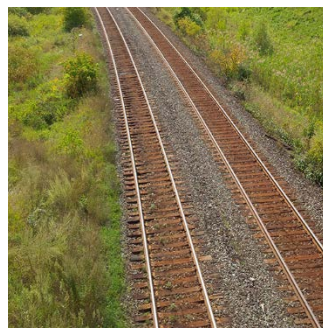
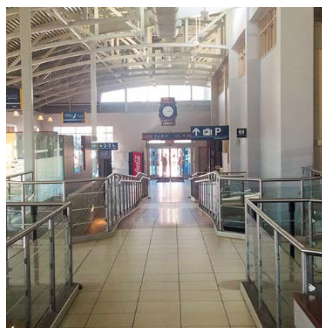


Southwestern Ontario's Passenger Rail and Bus Service Action Plan

Network Southwest

**Prepared by Greg Gormick
On Track Strategies**

March 2015



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By
Greg Gormick,
Southwestern Ontario Transportation Alliance
and
Transport Action Ontario

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Mitch Goldman

Jim Houston
President
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Terence Johnson
President
Southwestern Ontario Transportation Alliance

Peter Miasek
President
Transport Action Ontario

Bill Namink
Rail Advocacy in Lambton

Ethan Rabidoux
Transportation Task Force Coordinator
United Way Perth-Huron

Tony Turritin
Vice-President
Transport Action Ontario

Chris West
Chairman
Save VIA Committee of St. Marys

Ken Westcar
Board Member
Transport Action Ontario

EXECUTIVE SUMMARY

1.0 SOUTHWESTERN ONTARIO AT THE CROSSROADS

Southwestern Ontario's intercity public transportation system is inadequate for current needs and shows little prospect of becoming a stimulator of economic and social vitality.

As both aging Baby Boomers and a new generation of Canadians – the Millennials – eschew car ownership, their travel choices will increasingly factor into this situation. As with several other regions around North America that compete with Southwestern Ontario, its transportation system needs to change rapidly. “Business as usual” is not acceptable.

Network Southwest is a practical and affordable first step in giving Southwestern Ontario the mobility it requires. It is a framework based on concepts that have succeeded elsewhere in North America, under conditions similar to those faced by the communities west of Toronto.

2.0 SOUTHWESTERN ONTARIO'S MOBILITY GAP

Southwestern Ontario is dominated by the private automobile, bringing with it high economic, social and environmental costs. While it has a role to play, the car is not a one-size-fits-all mobility solution.

The rail passenger service provided by federally-owned VIA Rail Canada has long been in decline for numerous physical, financial, legislative and political reasons. It survives at the whim of any government and its future is uncertain. Despite these negative factors, there is still a large demand for rail service along VIA's three well-populated corridors in Southwestern Ontario. The factors in rail's favour on these routes include:

Despite the federal budget cut that led to the VIA service reductions of 2012, total ridership on the three routes was relatively healthy at one million passengers in 2013. However, VIA's operating costs have risen, ridership and revenues have stagnated, cost recovery has declined and the current federal government has failed to take any serious and positive action. Without substantial modernization and service improvements, these negative trends will continue.

Like VIA, for-profit intercity bus operators have long attempted to offer a credible, convenient alternative to the car. However, the privately-owned bus companies have struggled for decades to operate profitably on many lighter-density routes, which had always operated with low or non-existent profit margins, but had functioned as feeders for the profitable, higher-density trunk routes.

In 2009, Greyhound announced sweeping service reductions across Canada, including Southwestern Ontario. The only reaction from government was the formation of a task force

composed of bus operators, their industry associations, and provincial and federal transportation ministry representatives, which stated that “the current state of the industry is dismal, with declining ridership and profitability.”

To date, little action has resulted. In the wake of the 2009 Greyhound cuts, some of the abandoned Southwestern Ontario routes were taken over by London-based Aboutown, but these services were all terminated by 2013. Other privately-operated Southwestern Ontario routes have either been reduced or eliminated since then.

Another factor in Southwestern Ontario’s public transportation deficit is the historically low level of public transit provided in larger communities and its absence in smaller ones. This affects not only urban mobility, but also regional intercity travel patterns. Transit supplies the “first and last mile” element that can affect a traveller’s decision to drive or to take the train or bus. Without adequate transit as part of a seamless travel package, the effectiveness of each mode of transportation is compromised.

Connectivity between the intercity and urban modes is vital, but Southwestern Ontario doesn’t score well in this regard. In addition to a general lack of cooperation and connection between VIA and intercity bus services, the difficulty in using urban transit as the initial and final links in car-free journeys contributes to the automobile’s dominance of intercity travel.

3.0 PROGRESSIVE PROVINCIAL INITIATIVES

While the current state of VIA, intercity bus service and most urban transit systems in Southwestern Ontario is distressing, there are glimmers of hope thanks to the Government of Ontario’s growing commitment to explore and advance rail-based mobility solutions. This is particularly apparent in the government’s strong commitment to an extensive list of GO improvements in the Greater Toronto and Hamilton Area (GTHA).

For residents of the easternmost portion of Southwestern Ontario, these beneficial improvements have included the extension of GO rail and/or bus service to numerous points, such as Orangeville, Guelph, Kitchener and Niagara Falls. Under Premier Kathleen Wynne’s 10-year, \$29-billion *Moving Ontario Forward* plan, the core of the GO rail system will be converted to electrified, high-frequency Regional Express Rail (RER) service. Commitments have also been made to various other GO rail improvements, including an extension of the Lakeshore West Line to Niagara Falls and doubling the two-train Kitchener-Toronto GO rail service by 2016.

These developments have positive implications for parts of Southwestern Ontario, but there are concerns related to many fiscal, physical and operational factors. There are capacity issues to be resolved between GO and the freight railways concerning the long-promised all-day, two-way services for Kitchener and Niagara Falls.

However, one unintentional negative consequence of GO service expansion has been its erosion of VIA’s traffic base on the eastern end of its Southwestern Ontario route network. In

essence, one publicly-funded service now competes with another and there is little coordination.

One surprising development just before the 2014 provincial election was the announcement that Ontario would, in concert with GO expansion, build a Toronto-London high-speed rail (HSR) line. A cost of \$6 billion and an estimate of 10 to 12 years for the service launch were given. The route of the proposed service was subsequently extended to Windsor after the government's re-election.

Reaction to the HSR plan was mixed. This was due to the concerns of some communities over the route it would take, the length and cost of its construction and the general lack of action to emanate from the numerous HSR studies that have preceded it since 1970.

Nonetheless, with the federal government failing to honour its responsibility to provide adequate intercity rail passenger service, the various GO, RER and HSR projects all indicate the adoption of a rail-friendly policy and funding outlook by the Government of Ontario.

4.0 THE POWER OF RAIL-BASED MOBILITY

The benefits of public investment in rail projects have been verified by numerous public agencies and private industry organizations in other countries, although less so in Canada. The points in favour of public spending on rail-based passenger transportation include safety, energy efficiency, diversion of travelers from crowded highways and airports, high rates of economic spinoff and job creation, and convertibility from oil-powered diesel traction to electricity derived from renewable sources.

Of particular note is the fact that refurbished stations with high levels of service and passenger activity are active catalysts for economic growth, with many being developed into mixed-use properties that include offices, retailing and other commercial activities.

Rail also offers substantial environmental benefits. In Canada, the transportation sector generates 27 per cent of the nation's greenhouse gas emissions. Railways produce only 3 per cent of the transportation sector's total and less than 1 per cent of the national total, while moving 70 million commuters and intercity passengers, and more than 70 per cent of the surface freight tonnage annually.

However, these virtues are often dismissed at the Canadian federal level, as evidenced by the successive waves of VIA cuts on the basis of so-called fiscal responsibility. This anti-rail bias is even expressed semantically, with public spending on rail passenger service usually described as "a subsidy," while highway and aviation funding is invariably "an investment."

5.0 THE HIGH-PERFORMANCE RAIL SOLUTION

Since the world's first true high-speed rail (HSR) train pulled out of Tokyo for Osaka on the all-new Tokaido Line in 1964, it has become the gold standard of intercity passenger transportation. Commonly defined as electrified, high-frequency passenger service operating at speeds of 240 km/h or more, HSR has become a global phenomenon.

However, HSR is expensive and time-consuming to build. It also requires a concentration of passengers in dense corridors and an ability to draw additional traffic from off-line points with complementary rail, bus and transit services. When it is part of a seamless network of integrated services, HSR does, indeed, offer a credible and attractive alternative to intercity car and air travel, diverting large passenger volumes to rail.

But HSR is not the only rail-based mobility solution that is enjoying worldwide growth. An alternative known as high-performance rail (HPR) is increasingly being applied around the world as a higher-speed middle-ground between high-end HSR and lower-speed conventional rail, such as VIA's Southwestern Ontario service. HPR operates on many main and secondary routes around the world, often complementing and feeding traffic to HSR lines.

A key feature of HPR is that it isn't a "big bang" approach that takes years to deliver all in one go. It grows incrementally, with investment pegged to the success of each phase. New line segments are built only when the old ones reach their speed and capacity limits. As well, HPR can be operated with electric or diesel-electric locomotives, whereas HSR requires full electrification.

While HSR is a revolutionary vision for tomorrow, HPR is a practical reality for today. It is also a logical and cost-effective platform on which to construct HSR in the future.

HPR is at work in the U.S. today. The most notable examples are the electrified Northeast Corridor (Boston-New York-Washington) and the Keystone Corridor (Philadelphia-Harrisburg). Diesel-powered HPR service is also operated on the New York-Albany, Detroit-Chicago, Chicago-St. Louis and Los Angeles-San Diego routes in the U.S. Other HPR corridors are now emerging incrementally, as public funding greatly improves the existing Amtrak service on several routes.

Canada has no HPR service, although VIA's Toronto-Ottawa and Ottawa-Montreal routes come close by virtue of their speed (160 km/h) and service frequency. In 2002, VIA proposed a \$2.6-billion HPR project known as VIAFast. This would have brought major improvements in speed and frequency to the Quebec-Windsor Corridor in four to five years. The plan was tentatively approved by one federal government and then cancelled by its successor.

6.0 SUCCESSFUL U.S. ROLE MODELS

There are several examples of successful, rail-based regional public transport solutions in the U.S. They share a number of characteristics, including:

- joint funding by the federal and state governments
- HPR or substantially upgraded conventional rail services for the spines;
- important, well-used bus feeders;
- modern, cost-effective rail and bus equipment;
- high connectivity through the conversion of rail stations into mobility hubs;
- incremental increases in rail frequencies and speeds; and
- adaptability as components of larger, longer-term HSR plans

Of these factors, it is the joint funding by the upper levels of government that has been the key to making these projects function effectively. This is the cornerstone of the U.S. approach.

Today, 19 states support 28 Amtrak corridors, three of which are detailed in this report:

- Michigan's Wolverine Corridor;
- North Carolina's Piedmont Corridor; and
- California's Capitol Corridor.

Each corridor varies in terms of regional needs, the trains and feeder services employed, and their governance. These rail-based mobility solutions have one common denominator: they all work because the governments work collaboratively.

7.0 NETWORK SOUTHWEST'S FOUNDATION

Based on the U.S experience, it is clear there are two major changes that must be undertaken cooperatively by the federal and provincial governments if a mutually-beneficial project such as Network Southwest is to become a reality. These are:

- the re-alignment and coordination of their disconnected and disjointed intercity transportation planning, funding and delivery policies; and
- the consequential need for a new management structure to deliver the core rail service and coordinate the development of the feeder bus system and the mobility hubs.

There are several precedents in Canadian transportation for taking such an approach. In 1991, a previous provincial government partnered to with VIA to restore a London-Toronto train that had been cut as a result of the federal government's slashing of half of the national rail passenger service the year before. That approach was selected because it was quicker and more cost-effective than launching a new GO service solely with provincial funding.

More recently, the governments of Canada and New Brunswick jointly invested in a section of the CN-owned track used by VIA's Halifax-Montreal *Ocean* to prevent its abandonment. The benefits obtained by the two governments working in concert were greater than those that would have been attained by working in isolation from each other.

The federal government is currently spending nearly \$60 million annually to provide a rail passenger service in Southwestern Ontario that is not delivering its full potential, and it is only going to grow more costly without full modernization and service improvements.

At the same time, provincial funding is already flowing into the eastern portion of the region through the expanding GO service. This provincial investment will only grow as a result of more GO expansion and the HSR project. In combination, this public funding from the two levels of government could and should be delivering a much greater benefit to users and taxpayers.

Network Southwest is the method by which public investment can be applied more effectively to deliver a public service that has a large bearing on the future of Southwestern Ontario. Only a joint approach by the federal and provincial governments can bring about the mobility improvements needed by the region.

The preferred method for the two levels of government to jointly implement Network Southwest should be through a compact, dedicated Network Southwest business unit within VIA. This should duplicate the successful U.S. methodology, where on-the-ground input from and decision making by local Amtrak managers and the representatives of its state partners has guided these corridor development programs.

The structuring and staffing of this new Network Southwest business group and the production of its initial business plan should be entrusted to a committee composed of representatives from VIA, Transport Canada, the new MTO Rail Office, and affiliated government departments with public transportation experience and responsibilities, especially Metrolinx and GO.

8.0 NETWORK SOUTHWEST'S BUILDING BLOCKS

There is nothing technologically or operationally revolutionary or unproven in Network Southwest. As demonstrated by the successful U.S. examples, the three physical elements required to deliver the improved, integrated service envisioned are:

- existing VIA services upgraded to high-performance rail (HPR) standards;
- feeder bus services to link the trains with communities beyond the rail lines; and
- mobility hubs for seamless connectivity between the modes, including local transit.

Each of these components needs serious attention if Southwestern Ontario is going to have the type of car-free mobility already available in numerous other North American regions. While

each is important on its own, it is only by tackling all three elements in unison as part of a unified, multi-modal plan that the maximum benefits can be derived from each of them.

In total, Network Southwest requires a capital investment of approximately \$400 million and the maintenance of VIA's current annual operating subsidy of \$60 million for its Southwestern Ontario services.

As the core of Network Southwest, the rail system will act as both the anchor and the stimulant for all the sub-projects necessary to build a truly multi-modal system.

The bulk of the infrastructure over which Network Southwest core rail service will operate is in good to excellent condition. This should allow for reductions in the running times of all three VIA routes in advance of the full implementation of Network Southwest.

Some infrastructure work remains to be done, especially in light of the increasing CN freight traffic that is affecting VIA's on-time performance today. The most significant of these will be capacity expansion on the CN Halton Subdivision between Bramalea and Georgetown, the CN Strathroy Subdivision between London and Sarnia, and the CN Grimsby Subdivision near Grimsby.

It is in the area of rolling stock that VIA remains seriously deficient and this will require the largest portion of the \$400-million capital budget proposed for the first phase of Network Southwest. Based on the U.S. experience, it is recommended that new, bi-level rolling stock equipped for push-pull service at up to 160 km/h be purchased.

While it would seem logical for the Network Southwest fleet to be piggybacked-on a large U.S. bi-level car order now under construction in Illinois, this would yield few Canadian economic spinoff benefits. However, the Bombardier bi-level push-pull equipment built in Thunder Bay was designed to be adaptable for intercity service at speeds of up to 160 km/h. Delivery would require four to five years and would have large Canadian economic spinoff and job creation benefits.

The 40 dedicated bi-level cars required for the first five-year phase of Network Southwest would be configured along the lines of the bi-level rolling stock now being built in the U.S. for Amtrak state-supported corridor service. To deliver the frequency contemplated in the initial Network Southwest build-out period, it is estimated that eight trainsets of four cars each would be required for the base service, plus two full trainsets to allow for programmed preventive maintenance and surge capacity. These 10 push-pull trains would be powered by locomotives from VIA's existing fleet.

The purchase of this new equipment is the key to the success of Network Southwest. Without it, there can be no efficient and cost-effective core rail service, on which the entire plan is dependent. Maximizing the use of VIA's current fleet in the short term is unavoidable, but

attempting to use this equipment to deliver the expanded service in the longer term would doom Network Southwest to financial and operational failure.

The first step in ramping Network Southwest's rail service up to a useful and sustainable level should be the restoration of trains eliminated in 2012. Thanks to some positive developments at VIA regarding its fleet availability, this should be possible in a very short time frame. Other slight additions to the schedule can be accomplished using VIA's existing equipment pool, but substantial increases in frequency will not be possible until the new bi-level equipment begins arriving.

The number of Network Southwest weekday roundtrips should increase on the following basis:

ROUTE	2015	2016	2017	2018	2019	2020
Toronto-Stratford-London	2	3	3	4	5	6
Toronto-Brantford-London	5	5	5	6	6	7
Toronto-Sarnia	1	2	2	2	3	3
Toronto-Windsor	4	4	4	4	5	5
Toronto-Niagara Falls	1	2	2	3	4	5

To serve communities beyond the rail lines, the creation of a Network Southwest feeder bus system is required. With modifications to their service levels and scheduling, there are at least 10 GO and municipally-operated interurban bus routes that could play this role in Network Southwest.

Elsewhere, there must be coordinated action by the Network Southwest business unit and the affected municipalities, townships and counties to create the additional interurban feeder routes. There is an excellent opportunity to test this concept at low cost with two new Stratford-based services that would operate northwest to Goderich and northeast to Listowel and Wingham.

At full build-out during the first five years of Network Southwest, this feeder system could grow to as many as 24 routes that would greatly extend the rail system's catchment area, as well as provide a basic level of rural mobility that is now missing from Southwestern Ontario.

In the creation of the mobility hubs to seamlessly connect Network Southwest's core rail and bus feeder components, a good start has already been made on the eastern ends of the three rail routes, thanks largely to GO. The municipally-owned Guelph Central Station offers an ideal model to be emulated in the creation of the necessary intermodal facilities based on the existing VIA stations throughout the Network Southwest service territory.

In London, the opportunity exists not just to connect the Network Southwest rail and feeder bus services with local transit, but also to include the city's Greyhound intercity services, which

are currently located at a separate facility three blocks west of the large and modern VIA station.

9.0 MOVING NETWORK SOUTHWEST FORWARD

There is nothing technologically or legislatively untested in Network Southwest. The three successful U.S. examples cited in this report demonstrate the various elements of the concept are all service proven.

Nor is the cost onerous, especially in the context of recent Canadian transportation projects. The \$400-million capital investment required to implement Network Southwest is equal to:

- 1 km of Toronto subway tunnel
- 12 km of six-lane toll highway
- 1.4% of Ontario's \$29 billion transportation pledge

What is required to make Network Southwest a reality is the most difficult commodity to prescribe: political will. Whether it exists and can be leveraged to implement this plan remains the overriding question.

Network Southwest can deliver the mobility improvements required. It has been designed to deliver the maximum level of car-free mobility throughout all of Southwestern Ontario in the shortest time possible, and with an affordable, justifiable budget.

Furthermore, Network Southwest has been conceived as an initiative that will dovetail with the larger and longer-range projects that are now on the provincial agenda. There is nothing within Network Southwest that will need to be discarded if ambitious projects such as the all-day, two-way GO service to the Niagara and Kitchener-Waterloo regions, and HSR to London and Windsor, are undertaken.

Time is of the essence. Resolving Southwestern Ontario's mobility challenge is a growing concern to many in the region, and for very good reasons. Alternate long-range solutions requiring billions of scarce public dollars and a decade or more to deliver any appreciable improvement are inadequate.

PREFACE

As a member of my local workforce planning board, I hear stories of people unable to take jobs because the transportation they need isn't available. Employers can't fill vacancies even though we have a highly-skilled and educated workforce. Youth retention is a challenge because access to work and leisure opportunities is limited by mobility challenges.

It wasn't always so. In the early 1990s, when gasoline and car insurance were cheaper, Southwestern Ontario had a strong public transportation network, providing access to opportunity. It was an economic success story.

The VIA Rail cuts of 2012, coming on top of earlier cuts and the abandonment of intercity bus routes, provoked both outrage and deep concern for the future of our communities. Municipalities passed 72 resolutions calling on our provincial and federal governments to restore rail and bus services. Rather than merely protesting, citizen advocacy groups have come together as the Southwestern Ontario Transportation Alliance to promote viable solutions.

We are grateful to Transport Action Canada's *John McCullum Research Fund* and other donors for making it possible for us to engage transportation industry expert Greg Gormick to research solutions and to present them in this report.

We welcome the Ontario government's decisions to expand GO service to Kitchener, to review bus regulations, and to begin an environmental assessment for a high-speed rail line to London by 2025. However, ten years is a long time in politics. For seniors, current college students and businesses considering where to invest today, this is too long to wait.

Both rail and intercity bus services are now below sustainable levels, many communities have lost vital connections, and the services that remain are badly fragmented. For this reason, the report focuses on the viable, affordable and practical steps that must be taken right now to underpin our region's economic and social fabric, and that will deliver results within the next five years.

Transportation is a complex issue requiring federal, provincial, municipal, and private sector cooperation to deliver a passenger-friendly integrated network. This doesn't mean that the solutions have to be expensive. We're often told that something will cost us less than a cup of coffee per person per day, but in this report, we've set the bar even lower: less than the cost of one doughnut per citizen per day.

Indeed, *everything* we propose for Southwestern Ontario over the next five years will cost less than building a single kilometer of new subway in Toronto.

Whether the recommendations in this report result in action to addresses our widening mobility gap is up to each of you. Engage your elected representatives, remind them that we expect them to deliver prosperity for our communities, and show them this affordable blueprint for quick results.

Terence W. Johnson
President, SWOTA

1.0 SOUTHWESTERN ONTARIO AT THE CROSSROADS

“A problem well stated is a problem half-solved.”

Charles F. Kettering
General Motors Research Director
1920-1947

Southwestern Ontario is at a crossroads. As it reinvents and repositions itself as a largely post-industrial region, it must make long-range decisions to guide and sustain its transformation. Some of these will be transportation choices.

Southwestern Ontario once enjoyed a wide variety of public transportation options that served as effective alternatives to the automobile. But as car ownership and driving increased, the public modes saw their market share decline. This started a vicious cycle of cuts to stem rising costs and declining revenues, which only made rail and bus less attractive than driving, leading to further losses. Today, the car is the undeniable king of travel in Southwestern Ontario.

This automotive over-dependence is one of the issues that must be faced as Southwestern Ontario makes its transition. The economic, social and environmental evidence against using the car as a one-size-fits-all mobility solution is well documented.

Southwestern Ontario's future will not be determined solely by resolving its transportation challenges. However, as reams of real-world evidence have proved, non-automotive access and mobility are key factors in the success of regional economies around the world.

Southwestern Ontario's intercity public transportation system is inadequate for the region's current needs and shows little prospect of becoming a stimulator of economic and social vitality. As both aging Baby Boomers and a new generation of Canadians – the Millennials – eschew car ownership, their travel choices will increasingly factor into this situation. As with several other regions around North America that compete with Southwestern Ontario, its transportation system needs change – and it needs to be undertaken quickly. “Business as usual” is not acceptable.

Network Southwest is a practical and affordable first step in giving Southwestern Ontario the mobility it requires. It is a framework based on concepts that have succeeded elsewhere in North America, under conditions similar to those faced by the communities west of Toronto.

Network Southwest is intended not as an end, but rather as a means for embarking on what will undoubtedly be a long and complex journey involving other projects that will grow with and out of it.

2.0 SOUTHWESTERN ONTARIO'S MOBILITY GAP

“Their highway program will, eventually, wipe out the very area of freedom that the private motorcar promised to retain for them.”

Lewis Mumford
The Highway and the City (1966)

Southwestern Ontario is dominated by the private automobile. While it has long been promoted and sold as the ultimate in freedom and personal mobility, the car has become the junk food of transportation, bringing with it high economic, social and environmental costs. While it has a role to play, the car is not a one-size-fits-all mobility solution.

The car's natural lure of independence and private mobility hasn't been the only factor in its rise. Automotive dominance has depended heavily on public policies coupled with massive, ongoing public investments. It is the combination of the car's appeal with these public policy and investment decisions that have greased its wheels.

While commercial aviation was also favoured in federal investment decisions in the post-war period, its impact on Southwestern Ontario's intra-regional mobility has always been negligible. In a recent address, Dr. Mike Moffat, assistant professor of business economics and policy at the University of Western Ontario's Ivey School of Business, said the region's future economy will require businesspeople to be able “to travel all over the world to meet customers, suppliers and sources of capital.... This can be accomplished through expansion of regional airports and increasing transportation links to Pearson Airport.”

There's no question of the requirement for strong air connectivity with distant domestic and foreign destinations. But air won't ease Southwestern Ontario's intra-regional mobility deficit. Improved rail and bus service can, while also providing access to Pearson and regional airports. Furthermore, regional air service comes with large public costs. In Iowa, a federal program that supports regional airports results in a subsidy of \$118 per air traveller. By comparison, a plan to extend the upcoming Amtrak Chicago-Quad Cities service through Iowa to Omaha, Nebraska, would require an annual subsidy of only \$2 per passenger.

As in any business – publicly or privately owned – investment is the key. Even with the public making up the full loss on passenger trains since 1977, as well as the unquantifiable benefits for the private bus industry resulting from the public financing of the highways, rail and bus have never enjoyed the same degree of public largesse as the automotive and airline industries.

It is, therefore, not surprising these two modes have declined. Given the strength of their well-funded competitors, the fact that rail and bus continue to provide the level of service they do is astonishing.

2.1 VIA RAIL CANADA

In 2011, a Library of Parliament background report summarized VIA Rail Canada's dilemma:

"Passenger rail in Canada is currently at a crossroads: To continue on a 'business as usual' basis promises only continued decline in an industry whose current business model and institutional constraints offer few options for further expansion or development. The future of passenger rail in Canada depends, in large part, on federal government policy in this area."

Despite VIA's long decline and the competitive advantages enjoyed by car and air travel as a result of massive public investment, a large demand and potential for rail service remain in Southwestern Ontario. First and foremost, VIA serves three well-populated corridors with evenly-spaced traffic generators:

- Toronto-Aldershot-St. Catharines-Niagara Falls
- Toronto-Aldershot-Brantford-London-Windsor (South Main Line or SML)
- Toronto-Stratford-London-Sarnia (North Main Line or NML)

The factors in rail's favour on these routes include:

- one of the highest population densities in Canada;
- numerous online colleges and universities, and large numbers of younger travellers without access to cars;
- significant online tourist and cultural attractions;
- Toronto's strong attraction as a destination and a VIA interchange point;
- high travel demand end-to-end and between intermediate points;
- a lack of alternate and/or reasonably-priced public transportation options;
- increasing driving times for trips on Highway 401 and the Queen Elizabeth Way; and
- difficult winter driving conditions.

Despite these positive factors and the early efforts to improve the Canadian National (CN) and Canadian Pacific (CP) services it took over in 1977, VIA has lurched from crisis to crisis. VIA's inability to succeed decisively has to a large degree been induced by:

- government indecision and inadequate funding;
- managerial missteps and a board lacking real-world transportation experience;
- high freight railway trackage fees and a lack of effective access;
- infrastructure lacking the capacity to handle growing passenger and freight demands;
- aging and costly equipment desperately in need of replacement; and
- an absence of legislation spelling out VIA's mandate, mission and rights.

VIA RAIL CANADA SOUTHWESTERN ONTARIO NETWORK – 2015



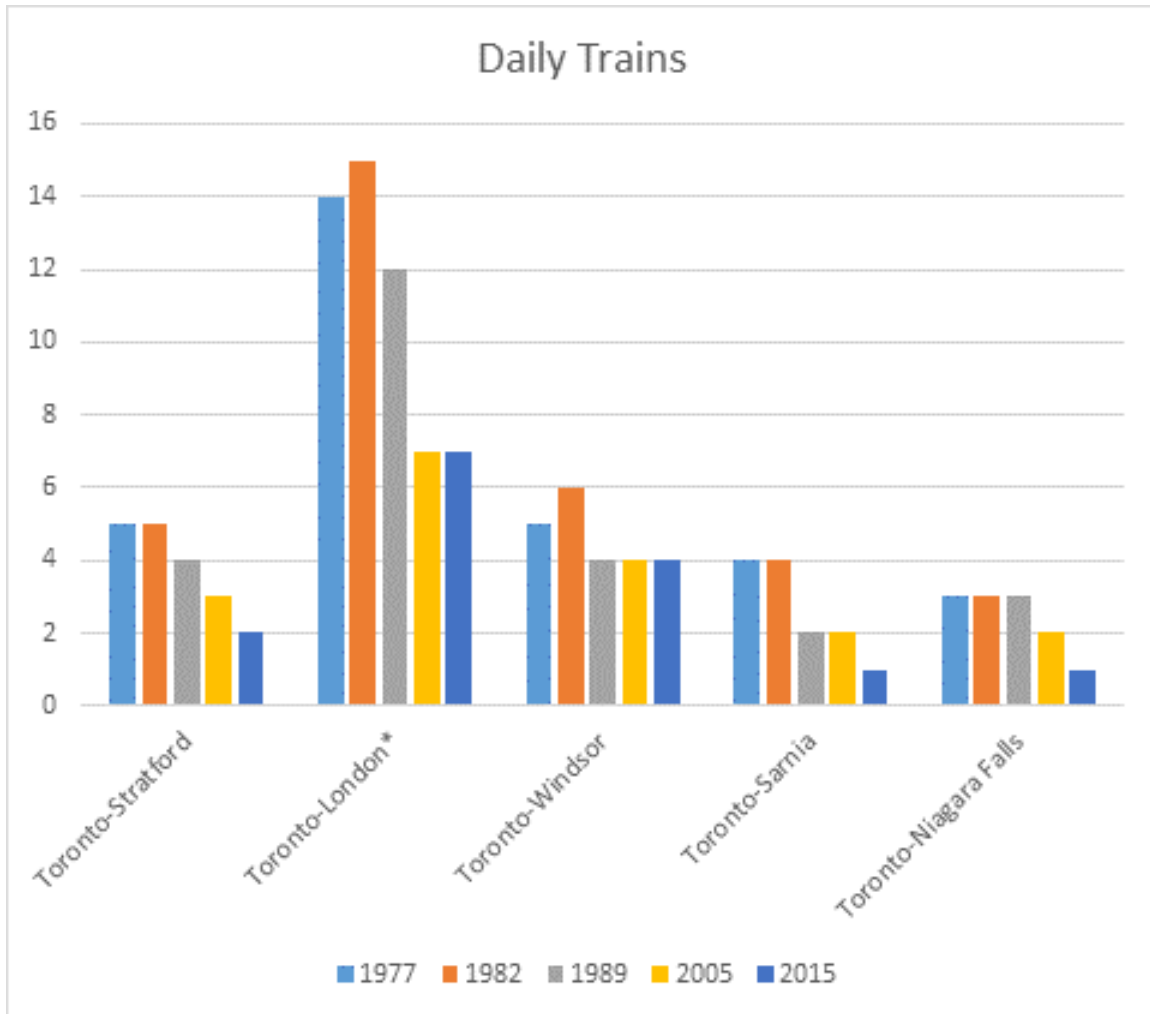
A review of VIA's Southwestern Ontario service frequency, running times and on-time performance reveals a slow and disturbing erosion of quality and competitive attractiveness.

Despite the service cuts of 2012, total ridership on the three routes was a relatively healthy one million passengers in 2013 (the last year for which complete figures are available). However, in Southwestern Ontario and elsewhere, VIA's operating costs have risen, ridership and revenues have stagnated, and cost recovery has declined. Without substantial modernization and service improvements, these negative trends will continue.

VIA SOUTHWESTERN ONTARIO PERFORMANCE: 2013 VS. 1988

KEY INDICATOR	1988	2013	% CHANGE
Passengers	1,961,000	997,142	-49.2
Passenger Miles	209,978,000	114,300,000	-45.5
Train Miles	1,689,000	978,000	-42.1
Revenues	\$34,905,000	\$40,897,000	+17.2
Operating Costs*	\$52,265,000	\$98,321,000	+88.1
Operating Shortfall	\$17,360,000	\$57,424,000	+230.8
Cost Recovery Ratio	66.8%	41.6%	-25.2
Subsidy Per Passenger	\$8.85	\$57.59	+550.7

* Excludes capital, administration and system overhead costs. Inflation was 75.3% over the same period.



* Includes all trains on both the North Main Line (NML) via Stratford and the South Main Line (SML) via Brantford

To be fair, the physical modernization of VIA was the objective of the \$923-million capital investment program the current federal government authorized in two stages beginning in 2007. Although it was the largest capital investment in VIA's history, it was still inadequate to completely fix VIA physically and not only control its rising costs, but also attract more passengers and revenue. Still, it appeared on paper to be a good first step.

However, VIA's capital renewal program derailed. One casualty was a project to boost the Toronto-London service on the North Main Line (NML) to six daily roundtrips. The modestly-priced plan involved some infrastructure upgrading in conjunction with extension of two GO weekday-only Georgetown trains to Kitchener, as well as the rebuilding of a small fleet of self-propelled Budd rail diesel cars. A November 2009 announcement in Kitchener was delayed by a legal dispute with one of the NML rail freight operators. The project was cancelled when the capital renewal program encountered serious delays and cost overruns.

Instead of expanding, VIA cut the frequency of its Southwestern Ontario network in 2012, as well as the eastern and western transcontinental routes. While the cuts were small numerically and didn't eliminate any routes completely, they had a disproportionately high impact because service was already below what many users considered an irreducible minimum. These seemingly small cuts eroded VIA's convenience, utility and attractiveness.

VIA's situation contrasts sharply with the improvement in U.S. rail passenger operations, performance and cost-effectiveness. While Amtrak enjoys some advantages in terms of funding and legislation over VIA, it also faces many of the same challenges. Still, it has managed to work on its own and with many state partners to modernize and expand service, which has improved its financial performance and public utility.

Today, VIA's future is not assured and its next steps remain uncertain. As the 2011 Library of Parliament report states, the future of VIA – in Southwestern Ontario and across Canada – is largely one of federal government policy.

2.2 INTERCITY BUS SERVICE

Like VIA, for-profit intercity bus operators have long attempted to offer a credible, convenient alternative to the car. While government-mandated rail passenger cuts have always garnered widespread media and public attention, the contraction of Southwestern Ontario's intercity bus service has been equally dramatic, but not as widely recognized.

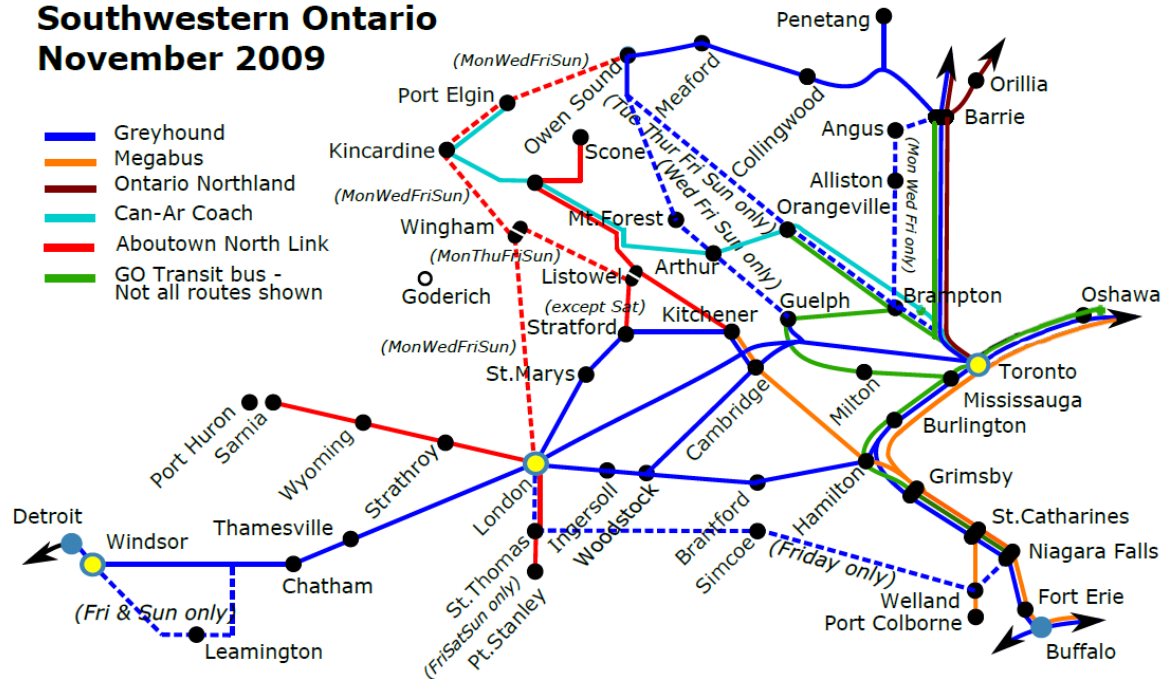
With the geographic contraction of the once far-flung Southwestern Ontario rail passenger network throughout the 1960s, bus service often remained the only public transportation service available in many communities. However, the privately-owned bus companies have struggled for decades to operate profitably on many lighter-density routes, which had always operated with low or non-existent profit margins, but had functioned as feeders for the profitable, higher-density trunk routes.

Most of the lighter-density routes that once connected hundreds of communities have vanished and even trunk line services have declined. The departure of the last bus from many communities has eliminated the last public transportation option.

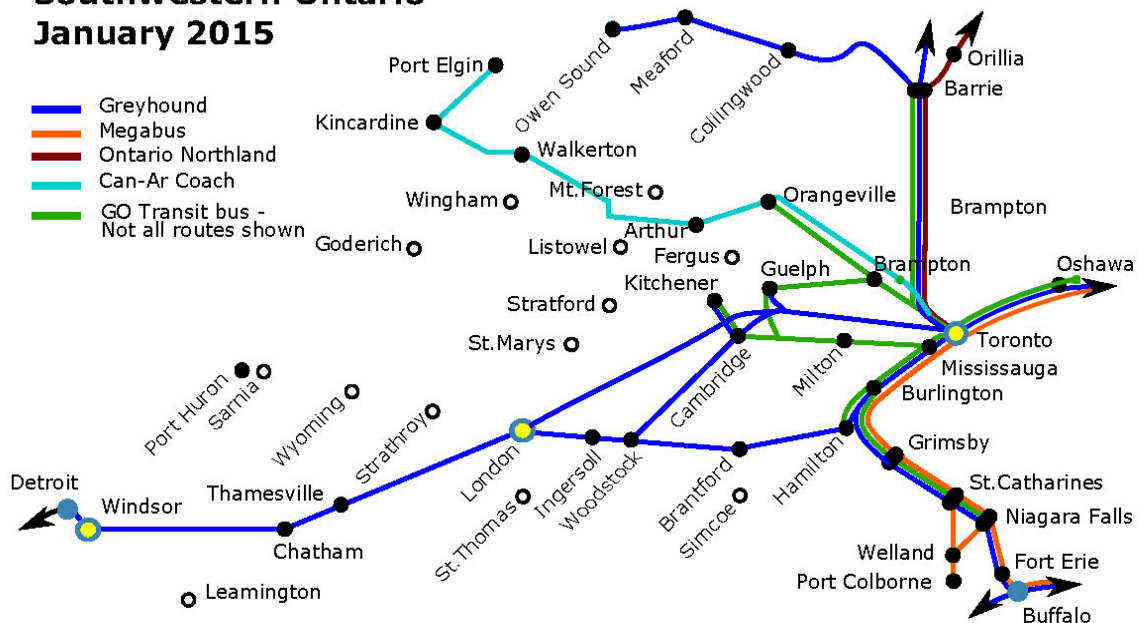
To survive, the bus industry has tried to reinvent itself as a deep-discount, mass hauler of passengers on a reduced network of high-density trunk routes that often parallel and compete with VIA. Limited-stop, no-frills direct services have proven popular between certain larger city pairs, but this has done nothing for smaller communities.

In 2009, Greyhound Canada announced sweeping service reductions across Canada. Some routes would have their frequencies reduced drastically, while others would disappear.

Intercity Motor Coach Routes Southwestern Ontario November 2009



Intercity Motor Coach Routes Southwestern Ontario January 2015



Consultations with the eight affected provinces and the Yukon were aimed at securing financial support to continue some of these services, but they were only partially successful. Manitoba granted short-term assistance that maintained some services in and to that province, which also saved trunk route service in Northwestern Ontario. Ontario declined to contribute.

Faced with the drastic Greyhound measures – as well as the previous and contemplated cuts by other operators nationwide – an interprovincial task force on the future of the industry was formed, including operators, their industry associations and Transport Canada.

After analyzing the changing bus market, the task force established that “passengers on all routes tend to be of below-average income, are either seniors or students and use the bus because it is their only mode of transportation available.”

The task force’s report also noted the importance of service to both urban and rural destinations, “but more so to rural and northern communities, where there are limited transportation alternatives.”

The authors of the task force report also admitted that “the current state of the industry is dismal, with declining ridership and profitability.”

The task force identified several factors contributing to the industry’s decline, including:

- a broken regulatory model, with regulations not enforced, innovation stifled and costs increased;
- “tension” as a result of publicly-funded competition from VIA (a longstanding industry complaint) and urban transit agencies, such as GO, which have expanded into areas traditionally served by private operators; and
- the need to connect intercity bus service with other modes of transportation.

Fiscal options were suggested to counter the decline, including:

- partnerships with communities to provide alternative modes of service delivery where none currently exist, or to replace services targeted for elimination;
- capital support for purchases of new buses or refurbishment of existing vehicles;
- support to cover operating losses/operating costs for specific routes or full systems;
- fuel tax and ticket tax exemptions;
- a federal tax credit for bus passengers, such as the federal public transit tax credit; and
- partnerships between local authorities and carriers to maintain existing services and develop new ones.

To date, little action has resulted. In Ontario, no assistance was provided and Greyhound went ahead with its service cuts in Southwestern Ontario, as well as the Southeastern and Muskoka regions. Some of the abandoned routes were taken over by London-based Aboutown and

operated as NorthLink. These services were all terminated by 2013. Other privately-operated Southwestern Ontario routes have either been reduced or eliminated since then.

A review of Ontario intercity bus regulation is on the provincial agenda, but little is known of the scope or timing of the process. Some private operators have said that deregulation and unfettered competition would bring more service, but it is unclear how that would affect anything other than the existing routes linking major cities. No assurances have been given that smaller communities would regain bus services that had been reduced or eliminated.

Although a point of contention among the private companies operating west of Toronto, GO's commuter-oriented bus expansion has improved mobility for some Southwestern Ontarians. GO buses now serve Orangeville, Kitchener, Cambridge and Niagara Falls, and further expansion is expected. The private operators say this GO expansion into markets they serve under operating authorities granted by Ontario's regulated system has created unfair competition. They maintain that this has damaged profitability and hastened the termination of marginal routes, which were often cross-subsidized from the more lucrative markets GO has entered.

As for the task force's recommendation on the need to connect with the other modes of transportation, little has been done by the two levels of government or the industry.

2.3 URBAN TRANSIT

Another factor in Southwestern Ontario's public transportation deficit is the historically low level of public transit provided in larger communities and its absence in smaller ones.

In his May 30, 2014, *Globe and Mail* special report on Southwestern Ontario's future, reporter Adam Radwanski noted the need to focus economic renewal efforts on revitalizing downtown cores. As City of London planner John Fleming said, "Your downtown is your calling card to the world."

Radwanski also noted in his article that:

"Pivotal to that vision is one thing much of the southwest lacks: modern public transit. People fresh out of university and starting their careers don't always have a car to get around. The need for all this investment speaks to a fundamental chicken-and-egg problem facing much of the rust belt. The lack of modern urban infrastructure can be a barrier to economic growth, but without that growth, communities simply can't afford it. For that, they need help from the province."

The impact of transit service on the vitality of communities has been well documented innumerable times. There is no doubt that the lack of frequent, effective transit service in many Southwestern Ontario communities contributes to the region's overall mobility gap. Thanks largely to capital and operating assistance from the upper levels of government, other

North American regions competing with Southwestern Ontario are widening this gap through transit enhancement and expansion.



EFFECTIVE “FIRST AND LAST MILE” CONNECTIONS: Waterloo’s ION rapid transit project will deliver high-quality urban connections for intercity travellers when it opens in 2017. The Kitchener-Waterloo-Cambridge light rail and bus rapid transit service will connect with VIA, GO and intercity buses will be made at a new intermodal terminal to be located slightly west of the current VIA/GO Kitchener station at King Street.



This is not a criticism of the municipal governments that provide these services. Unlike the situation in the U.S., the Canadian federal government has never taken much responsibility for assisting in the maintenance or improvement of urban transit. When funding has come, it has not been sustained, often involving one-off, high-visibility projects that look good as planks in a campaign platform, but are forgotten afterward.

Provincially, the record on transit investment has ranged from excellent to abysmal. In the early 1970s, after decades of highway-only funding policies, the Government of Ontario laudably launched funding programs to assist the municipalities in improving their transit systems. This took the form of both capital and operating assistance.

However, this changed in the face of the provincial budgetary problems of the 1990s and culminated in the cancellation of all funding. This undermined the progress that had been made over a period of more than 20 years. Unavoidable service cuts were enacted by municipalities struggling to deal with the downloading of many other programs previously supported by the two upper levels of government.

Only in the last decade has the province resumed its large and necessary involvement in transit funding. The creation of Metrolinx for the Greater Toronto and Hamilton Area (GTHA) in 2006 is but one example. However, many municipalities are wrestling with tightened budgets that don't allow for the investment that can improve their transit systems on a sustainable basis.

In the context of this report, it must be noted this transit deficiency affects not only urban mobility, but also regional intercity travel patterns. Urban transit supplies the “first and last mile” element that can affect a traveller’s decision to drive or to take the train or bus. Without adequate transit as part of a seamless travel package, the effectiveness of each mode of transportation is compromised.

2.4 INTERMODAL CONNECTIVITY

Connectivity between the intercity and urban modes is a vital element of any comprehensive public transportation system. The rail or bus portion of a journey should be part of a coordinated trip that begins at a passenger’s point of origin and ends at their destination. The connections between the modes must be simple, comfortable and fast. Stations and directly connected transit service are key components of a seamless passenger trip.

In this regard, neither Southwestern Ontario nor the rest of Canada scores well. In addition to a general lack of cooperation and connection between VIA and intercity bus services, the difficulty in using urban transit as the initial and final links in car-free journeys in many cities is a contributing factor in the automobile’s dominance of intercity travel.

In lockstep with improved U.S. rail passenger service, many states made enhanced connectivity a priority. Using financial incentives to encourage the relocation of both intercity bus and urban transit services to modified, improved rail stations has been part of the U.S. approach. Once called intermodal terminals, and now known as mobility hubs, these facilities have not only helped improve ridership on many revitalized U.S. rail passenger corridors, they have also led to gains for the other modes of transportation, justifying further investment and expansion.

In Southwestern Ontario, progress has been made on the eastern ends of the three VIA routes. Some GO stations used by VIA are effective mobility hubs. There are also two developments led by other municipal agencies that can be used as models for future efforts.

The most notable is in Guelph, where the city took over the former VIA station as the basis for its Guelph Central Station, a mobility hub linking Guelph Transit, GO's rail and bus services, Greyhound and the two remaining VIA roundtrips on the North Main Line. First proposed in 2002, the \$8 million project received federal and provincial assistance. It has consolidated the modes at a central location that supports Guelph's downtown revitalization efforts.

Often forgotten as a factor that encourages travellers to choose the public modes of transportation, Guelph Central Station's signage is excellent. It is a well-planned, safe and convenient facility that includes all the necessary aesthetic and functional elements.

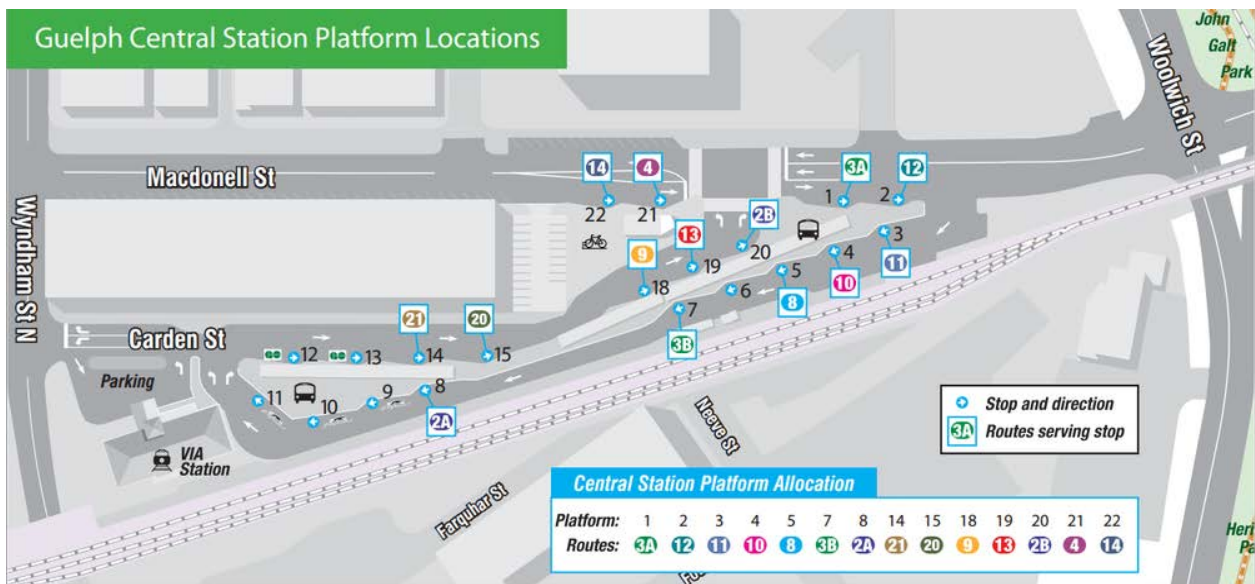
A similar project is planned for the Waterloo Region, where the construction of its ION rapid transit system has created an opportunity to finally connect the region's scattered public transportation services. The first phase of ION, slated for completion in late 2017, calls for a downtown mobility hub similar to Guelph Central Station. Located slightly west of the existing VIA station, it will directly link the initial Kitchener-Waterloo light rail spine line on King Street (which includes a Kitchener-Cambridge bus rapid transit extension) with other Grand River Transit routes, VIA, GO rail and bus services, and intercity buses.

In other locations, similar opportunities exist. In some, such as London, the various modes of transportation are already close to each other, but they don't connect effectively. In a few cases, building mobility hubs to serve all three modes would be more difficult, with some rail lines and stations inconveniently located away from downtown.

However, without a maximum number of mobility hubs to provide seamless access to all the public modes of transportation, individual and disconnected improvements to each of them will produce less than their cumulative potential.



INTERMODAL ROLE MODEL: Anchored by the historic railway station, the municipally-owned Guelph Central Station directly links VIA, GO, Guelph Transit and Greyhound at a well-planned downtown location. Guelph's transit system has also modified its bus services to make timed shuttle connections with the morning GO trains.



3.0 PROGRESSIVE PROVINCIAL INITIATIVES

“If we want to boost productivity and grow our economy, we need to build a seamless transportation network across the province.”

Premier Kathleen Wynne
Moving Ontario Forward
April 17, 2014

While the current state of VIA, intercity bus service and most urban transit systems in Southwestern Ontario is distressing, there are glimmers of hope thanks to the Government of Ontario’s growing commitment to explore and advance rail-based mobility solutions.

In many respects, the roots of the provincial government’s embrace of automotive alternatives can be traced back to the 1967 launch of the first GO rail service on the Lakeshore Line. Tentative though it may have been, it was a North American breakthrough: The first all-new commuter rail service in more than half-a-century. Championed by Premier John Robarts in preference to a plan for massive expansion of the parallel highways, GO’s creation and its rapid success sent a strong message about the wisdom of selecting rail-based public transportation alternatives to the car.

While the response to the calls for growth of the GO system was slow, each service expansion or extension only brought public calls for more. However, it is only in recent years that there has been a political recognition of the power of GO’s rail and bus services. Its central and often under-appreciated role in easing the gridlock and improving the mobility of the GTHA and its border regions has now been secured.

The 2006 creation of Metrolinx as the province’s GTHA transportation planning authority, its inclusion of GO as its operating division and long-range master plans for substantial GO expansion and intensification bode well for those portions of Southwestern Ontario within or bordering the expanding GTHA.

3.1 GO TRANSIT EXPANSION AND REGIONAL EXPRESS RAIL

Although plans for the sweeping expansion of GO’s routes and service levels date back to the early 1970s, it is only within the last decade that the system’s growth has been more than sporadic. For residents of the easternmost portion of Southwestern Ontario, these improvements have included the extension of GO rail and/or bus service to numerous points, such as Orangeville, Guelph, Kitchener and Niagara Falls.

The doubling of train frequency on the Lakeshore Line to provide a half-hourly service, combined with feeder buses, has opened up non-automotive travel options for those living on

or close to what is GO's busiest corridor. Although it has been a controversial project, the aim of the \$456-million UPX project to link Toronto Union Station and Pearson International Airport is to lure travellers out of their cars and on to rail transit.

GO will grow even more as a result of the provincial government's *Moving Ontario Forward* plan. Announced by Premier Kathleen Wynne prior to the provincial election of June 12, 2014, and reaffirmed afterward, this program will allocate \$29 billion over 10 years to transportation improvements province-wide, including transit, roads and bridges. Southern Ontario will receive \$15 billion of this total spending package.

Among its many components, *Moving Ontario Forward* calls for:

- a 10-year, \$10-billion conversion of the core GO rail system into an electrified, high-frequency service on fully-owned GO lines, to be known as Regional Express Rail (RER);
- substantial investment in the GO-owned infrastructure for RER (which will positively impact the performance of the VIA services operated over those GO lines); and
- negotiations to extend RER to GO routes owned wholly or in part by CN and CP.



REVOLUTIONIZING GO TRANSIT: The ambitious Regional Express Rail project will convert some GO lines into what is often described as a “surface subway.” It involves electrification, high frequencies and new equipment, which will likely be electric multiple unit trainsets similar to those to be used on a similar conversion of the Bay Area’s Caltrain commuter rail line. Photo by Caltrain

Previously, Premier Wynne and her predecessor, Premier Dalton McGuinty, committed to various other GO rail improvements. These include an extension of the Lakeshore West Line to Niagara Falls and doubling the two-train Kitchener-Toronto GO rail service by 2016, with more

frequency increases to follow as part of the RER plan. The recent GO purchase of the CN Georgetown-Kitchener line is part of the latter commitment and adds to previous CN and CP line acquisitions, some of which also host VIA's intercity trains.

These developments have positive long-term implications for parts of Southwestern Ontario, but there are concerns. *Moving Ontario Forward* is expensive, long range and dependent on many fiscal, physical and operational factors. The RER plan is a massive undertaking that will take several years to deliver its first benefits; the complex process of converting the GO routes has not yet been prioritized and the launch dates remain to be set.

There are also issues to be resolved between GO and the freight railways concerning those RER routes that will require the use of their lines. The long-promised all-day, two-way services for Kitchener and Niagara Falls are also still without funding and timelines, and there are some capacity issues to be resolved with CN concerning the portions of both routes that operate on what are heavily-used freight corridors.

While the GO improvements promised within *Moving Ontario Forward* will improve mobility in the easternmost portion of Southwestern Ontario, how and when they will be delivered remains to be clarified.

Furthermore, GO expansion is a double-edged sword. On the one hand, it will improve the quality and extent of the provincially-owned rail infrastructure, which VIA uses for portions of its Southwestern Ontario services. But this expansion also cuts into and destabilizes the VIA services. Even with its longer running times and the lower comfort levels of comfort of its short-haul commuter rolling stock, GO's lower fares and complementary off-peak bus services have attracted former VIA passengers on portions of the three VIA routes. The loss of these passengers has helped justify VIA's service reductions.

At the same time, GO's ridership to and from certain points has been low and acquired at great cost. The extension of two GO Georgetown weekday rush-hour trains to Acton, Guelph and Kitchener has only attracted about 250 daily passengers. The summer weekend GO service to Niagara Falls has also generated low ridership.

Both these moves by the province have unintentionally damaged VIA's utility and cost-effectiveness in Southwestern Ontario. In essence, one publicly-funded service now competes with another publicly-funded service – and not to the advantage of taxpayers, in terms of mobility or finances.

3.2 SOUTHWESTERN ONTARIO HIGH-SPEED RAIL PROPOSAL

One surprising development just before the 2014 provincial election was the announcement by the Wynne government that it would, in concert with major GO expansion, build a Toronto-London high-speed rail (HSR) line. A cost of \$6 billion and an estimate of 10 to 12 years for the service launch were given.

This HSR proposal was reconfirmed and expanded following the election. Premier Wynne announced that the government was moving ahead with the planning and environmental assessments for an HSR hybrid route that combines existing rights-of-way and new alignments between Toronto, Pearson International Airport, Kitchener and London, with a possible extension to Windsor.

The premier also said she hoped the federal government would contribute to the HSR plan, inasmuch as it is already funds conventional VIA service in the same market.

The public, media and municipal responses were mixed. Many commentators welcomed the concept of bringing high-end rail service to the region. Others pointed out that the HSR plan wouldn't deliver service for a decade or more, failing to address the current and urgent need for improved rail service.

Also, because of physical constraints on the existing line used by VIA and GO, the HSR service would have to bypass downtown Guelph in favour of a new station south of the city, although improved GO Toronto-Kitchener service would continue on the current route. The HSR line would also use a new alignment from Kitchener to London, excluding Stratford and St. Marys. Nothing was said in the skimpy summary document that was released prior to the election about the future of VIA service on the South Main Line through Brantford, or beyond London to Sarnia.

However, when the full pre-feasibility study was released several months after the election, the HSR plan didn't look as damaging to some communities as had been presumed. It revealed that the consultants had called for the continuation of some lower-speed service over the North Main Line from London to Kitchener, connecting at the latter point with the HSR trains and the expanded GO service. The more detailed version of the study also suggested VIA service should be maintained over the South Main Line through Brantford, as well as to Sarnia.

In addition to the negative impression caused by the failure to release the full details of the HSR plan, some of the public skepticism also undoubtedly resulted from the fact that HSR has been studied repeatedly in Canada for more than 40 years by VIA, the federal and provincial governments, and the private sector.

These studies have all proved it is technically feasible and it would divert large numbers of travellers from air, bus and, to a lesser extent, the highways. But the studies have also

determined HSR service would have to be publicly funded, with perhaps a small percentage of private investment. That public funding has never materialized.

Nonetheless, with the federal government failing to honour its responsibility to provide intercity rail passenger service, the HSR plan is encouraging. Despite some questions about the timing and financing of the various GO, RER and HSR projects, they all indicate the adoption of a more rail-friendly provincial policy and funding outlook.

An additional element is the formation of the new Rail Office within the Ministry of Transportation of Ontario (MTO) to assist with some aspects of these projects and set provincial rail policy. After years without any focus on or institutional knowledge of rail transportation, the establishment of this office at least provides hope that rail will be considered fairly and fully in future provincial policy decision making.

PROPOSED TORONTO-LONDON HSR LINE (SHOWN IN PURPLE)



4.0 THE POWER OF RAIL-BASED MOBILITY

“Rail built Salisbury. We look forward to the stimulation of our economy through the rail.”

Mayor Pro-Tem Maggie Blackwell
Salisbury, North Carolina

The benefits of public investment in rail projects have been verified by numerous public agencies and private industry organizations in other countries, although less so in Canada. The points in favour of public spending on rail-based passenger transportation include:

- diversion of traffic from other publicly-supported modes, such as highways, making investments in capacity expansion unnecessary;
- job creation throughout the project’s supply chain during the construction or equipment manufacturing phases;
- ongoing jobs and economic spin-off from the operation itself and its consumption of purchased supplies and services;
- large present and potential spin-off benefits for tourism sector;
- savings in health care costs due to traffic diversion from less safe modes, such as the highways, and reductions in emissions affecting public’s health;
- savings in national energy costs, given the higher energy efficiency and reduced fuel requirements of rail; and
- residential and/or commercial development and economic activity created in the areas surrounding the stations and other facilities.

In its April 2009 *Vision for High-Speed Passenger Rail in America*, the U.S. government outlined the benefits of public investment in rail passenger service. These included:

- ensuring safe and efficient transportation choices;
- promoting the safest possible movement of goods and people, and optimize the use of existing and new transportation infrastructure;
- building a foundation for economic competitiveness;
- laying the groundwork for economic growth by efficiently moving people and goods, while renewing domestic manufacturing and supply industries;
- promoting energy efficiency and environmental quality;
- reinforcing plans for energy independence and the use of renewable energy, and reduce pollutants and greenhouse gas emissions;
- supporting interconnected, livable communities; and
- improving the quality of life in local communities by promoting affordable, convenient and sustainable housing, energy and transportation options.

However, these views are often dismissed at the Canadian federal level, as evidenced by the successive waves of VIA cuts on the basis of so-called fiscal responsibility. This anti-rail bias is even expressed semantically, with public spending on rail passenger service usually described as “a subsidy,” while highway and aviation funding is invariably “an investment.”

One roadblock to a wider recognition of the positive impact of rail passenger investments is that most economic benefits occur off VIA’s balance sheet. This leaves behind a highly-visible accounting loss that seems inviting when government budget reduction is the order of the day.

However, various industry associations and government agencies in other countries have quantified the value of rail passenger investment and produced rule-of-thumb economic impact calculators. U.S. organizations such as the publicly-funded States for Passenger Rail, the American Public Transportation Association and the U.S. Department of Commerce have concluded that:

- \$1 million spent on passenger rail projects creates 30-36 new jobs;
- \$1 million invested in rail passenger service generates \$4 million in economic returns;
- \$1 million invested in capital projects yields \$3 million in increased business sales;
- \$1 million in operating investment yields \$3.2 million in increased business sales; and



COST-EFFECTIVE GRIDLOCK BUSTER: GO’s four-track Oakville Subdivision, on the right, can carry the equivalent of one hour’s worth of the six-lane Gardiner Expressway to the left – plus 26 additional lanes of traffic. Still, Canadian governments typically describe spending on highways and aviation facilities as “investments,” while railway improvement and expansion funding is called “subsidization.” GO Transit photo by Tim Hudson

Of particular note is the fact that refurbished stations with high levels of service and passenger activity are active catalysts for economic growth, with many being developed into mixed-use properties that include offices, retailing and other commercial activities. This is an important consideration in the discussion of the need to redevelop many VIA stations in Southwestern Ontario as mobility hubs to link trains, interurban buses and local transit.

While data on the non-economic advantages of passenger diversion to rail from road and air in Canada is skimpy, considerable research has been done in the U.S. This work has determined that the environmental benefits of a modernized rail passenger system are large.

A double-track railway line with a modern signalling system can handle the passenger and freight equivalent of 16 lanes of highway traffic. The land needed to create this highway capacity would be staggering, ripping a jagged wound through any urban area. The existing rail corridors can usually accommodate additional tracks with little or no extra land.

As well, capacity can be boosted further with the modern, computer-driven rail traffic control systems now available off the shelf from established manufacturers, including some Canadian firms. Capacity expansion for passenger projects frequently has collateral benefits for the privately-owned freight railways over which they largely operate, aiding them in diverting long-haul truck traffic from road to rail.

Although it is unlikely to occur anywhere in Canada in the foreseeable future except on the GO system, railways offer something no highway can: Convertibility from oil-driven diesel power to electric traction, which can be derived from an extensive list of renewable sources, including hydro, geothermal, tidal, wind and solar energy.

Even without electrification, Canada already enjoys energy and environmental benefits from our railways' use of modern diesel-electric locomotives. Both passenger and freight motive power have become more energy efficient in recent years, delivering advantages over other forms of intercity transportation, especially cars and short-haul commercial aircraft. Measured by the energy required to move one passenger one kilometre, North American passenger trains are three times more efficient than commercial aircraft and six times more efficient than single-occupant automobiles.

In Canada, the transportation sector generates 27 per cent of the nation's greenhouse gas emissions. Railways produce only 3 per cent of the transportation sector's total and less than 1 per cent of the national total, while moving 70 million commuters and intercity passengers, and more than 70 per cent of the surface freight tonnage annually.

Also on the positive side of the passenger train's balance sheet is the fact that rail is the safest mode of intercity transportation, estimated to be 18 times safer than car travel.

5.0 THE HIGH-PERFORMANCE RAIL SOLUTION

“Speed is compelling. But it is not always the best criterion. In truth, most transportation modes actually ‘sell’ performance.”

Chris Taylor
Deputy Director, High-Speed Rail, AECOM

Despite some skepticism, the previously-discussed provincial proposal for a Toronto-London-Windsor high-speed rail (HSR) line has inspired some Ontarians to envision sleek bullet trains zooming across Southwestern Ontario on ribbons of steel and a streak of chained lightning.

There is no doubt HSR is dazzling. Since the world’s first true high-speed train pulled out of Tokyo for Osaka on the all-new Tokaido Line in 1964, it has become the gold standard of intercity passenger transportation. In addition to growing into an extensive, multi-line system in its birthplace, it has taken root in nations as diverse as France, Turkey and China. HSR has become a global phenomenon.

However, HSR is expensive and time-consuming to build. It also requires a concentration of passengers in dense corridors and an ability to draw additional traffic from off-line points with complementary rail, bus and transit services. When it is part of a seamless network of integrated services, HSR does, indeed, offer a credible and attractive alternative to intercity car and air travel, diverting large passenger volumes to rail.

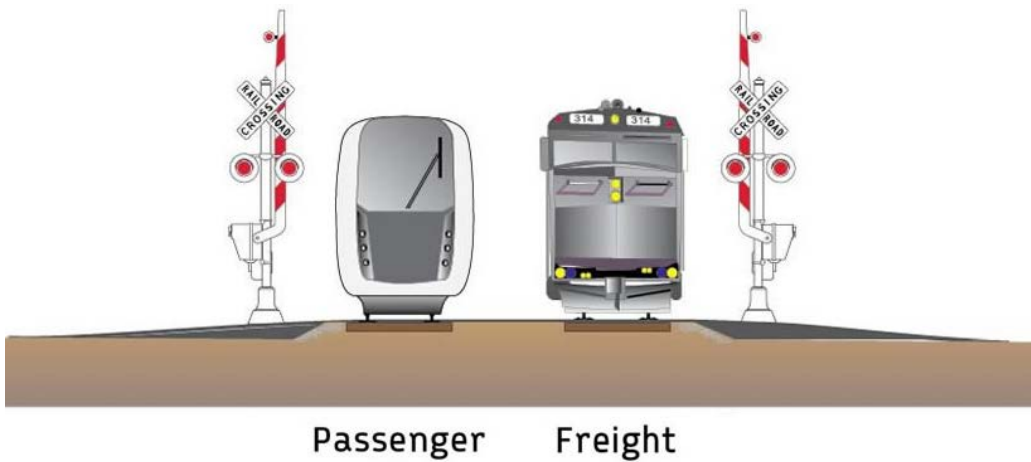
Definitions of HSR vary by continent and nation. The U.S. Department of Transportation (USDOT) describes it as:

“Frequent, express service between major population centers 200-600 miles (320-965 km) apart, with few intermediate stops. Top speeds of at least 150 mph (240 km/h) on completely grade-separated, dedicated rights-of-way (with the possible exception of some shared track in terminal areas).”

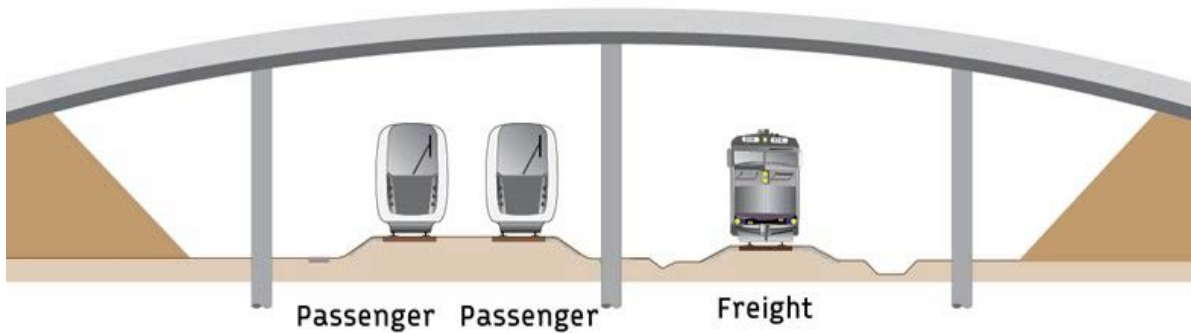
Furthermore, the USDOT delineates another service level, regional high-speed rail, which is increasingly being referred to as high-performance rail (HPR). It is described in the U.S. as:

“Relatively frequent service between major and moderate population centers 100-500 miles (160-800 km) apart, with some intermediate stops. Top speeds of 110-150 mph (175-240 km/h), grade-separated, with some dedicated and some shared track (using positive train control technology).”

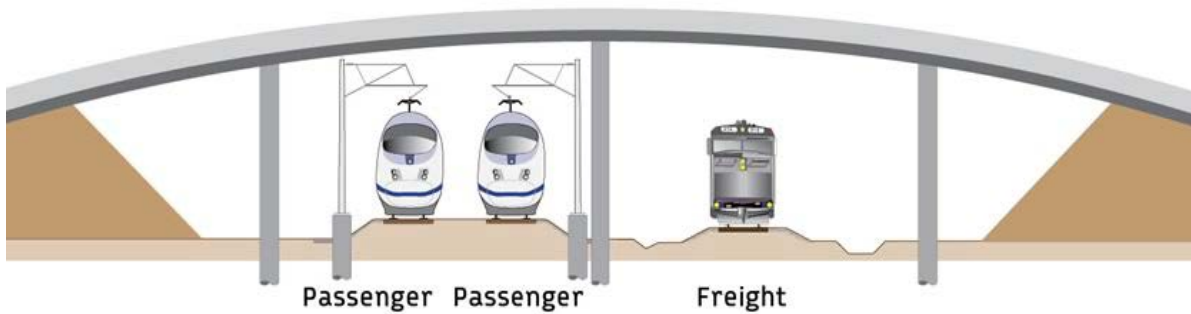
CONVENTIONAL RAIL PASSENGER SERVICE
(UP TO 160 KM/HOUR IN CANADA)



HIGH-PERFORMANCE RAIL PASSENGER SERVICE
(160-240 KM/HOUR IN CANADA)



HIGH-SPEED RAIL PASSENGER SERVICE
(MORE THAN 240 KM/HOUR)



Courtesy of the Midwest High Speed Rail Association

HPR is a solid middle-ground between high-end HSR and lower-speed conventional rail, such as VIA's Southwestern Ontario service. HPR is, in fact, what Europe and Asia built in advance of their impressive HSR systems. It continues to operate on many main and secondary routes in these countries, complementing and feeding traffic to the HSR lines.

In addition to speed, HPR is defined by its multiple service attributes, including:

- frequency;
- price vis-à-vis other modes;
- comfort and onboard amenities;
- on-time performance;
- station convenience;
- connectivity with other public modes; and
- door-to-door travel time.

A key feature of HPR is that it isn't a "big bang" approach that takes years to deliver all in one go. It grows incrementally, with investment pegged to the success of each phase. New line segments are built only when the old ones reach their speed and capacity limits. As well, HPR can be operated with electric or diesel-electric locomotives, whereas HSR requires full electrification.

In short, HSR is a revolutionary vision for tomorrow, while HPR is a practical reality for today. It is also a logical and cost-effective platform on which to construct HSR in the future.

5.1 U.S. HIGH-PERFORMANCE RAIL SERVICES

There are no true HSR lines in North America today, although the State of California broke ground on the first segment of its 320-km/h system on January 6, 2015. However, California is taking what it describes as a "blended" approach. It will use upgraded existing track in the two largest urban regions and create a full San Diego-Los Angeles-San Francisco/Sacramento system in stages. Amtrak will use the new line segments to provide diesel-powered, 200-km/h HPR service prior to the launch of full electrified Los Angeles-San Francisco service in 2029.

Although Amtrak's Boston-Washington Northeast Corridor (NEC) meets some of the HSR criteria, it is still considered HPR for several reasons. It offers high frequencies with some trains at up to 240-km/h on some segments, but it also handles a complex mix of slower intercity passenger and commuter trains, plus some freight.

A proposal for true HSR in the NEC would require the construction of a new 350-km/h line costing \$151 billion. The New York-Washington section would open in 2030, followed by the Boston route in 2040.

Amtrak operates other HPR services in addition to the NEC. These are the Philadelphia-Harrisburg Keystone Corridor, the New York-Albany section of the Empire Corridor and the Los Angeles-San Diego segment of the Pacific Surfliner. All operate at 160 km/h or faster, offer multiple departures daily and connect with numerous feeder buses, urban transit and commuter rail services, and other Amtrak routes.

HPR upgrades of conventional service are under way on the Pontiac-Detroit-Chicago, Chicago-St. Louis and Albany-Niagara Falls routes. Others will follow as multi-route regional systems are built on the foundation of current state-supported Amtrak routes. The two Midwest HPR projects now under construction are components of a planned Chicago hub network of HPR and conventional services, with some designated for HSR upgrading in the future.

In unveiling his proposed Fiscal Year 2016 budget on February 2, 2015, President Obama included \$4.8 billion for a National High-Performance Rail System (NHPRS). This will support and improve current Amtrak operations nationwide, including state-funded corridors. NHPRS is part of a six-year, \$28.55-billion rail reauthorization proposal that includes two new programs: Current Passenger Rail Service and Rail Service Improvement. Funding will come from a new Rail Account included in President Obama's proposed Transportation Trust Fund.



SUPER HIGH PERFORMANCE: Amtrak's electrified Northeast Corridor (NEC) represents the high water mark in HPR service on this continent. It offers high frequencies and a maximum speed for express trains of 256 km/h. NEC trains also seamlessly connect with other Amtrak routes, commuter rail services and local transit at numerous points along the 731- km corridor from Boston to Washington. Photo by Mitch Goodman

5.2 VIA'S 2002 HIGH-PERFORMANCE RAIL PROPOSAL

VIA's Southwestern Ontario services operate at speeds and with frequencies below HPR standards. However, the Toronto-Ottawa and Ottawa-Montreal route segments are close to HPR; these operate at a maximum speed of 160 km/h, and offer eight and seven weekday roundtrips, respectively. These still aren't delivering the full benefits of HPR, however.

In 2002, after 20 years of failed attempts to obtain HSR funding, VIA developed a plan to implement HPR on the bulk of the Quebec-Windsor Corridor. It would have delivered large benefits sooner than HSR and at a much lower cost.

Known as VIAFast, this plan would have been built incrementally over a period of four to five years at a cost of \$2.6 billion. The increased revenue and reduced costs in each phase of the project would have justified each successive set of improvements, as well as cumulatively reducing VIA's system-wide funding requirements by \$125 million annually.

The VIAFast building blocks included:

- a maximum speed of 240 km/h on some route segments;
- running time reductions and frequency improvements;
- fleet modernization with off-the-shelf, diesel-hauled equipment;
- upgraded lines, dedicated VIA tracks on existing CN and CP rights-of-way, and 80 km of new VIA-only line segments;
- improved intermodal connections, including a Montreal airport loop line; and
- a connection west of Chatham from VIA's line to CP's to serve a new downtown Windsor station and to enable an extension to Detroit.

VIAFast would have delivered several benefits to Southwestern Ontario. For example, the Toronto-Brantford-London service was to be boosted to eight roundtrips and the running time cut to 1 hour and 45 minutes. This would have increased ridership by 45 per cent.

VIAFast was endorsed by Minister of Transport David Collenette and funding to develop the project was approved by the cabinet. This plan was designed to build on the \$401.9 million capital investment Collenette secured for VIA in 2000, but when he stepped down as transport minister in 2003, VIAFast was shelved.

The VIAFast plan contains elements that could be adopted in advance of and as future elements within any Southwestern Ontario HSR program, as is being done with the many U.S. HPR/HSR projects. The Network Southwest action plan draws on many VIAFast concepts and sub-projects to produce major improvements at a reasonable cost in a timely manner. None of the value of these investments will be lost if HSR is later implemented.

6.0 SUCCESSFUL U.S. ROLE MODELS

“In every region and in various types of communities, Americans want more rail; the numbers speak for themselves.”

William Millar
President Emeritus
American Public Transportation Association

There are numerous worldwide examples of successful, rail-based regional public transport solutions. While economic, demographic and market conditions in Western Europe, the UK, Japan and China make comparisons with Southwestern Ontario difficult, the heavily car- and air-dependent U.S. offers many applicable and transferrable working models. Some have been successfully implemented in regions that were virtually stripped of rail passenger service decades ago.

These U.S. rail-based regional transportation systems share a number of characteristics related to their successes, including:

- joint funding by the federal and state governments
- municipal participation through station ownership, enhanced transit service and, in some cases, policy and management decisions;
- HPR or substantially upgraded conventional rail services for the spines;
- important, well-used bus feeders;
- modern, cost-effective rail and bus equipment;
- high connectivity through the conversion of rail stations into mobility hubs;
- incremental increases in rail frequencies and speeds; and
- adaptability as components of larger, longer-term HSR plans

Of these factors, it is the joint funding by the upper levels of government that has been the key to making these projects function effectively. This is the cornerstone of the U.S. approach.

The incorporators of Amtrak wisely included a provision in its enabling legislation that recognized the desirability of working with other levels of government to improve and expand its federally-funded service. Under Section 403(b) of the *Rail Passenger Service Act of 1970*, which also established a cost-sharing formula, it was provided that:

“Any State, regional, or local agency may request of the Corporation rail passenger service beyond that included within the basic system. The Corporation shall institute such service if the State, regional, or local agency agrees to reimburse the Corporation for a reasonable portion of any losses associated with such services.”

These 403(b) services extended Amtrak's regional reach during many years of federal funding problems similar to VIA's. Other growth drivers have been the Amtrak Thruway bus feeder routes, which attend to markets not easily be served by rail, programs to assist bus operators, the revamping of existing rail stations and the construction of new intermodal terminals.

With Amtrak's reauthorization under the *Passenger Rail Investment and Improvement Act of 2008 (PRIIA)*, the original 403(b) program was redefined. Under Section 209 of *PRIIA*, states are responsible for the full operating losses on routes of less than 1,200 km. However, this has come with increased grants from federal programs for capital projects to improve operating efficiency and cost recovery. *PRIIA* also established a Next Generation Equipment Committee to standardize locomotive and rolling stock for improved service and cost reduction.

In addition, many state-supported corridors will benefit incrementally from upgrading as components of the national HSR initiative. Grants for improved intercity connecting bus services and major local transit projects are coupled with the continuing investment in the state-funded Amtrak corridors.

Today, 19 states support 28 Amtrak corridors, three of which are detailed here. All offer lessons for improving transportation in Southwestern Ontario quickly and with a reasonable investment. Each corridor varies in terms of regional needs, the trains and feeder services employed, and their governance. These rail-based mobility solutions have one common denominator: they all work because the governments work collaboratively.



STATE TAX DOLLARS AT WORK IN ONTARIO: The last train left on the Toronto-Niagara Falls route after the VIA cuts of 2012 was the VIA-Amtrak *Maple Leaf*, which is supported in the U.S. by the State of New York. Without that funding for the bulk of the train's route, the Canadian portion would have likely ended. Photo by Bruce Fingerhood from Wikimedia Commons

6.1 MICHIGAN'S WOLVERINE CORRIDOR



When Amtrak took over the deteriorating U.S. network of passenger trains operated by the private freight railways, Michigan's service was reduced overnight to two roundtrips on the Detroit-Chicago route, now known as the Wolverine Corridor. On this meagre foundation, the Michigan Department of Transportation (MDOT) has slowly built a larger rail passenger service and a truly intermodal network using intercity buses, urban transit and intermodal terminals to improve non-automotive mobility throughout the state.

Michigan was an early proponent of intermodality. Faced with a shrinking and disjointed network of rail services, private bus operations and public transit, it accomplished a great deal on a limited budget. Now, through a major investment in the Wolverine Corridor, the whole Michigan network will undergo positive change. Michigan's example can serve as an example for Southwestern Ontario and its federal and provincial governments.



MAKING NEW CONNECTIONS IN MICHIGAN: An Amtrak Wolverine calls at Dearborn's new John D. Dingell Transit Center, conveniently located near Greenfield Village and a popular retail district. Photo courtesy of Michigan DOT



FRIENDS, NOT FOES: As proven in Michigan and other states, passenger trains and buses can be linked to make the best use of each in providing seamless intercity travel. The eExpanded Amtrak Thruway bus feeder service is a component of the Midwest Regional Rail Initiative's Chicago hub plan. Photo courtesy of Amtrak

Michigan's state-supported rail system grew incrementally, adding the Port Huron-Chicago *Blue Water* in 1974 and the Grand Rapids-Chicago *Pere Marquette* in 1984. A third Wolverine service train was added in 1975 and extended to Pontiac in 1994. Network ridership has grown by more than 50 per cent since 2000, reaching more than 800,000 passengers annually.

In addition to the trains, state-assisted, privately-operated intercity buses serve as components of the nationwide Amtrak Thruway bus feeder network. Funding for the buses, which serve nearly 150 Michigan communities and connect directly with the three rail routes, has been provided through a variety of low-cost MDOT programs. These include the Bus Loan, Terminal Development, Intercity Services and Intercity Bus Capital Equipment programs. Under the last, the state acquires new buses under a lease agreement that requires private carriers to provide daily service. This program has helped launch new services and has preserved existing routes.

The creation of mobility hubs throughout Michigan has been a key component of the MDOT intercity transportation program, providing a mixture of new terminals and rehabilitated stations on the three rail passenger lines and the connecting bus routes. The Wolverine Corridor offers direct train-to-transit connections at 11 of its stations.

The most recent mobility hub on the Wolverine Corridor is Dearborn's municipally-owned John D. Dingell Transit Center. Built with a \$28.2-million federal grant under the *American Recovery and Reinvestment Act of 2009*, and opened as of December 15, 2014, it is located near Dearborn's retail district, Greenfield Village and the Henry Ford Museum. In addition to the Wolverines, it serves the regional SMART transit system and Amtrak Thruway buses to East Lansing and Toledo, Ohio. It will also be served by the new Ann Arbor-Detroit commuter rail service, which is currently under development.



Dearborn's John D. Dingell Transit Center. Photo courtesy of USDOT

A less visible but equally important component of the 486-km Wolverine Corridor HPR upgrade as Michigan's public transportation spine is its new rail traffic control system. Amtrak's ownership of the 156-km line segment west of Kalamazoo and the federally-funded MDOT purchase of the 217-km Kalamazoo- Dearborn section in 2011 have expedited the installation of the advanced Positive Train Control (PTC) system mandated by Congress for train operation at 128 km or more.

The Amtrak-owned section of the line now has PTC and is cleared for 180-km/h operation, which has reduced running times. PTC application on the longer Michigan-owned section is under way and, along with numerous other improvements, it will cut the Detroit-Chicago journey time of 6 hours and 30 minutes by two hours.

A key component of the \$687-million Wolverine Corridor project is that of new equipment to increase speed, comfort and capacity, while reducing costs. The experience on some state-assisted Amtrak routes, such as the Vancouver-Seattle-Portland-Eugene Cascades Corridor, is that the arrival of new equipment boosts ridership even without service increases. The Wolverines currently operate using conventional, single-level Amtrak trainsets with locomotives on both ends. This makes it unnecessary to physically turn the trains at terminals, which saves time and operating costs, while increasing equipment availability and utilization.

As part of a coalition of three Midwestern states and California, MDOT will soon receive new, bi-level push-pull cars and high-horsepower Charger diesel locomotives, all American built and designed for 180-km/h service. The 463-seat, low-floor Michigan trainsets will consist of four coaches, a café/business class car and a coach/baggage/cab car. The cab cars will allow a single locomotive to pull or push a bi-level trainset at full track speed.



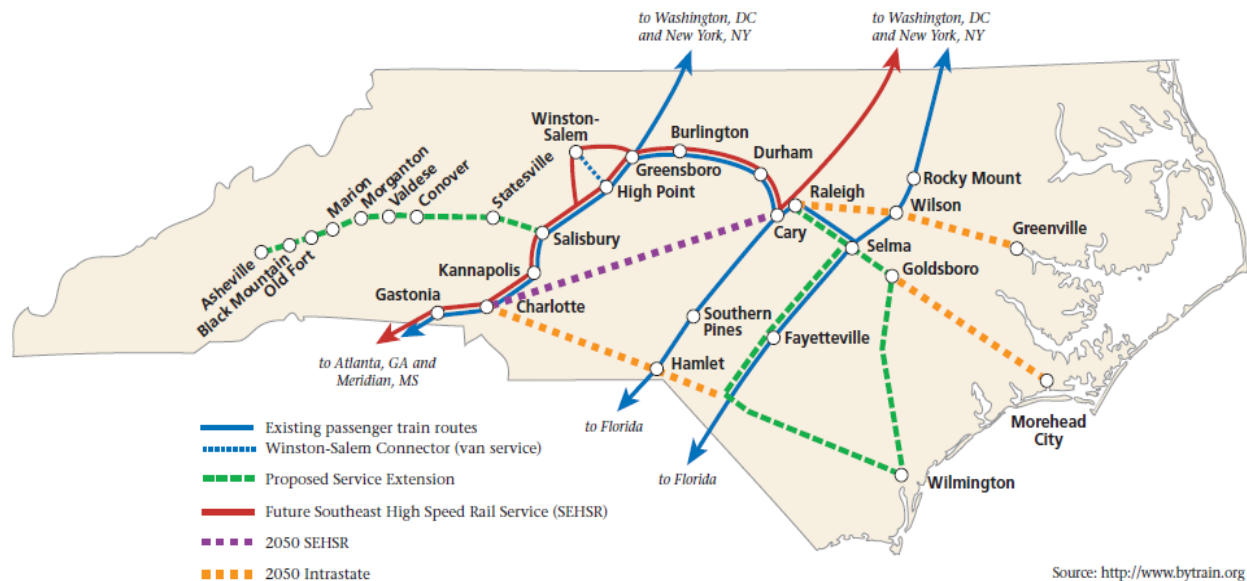
MICHIGAN BOUND: The arrival in late 2016 of 180-km/h bi-level, push-pull rolling stock and high-horsepower diesel locomotives will boost efficiency, frequency and comfort on the Wolverine Corridor and other HPR routes in the Midwest and California. Built in the U.S., the low-floor cars are conceptually similar to GO's Ontario-built cars. Artist's rendering courtesy of Sumitomo America

The Wolverine Corridor will grow to 10 daily roundtrips between Detroit and Chicago, with six extended to Pontiac. End-to-end running times will progressively drop by 30 to 50 per cent, with running times for the Port Huron-Chicago *Blue Water* also reduced as a result of its use of a portion of the Wolverine Corridor's 180-km/h infrastructure. The recommended service increases on the Port Huron and Grand Rapids routes would eventually see four roundtrips daily on each, as well as additional feeder buses. Proposed additions to the rail passenger network include Detroit-Grand Rapids, Detroit-Toledo and a service to northern Michigan.

The Michigan rail passenger program is part of the Midwest Regional Rail Initiative, which was formed in 1996 by a coalition of nine states (now 10) to develop a Chicago hub-and-spoke system of 11 rail routes totalling 5,000 km, as well as several Thruway feeder buses. The rail system will consist of 11 lines operated at maximum speeds of up to 176 km/h.

MDOT envisions the Wolverine Corridor eventually being converted to 352-km/h HSR as part of an interconnected, international service from Chicago to Toronto via Detroit and Windsor.

6.2 NORTH CAROLINA'S PIEDMONT CORRIDOR



While North Carolina wasn't stripped of rail passenger service as dramatically as Michigan was with the creation of Amtrak and its early route rationalization, what was left was regionally ineffective, consisting of long-haul trains passing through the state at inconvenient hours on runs from the Northeast Corridor to Florida and New Orleans. Over the last quarter-century, the North Carolina Department of Transportation (NCDOT) has worked with Amtrak, municipalities and connecting bus and transit operators to create an essentially all-new system.

North Carolina now has two state-supported rail services. Launched in 1990, the *Carolinian* links Charlotte, Raleigh and other North Carolina points to Northeast Corridor destinations. It runs on a 13-hour Charlotte-New York schedule and is operated under a full service contract with Amtrak, similar to that employed by Michigan and many other states.

On the Raleigh-Charlotte Piedmont Corridor portion of the *Carolinian's* route, the state has progressively added daytime roundtrips. Originally a single daily train in 1995, the *Piedmont's* success has led to a doubling of the service and a plan that will, in combination with the *Carolinian*, offer six Raleigh-Charlotte roundtrips daily by 2018.

A unique feature of the North Carolina passenger program is the state's historic ownership of the Charlotte-Raleigh railway over which it operates. The line is leased to Norfolk Southern (NS), which operates and maintains it for freight service. In addition to the lease revenue, North Carolina benefits from being in a better position than most passenger operators to negotiate the priority of its passenger trains. It also benefits from NS's passenger-friendly management; the freight railway has an excellent track record of jointly crafting solutions for passenger and commuter services on its lines, in addition to its own freight operations.



PARTNERS IN NORTH CAROLINA'S PROGRESS: Led by a London-built former GO Transit locomotive, a Piedmont passenger train shares the upgraded main line with a Norfolk Southern freight train at Salisbury, North Carolina. Investments in the Piedmont's infrastructure are aimed at getting more freight off the highways and on to the rails, in addition to luring travellers out of their cars. Photo by Marcus Neubacher courtesy of NCDOT

Unlike many state-assisted services, the Piedmont service uses its own equipment and maintenance services. States have the right under the partnership agreements with Amtrak to provide certain aspects of the service and deduct those costs from the contract. North Carolina uses a remanufactured fleet for the Piedmonts, which includes seven locomotives (four of them former GO units) and 20 passenger cars. With the North American pool of secondhand equipment almost exhausted, new equipment will have to be purchased for the full expansion of the Piedmont and additional new routes and services proposed by NCDOT.

The Piedmonts are comfortable and stylistically retro. One-class coach service is offered and each train has a lounge/baggage car with several tables and vending machines for locally-sourced food and beverages. The baggage sections of the cars are well used by the numerous cyclists who ride the trains. A flexible fare plan includes discounted 10-trip passes, a 15 per cent reduction for students and a 30-per-cent-off companion fare. All fares and travel information are posted on Amtrak's website and the state's own site (www.ncbytrain.org).

Thanks to joint federal and state funding, the Piedmont Corridor's infrastructure is undergoing a \$520-million improvement program. The trains are now limited to 126 km/h under federal rules and require in-cab signal displays and automatic train stop protection at higher speeds. Congress has mandated the application of Positive Train Control (PTC) on all passenger and safety-sensitive lines by the end of 2015 (although the multi-billion-dollar project is running behind schedule for a variety of reasons). Track upgrading has already reduced the Charlotte-Raleigh running time by 35 minutes and higher speeds under PTC will cut it further.

The Piedmonts are directly connected to six transit systems at seven stations. These transit systems have benefitted from increased public investment spurred by North Carolina's shift from a rural economy, dominated by agriculture and related processing (especially tobacco) to an urban one driven by its many universities, research centres, high-tech industries, banking and tourism.

As North Carolina's urban population has risen, younger professionals have increasingly shown their preference for car-free travel. Statewide transit ridership has increased 95 per cent since 2002 and automotive vehicle-km travelled has declined by 4.3 per cent.

In linking this expanding transit system with the trains, some intermodal improvements have been as simple as diverting transit buses from nearby streets to the front doors of the stations at train time. More substantially, several historic rail stations have been refurbished as mobility hubs and new ones have been constructed.



THE JEWEL IN THE PIEDMONT'S CROWN: Ground breaking will occur on March 21, 2015 – the 175th anniversary of the arrival of Raleigh's first train – for the city's new Union Station mobility hub. It has been designed for maximum connectivity with existing transit and the future regional light rail and commuter rail services.



The largest mobility hub project is the new Raleigh Union Station. Replacing a cramped and poorly-located facility, it will maximize connectivity at a downtown location. Ground breaking will occur on March 21, 2015, the 175th anniversary of the arrival of Raleigh's first train.

Piedmont ridership has almost tripled since 2002 and doubled statewide. Including the Piedmonts, the *Carolinian* and Amtrak's four north-south long-haul services, North Carolina is now served by 14 daily trains on five routes with stations in 16 communities. More than 70 per cent of North Carolina's population is within a 50-km radius of a rail passenger station, with an additional 11 per cent within a 50-km radius of stops served by the Amtrak Thruway feeder bus connections.

In its *25-Year Vision for North Carolina*, the state committed itself to several ambitious transportation goals, including the expansion of both rail passenger options in all regions and more transit. A major component of this vision is the state's participation in the federally-designated Southeast High-Speed Rail Corridor plan.

To be built as a cooperative federal/state project, the principal main line will stretch from Washington to Jacksonville via Richmond, Raleigh, Charlotte, and Atlanta. Later segments will be built from Atlanta to Birmingham and Raleigh to Jacksonville via Savannah, Georgia.

Although it is described as "high-speed," it isn't. It will be a diesel-powered, 176-km/h HPR system. Except for a segment north of Raleigh that will be built on an abandoned right-of-way, the system will share trackage with the freight railways.

Currently largely single-track south of Richmond, Virginia, the upgrade to HPR will include the construction of 8-km passing sidings every 16 km, the straightening of curves, grade crossing elimination, PTC, station improvements, and the use of higher-speed locomotives and cars. The full scope of these improvements will be done incrementally.

Dependent on the timing of the joint funding, operation of the initial Washington-Charlotte section is estimated between 2018 and 2022. It will cut three hours off the *Carolinian's* current running time of 9 hours and 20 minutes.

A side benefit of this HPR approach is the improvement it will bring in line capacity and speed for the freight railways. Additionally, the plan contemplates the possible inclusion of a parallel, multi-purpose trail from Petersburg, Virginia, to Raleigh as part of the Maine-to-Florida East Coast Gateway. This hiking and biking trail would be built on the rights-of-way and safely separated from the adjacent rail passenger and freight operation.

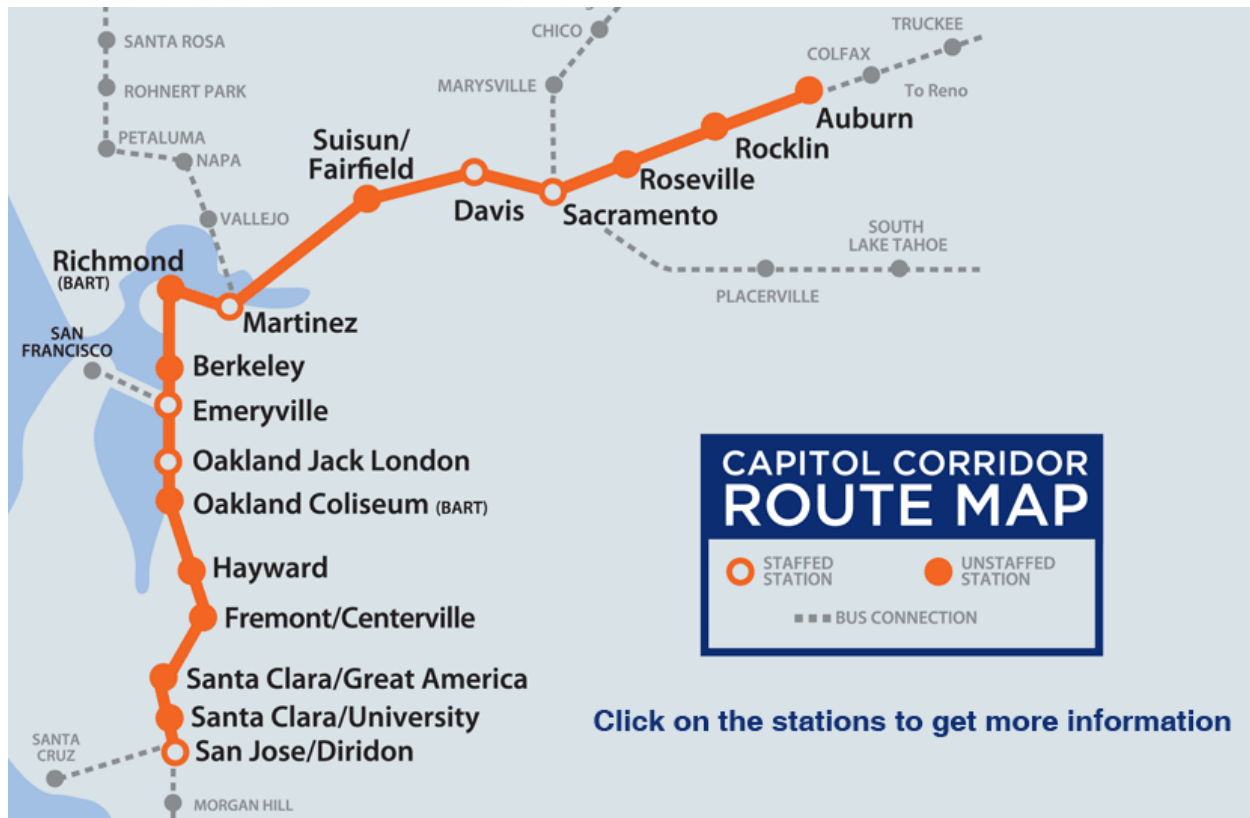
The addition of new conventional rail services to North Carolina's Atlantic coast and the Smoky Mountains is also projected under the 2014 *Comprehensive State Rail Plan*.



PLANNING FOR FUTURE GROWTH: Ease of expansion has been a keynote in the designs employed in the \$520-million Piedmont Improvement Program. At the improved High Point station, the overhead passenger structures have been built to accommodate a third track to handle increases in both passenger and freight traffic without conflict. Photo courtesy of NCDOT



6.3 NORTHERN CALIFORNIA'S CAPITOL CORRIDOR



Prior to the 1991 launch of the state-assisted San Jose-Sacramento Capitol Corridor service, the only train serving the full 269-km route was Amtrak's *Coast Starlight*, which operated at hours inconvenient for local travel on its run between Los Angeles and Seattle. The last local service on the line was discontinued in 1962. Nevertheless, California voters approved two 1990 ballot propositions providing \$105 million for the revival of service on the route.

The Capitol Corridor began with three roundtrips and expanded in stages to the current 15 on the Oakland-Sacramento route segment, with seven operating south of Oakland to San Jose and one extending east of Sacramento to Auburn. It is now the third busiest route in the Amtrak network, behind the Northeast Corridor and the San Luis Obispo-Los Angeles-San Diego Pacific Surfliner. During the 2012 fiscal year, Capitol Corridor trains carried 1.7 million passengers and recovered half of their \$58 million operating costs through passenger fares.

Like other state-assisted services provided in California at the time of its launch, the Capitol Corridor was originally operated by Amtrak under a full-service contract with the state's department of transportation – Caltrans – which managed the program. Equipment was provided from Amtrak's own fleet.



EFFICIENT, COMFORTABLE AND VERY FREQUENT: With its fleet of efficient and cost-effective bi-level, push-pull trainsets, the Capitol Corridor offers high-frequency, low-floor accessibility and passenger amenities such as a café-coach for light food and beverage service, and tables in the coaches to provide a generous amount of onboard work space. Top photo by Jerry Huddleston from Wikimedia Commons; lower photo courtesy of Caltrans



This began to change in the mid-1990s, when a fleet of California-owned locomotives and bi-level California Cars arrived for service under the distinctive Amtrak California brand. In 1998, management of the Capitol Corridor was transferred to a joint powers authority (JPA) composed of representatives from six municipal transit agencies on the line. State funding is provided through Caltrans and the JPA contracts with the San Francisco Bay Area Rapid Transit District for day-to-day management.

Service delivery is through Amtrak and an operating contract with the Union Pacific Railroad, which owns the line and continues to operate a heavy freight volume over part of it. This JPA governance and management model has been adopted for the other state-assisted Amtrak routes in California, as well as many other non-transportation services operated in the public interest.

Like North Carolina's Piedmonts, the Capitol Corridor offers only one-class coach service and each train includes a café-coach with light food and beverage service. There is also at least one car on each train with ample, secure bicycle storage. As on GO's bi-level trains, passengers are responsible for loading and unloading their own bicycles. Also similar to GO's Bombardier BiLevels, the push-pull rolling stock is low-floor and fully accessible. The new 176-km/h bi-levels that Caltrans and the Midwestern states will soon receive are modelled after these lower-speed California Cars and are fully compatible with them.



THE ULTIMATE IN SEAMLESS SERVICE: An Amtrak California Thruway bus connects directly with both a Capitol Corridor train and the Oakland-Chicago *California Zephyr*. Missing from this view is a Sacramento LRT train, which will arrive on the track between the Amtrak trains and their bus connection. Photo courtesy of Amtrak

In addition to one-way and roundtrip tickets, the Capitol Corridor offers a wide range of discounted fare options, including an unlimited monthly pass and 10-ride tickets. There are numerous discounts for seniors, students, children, disabled persons, veterans, active-duty military personnel, groups of 20 or more and members of the American Automobile Association and the National Association of Railroad Passengers. Discounts are also offered in partnership with the Oakland Raiders and California Golden Bears football teams, Levi's Stadium in Santa Clara and regional special events operators.

Intercity bus feeder and transit links to the Capitol Corridor trains are numerous. In addition to connecting at five stations with 11 Amtrak Thruway bus routes, direct transit connections are made with 16 local or regional transit providers at 14 stations. These include the San Jose and Sacramento light rail transit systems, the Bay Area's BART subway, and the Altamont Commuter Express and Caltrain commuter rail services. Connections are also made with two Amtrak long-haul trains, the Oakland-Chicago *California Zephyr* and the Los Angeles-Seattle *Coast Starlight*, and the six daily San Joaquin trains on the inland route via Bakersfield to Los Angeles.

Fare integration with the transit systems is extensive. Discounted BART day passes are sold on the Capitol Corridor café cars and up to two free transfers for 11 of the connecting transit systems are issued onboard upon request. Full fare and connecting service information is available on the service's dedicated website (www.capitolcorridor.org).

The Capitol Corridor's trains have proved to be an attractive alternative to the congested, parallel freeways. They're also politically popular, serving many state legislators and political aides who use them to commute from their Bay Area homes to offices in Sacramento.

The Capitol Corridor JPA has mapped out an ambitious expansion plan for the service. With the congressionally-mandated implementation of PTC, the maximum speed will be increased in combination with various infrastructure projects from the current 127 km/h to 176 km/h. Increases in frequency are planned on all route segments, and Oakland-Sacramento peak-hour express trains will be introduced, cutting the two-hour running time by almost half.

New stations will be added and intermodal connectivity increased with more Amtrak Thruway and transit feeder services. The long-range plan contemplates service extensions east to Truckee or Reno, Nevada, and south to Salinas and Monterey.

California's \$68.4-billion HSR system will bring more riders to the Capitol Corridor. It will connect at San Jose with the Los Angeles-San Francisco HSR main line when it opens in 2029, serving as a connector and feeder. That role will grow if the HSR eastern branch from Merced to Sacramento is built, although funding and timelines have not been set.

The Capitol Corridor's future is guaranteed as part of a seamless, interconnected network that will blend HSR, HPR, conventional passenger service and commuter trains to provide California with high-quality rail, bus and transit services.

STATEWIDE RAIL MODERNIZATION EARLY INVESTMENTS/STATEWIDE BENEFITS



Map courtesy of Caltrans

7.0 NETWORK SOUTHWEST'S FOUNDATION

“In the modern age, we will only get as far as our infrastructure will take us – both literally and figuratively. Provinces and municipalities can’t carry that load alone.... And existing federal infrastructure programs are not sufficient to meet the scope of the investments that are required to truly move us forward.”

Premier Kathleen Wynne
The Toronto Star
February 13, 2015

If there is to be a Network Southwest, there are two major changes that must be undertaken cooperatively by the federal and provincial governments. These are:

- the re-alignment and coordination of their disconnected and disjointed intercity transportation planning, funding and delivery policies; and
- the consequential need for a new management structure to deliver the core rail service and coordinate the development of the feeder bus system and the mobility hubs.

As has been demonstrated in the U.S., such a sea change in policy and governance can be accomplished only if the two senior levels of government take a cooperative approach and recognize its mutual benefits. Network Southwest is predicated on the belief that such a rational meeting of political minds can be accomplished in Canada.

Without the resolution of the legislative, financial and institutional barriers that now separate the two levels of government on the issue of intercity transportation, there can be no Network Southwest. A failure to adjust to conditions and experiences that were not anticipated when VIA was formed in 1977 will harm not just Southwestern Ontario’s mobility and economic prospects, but those of other regions of Ontario and the nation.

7.1 FEDERAL-PROVINCIAL PARTNERSHIP

The line between federal and provincial responsibilities in intercity transportation has always been blurred. As far back as the 19th century, there was frequently joint federal and provincial involvement in the construction of main, secondary and branch line railways across the country. This approach was later applied to many highway projects and several major urban transit programs nationwide, not to mention numerous non-transportation programs over the years. In each case, the underlying rationale was that these projects had both provincial and national implications that could only be realized through the joint efforts of both levels of government.

However, it is mainly in the legislative area that the division of responsibility has been more rigid. Rail has traditionally been viewed as a federal responsibility, regulated under a succession of national acts. Air service and ports have also been largely federal domains.

But there are other instances where provincial interests and responsibilities have taken precedence. GO Transit's rail operations, for example, are not federally regulated. Many of the intra-provincial short line railways that have been created as a result of both the deregulatory *National Transportation Act* of 1987 and the subsequent downsizing of the light-density CN and CP feeder networks are now provincially regulated.

Even in these instances, there have been numerous incidences of funding matches by the two levels of government for the purposes of rehabilitating these deteriorated, low-revenue railways, which deliver service and economic benefits of both regional and national significance.

In the rail passenger field, there have also been situations requiring intergovernmental cooperation to fully deliver multiple regional and national public benefits. The most recent is a two-part arrangement that was reached in New Brunswick in 2014.

In 2012, CN announced it was offering a 211-km segment of the route of VIA's Halifax-Montreal *Ocean* for sale or abandonment due to freight traffic reductions that made it unprofitable. No short line operator or government agency came forward to purchase this line segment, making it eligible under the terms of the *Canadian Transportation Act* of 1996 for abandonment.

This line abandonment would have led to the re-routing or cancellation of the *Ocean* and, in either case, removed the last passenger train from New Brunswick's North Shore, which is poorly served by air and bus. It also would have eliminated rail freight service at various points, as well as precluded any future economic development dependent on rail access.

To the credit of the federal and provincial governments, both struck deals with CN to preserve the line through a combined investment of \$35.2 million. As a result, the route will be retained and maintained to passenger standards for 15 years, allowing for the continuance of the *Ocean*, provided the federal government continues to fund VIA's operation of the service.

While the New Brunswick solution was aimed at preserving infrastructure for the maintenance of rail service – a situation different from that facing Southwestern Ontario – it demonstrates that intergovernmental partnership in Canadian intercity transportation matters is possible.

Although it occurred 24 years ago, there is another example of such cooperation that has even more relevancy in the context of the Southwestern Ontario situation today. This was an agreement that was reached in the wake of the 50 per cent reduction of the VIA system in 1990.

Among the trains cancelled was a London-Toronto weekday train that acted as a long-haul commuter service, particularly for passengers in Brantford. While Brantford was then and still remains outside GO's provincially-mandated service territory, there was a desire on the part of the provincial government of Premier David Peterson to explore a means of addressing this gap in a cost-effective manner.

The result was an agreement to share with VIA the cost of restoring the service over the full London-Toronto route, which made it possible to serve commuters not just in Brantford, but also London and Woodstock. The contract was negotiated by the Peterson government and implemented in January 1991 by the successor government of Premier Bob Rae.

As was said at the time, it was less costly to provide this service in partnership with VIA than through the creation of an all-new GO service, which would have brought with it a requirement for additional bi-level commuter equipment and an overnight layover facility for the train. Furthermore, this partnership approach made it possible to re-launch the service faster using excess VIA resources and capacity.

Unfortunately, in the face of budgetary problems caused by the economic recession of the early 1990s, the provincial agreement for this jointly-funded VIA service was eventually allowed to lapse. To their credit, VIA and the federal government did not cancel the train when the agreement with Ontario expired. It continues today as VIA #82 eastbound and VIA #83 westbound, operating Monday through Friday.

For many of the same reasons that were given by Ontario for taking this approach in 1991, an intergovernmental partnership needs to be applied in the implementation of Network Southwest today. These are the very same factors that led to the inclusion of the cost-sharing arrangements embodied in Amtrak's original legislation and its subsequent reauthorizations.

Quite simply, the two levels of government can accomplish more by pooling their resources than by working in isolation from each other or even at cross-purposes.

This solution is easy to prescribe. What is more difficult is getting the two levels of government to have the conversation that could lead to this cost-effective and timely solution. While it is not the intention of this report to enter into political matters, ignoring the political reality would not paint a fair portrait of the work ahead in the implementation of Network Southwest.

The current federal government seems both uninterested in VIA's situation or the hard financial facts underlying its problems. When it came to power in 2006, this government took steps that implied it understood that one of VIA's biggest problems was its traditional lack of capital to fully modernize. The result was a 2007-2012 VIA capital investment plan totalling \$923 million. But this program was fraught with difficulties, delays and basic flaws.

Instead of facing the fact that VIA requires complete modernization to reduce its high operating costs and attract additional passengers and revenue, the government agreed to what

amounted to yet another expensive Band-Aid plan. Even if all the sub-projects proceeded on schedule and within budget, this could only yield modest improvements for a limited time.

Today, VIA is still attempting to complete elements of the 2007-2012 capital investment plan that are years overdue and millions of dollars over budget. On top of this, VIA's operating funding was reduced by 10 per cent in 2012 as part of an across-the-board budget reduction plan. No long-range plan has come forth and the few statements made recently by the current government regarding VIA's future have been far from encouraging.

In the February 20, 2015, debate in the House of Commons regarding the proposed *VIA Rail Canada Act* introduced by opposition MP Phil Toone (NDP, Gaspésie – Îles-de-la-Madeleine), the government took the view that VIA is not an instrument of public policy, but an arm's-length, for-profit Crown corporation receiving more than \$300 million annually in public funding. The government also said it opposed the bill because it was too "prescriptive."

The simple fact is that VIA is a program delivered in the public interest that will always require public funding, even if its higher-demand routes can be made less costly to operate through full modernization. This is the case with rail passenger services throughout the world – and virtually every other form of passenger transportation. To view VIA's situation in any other context is illogical and dangerous. What would make VIA any different from all the publicly-supported rail passenger services around the world?

However, if this or a future federal government wishes to deliver better rail passenger service in a more cost-effective manner, then it would appear that opportunity is being presented by the policies of the current Government of Ontario. With its massive GO expansion plan and the Toronto-London-Windsor high-speed rail (HSR) proposal, no provincial government has ever shown a greater willingness to participate in rail-based passenger transportation solutions.

The federal government is currently spending nearly \$60 million annually to provide a rail passenger service in Southwestern Ontario that is not delivering its full potential, and it is only going to grow more costly without full modernization and service improvements.

At the same time, provincial funding is already flowing into the eastern portion of the region through the expanding GO service. This provincial investment will only grow as a result of more GO expansion and the HSR project. In combination, this public funding from the two levels of government could and should be delivering a much greater benefit to users and taxpayers.

Network Southwest is the method by which public investment can be applied more effectively to deliver a public service that has a large bearing on the future of Southwestern Ontario. Only a joint approach by the federal and provincial governments can bring about the mobility improvements needed by the region.

7.2 SERVICE DELIVERY STRATEGY

In proposing the method for the delivery of the interconnected, multi-modal service envisioned in Network Southwest, some assumptions have been made beyond the need for a federal-provincial agreement to guide and fund it. These are based on the approaches behind similar intergovernmental, intercity transportation programs undertaken elsewhere and the realities of the current Southwestern Ontario situation.

The first assumption is that the current service levels on the three core routes now operated by VIA must be stabilized. The cuts of 2012 demonstrated the disproportionate effect of removing a few trains from a system that was already at a frequency level considered less than optimal from a passenger perspective. Reducing this service any further would bring VIA down to an unsustainable level. In the case of the single remaining trains from Toronto to Sarnia and Niagara Falls, further reduction would result in complete elimination of these services.

Fortunately, despite the federal government's failure to enunciate a long-range plan for VIA, there has been nothing to suggest there will be another round of reductions. With a federal election looming in October, it is unlikely that any government would be foolish enough to cut a public service that, when reduced in the past, has sparked so much public protest.

Pending the outcome of the federal election in October 2015 and any policy change that might follow it, the current government and VIA itself must be encouraged to not make any further reductions in Southwestern Ontario's rail passenger service. This call to "stay the course" should logically come from local MPs, MPPs and municipal politicians.

Next, it is assumed that any plan to rebuild the three VIA routes as the core of the Network Southwest system must be cost-effective, deliverable in the shortest time possible and doable without drastically increasing the financial and physical resources currently available.

With VIA at least not under imminent threat of reduction or elimination pending the next federal election, it is suggested that the preferred method for the two levels of government to jointly implement Network Southwest should be through a compact, dedicated Network Southwest business unit within VIA. As much as possible, this should duplicate the successful U.S. methodology, where on-the-ground input from and decision making by local Amtrak managers and the representatives of its state partners has guided the state-supported corridor development programs.

The structuring and staffing of this new Network Southwest business group and the production of its initial business plan should be entrusted to a committee composed of representatives from VIA, Transport Canada, the new MTO Rail Office, and affiliated government departments with public transportation experience and responsibilities, especially Metrolinx and GO.

It is, therefore, recommended that the VIA Network Southwest business unit be located in offices at Toronto Union Station. Not only is this the eastern terminal of all three Southwestern Ontario rail routes, it is also the location of the Metrolinx and GO head offices. The managers of the new Network Southwest business unit will have to work closely with Metrolinx and GO staff on a variety of issues, not the least of which will be the cooperative use of key, provincially-owned rail line segments and facilities, including the Union Station Rail Corridor.

Two other service delivery strategies were considered in designing Network Southwest. The first was a complete takeover of the current VIA services by the Government of Ontario, with federal support continuing through a transfer payment equal to the federal funds now being expended on VIA's Southwestern Ontario services. The logical service provider under this scenario would be Metrolinx through its operating division, GO.

However, Metrolinx is now immersed in the largest and most challenging transit investment program in North America. Not only is the agency dealing with the massive GO expansion, electrification and Regional Express Rail (RER) projects, it is also involved in several major projects in conjunction with other Greater Toronto and Hamilton Area (GTHA) transit agencies. Assigning Network Southwest to Metrolinx at this critical time could conceivably overload its project management abilities, affecting the delivery of its numerous large and time-sensitive transit projects.

As well, the intercity nature of Network Southwest is different from the commuter-oriented services provided by Metrolinx through its GO operating division. VIA already possesses systems and personnel to handle such intercity functions as onboard catering, reservations, ticketing, and marketing. Metrolinx would have to start from scratch in acquiring the ability to deliver these necessary intercity service components.

The availability of motive power, rolling stock and maintenance facilities also weighs in favour of VIA. Pending the arrival of the new, high-performance equipment necessary to deliver the full benefits of Network Southwest, existing trains and facilities will be required to maintain and improve the existing rail service.

While VIA is far from having a plentiful supply of cars and locomotives, it does have some fleet flexibility. Its ability to field additional train frequencies is expected to increase in 2015, as the last coaches in the LRC refurbishment program return from the shops and some mothballed Renaissance cars are returned to revenue service. VIA also possesses a well-equipped Toronto maintenance and servicing facility that is seriously underused.

GO has no surplus equipment currently suited to intercity operation and its servicing facility at Willowbrook, in Toronto's west end, is fully employed maintaining its own fleet. As well, GO's rail operations, routine servicing and heavy maintenance are all handled under contract by Bombardier Transportation. This arrangement is based on the operation and maintenance of a unified fleet equipped solely for commuter service.

It is worth noting that prior to the signing of the VIA-Government of Ontario agreement for the reinstitution of the morning-in/afternoon-out weekday London-Toronto train in 1991, the advisability of GO instituting a new Brantford-Toronto service was investigated. However, as previously discussed in this report, it was determined that the service could be revived at a lower cost by working with resources VIA had on hand. Another reason given at the time was that GO was then in the midst of several service expansion projects and it would be difficult for the agency to divert the required resources – particularly motive power and rolling stock – to implement the Brantford service.

All of these factors apply to an even greater extent today. They also work even more decisively against a third possible Network Southwest delivery strategy, which would be the creation of a whole new organization – federal, provincial or jointly-managed. Such an agency would have to be built from scratch and would require time and resources that cannot be spared if a maximum level of improvement is to be quickly delivered to Southwestern Ontario.

8.0 NETWORK SOUTHWEST'S BUILDING BLOCKS

“But what our experts in transportation are kept by their own stultifying axioms from realizing is that an adequate transportation system cannot be created in terms of any single limited means of locomotion....”

Lewis Mumford
The City in History (1961)

There is nothing technologically or operationally revolutionary or unproven in Network Southwest. As demonstrated by the successful U.S. examples, the three physical elements required to deliver the improved, integrated service envisioned are:

- existing VIA services upgraded to high-performance rail (HPR) standards;
- feeder bus services to link the trains with communities beyond the rail lines; and
- mobility hubs for seamless connectivity between the modes, including local transit.

Each of these components needs serious attention if Southwestern Ontario is going to have the type of car-free mobility already available in numerous other North American regions. While each is important on its own, it is only by tackling all three elements in unison as part of a unified, multi-modal plan that the maximum benefits can be derived from each of them.

8.1 HIGH-PERFORMANCE RAIL CORE NETWORK

As the core of Network Southwest, the rail system will act as both the anchor and the stimulant for all the sub-projects necessary to build a truly multi-modal system.

VIA outlined what expanded, properly-funded HPR service for Southwestern Ontario might look like in its 1989 *Review of Passenger Rail Transportation in Canada*. The report analyzed VIA's nationwide services on a segment-by-segment basis, with funding and service options for each. The analysis covered all the perceived financial requirements and performance outcomes for the period from 1990 through 2010, inclusive.

For Southwestern Ontario, four options were examined and costed in detail. At the low end, the Minimum Role would have stripped VIA down to a level below the 1989 Current Role, which was substantially larger than today's service levels. Even the Minimum Role would have provided more service than is being offered today on some route segments.

The Maximum Role was a single Toronto-Windsor HSR operation that would have led to the discontinuance of all existing trains. This would have left all points, except Toronto Union Station, a suburban station in the Mississauga/Oakville area, London and Windsor without intercity rail service; all the others would have been provided with bus feeders to the HSR line.

However, VIA's Competitive Role would have enhanced the Windsor and Sarnia routes significantly, with strategic upgrading of some line segments, station improvements and new, higher-speed trains. Under this scenario, the frequency levels would have been considerably higher than those being provided today, which are well below what VIA considered to be its base line Minimum Role in 1989.

Under the Competitive Role, some benefits would have also accrued to the Niagara Falls service through investments in the Toronto-Bayview Junction line segment that is shared with the Toronto-Windsor South Main Line (SML) route. However, the Niagara Falls route did not receive as much attention as the other two Southwestern Ontario routes in VIA's review.

VIA 1989 REVIEW OF PASSENGER RAIL TRANSPORTATION IN CANADA **SOUTHWESTERN ONTARIO ROUNDTrip FREQUENCY OPTIONS**

ROUTE	STATUS QUO	MINIMUM ROLE	COMPETITIVE ROLE	HIGH-SPEED RAIL
Toronto-Niagara Falls	3	2	3	0
Toronto-London-Sarnia	4	2	4	0
Toronto-London-Windsor	4	2	4	12
Toronto-Stratford-London	4	2	6	0

With some upward adjustments and a greater consideration of the Toronto-Niagara Falls route, VIA's Competitive Role has served as the target for Network Southwest's incremental expansion of frequency levels; so, too, have the equipment and infrastructure investments that were part of that scenario, with modifications to account for changes that have occurred since.

A re-examination of the 1989 study reveals that VIA's Competitive Role was the best option from many perspectives, especially public utility. It would have maintained service to all points, made full use of the existing infrastructure, attracted the largest number of passengers and generated the most revenue. In total, it would have delivered true HPR service.

On the surface, the HSR option appeared more financially attractive. It would have generated a modest operating surplus in its third year of operation, rising to \$9.6 million annually within a decade. However, this would not have been sufficient to cover its full capital costs and it would have eliminated rail service to 21 points then being served by VIA.

VIA 1989 REVIEW OF PASSENGER RAIL TRANSPORTATION IN CANADA
PROJECTED SOUTHWESTERN ONTARIO PERFORMANCE

KEY INDICATOR	STATUS QUO	MINIMUM ROLE	COMPETITIVE ROLE	HIGH-SPEED RAIL
Passengers (millions)	2.7	1.0	3.8	1.8
Average Passengers/Train	250	175	305	350
Revenues (millions)	\$58.2	\$17.2	\$80.4	\$63.3
Operating Costs (millions)	\$90.6	\$50.9	\$123.4	\$53.7
Operating Subsidy (millions)	\$32.4	\$33.7	\$43.0	(\$9.6)
Operating Subsidy/Passenger	\$12	\$33	\$11	(\$5)
Cost Recovery Ratio	64%	34%	65%	118%
Capital Required (millions)	\$255	\$51	\$375	\$1,575

Delivering VIA's Competitive Role would have required several capital projects that could have been completed within five years. The largest would have been a \$168 million investment in new locomotives and rolling stock capable of 160 km/h. For \$193 million, various infrastructure projects on all three lines would have dealt with chokepoints and speed restrictions.

The cumulative result of these projects would have been significant improvements in journey time, such as a 35-minute reduction on Toronto-Windsor SML runs and 25 minutes shaved off the Toronto-Stratford-London North Main Line (NML) run time.

VIA SOUTHWESTERN ONTARIO FASTEST JOURNEY TIMES

ROUTE	1989	2015	COMPETITIVE
Toronto-Stratford-London	2:45	3:24	2:20
Toronto-Brantford-London	1:53	2:07	1:40
Toronto-London-Windsor via SML	4:05	4:05	3:30
Toronto-London-Sarnia via NML	4:00	4:38	3:25
Toronto-Niagara Falls	1:55	1:56	N/A

Unfortunately, the federal government not only rejected VIA's Competitive Role option, it turned down all the others, too. Instead, the steep budget cut that triggered the slashing of VIA nationwide in 1990 brought the Southwestern Ontario services below the Minimum Role.

In hindsight, VIA's Competitive Role remains the most compelling option. With modifications, it still offers the greatest opportunity to deliver substantially improved, rail-based mobility throughout Southwestern Ontario at a reasonable cost and within a desirable time frame.

8.1.1 RAIL INFRASTRUCTURE INVESTMENTS

Despite the federal government's rejection of all the options VIA presented in 1989, some infrastructure work has since been undertaken. While no new rolling stock suitable for the type of service envisioned in Network Southwest has been acquired, VIA did purchase 21 General Electric (GE) P42 Genesis units geared for 175 km/h service in 2001. VIA has also rebuilt 53 of its Electro-Motive Diesel (EMD) F40 locomotives, which are geared for 150 km/h service.

Furthermore, the purchase and upgrading of a number of CN line segments by Metrolinx for GO expansion has dealt with some of the infrastructure work that was required to deliver the Competitive Role that VIA envisioned in 1989.

In other instances, VIA itself has invested a small amount of the capital funding it has received in recent years in Southwestern Ontario projects. These include:

- station improvements at Oakville, London and Windsor;
- the purchase and upgrading of the western 56 km of the CN Chatham Subdivision, and
- the installation of continuous welded rail and a Centralized Traffic Control system on the Kitchener-London line segment.

As a result, the bulk of the infrastructure over which Network Southwest core rail service will operate is in good to excellent condition. This should allow for reductions in the running times of all three VIA routes in advance of the full implementation of Network Southwest.

Some infrastructure work remains to be done, especially in light of the increasing CN freight traffic that is affecting VIA's on-time performance today. The most significant of these will be capacity expansion on the CN Halton Subdivision between Bramalea and Georgetown, and the CN Strathroy Subdivision between London and Sarnia.

The former is a situation that will ultimately have to be solved by the province if it is to deliver expanded GO diesel-hauled Kitchener service, the more intensive RER electrified operation and HSR. All of these provincially-operated services will require increased access to this heavy-used and constricted CN freight corridor. This matter is, in fact, part of the environmental assessment (EA) now under way for the long-promised, all-day GO service to Guelph and Kitchener. The results of that EA will not be known until the fall of 2015.

Even with the EA in hand, a definitive solution to the capacity problem on the CN Halton Subdivision is several years and hundreds of millions of dollars away. Until then, close cooperation between CN, GO and VIA will be required to make the best use of the available track slots on this line segment. This is a factor in favour of using Network Southwest as a means for GO and VIA to jointly provide improved service on the North Main Line in advance of any all-day GO, RER and/or HSR service.

A similar situation applies to the Toronto-Niagara Falls route, where an all-day, two-way GO service has been promised for many years. Much to the consternation of the municipal governments along the route, it has not been possible to deliver on this provincial pledge for a variety of operational and financial reasons.

In April 2011, Metrolinx received an environmental study prepared by an outside consultant on the proposed all-day GO service from Toronto Union Station to Niagara Falls. At full build-out, the GO Niagara rail service would consist of 20-minute service during peak hours and hourly operations in both directions at other times. The projected Niagara Falls-Toronto run time would be two hours and eight minutes, with no stops between Oakville and Union Station.

To deliver this level of service over the route's full length, the capital cost was estimated to be roughly \$1.2 billion. In addition to new motive power and rolling stock, the budget included:

- a new Hamilton GO station at James Street North;
- new GO stations in Hamilton's east end, Grimsby and Beamsville;
- modification of the existing VIA stations at St. Catharines and Niagara Falls;
- a 4-km section of double-track on the CN-owned line through Hamilton;
- a 15-km section of double-track on the CN-owned line near Grimsby; and
- a new tunnel or bridge at the Welland Canal crossing to avoid marine traffic conflicts.

GO currently operates bus service to various points between Burlington and Niagara Falls, and a preliminary, low-frequency weekday extension of the rail service to and from a new Hamilton James Street North station will be launched in 2015. A seasonal, weekend GO rail service over the full route has operated since 2009, but it has produced low ridership and high costs.

While the level of service envisioned in Network Southwest is lower than the full GO scenario, it would still produce significant mobility improvements at a lower cost and within a much shorter time. It would require only a portion of the infrastructure work included in the more intensive GO plan, principally the restoration of the double-track line segment near Grimsby.

Accordingly, based on the rail infrastructure improvements and capacity expansion identified in the all-day GO study, a cost of \$50 million is projected for Network Southwest. The \$750 million cost of a new Welland Canal crossing has been excluded because, given the difference in service levels between the two proposals, it isn't required at this time.

The other major infrastructure investment that must be considered for the full implementation of Network Southwest is capacity expansion on the CN Strathroy Subdivision between London and Sarnia. Traffic and infrastructure conditions have changed greatly since VIA examined the route in its network-wide review of its future service and investment options in 1989. At that time, the Strathroy Subdivision was double-track over its full length and equipped with an outdated automatic block signal control system.

In the late 1990s, CN eliminated three sections of the double-track and installed a more advanced Centralized Traffic Control system. Since then, freight traffic has grown considerably on this line, which is a key component of CN's main Toronto-Chicago route. Even with the single roundtrip now being operated by VIA, passenger train delays are common.

To accommodate the increased Network Southwest passenger service, it is proposed that infrastructure improvements short of the costly restoration of all the missing double-track segments be undertaken. An investment of \$50 million is predicted for the construction of two signalled sidings at Strathroy and Wyoming to allow the passenger trains to exit and re-enter the main line to make their station stops without conflicting with the freight traffic. A re-arrangement of the track layout at the Sarnia station would accomplish the same goal.

There are also a handful of public road crossings on the Chatham Subdivision east of Thamesville that have yet to be equipped with warning lights and gates. Remediating this situation would remove several slow orders for trains, reducing journey times and enhancing safety for road users, particularly larger farm vehicles.

8.1.2 RAIL EQUIPMENT INVESTMENTS

It is in the area of rolling stock that VIA remains seriously deficient and this will require the largest portion of the \$400-million capital budget proposed for the first phase of Network Southwest.

VIA currently operates all of its Quebec-Windsor Corridor services with a variety of outdated, single-level rolling stock that needs to be replaced in order to provide the maximum levels of operational flexibility, financial performance and passenger attractiveness.

Various equipment options were examined for Network Southwest. These included:

- the existing mix of LRC and Budd HEP II single-level, non-push-pull rolling stock;
- a dedicated fleet of LRC or Budd HEP II equipment;
- remanufactured Budd rail diesel cars (RDCs);
- new diesel multiple unit (DMU) cars; and
- locomotive-hauled, bi-level, push-pull intercity cars.

Based on the U.S. experience, it is recommended that new, bi-level rolling stock equipped for push-pull service at up to 160 km/h be purchased for Network Southwest. As described in Chapter 6 of this report, this type of equipment is already in use on some Amtrak corridors in the Midwest and California. New, faster and more efficient versions of these push-pull bi-levels are now under construction at the Sumitomo plant in Rochelle, Illinois, and will be introduced on some Midwestern and California corridor routes beginning in late 2016.



HOMEGROWN EQUIPMENT OPTIONS: Modern bi-level, push-pull rolling stock is required to replace VIA's aged single-level corridor fleet in Southwestern Ontario. Bombardier's service-proven, Canadian-built commuter cars, such as the MultiLevel cars used by Montreal's AMT and New Jersey Transit (above), and the next generation of BiLevels for Toronto's GO Transit (below), are modifiable for 160-km/h intercity service. Photo above by Mitch Goldman



It would seem logical for the Network Southwest fleet to be piggybacked-on the current U.S. bi-level car order, but this would yield few Canadian economic spinoff benefits. The U.S. cars are being built to meet a 100 per cent Buy America requirement in all federally-funded rail improvement plans, which maximizes domestic economic and job creation benefits.

While it might be possible to negotiate with the builder to include some Canadian content, whether that is realistic remains unknown. It should be noted that the DMU cars for the Metrolinx UPX project are being assembled at this plant, but that the Canadian content is minimal.

However, the Bombardier BiLevel push-pull equipment built in Thunder Bay for GO and 13 other commuter agencies throughout North America could easily meet Network Southwest's performance requirements. It would also deliver the large Canadian economic and job creation benefits that must be considered in any publicly-funded project of this nature.

First built in 1977 for GO, the Bombardier BiLevels were designed to be easily adapted to a wide range of services, both commuter and intercity. An intercity variant was designed in the mid-1980s for the planned re-equipping of the Toronto-Kapuskasing *Northland*, operated by VIA and the provincially-owned Ontario Northland Transportation Commission (ONTC). This plan fell by the wayside as a result of the VIA cutbacks of 1990, which eliminated the *Northland*.

The decisions regarding the design, builder and implementation of the Network Southwest rolling stock are matters for the new management team. For this concept plan, a modified version of the Bombardier BiLevel design has been used for estimating purposes.

To deliver the frequency contemplated in the initial Network Southwest build-out period, it is estimated that eight trainsets would be required for the base service, plus two full trainsets to allow for programmed preventive maintenance and surge capacity. These 10 push-pull trains would be powered by GE P42 or EMD F40 locomotives from VIA's existing fleet. At a later date, higher-speed locomotives could be acquired, similar to the 200-km/h units now being built to haul the Sumitomo bi-levels in the U.S. Midwest and California.

Even with the purchase of the Network Southwest bi-level rolling stock, two trains would continue to be operated with the existing single-level equipment. These are the joint VIA-Amtrak *Maple Leaf* on the Toronto-Niagara Falls-New York City run and the Toronto-Windsor train that operates through to Montreal as a connection to VIA's Montreal-Halifax *Ocean*. Both of these conventionally-equipped trains would be integrated within the Network Southwest service plan.

The 40 dedicated Network Southwest cars would be configured along the lines of the bi-level rolling stock now being built for U.S. service, under specifications set by the Next Generation Equipment Committee, which is composed of Amtrak and four of its state partners.

The 10 Network Southwest trainsets would each consist of:

- 1 P42 or F40 locomotive
- 2 BiLevel coaches
- 1 BiLevel café/business class car
- 1 BiLevel coach/baggage/cab car

These four-car trainsets would have a capacity of approximately 300 revenue passengers, plus the non-revenue seating at the tables in the café/business class car. The lower level floor height would be identical to the current GO Bombardier BiLevel commuter cars, offering a high degree of accessibility using ramps from the existing station platforms. The four wide entry/exit doors on the lower level would allow for rapid passenger loading and unloading, which will help reduce station dwell times. The coach/baggage/cab cars would provide a generous amount of secure space for cyclists to store their bicycles.

Each Network Southwest four-car trainset would be expandable to a maximum of 10 cars. The maximum service speed would be 160 km/h, which should be attainable with modifications to strategic segments of the existing infrastructure. Without the need for time-consuming movements to physically turn the trains at end terminals, the push-pull Network Southwest trainsets will allow for a much quicker turnaround time than is possible with VIA's non-push-pull, single-level equipment today.

Based on GO's latest Bombardier BiLevel order and the additional cost of the improved seating, interior appointments and other amenities required for intercity service, it is estimated that a four-car Network Southwest trainset would cost approximately \$20 million. Therefore, the total fleet cost would be \$200 million, exclusive of motive power. This capital cost would be repaid through operating cost savings within six to 10 years, based on industry analysis of similar single-level-to-bi-level upgrading projects.

By the formulae established by various well-respected organizations in the U.S., including the U.S. Department of Commerce, the \$200 million investment in new, Ontario-built rolling stock would generate a minimum of \$600 million in economic stimulus. This would ripple out from the car builder and positively affect all its suppliers. It would also generate and sustain numerous jobs throughout the builder's supply chain during the four to five years required to design and build this new equipment.

The purchase of this new equipment is the key to the success of Network Southwest. Without it, there can be no efficient and cost-effective core rail service, on which the entire plan is dependent. Maximizing the use of VIA's current fleet in the short term is unavoidable, but attempting to use this equipment to deliver the expanded service in the longer term would doom Network Southwest to financial and operational failure.

8.1.3 RAIL SERVICE EXPANSION

As the core of Network Southwest, the improvement of the existing VIA service levels should be a priority. As has been stated earlier in this report, the 2012 cuts to the three Southwestern Ontario routes were small numerically and they didn't eliminate any routes completely, but they had a disproportionately high impact because service was already below what many users considered an irreducible minimum.

The first step in repairing the damage done by the cuts and preparing the Network Southwest routes for major growth in conjunction with the new equipment should be the restoration of trains eliminated in 2012. Thanks to some positive developments at VIA, this shouldn't be difficult.

A major complication in VIA's 2007-2012 capital investment program was the equipment renewal strategy, which was based principally on the full refurbishment of the 97 Light, Rapid, Comfortable (LRC) corridor cars built between 1981 and 1984. This project ran into major delays and cost overruns. So, too, did modifications to a portion of the newer, British-built Renaissance fleet, which has not performed as was expected when it was purchased for adaptation for Canadian operating conditions in 2000.

After many problems with car availability due to these issues, VIA is gradually bringing its fleet back to a level that allows for the maintenance of all its current services with capacity sufficient to meet demand. Although never confirmed or denied by VIA, it is believed both the cost overruns on these and other capital projects, and the severe drop in equipment availability contributed to the decision to cut the frequency of the Southwestern Ontario routes in 2012 in favour of increasing its Montreal-Ottawa and Ottawa-Toronto services.

Now, with the LRC refurbishment project nearing completion and some of the Renaissance equipment being returned to revenue service after being mothballed in December 2013, VIA should have the ability to simultaneously increase capacity on its heavily-used services east of Toronto and reintroduce the discontinued Southwestern Ontario trains.

While a major increase in rail service can't be cost-effectively undertaken until the new bi-level rolling stock required for Network Southwest arrives, it is suggested that the rail service be built up gradually using VIA's existing fleet as an interim measure.

These service increases would also relieve the pressure on the provincial government for the GO expansion that is increasingly being demanded by the municipal governments in Guelph, Kitchener and throughout the Niagara Region. With track capacity tight on portions of these routes and GO's fleet required for service expansion on some of its most heavily-used routes, this approach would maximize the benefits to both GO and VIA.

Based on VIA equipment availability and the arrival of the new, bi-level rolling stock beginning in 2019, it is proposed that this incremental service expansion be undertaken on the schedule shown in the table below.

WEEKDAY ROUNDTrip RAIL FREQUENCIES

ROUTE	2015	2016	2017	2018	2019	2020
Toronto-Stratford-London	2	3	3	4	5	6
Toronto-Brantford-London	5	5	5	6	6	7
Toronto-Sarnia	1	2	2	2	3	3
Toronto-Windsor	4	4	4	4	5	5
Toronto-Niagara Falls	1	2	2	3	4	5

8.2 BUS FEEDER NETWORK

At first glance, it would appear that a Network Southwest feeder bus system represents an entirely new service that must be constructed from scratch. This is not entirely true.

Today, there are numerous GO and municipally-operated interurban transit routes that connect with the existing VIA services, but that are not in any way coordinated with them. In terms of timetabling, fare integration, printed and online information, and even station signage, these are services that just happen to use the same terminals as VIA. This contrasts with U.S. practice, where there are many stand-alone local and interurban bus routes that have been integrated into the Amtrak Thruway feeder system.

While the Amtrak Thruway network appears to be a homogenous operation, it is not. It is composed of two types of service, defined as “dedicated” and “coordinated.” The dedicated services are operated totally in conjunction with the rail service and are available only to those making combined rail and bus journeys. These routes have been specifically created to function as rail feeders and nothing else.

However, the coordinated Thruway services are actually routes operated by municipal agencies or through state-supported programs primarily as local or interurban services in their own right; they do double duty as coordinated components of the rail services. This has been accomplished through scheduling, fare integration and physical connectivity at the rail stations.

With modifications to their service levels and scheduling, there are at least 10 GO and municipally-operated interurban bus routes that could play this role in Network Southwest.

The existing, publicly-operated interurban routes identified as the initial components of this feeder network are:

ROUTE	OPERATOR
Brampton-Orangeville	GO Transit
Guelph-Milton	GO Transit
Oakville-Milton	GO Transit
Kitchener-St. Jacobs-Elmira	Grand River Transit
Kitchener-Cambridge	Grand River Transit
St. Catharines-Welland-Port Colborne	Welland Transit/Niagara Region Transit
Niagara Falls-Fort Erie	Niagara Transit
Chatham-Blenheim-Ridgetown	CK Transit
Chatham-Wallaceburg-Dresden	CK Transit
Chatham-Tilbury-South Buxton	CK Transit

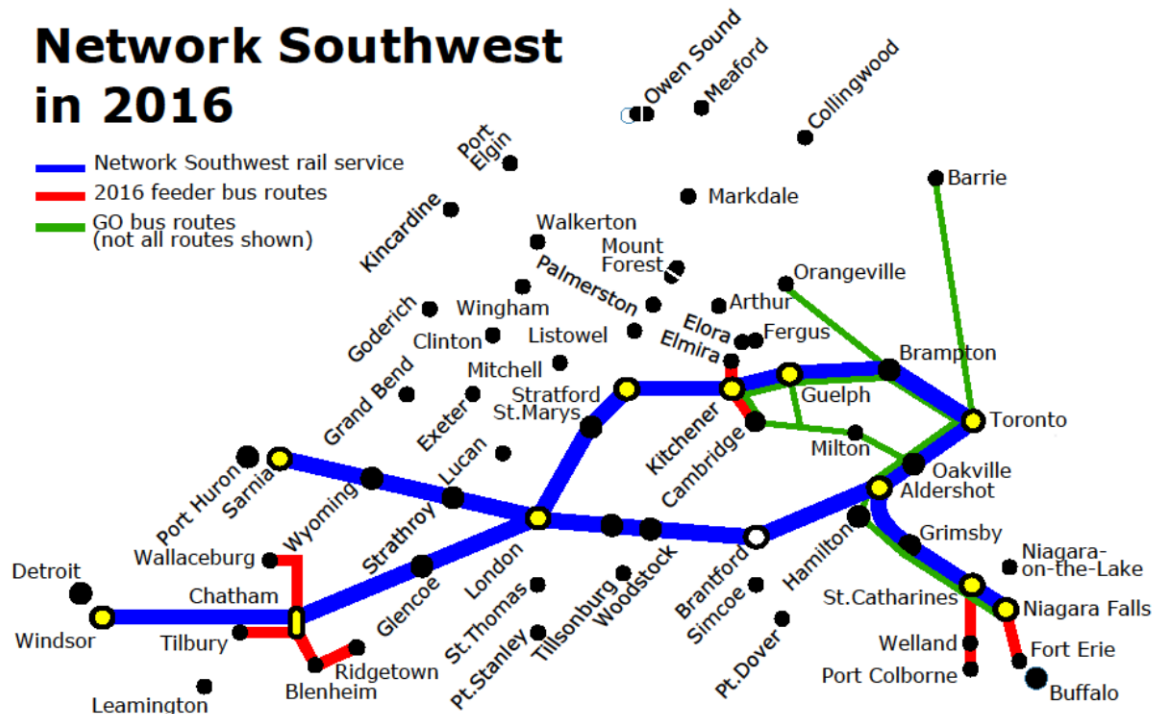
In the case of the three GO routes, these already physically connect with the current VIA services. The two Grand River Transit routes will ultimately be linked directly to the rail service through the new Kitchener mobility hub that is being constructed as a component of the ION rapid transit project, slated for a late 2017 opening.

An easy way to make fuller use of these existing transit services as Network Southwest feeders is to follow the example of California's Capitol Corridor. There, partnerships with the transit operators enable passengers to transfer between the trains and the transit services using discounted transit passes or coupons. These interline co-fare arrangements are well advertised in all the printed and online information concerning the rail service.

It should be noted that Metrolinx already has agreements with several transit agencies throughout its service territory that allow riders to access GO routes by local transit for free or at discounted rates. This should serve as a proven model for Network Southwest.

One of the first action items for the new Network Southwest business unit should be the creation of similar interline co-fare and scheduling arrangements with GO and the municipal transit agencies that already serve these points. While VIA boasts having an arrangement with GO, it is difficult to see just what it is currently delivering. Other than the fact that both carriers jointly serve eight points (Toronto Union Station, Oakville, Aldershot, Malton, Brampton, Georgetown, Guelph and Kitchener), there appears to be little effective connectivity between them. Leaving it to passengers to figure out that they may be able to use both VIA and GO as components of a complete journey is not enough.

As for the other interurban bus routes listed above, much work needs to be done. The connection with the two Grand River Transit routes cannot be made effective until the new mobility hub is operational; those routes now operate from a downtown transit terminal several blocks away from the VIA station. Nonetheless, preparations need to be made now for the maximum coordination and integration of these interurban bus services with the proposed Network Southwest rail service in advance of the new Kitchener mobility hub's opening.



In Chatham, St. Catharines and Niagara Falls, an investigation of the potential to improve connectivity physically and through scheduling, fare integration and the provision of passenger information needs to be explored. In fairness to the affected transit operators, they currently have little reason to upgrade their services as feeders to what amounts to a low-frequency intercity service that shows no sign of being stable and permanent, let alone poised for growth. Only frequent and permanent rail service can justify the addition of bus runs geared to train arrivals and departures, and/or the diversion or extension of these existing routes to the VIA stations.

Elsewhere, there must be coordinated action by the Network Southwest business unit and the affected municipalities, townships and counties to create the new interurban feeder routes. There is an excellent opportunity in Stratford to test this concept at low cost.

For more than three years, the United Way Perth-Huron Transportation Task Force has been attempting to spark some improvement in the public transportation options available to residents of the counties it serves. Currently, the only public transportation available to the 134,212 residents of the two counties are the local transit system in Stratford and the VIA service on the North Main Line to Stratford and St. Marys.

Based on travel demand, United Way Perth-Huron has suggested that three interurban bus services should be launched to address this deficiency within the two counties. The priority service would operate northwest along Highway 8 to link Stratford with Sebringville, Mitchell, Seaforth, Clinton and Goderich. Until 2013, this route was operated by London-based Aboutown, which took over the service from Greyhound. The service was abandoned in 2013 when Aboutown ceased operations throughout Southwestern Ontario.

Two other interurban routes that have been suggested by United Way Perth-Huron are Stratford-Milverton-Listowel-Wingham and London-Centralia-Exeter-Clinton. These, too, were previously operated in whole or in part by Greyhound, taken over by Aboutown and abandoned with the latter firm's collapse.

The two Stratford-based routes should serve as the test bed for the proposed operation of an extensive Network Southwest interurban bus feeder service. A cost-effective method for doing this was suggested in a proposal put forward in early 2014 by the City of Brantford. This plan calls for the establishment of a bus route to provide line-haul service to Hamilton, as well as a connection to the GO rail and bus network.

Developed by an independent consulting firm, the Brantford study explored the options for a bus route that would connect Brantford's downtown transit terminal, Mohawk College or McMaster University, the downtown Hamilton GO Centre and/or the GO/VIA Aldershot station. Various service levels were considered, ranging from seven peak-hour roundtrips on weekdays only to 13 roundtrips spaced throughout the day from Monday to Saturday, inclusive.

In developing this concept for Brantford, the city's consultant had access to GO's costing data in the production of a solution that could be delivered quickly and at low cost. Metrolinx suggested that this new route be launched through Brantford Transit, with the municipal agency reimbursed by the province for the costs incurred by the new service.

In this scenario, the city's transit agency would purchase the buses, handle maintenance in its existing facilities and provide the drivers. An alternative would be to contract this service to an outside firm, although that was likely to be more complicated and costly.

Based on data obtained from Metrolinx, it was predicted that such a service would cost between \$82 and \$86 per vehicle hour to operate.

As for equipment, the following scenarios were proposed:

- Rehabilitated, secondhand GO high-floor highway buses (\$20,000 per vehicle);
- Rehabilitated, secondhand low-floor transit buses (\$60,000-\$70,000 per vehicle); or
- New, low-floor transit buses (\$500,000-\$600,000 per vehicle).

Using the concepts and costs developed for the Brantford-Hamilton service, two Network Southwest bus routes based on the United Way Perth-Huron proposals could be launched at a reasonable cost and within a short time.

These Stratford-Goderich and Stratford-Wingham routes would each initially operate a minimum of three roundtrips daily except Sunday and statutory holidays, with an end-to-end running time of 1 hour and 45 minutes. They would be timed to connect with the existing VIA runs and simultaneously provide a useful service for those who need to travel to and from Stratford and intermediate points for journeys not related to the rail service.

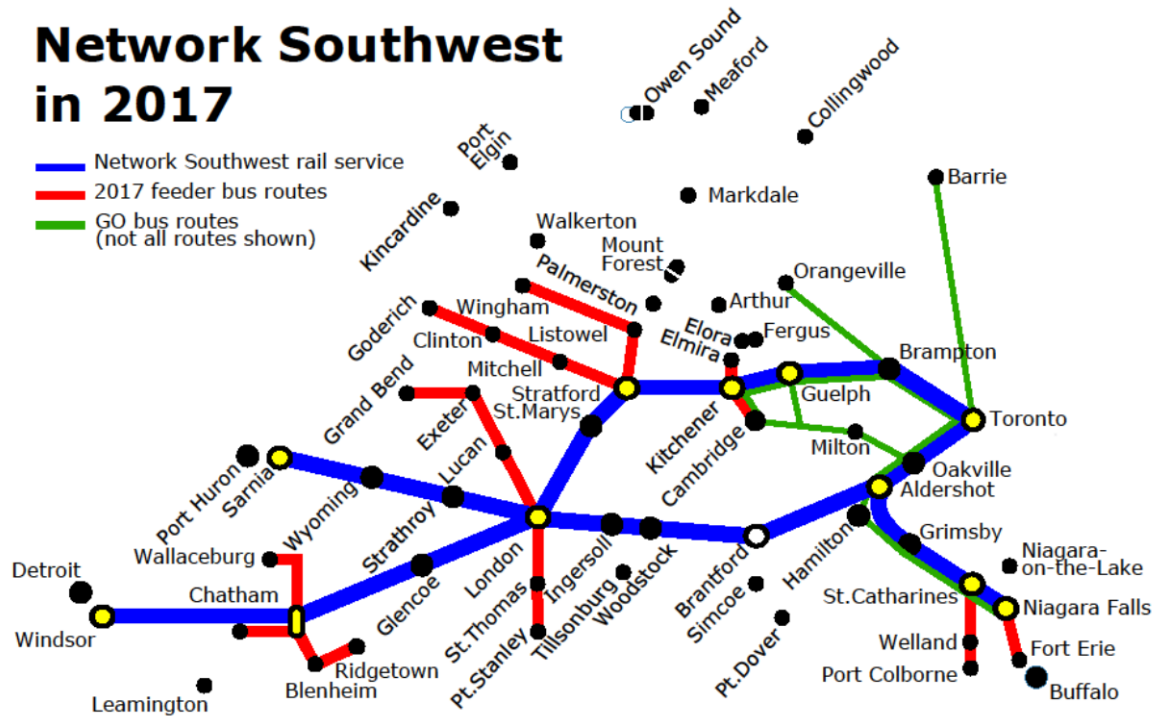
This two-route starter service would require one bus for each route, plus a spare. Dependent on the vehicles selected, this would result in a capital cost of \$60,000 to \$1.8 million. As in the case of the Brantford proposal, the costs should be minimized during the test phase through the use of rehabilitated, secondhand buses. The availability of GO high-floor highway buses – which are equipped with lifts to accommodate those using wheelchairs and other mobility devices – makes this option the most attractive.

The operating time for each route would be 18 hours daily, except Sundays and statutory holidays. With a total of 36 hours of operating time for both routes and an estimated per-hour operating cost of \$90, the annual operating cost would be \$988,200.

A similar approach would be taken to launch a pair of London-based interurban bus routes that would both feed the Network Southwest rail service and address regional public transportation needs. These are London-Exeter-Centralia-Grand Bend and London-St. Thomas, with a possible extension of the latter south to Port Stanley. As in Stratford, both routes would hub at the downtown VIA station, which is served by six of the city's transit routes.

Capital and annual operating costs would be comparable to the Stratford-based routes. They would be operated under contract by London Transit with funding from the Network Southwest system budget.

Network Southwest in 2017

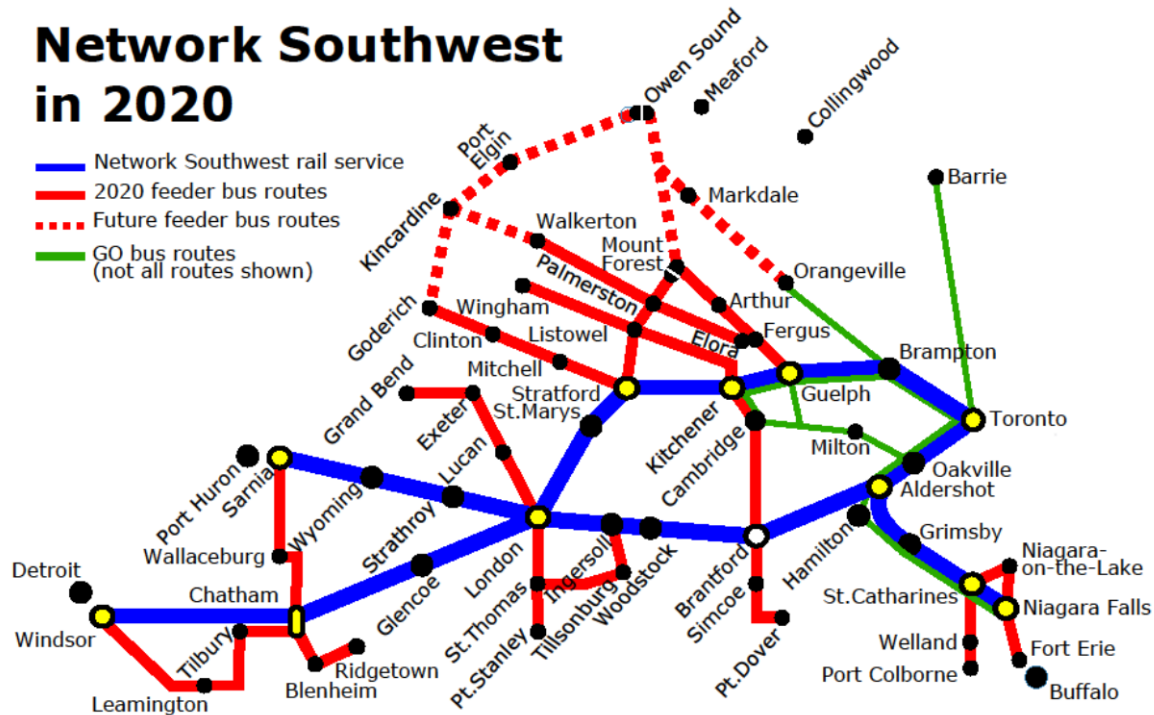


Additional interurban bus routes, anchored by and feeding Network Southwest's core rail system, should also be considered. Linked to a faster, more frequent rail service, they are apt to draw more passengers than when many of these routes were operated as connections to intercity bus services, which lacked the comfort and speed of rail. The routes to be considered should include:

- Guelph-Elora-Fergus-Orangeville
- Guelph-Mount Forest-Durham
- Guelph-Palmerston-Harriston-Hanover-Walkerton
- Kitchener-Listowel-Hanover
- Brantford-Simcoe-Port Dover
- Ingersoll-Tillsonburg-Aylmer-St. Thomas
- Sarnia-Wallaceburg
- Chatham-Comber-Leamington-Essex-Windsor
- St. Catharines-Niagara-on-the-Lake-Niagara Falls

Extensions of these and the other routes previously discussed could follow, expanding the Network Southwest feeder service catchment area north to include Owen Sound and points along the Lake Huron shoreline, such as Kincardine, Port Elgin and Southampton.

Network Southwest in 2020



The ultimate size and scope of this bus feeder network is a matter to be addressed by the new Network Southwest business unit and its federal, provincial and municipal partners.

8.3 MOBILITY HUBS AND STATION IMPROVEMENTS

In the creation of the mobility hubs to seamlessly connect Network Southwest's core rail and bus feeder components, a good start has already been made on the eastern ends of the three rail routes, thanks largely to GO.

As the extreme eastern end of the system, Toronto Union Station represents the ultimate in connectivity. Easy transfers from VIA's Southwestern Ontario trains can be made with three other VIA routes, the full GO rail system, numerous GO bus routes and the extensive TTC system. The relocation of Greyhound, Coach Canada/Megabus and Ontario Northland intercity bus services from the current Toronto Motor Coach Terminal at Bay and Dundas streets to a new facility on the south side of Union Station in 2018 will boost this high level of intermodal connectivity even further.

Physical connectivity with GO and local transit services is also high at Oakville, Aldershot, Brampton and Guelph, although the actual integration of the various services through scheduling, fares and the provision of useful passenger information remains low. A similar level of physical connectivity will be delivered in Kitchener when the new mobility hub that is a component of the ION rapid transit project opens in late 2017.

The municipally-built Guelph Central Station offers an ideal model for the other Network Southwest mobility hubs. Every element of this terminal has been thoughtfully designed to maximize the ease with which passengers make journeys involving more than one route or carrier, which now include VIA, GO, Greyhound and all the Guelph Transit routes. Adjusted for local conditions and based on the full range of Network Southwest feeder bus routes previously discussed, there are several locations where a similar approach should be taken.

In Stratford, a smaller version of Guelph Central Station would accommodate the enhanced rail service, the two interurban buses and the one local transit service that now serves the VIA station as part of a counter-clockwise loop operating every 30 minutes from the downtown transit hub behind Stratford City Hall. Modifications to the roadway layout at the VIA station should be undertaken not only to establish a direct, “cross-platform” connection between the trains and the interurban buses, but to also allow the Stratford Transit buses to quickly enter and exit the improved facility.

In addition, provision must be made for parking, secure bicycle storage, taxi access and a “kiss and ride” area for passengers arriving and departing by car. There is more than adequate space at the Stratford VIA station to provide this full range of amenities.

Similar station modifications to provide for the proposed Network Southwest feeder buses and to allow for more effective transit connectivity are required in Brantford, Chatham and St. Catharines. In these cities, the VIA stations are outside the downtown areas and some distance from the local transit hubs, although they are all currently served by one or more transit routes that provide service to the downtown facilities on an infrequent basis. Offering an improved local transit service to connect the three VIA stations with the established downtown transit hubs or extending the new interurban bus routes to provide that connection should be examined further.

Improvements will also be required in Niagara Falls, although the existing VIA station already benefits greatly from the location of the main transit and intercity bus terminal directly across Bridge Street. Investments here should be directed toward making the cross-street connection more effective, especially for those with mobility challenges.

In London, the opportunity exists not just to connect the Network Southwest rail and feeder bus services with local transit, but also to include the city’s Greyhound intercity services. The current Greyhound terminal is three blocks west of the large and modern VIA station on the south side of York Street and adjacent to the rail corridor. It falls far short of being an attractive, inviting gateway to the city and compares poorly with the VIA station, which is underused due to the level of rail service now being offered.



PLACES TO GROW: The current VIA stations in London (above) and Stratford (below) have ample space to accommodate the feeder buses and improved transit services that can turn them into hubs of intermodal activity. The London facility is ideally suited as a new and attractive home for the city's Greyhound bus services, which are currently located in a drab facility three blocks west of the modern VIA station. Photos from Wikipedia Commons



Determining the requirements to connect the Network Southwest rail and feeder bus services with Greyhound, as well as the six London Transit routes that stop outside the VIA station, should be undertaken at the earliest opportunity by the Network Southwest business unit.

In Sarnia and Windsor, the location of the existing VIA stations will make it more difficult to create full-fledged mobility hubs. Both are sited well outside the downtown cores, and each is served by a single, infrequent local transit route. In their present locations, these stations would be unsuitable for service as the hubs for the local transit systems.

Instead, these stations should be upgraded to accommodate the proposed Network Southwest feeder buses and an improved, more frequent transit service to the downtown areas should be considered. Additional runs on the existing transit routes or dedicated shuttle services timed to connect with train and feeder bus arrivals and departures are two options that should be examined by the Network Southwest business unit and the local transit agencies.

Whether a full-fledged mobility hub or an upgraded station facility, there is one given and that is the need for all the stations to be staffed. In addition to the reduction in the service levels, the 2012 VIA cuts resulted in the “de-staffing” of the stations in numerous communities throughout Southwestern Ontario, including major points such as Guelph, Stratford, Sarnia and Niagara Falls. Now, passengers can gain access to the buildings for shelter 30 minutes before train time and tickets are only available online, by phone or using the electronic kiosks that have been installed at these locations.

With the low level of VIA service now being provided at these points, it is admittedly difficult to justify full-time or even part-time staffing. However, unstaffed facilities send a powerful negative message to potential users. In particular, older passengers and those with mobility challenges require staff to assist them in obtaining their tickets, handling their baggage and even providing up-to-date information on train arrivals and departures. It is difficult to fathom why an arrangement hasn’t been made at points where VIA and GO share the stations to enable GO staff to provide these services.

With the higher level of rail and connecting bus service to be offered throughout the Network Southwest system, there can be no excuse for a continued lack of staffing. This must be addressed if this concept is going to succeed.

9.0 MOVING NETWORK SOUTHWEST FORWARD

“21st century businesses need 21st century infrastructure – modern ports, stronger bridges, faster trains and the fastest Internet.”

U.S. President Barack Obama
2015 State of the Union Address

Can Network Southwest happen?

There is nothing technologically or legislatively untested in the concept. Indeed, the three successful U.S. examples cited in Chapter 6 of this report demonstrate that Network Southwest’s various elements are all service proven.

Nor is the cost onerous, especially in the context of recent Canadian transportation projects. The \$400-million capital investment required to implement Network Southwest is equal to:

- 1 km of Toronto subway tunnel
- 12 km of six-lane toll highway
- 1.4% of Ontario’s \$29 billion transportation pledge

What is required to make Network Southwest a reality is the most difficult commodity to prescribe: political will. Whether it exists and can be leveraged to implement this plan remains the overriding question.

At the federal level, the signals are mixed. In 2007, the current federal government announced its capital renewal plan for VIA, which eventually grew to \$923 million. The indication then was that the federal government understood and supported public investment in a publicly-owned transportation service that could deliver numerous economic, social and environmental benefits across the nation.

However, the VIA investment plan was inadequate to repair the damage that had been done by too many years of under-investment. When the risky program ran into trouble, the federal government’s enthusiasm seemed to drain away. What followed were the budgetary and service cuts of 2012.

Since then, the current federal government’s approach to VIA has been, at best, a laissez-faire one. When questioned as to why a decisive plan to fix VIA hasn’t been produced, the government’s response is consistently that VIA is an arm’s-length Crown corporation that makes its own decisions based on the funding provided by Ottawa.

With a federal election looming, it seems unlikely that there is going to be any positive action applied to the VIA file. Once again, the future of this publicly-funded service is hanging in the balance.

At the provincial level, the outlook is brighter. As was stated earlier in this report, the current provincial government is the first ever to commit itself so enthusiastically to rail-based public transport transportation solutions for the mobility challenges afflicting Ontario. The pledges to expand GO, electrify and significantly boost service levels on some of its more heavily-used lines, and begin the environmental assessment and design processes to create a provincially-owned Toronto-London-Windsor high-speed rail (HSR) passenger service are all encouraging signs.

The drawback is that these admirable provincial rail plans are all long-range and very expensive. What still seems to be lacking in the provincial vision is the need for mobility improvements sooner – and over a larger geographic area than can be delivered through the GO and HSR projects.

Network Southwest can deliver the mobility improvements required. It has been designed to deliver the maximum level of car-free mobility throughout all of Southwestern Ontario in the shortest time possible, and with an affordable, justifiable budget.

Furthermore, Network Southwest has been conceived as an initiative that will dovetail with the larger and longer-range projects that are now on the provincial agenda. There is nothing within Network Southwest that will need to be discarded if ambitious projects such as the all-day, two-way GO service to the Niagara and Kitchener-Waterloo regions, and HSR to London and Windsor, are undertaken.

The job for those who commissioned the development of this plan is to now sell it. The three public forums staged by the Southwestern Ontario Transportation Alliance and its advocacy partners to unveil Network Southwest in Sarnia, St. Marys, and Stratford drew large and supportive audiences. These events demonstrated that there is a very real public interest in seeing Southwestern Ontario's mobility deficiency addressed.

In attendance at the initial Network Southwest public forums were numerous municipal and provincial politicians, as well as federal election candidates of all parties. All voiced strong support for the concept and pledged to help carry the message further.

The combination of these diverse voices can help develop the will at the higher political levels to implement Network Southwest. That should be the objective. Efforts should especially be directed to the provincial government. With its mandate renewed in the June 2014 election and its obvious willingness to consider rail-based public transportation solutions, that is where Network Southwest is most likely to get a serious and informed hearing.

Federally, the advocates of Network Southwest are most likely going to have to await the outcome of the October 2015 election before a future government, no matter which political stripe it may be, will give this proposal the hearing it requires.

Time is of the essence. Resolving Southwestern Ontario's mobility challenge is a growing concern to many in the region, and for very good reasons. There are already documented cases of major firms rejecting the region in favour of those that are, among other things, much better served by public transportation. Long-range solutions requiring billions of scarce public dollars and a decade or more to deliver any appreciable improvement are inadequate.

Network Southwest: The sensible, seamless, car-free travel system of tomorrow... today.