A comprehensive plan that details the redevelopment of the Kingston Transit system to meet the current and future needs of our riders. The plan includes two initial phases to be completed by January 2015 and outlines future phases for implementation post 2015.

This plan was written by Kingston Transit staff in consultation with our riders, our bus operators, and internal city departments.

August 2011
Executive Summary

The City of Kingston has a vision of becoming Canada’s most sustainable city. The way in which people and goods move around our city is an important component of the economic, environmental, social, and cultural pillars that support the sustainability goals. Developing a sustainable transportation model for the city means that our existing infrastructure, such as roads, buses, and parking spaces, must be used more efficiently. This desire to move towards a more sustainable, active transportation model is reflected in the policies of the Official Plan and the Transportation Master Plan, which encourage travel that minimizes the use of personal vehicles.

Kingston Transit is a critical piece of this preferred transportation model and a necessary component of the City’s Transportation Demand Management plan. Many of the policies and programs developed under the Transportation Demand Management plan require a viable, frequent transit system that people can switch to when they choose to leave their car at home. Investments in transit help to reduce the reliance on personal vehicles and encourage people to add an active, healthy component, such as walking or cycling, to their trip.

One of the main objectives of the City’s Transportation Master Plan has been to increase the percentage of peak commuter trips on transit from 3% to 11%. Since the Transportation Master Plan was adopted in 2004, transit has increased its coverage, fleet, and frequency of service resulting in a current annual system ridership of 3.5M trips, an increase of 772,000 trips. However, the transit system, as it exists today, has become inadequate for our current riders and limits our ability to further the objectives of the City’s Transportation Master Plan.

The existing system has reached capacity in major corridors, faces daily reliability issues that result in cascading delays and missed connections across the city, has inadequate bus stop infrastructure, and cannot compete with the flexibility and travel time that the personal automobile provides. In October 2008, Council adopted a recommendation approving the Kingston Transit Review Discussion Paper and directed staff to explore options to address the deficiencies in the system. Council has further established as one of their strategic priorities the need to create a public transit system that people choose to use.

Kingston Transit partnered with the Waterloo Public Transportation Initiative (WPTI) to conduct an analysis of the system. The study concluded that the current system is not structured correctly and is not adequate to attract the new riders necessary to meet the City’s transportation objectives. The WPTI analysis recommended the following:

- Introduce express bus routes that link the City’s urban areas with fast, reliable, service that operates on a 15-minute frequency;
- A redesign of the existing routes to take advantage of the express route backbone to increase reliability and reduce travel times;
- A significant investment in infrastructure and technology to enhance the rider experience, improve the efficiency of the system, and make transit an attractive transportation option.
Through consultation with WPTI, the public, our bus operators, and other city departments, transit staff has developed a phased Redevelopment Plan to create a service that riders will choose to use and can be completed within City’s proposed strategic plan. The phasing of the route redesign implementation will allow Kingston Transit to build capacity, minimize risk, and ensure a smooth implementation. This Redevelopment Plan outlines two phases to be implemented in September 2013 and January 2015 respectively that will include the following improvements:

- Three express bus routes will be introduced that link the City’s urban areas with fast, reliable, service that operates on a 15-minute frequency during the weekday peak periods and at a 30-minute frequency at other times. The three express routes will form the “backbone” of the Kingston Transit network;
- The transit fleet will expand from 48 to 63 buses;
- Bus stops serving the express routes will be upgraded with accessible concrete pads, shelters and benches;
- Technology will be introduced to provide real-time bus arrival information for our riders and traffic signal priority along our major corridors.

This Redevelopment Plan also includes future phases that expand the 15-minute operation of the express routes and further realigns the local bus routes to make more efficient use of the express backbone.

To support this Redevelopment Plan, transit staff has developed a detailed financial model to forecast the increased operating and capital expenditures required to implement Phase 1 and 2. Upon completion of these initial redevelopment phases in 2015, the annual operating budget for transit is projected to grow from $15.4M to $22.2M. The capital financing requirement for Phase 1 and 2 totals $24.9M of which $18.0M is attributed to new requirements outlined in the redevelopment plan and $6.9M is required for the existing operation.

From 2011 to 2015, the financial model forecasts that annual ridership will grow from 3.5M to 4.1M and the total annual revenue increases from $5.4M to $7.4M. As a result of this phased expansion the annual municipal contribution to support transit is projected to grow from $8.1M in 2011 to $12.7M in 2015. The financial considerations of the additional future phases have not been modeled in this report.

When fully implemented the system will be faster, more frequent, more reliable, easier to use, and will provide an enhanced transit experience when compared to the existing system. This plan creates a system that people will choose to use, addressing the priority of Council while remaining within the objectives set forth in the strategic sessions. Creating a more viable transit system is a key requirement in achieving the goals of the transportation demand management, active transportation, and sustainability policies of the city. This Redevelopment Plan will allow Kingston Transit to position itself as a true alternative transportation option in the City.
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1 Introduction

In October 2008, Council adopted a recommendation approving the Kingston Transit Review Discussion Paper. The adopted discussion paper identified several transit network priorities and improvements including the following:

- More frequent service built around key destinations such as: downtown, employment nodes, shopping centres, train and bus stations, St. Lawrence College and Queen’s University;
- Routes designed to focus on main corridors with feeder routes connecting at various transfer points;
- All main corridors on a minimum 15-minute frequency during peak hours;
- Staggering routes to improve the ability to meet transfer times;
- Implementing express routes in the north, east, and west end;
- A review of the feasibility and cost of implementing consistent routes for weekdays, evenings and weekends.

A Project Steering Committee that consisted of transit management and bus operators was established to review and finalize the implementation plan and establish priorities. The Steering Committee identified the redesign of the transit network as the most important priority to improve customer satisfaction by increasing service options.

Since June 2009, Kingston Transit has been working in partnership with the Waterloo Public Transportation Initiative (WPTI) to:

- Develop an improved transit network;
- Identify the types of transit service best suited for Kingston (e.g. express service and local service);
- Develop an implementation plan that identifies immediate, short-term, and long-term deliverables;
- Build the required capacity within the Kingston Transit organization to model, test, and implement these changes.

Kingston Transit started two new routes in September 2010 to address immediate needs. This Redevelopment Plan identifies the short-term and long-term deliverables required to revitalize the transit system. The plan outlines the current state of the transit system in Kingston, the challenges the system faces, and presents a phased redevelopment approach that begins to address the short and long-term requirements of the City.
2 Existing Transit Service

Kingston Transit provides service to the urban areas of the City of Kingston and into the neighbouring community of Amherstview. The system operates 7 days a week with an average of more than 67,000 weekly trips taken by our riders. The following section provides an overview of our riders, the existing transit service, and the challenges the system is facing.

2.1 Transit Ridership

Kingston Transit riders made 3.5 million transit trips in 2010 on our system. Ridership has grown an average of 4.2% each year since 2006 and transit trips now represent approximately 5% of all the trips made within the city. The highest proportion of transit use, attributed to between 6%–8% of all trips, is within the downtown core and student areas.

![Figure 1 - Transit Mode Share (Source: 2008 Travel Survey)](image)

Our existing ridership is comprised primarily of adult riders and post secondary students from Queen’s University and St. Lawrence College. More than 40% of our adult riders travel using a monthly pass suggesting a long-term, daily commitment to the transit system as their method of transportation.

Post-secondary students from Queen’s University and St. Lawrence College have unlimited use of Kingston Transit as part of their tuition and student fees. The existing system provides high frequency service between the college, university, downtown, and other major transfer points. Specialized service catering to the needs of these riders is also provided during the academic year.
<table>
<thead>
<tr>
<th>Type of Rider</th>
<th>Proportion of Annual Ridership</th>
<th>Proportion Using Transit Pass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult (18-64)</td>
<td>49.7%</td>
<td>41.7%</td>
</tr>
<tr>
<td>Queen’s University and St. Lawrence College Students</td>
<td>40.8%</td>
<td>100%</td>
</tr>
<tr>
<td>Senior (65+)</td>
<td>4.8%</td>
<td>50.4%</td>
</tr>
<tr>
<td>Youth (6–17)</td>
<td>4.7%</td>
<td>47.0%</td>
</tr>
</tbody>
</table>

Table 1 - Breakdown of Ridership for 2010

2.2 Existing Transit Service

2.2.1 Existing Routes and Coverage

Figure 2 shows the network of roads that the buses travel on and provides an illustration of the areas located within a 400m distance of a transit stop.

Figure 2 - Existing Routes and Daytime Coverage
The service operates 16 routes with additional service added during morning and afternoon peak-hour commute. Table 2 provides an overview of the existing transit routes, as of July 2011, and a description of the areas served. For a detailed view of where each route travels, please see the larger map contained in the latest publication of the Rider’s Guide.

<table>
<thead>
<tr>
<th>Route</th>
<th>Route Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cataraqui Woods - Princess St. - Montreal St.</td>
<td>Major arterial route that connects the Cataraqui Town Centre, Kingston Centre, Downtown, and Rideau Heights neighbourhood using Princess Street and Montreal Street.</td>
</tr>
<tr>
<td>2</td>
<td>Calvin Park - Union St. - Division St. - Markers Acres</td>
<td>Major arterial route that connects the Kingston Centre, Calvin Park, Portsmouth, St. Lawrence College, Queen’s University, Downtown, Division St. and Rideau Heights.</td>
</tr>
<tr>
<td>3</td>
<td>Queen Mary Rd. - Portsmouth Ave. - King St.</td>
<td>This route links Polson Park, St. Lawrence College, KGH, and the Downtown.</td>
</tr>
<tr>
<td>4</td>
<td>Princess St.</td>
<td>This route provides service along Princess Street from the Cataraqui Town Centre to the Downtown.</td>
</tr>
<tr>
<td>6</td>
<td>Bayridge - Gardiners Rd. - Reddendale - Union St.</td>
<td>Major arterial route that links Bayridge, Reddendale, St. Lawrence College, and the Downtown.</td>
</tr>
<tr>
<td>7</td>
<td>Midland Ave. - John Counter Blvd. - Division St. - Dalton Ave.</td>
<td>This route, introduced in 2010, provides an east-west connection across the north end of the city. It connects the INVISTA Centre, Cataraqui Town Centre, Bus Terminal, and Clyde Industrial Park.</td>
</tr>
<tr>
<td>10</td>
<td>Amherstview - Bath Rd.</td>
<td>Service along Bath Road that connect the Kingston Centre, Gardiners Town Centre, and Amherstview</td>
</tr>
<tr>
<td>12</td>
<td>Brock St. /Johnson St. - CFB Kingston - Highway 15</td>
<td>This route links the east end of the city, CFB Kingston, and the St. Lawrence Business Park with the Downtown and the Kingston Centre.</td>
</tr>
<tr>
<td>12A</td>
<td>Downtown - CFB Kingston</td>
<td>This route operates during peak commuting times and provides direct service between CFB Kingston and the Downtown. This route supports Route 12.</td>
</tr>
<tr>
<td>Route</td>
<td>Route Name</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>17</td>
<td>Queen’s University Late Night Shuttle</td>
<td>Late night route that operates until 2AM from September to April that links Queen’s University Main/West campus to the Downtown. This service is fully funded by the Queen’s University Alma Mater Society (Student Government).</td>
</tr>
<tr>
<td>18</td>
<td>Train Station Circuit</td>
<td>This one way loop links the Downtown, Queen’s University, and St. Lawrence College to the Train Station and Bus Station. This service is partially funded by the Queen’s University Alma Mater Society (Student Government).</td>
</tr>
<tr>
<td>19</td>
<td>Montreal St - Downtown- Queen’s</td>
<td>This route operates during peak commuting times and provides service from the 401 on Montreal Street through the Downtown and onwards to Queen’s/KGH.</td>
</tr>
<tr>
<td>71</td>
<td>Gardiners Rd. - Bath Rd.</td>
<td>This route links the Catarraqui Town Centre, Gardiners Town Centre, and Kingston Centre along Bath Road and Gardiners Road. This route also provides service into the RioCAN shopping complex.</td>
</tr>
<tr>
<td>A</td>
<td>Catarraqui North - Waterloo Village</td>
<td>This route, updated in July 2011, provides service to riders in the neighbourhoods of Catarraqui North and Waterloo Village to major routes along Princess Street and the Catarraqui Town Centre.</td>
</tr>
<tr>
<td>B</td>
<td>Bayridge - Redendale</td>
<td>This route provides service to west end residents living in Bayridge and Redendale. It connects to the Gardiners Town Centre and Catarraqui Town Centre where riders can transfer on to other major routes.</td>
</tr>
<tr>
<td>C</td>
<td>Kingscourt Ave. - Portsmouth Ave. - Strathcona Park</td>
<td>This neighbourhood route connects Strathcona Park and Kingcourt residents with the Kingston Centre where they can connect with other routes. This route also provides service to the Train Station and the Bus Station.</td>
</tr>
</tbody>
</table>

Table 2 - Current Routes
The routes generally travel between major activity nodes such as the downtown, Cataraqui Town Centre, and St. Lawrence College. This type of route system, in which buses arrive and depart at fixed times from major points, is referred to as a ‘pulse network’ and is most appropriate for small cities running buses with a low frequency of service (30 minutes or greater between buses). Riders are able to transfer between routes at these nodes with a minimal wait time when the system is operating as designed, however, any delays along any of the routes are very disruptive to the efficiency of the operation. The major timed transit nodes used in our system are shown in Figure 3.

![Figure 3 - Timed Transit Nodes within the Pulse Network](image)

### 2.2.2 Service Frequency

Frequency of service is measured as the number of minutes between buses arriving at a bus stop. Currently daytime service routes, which operate from 6:00AM – 6:30 PM, Monday to Saturday, run with a 30-minute frequency, while evening/Sunday routes operate on a 60-minute frequency.

A daytime frequency of 30 minutes can be a deterrent for riders who require more flexible transportation options and can be inconvenient for those who miss a transfer to another route and must then wait an additional 30 minutes for the next bus. The evening and Sunday frequency of 60 minutes is an even greater deterrent for riders. Within the busier travel corridors, this frequency also presents an issue on the bus as the number of riders seeking to travel in the 30-minute interval can overwhelm the capacity of the vehicle.

To address these concerns, the system includes several routes that overlap on major rider corridors such as Princess Street and Union Street to provide a 15-minute frequency during the daytime. Other areas
such as Bath Road, Montreal Street, and Highway 2 from Downtown to Highway 15, operate at a 15-minute frequency during the peak commuting times on weekdays only (7AM – 9AM and 4PM to 6PM). The 15-minute frequency of service is generally regarded as the minimum frequency at which transit becomes an attractive option for riders. A visual representation of the existing service frequency within the transit service area is shown in Figure 4.

![Figure 4 - Existing Frequency of Daytime Service](image.png)

### 2.2.3 Service Hours

Transit currently operates 7 days a week during the following hours, 361 days of the year.

<table>
<thead>
<tr>
<th>Days</th>
<th>Hours of Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday to Saturday</td>
<td>6AM – 11:30PM</td>
</tr>
<tr>
<td>Sunday</td>
<td>8:30AM – 8:30PM</td>
</tr>
<tr>
<td>Most Holidays</td>
<td>8:30AM – 8:30PM</td>
</tr>
<tr>
<td>New Year’s Day, Family Day, Good Friday, Christmas Day</td>
<td>No Service</td>
</tr>
</tbody>
</table>

Table 3 - Hours of Operation

As ridership has grown in the past 5-year period, the number of buses operating during these hours has increased such that our total annual operating service hours has grown from 134,000 in 2006 to 162,000 in 2011. This growth in service has been achieved through a combination of new routes that have been introduced, such as the Route 7 and Route 18, and the addition of more frequent service in our busier corridors.
2.2.4 Special Service / Contracts

Kingston Transit has multi-year agreements in place with student governments at Queen’s University and St. Lawrence College that provide their registered students with unlimited transit use. The fees are collected as part of the student payment to the institution and all registered students are able to use their student cards to travel on any Kingston Transit bus.

As part of this agreement, Queen’s University also provides funding for a late night route between the campus and downtown (Route 17 – Late Night Shuttle) and a direct route between the campus and train/bus station on John Counter Boulevard (Route 18 – Train Station Circuit).

A multi-year service agreement also exists with Loyalist Township to provide service for Amherstview residents to the Gardiners Town Centre and Kingston Centre along Bath Road.

2.3 Challenges

There are a number of challenges within the existing system that limit Kingston Transit’s ability to grow and attract new riders that may otherwise take their own automobile.

2.3.1 Route Capacity

As ridership has grown, segments of major routes have approached or exceeded the capacity of the system. During peak travel times, buses along the major corridors such as Princess Street, Union Street, Highway 15/Highway 2 and Front Road can reach capacity and operators have no choice but to leave riders at bus stops to wait for the next bus.

2.3.2 Cascading System Delays

The nature of the ‘pulse system’ structure and the ability to minimize wait time at transfer points relies on each bus, on each route, arriving at the timed transfer point within a 3-minute window. This small buffer requires each route to operate on a fixed schedule at all times of the day. Unfortunately, traffic congestion and weather conditions can introduce delays that prevent buses from arriving at the transfer point within this window.

The immediate issue with a late bus is that riders on board that bus may miss their connection, however, it also results in the late departure of that bus from the next timed transfer point. These delays, even though they may have originally been centered in one area of the city, are cumulative and begin to cascade throughout the system.

Missed connections and uncertainty of trip time is a major deterrent in attracting riders who may otherwise take their personal automobile. The existing fleet size and pulse structure of the system limit Kingston Transit’s ability to tailor service to the needs of the morning and afternoon peak commuting periods.
2.3.3 Frequency of Service and Hours of Operation

The base 30 minute service available across the majority of the transit system during the daytime from Monday to Saturday is not frequent enough to be a viable transportation for most riders and is not competitive with the personal vehicle.

Areas within the city that have 15-minute service are limited to major corridors and do not link into the suburban neighbourhoods of the city. This 15-minute service is available during the daytime only and is reduced to a 60-minute frequency in the evenings and on Sunday. Riders who require service beyond 6:00PM face a reduced service that is seen as a major deterrent in choosing transit. Some routes do not provide any service during evenings or on Sunday, so the option to use transit does not even exist in some areas of the City.

2.3.4 Bus Stop Infrastructure and Accessibility

Our transit network contains more than 800 bus stops of which 134 are equipped with a bus shelter. Kingston Transit is equipped with a fleet of accessible buses however the infrastructure at our stops varies considerably. Bus stops that are reconstructed as part of the City’s planned sidewalk work are currently built to a standard consistent with the City’s Facility Accessibility Design Standards; however, it will take time and planning to upgrade our entire bus stop inventory.

In addition to the disparity in bus stop infrastructure, there is also a wide variation in bus stop spacing. In some cases, bus stops are spaced less than 100m apart. Frequent stops reduce the walking distance but impact the efficiency of the transit route for all riders and require additional capital investment.

2.3.5 Competitive Travel Times

The existing routes provide very good coverage across the urban area of the city but this coverage is often provided at the expense of efficient routing. Riders might benefit from a bus that travels within 50m of their home, but are then burdened by the relatively long travel time to their destination as the route continues to weave its way through many neighbourhoods. As Kingston Transit’s routes have expanded to serve larger areas, the routes have become increasingly longer and less competitive from a travel time standpoint compared to the automobile.

This effect is even more pronounced when circuitous routing occurs mid-route between two major destinations, such as on the existing Route 12 between Greenwood Park and the Downtown. This trip by car takes approximately 12 minutes, but the corresponding transit trip takes over 28 minutes. A similar trip from Bayridge Drive in the west end to the Downtown takes approximately 15 minutes by car whereas the transit trip can be upwards of 50 minutes.
3 Policy Framework

As Kingston Transit considers the existing service and the challenges it faces, it must base any redevelopment plan on the guiding transportation policies within the city. This section provides a summary of the policies that inform how the long-term redevelopment of transit is supported.

3.1 Sustainable Kingston

Kingston has a vision of becoming Canada’s most sustainable city. To support this vision, an Integrated Community Strategic Plan has been developed to provide a way for all sectors of the community to focus on how to advance sustainable practices, in an integrated manner. The Sustainable Kingston Plan is based on the cultural, economic, environmental, and social pillars of sustainability. Kingston Transit supports, directly and indirectly, all four pillars of sustainability as summarized in Table 4.

<table>
<thead>
<tr>
<th>Pillars of Sustainability</th>
<th>Objectives</th>
<th>Kingston Transit Alignment to Objectives</th>
</tr>
</thead>
</table>
| Economic                  | • Progressive and Dynamic City  
                           • Pursue Economic Strength | • Provides improved access to the labour pool by providing transportation options for employees, particularly those who work in the core business area, lower paying service jobs, call centres, and post secondary students  
                           • Has spin-off effects, including the creation of jobs, income and taxes  
                           • High quality public transportation infrastructure is an essential prerequisite for economic development |
| Environmental             | • Create a Green Community  
                           • Develop the City Wisely | • Effective public transit, integrated with urban intensification can play a major role in reducing private automobile GHG emissions.  
                           • Promotes/supports higher density development along major arterial corridors |
| Social                    | • Affordable Housing and Poverty Reduction  
                           • Promote Diversity  
                           • Promote Quality of Life Activities | • Can be the only means of transportation for lower income to access essential life services such as healthcare and housing.  
                           • Recognized as a poverty reduction/community development and sustainability tool. Affordable public transit can help ensure low income people and people with mobility challenges are not isolated or marginalized. |
| Cultural                  | • Promote Neighbourhoods  
                           • Enhance Neighbourhoods | • When transit services are integrated with planning, neighbourhoods can be enhanced by ensuring pathways are planned and connected to transit routes making neighbourhoods more accessible.  
                           • Supports active living for our residents – more walking, supports cycling |


Table 4 - Summary of Transit Integration with Sustainability Pillars
3.2 Land Use Planning

A new Official Plan for the City of Kingston came into effect in 2010. The plan guides the next 20 years of development and establishes goals and a means to achieve them by taking into consideration important land use, social, cultural, economic, and environmental factors. Section 4 of the plan, which deals with infrastructure and transportation, identifies the following goal:

“To increase sustainable means of travel and reduce reliance on the automobile, the City will promote a compact form of development within the Urban Boundary having a mix of uses that reduce the need for travel, and will also promote increased densities that are supportive of public transit alternatives. Increasing opportunities for active transportation and improving the maintenance of pedestrian and cycling routes will increase usage, safety and access for all.”

The Official Plan also identifies the City’s commitment to maintain a comprehensive Transportation Master Plan, which projects future needs for the City’s transportation system.

3.3 Transportation Master Plan

The Kingston Transportation Master Plan (KTMP) was developed in 2004. It sets the direction for Kingston Transit’s programs and priorities over a 25-year period.

The strategic direction in the KTMP is intended, “to foster sustainability within the City and to reduce reliance on the automobile by satisfying travel demand through the efficient use of the existing infrastructure, and by providing the facilities and services to encourage walking, cycling and transit as priority modes, before expanding the City’s road infrastructure”.

The KTMP examined modal split for commuters in detail. In 2004, the PM peak modal share for transit was 3%. To support the objectives identified in the KTMP, the modal share for transit must increase to 11% by 2026. To achieve this goal, the plan includes the following policy statement:

“The City supports increased transit use by providing full-service, accessible transit, comprising high-frequency peak period service and extended off-peak service.”

3.4 Transportation Demand Management

The Transportation Master Plan also recognizes the role of Transportation Demand Management (TDM) in promoting its strategic direction. Transportation Demand Management is a collection of strategies that, when employed in combination, aim to improve transportation system efficiency. It focuses on more efficient and sustainable transportation modes, such as cycling and transit. The focus of TDM plans is the mobility of people and goods, not the mobility of the personal automobile.
The City is currently developing a Transportation Demand Management Strategy that will identify policies, programs, partnerships and performance indicators to maximize the transportation performance of existing systems, while providing transportation alternatives to system users.

### 3.5 Transit Supportive Parking Policies

Parking is a critical component of the urban transportation system. Coordinated parking policies and strategies can support and encourage public transit and discourage the use of automobiles. A transit-friendly parking policy will be developed as part of a broader Parking Strategy over the next 24 months.

### 3.6 Accessibility

Kingston Transit recognizes the strategic importance of providing accessible transportation to our riders. Our system is seeing an increase in the daily accessibility needs of our riders and we must prepare for an aging, less mobile population within the city. Increasing transit accessibility requires a system-wide review to ensure the challenges related to boarding, route timing, funding, and infrastructure can be addressed.

The City of Kingston began implementation of a Municipal Accessibility Plan starting in 2003. The objectives of the plan are to fulfill the intent of the *Accessibility for Ontarians with Disabilities Act (AODA)* and to ensure that municipal services, such as public transit, are compliant.

The City of Kingston also adopted a Facility Accessibility Design Standard (FADS) in 2009, with the intent that all new or renovated facilities owned by the City would be upgraded to these standards. FADS does not currently apply to the right-of-way, where the majority of our bus stops are located, but Kingston Transit has made a commitment to apply FADS in the development of our bus stop design guidelines and have been building new and retrofitting existing stops to these standards since 2010. These design guidelines will continue to evolve as the AODA legislation introduces new requirements.
4 Vision, Goals, Objectives and Strategy

Kingston Transit has developed a vision, mission statement, and set of goals and objectives to address the challenges faced by the system and to meet the transportation goals of the City of Kingston.

4.1 Vision

Our vision is to make Kingston Transit a network-driven and market-focused organization that provides a transit service that all citizens of Kingston choose to use in support of the City’s Sustainability Plan and transportation policies.

Kingston Transit is a viable transportation choice that is competitive with the automobile in terms of comfort, convenience, reliability, and travel time.

4.2 Mission Statement

Our mission is to provide rider-focused transit services that enable access to work, education, health care, shopping, social, and recreational opportunities in Kingston.

4.3 Goals and Objectives

4.3.1 Goal 1 – Improve the Route Network

Recognizing how the existing route structure limits Kingston Transit’s ability to best serve our riders, we will engage in a phased plan of route additions and changes. These changes will include the creation of a hierarchy of routes and a new backbone of high frequency service across the urban area. The detailed plan to accomplish this objective is outlined in Section 5.

New and increased ridership, reduced travel times between key destinations, and increased service reliability will be measured to track progress in achieving this goal.

4.3.2 Goal 2 – Improve Customer Experience

The City’s transportation model projects an annual increase in ridership of at least 2.3% over the 10-year period from 2009–2019 to maintain the existing modal split of 5% of trips by transit. Considering the overall policy strategy and goals of the Transportation Master Plan, to reach a modal split of 11% by 2026, the transit system must grow and attract new riders at a much higher rate than in the past. The system needs to improve its services to encourage new riders to leave their cars at home.

To that end, Kingston Transit, in conjunction with the first goal, will increase the service frequency to 15 minutes on a backbone of express routes that will extend across the existing service area and expand...
service at all times of the day. This dramatic increase in the area over which this more frequent service will extend, represents a significant investment in making the service more attractive for riders. Details of this service expansion are outlined in Section 6.

Increased ridership in areas currently underserved by transit, increased partnerships with employers, number of accessible bus stops, and the availability and reliability of real-time bus arrival information on the express routes will be measured to track progress in achieving this goal.

4.3.3 Goal 3 – Improve Productivity and Service Value

The redevelopment of the transit system envisioned in Goal 1 and Goal 2 must be linked to an efficient and effective use of the City’s resources. Operating and capital dollars, fleet, facilities, and people must be deployed to provide the most productive and best service value transit system possible.

Kingston Transit has developed a detailed financial forecast that models the redevelopment proposals contained in this plan. Ridership, route reliability, frequency, operator utilization, and adherence to the financial model will all be measured to ensure resources are being used in the most efficient manner. Details of this model and the associated performance measurements are outlined in Sections 11 and 12.
5 Phased Route Redevelopment Plan

Kingston Transit, in consultation with the Waterloo Public Transportation Institute (WPTI), completed a service review in 2009/2010. This review, which included consultation with various stakeholders and the public, recommended:

- The introduction of 3 express bus routes that link the City’s urban area with fast, reliable, service that operates on a 15-minute frequency;
- A redesign of the existing routes to take advantage of the express route backbone to increase reliability and reduce travel times;
- A significant investment in infrastructure and technology to enhance the rider experience and make transit an attractive transportation option.

The network redesign recommendations propose a hierarchy of routes that have the following general characteristics:

- **Express Routes** act as the highest-profile, highest-performance (frequency, speed, and comfort), most heavily used and marketed routes in the system; the function of these routes is to serve passengers on longer distances with fast, direct service between major destinations. These routes operate with a service frequency of 15 minutes and provide a transit backbone across the entire service area. Express route bus stops have an approximate spacing of 900m–1200m and include a higher level of rider amenities such as larger shelters, lighting, and system information.

- **Local Routes** act as a supplementary service to express routes with more frequent stops and, as a result, slightly longer travel times. The function of these routes is to serve passengers for mid to short distance trips in moderate to heavy demand corridors. These routes generally have a service frequency of 30 minutes with an average stop spacing of approximately 400m–700m.

- **Collector Routes** act as shorter, more localized routes, with more frequent stops than local and express service. The function of these routes is to provide area coverage allowing passengers to make short-distance trips with multiple connections to local and express routes. These routes operate with a service frequency of 30 minutes and stop spacing is dependent on the area served.

Kingston Transit staff reviewed the WPTI recommendations and developed a phased implementation plan to transform the existing system into the proposed model. This plan represents a major investment in transit, both in capital infrastructure and annual operating hours, with the aim of creating a service that is faster, more reliable, and offers more direct service between major destinations in the city.

The following section outlines a 2-phase plan to implement the main recommendations identified in the service review that can be completed within City’s proposed strategic plan and also outlines several future phases to continue the full implementation of the report recommendations. The phasing of the route redesign implementation will allow Kingston Transit to build capacity, minimize risk, and ensure a smooth implementation.
The proposed route changes in this section represent a general plan to provide high quality transit service to our riders based on our knowledge of their travel patterns. This section should be considered as a system-wide vision of the type of transit system that can best address the challenges outlined in Section 2.3 and does not represent final routing. The details of each specific route change will be thoroughly reviewed and modeled, and subject to input from our riders and the public prior to final design and implementation.

5.1 Preliminary Phase – Local Route Additions (September 2010)

Early in the review of the report recommendations Kingston Transit identified two new local routes that could be implemented within the existing bus fleet. These routes complemented the existing service and addressed specific recommendations from the service review and previous 5-year business plan. These routes were implemented in September 2010 but are referenced here as they form a component of the longer term route Redevelopment Plan.

5.1.1 John Counter Boulevard Local (Route 7)

This route connects Gardiners/Midland in the west end to the Markers Acres and Rideau Heights neighbourhoods via John Counter Boulevard, and provides a faster, more direct connection across the north end of the city. The route serves major employers, commercial, and residential areas while providing some capacity relief for the existing routes that travel from the west end through the downtown core.

5.1.2 Train Station Circuit (Route 18)

This route provides a direct connection to the train and bus stations on John Counter Boulevard from the downtown and post-secondary institutions. The route operates on a modified schedule that is timed with the VIA train schedule to allow riders a convenient travel option. This service is partially funded through the service contract with the Queen’s University student government. The current route operates with a single bus however additional service is planned for a future phase beyond 2015.

5.2 Phase 1 – Express Route 1 and West End Route Changes (September 2013)

Phase 1 focuses on solving existing reliability and service issues in the system and significantly increases the quality of service provided to the west end neighbourhoods, an area of high potential for new ridership. This phase adds the first express route providing a direct, high frequency service from the west end to the downtown. To complement the express route, a number of changes are made to the existing local and collector routes. The most notable changes include redesigning the existing Route 1 into three smaller routes and the truncation of the existing Route 6 travelling east beyond Reddendale.
5.2.1 Express Route 1

Express Route 1 operates in both directions (clockwise and counter-clockwise) from the west end to the downtown via the Princess Street, Front/King, and Bayridge Drive corridors. This route links the existing major transfer points at the Cataraqui Town Centre, Kingston Centre, downtown, Queen’s/KGH and St. Lawrence College and penetrates into the west end neighbourhoods of Bayridge and Reddendale. The local service provided by the existing Route 1 on Princess Street and existing Route 6 on Front Road is replaced by this new route.

5.2.2 Montreal Local (Route 1)

This route provides service from Highway 401 to the downtown core via Montreal Street in a similar fashion to the service provided today. Markers Acres, Rideau Heights, and the Inner Harbour neighbourhoods are served by this route. Redesigning the existing Route 1 into three local routes, the Route 1, Route 4, and Route 5 will allow for more consistent and reliable local service as buses will not be delayed in other parts of the city.

5.2.3 Princess Local (Route 4)

This route is the same as the existing Route 4 in place today. Local service is provided between the Cataraqui Town Centre to the downtown via Princess Street and overlaps a portion of Express Route 1.
5.2.4 Cataraqui Woods Collector (Route 5)

The Cataraqui Woods Collector is a small route that will eventually grow to provide collector service through the Cataraqui West development between Bayridge Drive and Westbrook Road. In the short term, this route may be combined with other west end service with the intention of creating a separate route as the west end neighbourhoods are developed and become occupied.

5.2.5 Taylor Kidd/Gardiners/Reddendale Local (Route 6)

The west end routing of the existing Route 6 remains the same but the route is truncated at the Reddendale Plaza (Front Road/Days Road) with service to the downtown being provided by Express Route 1. Shortening this route will allow Kingston Transit to provide more consistent and reliable local service to the west end neighbourhoods as buses will not be delayed in other parts of the city.
Figure 7 – Cataraqui Woods Collector (Route 5) and Taylor Kidd-Gardiners-Reddendale (Route 6)
5.2.6 Reddendale Collector (Route 9)

This collector route provides service to the Westpark, Henderson and Auden Park neighbourhoods with three connection points to Express Route 1 and a direct connection to the Gardiners Town Centre. This route may be combined with Route 15 in the short term.

5.2.7 West End Collector (Route 15)

Coverage of the west end neighbourhoods of Bayridge (East/West), Sutton Mills, Westwoods, and Mile Square remains the same but the existing Route B is modified to increase connections to the new express node at Bayridge Drive and Taylor Kidd Boulevard. This will reduce travel time on the collector route for residents in these neighbourhoods. Convenient connections are also provided to the Gardiners Town Centre and the Cataraqui Town Centre. This route may be combined with Route 9 in the short term.

Figure 8 – Reddendale Collector (Route 9) and West End Collector (Route 15)
5.2.8  Amherstview/Bath Road Local (Route 10)

This route remains the same as the existing Route 10 with a small modification to routing in the west end to link with Express Route 1 node at Bayridge/Taylor Kidd. This link to the express route will allow modification to the existing timetable to more accurately reflect the time required to travel to Amherstview. No additional service or increase to frequency of service is planned to Amherstview as part of this system review.

5.2.9  Cataraqui North and Waterloo Village Collector (Route 14)

Service to the Cataraqui North neighbourhood is expanded to incorporate the new residential developments from Crossfield Avenue to Cataraqui Woods Drive. Buses operate in both directions around this loop which is an improvement over the existing single loop direction, reducing travel times for riders travelling to the Cataraqui Town Centre or Princess Street. This route intersects with Express Route 1 at several locations.

Figure 9 – Amherstview/Bath Road (Route 10) and Cataraqui North/Waterloo-Davis Collector (Route 14)
5.3 Phase 2 – Express Route 2, Express Route 3, and Local Route Modifications (January 2015)

Phase 2 adds two additional express routes to complete the express backbone across the city. Express Route 2 reduces travel times/transfers for east end riders who want to access Downtown-KGH-Queen's and provides a more direct connection to employment lands in the east end. Express Route 3 strengthens the express connection between the west end and downtown by adding service along Bath Road and Gardiners Road. Similar to the modifications made in Phase 1, the existing local routes are modified to integrate with the new express service backbone.

5.3.1 Express Route 2

Express Route 2 links the east end, St. Lawrence Business Park, CFB Kingston, RMC, Montreal Street, Division Street, KGH/Queen's, and the downtown with a high frequency 15-minute service during peak hours. It overlaps at three stops with Express Route 1 allowing cross-city travel with a single transfer. This route also connects to the Montreal Street Park and Ride for rural/out-of-town riders. The existing peak service routes that travel on Montreal Street (Route 19) and across the LaSalle Causeway (Route 12A) are discontinued when this service is introduced.

5.3.2 Express Route 3

This express route links the INVISTA Centre to the Gardiners Town Centre via Midland Avenue and Gardiners Road, and continues to the downtown via Bath Road and the Johnson/Brock corridor. This express route connects the Meadowbrook, Polson Park, Grenville Park, Calvin Park, and Hillendale neighbourhoods to the west end and downtown through a number of employment and commercial nodes. This route also provides an alternate west end express connection that may address capacity issues forming on Express Route 1 by this time. The local service provided by the existing Route 71 along Bath Road is replaced at this time.
5.3.3 Montreal Local (Route 1)

This route is modified to provide additional service into the John Counter Boulevard, Hickson Avenue, and Elliot Avenue areas, and continues beyond the downtown through the student corridor to St. Lawrence College. This extension reduces the number of transfers that Montreal Street riders travelling beyond the downtown need to make.

5.3.4 East End Collector (Route 12)

This route remains similar to the existing Route 12 providing service to the Cataraqui River East, CFB Kingston, and Greenwood neighbourhoods. The routing is modified slightly through the Greenwood Park subdivision to increase the service area to newer subdivisions, better align with the Express Route 2 stops, and add two-way service along the entire route.
Figure 11 – Montreal Local (Route 1) and East End Collector (Route 12)
5.4 Future Phase 3 – Enhanced Express (Post 2015)

Kingston Transit will monitor the implementation of Phase 1 and 2 to refine the service to best serve our riders. Based on the experience and success of the express routes the next enhancement beyond 2015 would be to expand the availability of the 15 minute express service during the weekday and into the weekend. The long term service frequency objectives for the express service are outlined in Section 6.

Increasing the time period that 15 minute frequency is available on the express routes can be accomplished with the existing bus fleet provided for Phase 1 and 2. This phase is not included in the financial model presented in Section 11.

5.5 Future Phase 4 – Local Route Additions and Realignment (Post 2015)

This future phase is a package of local route changes that are focused in the central part of the city to strengthen the links to the express route backbone. The timing of this phase will be reviewed during the implementation of the Phase 1 and 2 and is not included in the financial model presented in Section 11.

In this phase the local routes are reorganized to provide more efficient service and a number of service improvements for the central city neighbourhoods. This phase represents the full build out of the recommendations that were created through the work with WPTI and is presented to provide the full picture of the Redevelopment Plan. An additional 4 buses would be required to implement this phase.

5.5.1 Calvin Park/Union/Brock-Johnson Local (Route 2)

The existing Route 2 is reduced in length and concentrated to provide a service loop from the Kingston Centre through Calvin Park to St. Lawrence College, Queen’s University, the downtown, and the residential areas on Brock-Johnson. Similar to the way in which the existing Route 2 functions today, this route will derive much of its ridership from students and institutional staff. Route 2 will provide local service to the Brock-Johnson corridor that is also served by Express Route 3.

5.5.2 Queen Mary/King Local (Route 3)

This route travels through the same areas as the existing Route 3 that provides local service from the Kingston Centre through the Polson Park neighbourhood to St. Lawrence College and then along King Street into the downtown. A small modification to the route is proposed through Polson Park to complement the new service added to Portsmouth Avenue by the Train Station Circuit (Route18). Route 3 will provide local service over the segments that Express Route 1 travels on King Street and will intersect both Express Route 1 and Express Route 3 at several large transfer points.
5.5.3 John Counter Local (Route 7)

Route 7 is modified from its original routing in 2010 to serve the Rideau Heights and Markers Acres neighbourhoods to replicate the service originally provided by the existing Route 2. This modification allows the Route 7 to become a true east-west connection across the north end of the city and lays the foundation of a potential future express route on the John Counter Boulevard Corridor. The western portion of the route remains unchanged from the update completed in July 2011.

5.5.4 Clyde Industrial Park Collector (Route 8)

A portion of the Route 7 is segmented off into this small collector route that provides service to the Clyde Industrial Park and Dalton Avenue. A connection at the bus terminal allows for single transfer connection for many riders travelling on local routes from the downtown and east end. West end riders are able to make a connection using the Route 7. This route can be extended in the future to provide service along Sir John A. MacDonald Boulevard.
5.5.5 Kingscourt/Strathcona Park Collector (Route 16)

The existing Route C is modified to provide service in both directions for the Strathcona Park and Kingscourt neighbourhoods. The local service provided along Portsmouth Avenue is replaced by the Route 18. Route 16 intersects Express Route 1 on Princess Street.

5.5.6 Train Station Circuit (Route 18)

The Train Station Circuit, first introduced in September 2010, will be expanded to provide 30-minute frequency in both directions, increasing the service provided to the Train Station and Bus Terminal while also providing two-way service along Portsmouth Avenue where it currently exists in a single direction only. Route 18 is well connected to the express backbone intersecting all three routes, some at multiple locations, increasing the access to inter-city connections for all transit riders. This service also provides capacity in the student corridor along Union Street and local service on Division Street.
5.6 Phased Implementation 2013 - 2015

This redevelopment plan outlines two major phases of route changes and service increases from 2013–2015 and lays the framework for future phases to capitalize on the express route backbone. Kingston Transit will monitor the implementation of each phase to refine the timing and routing of each subsequent phase to best align with the overall system goals outlined in Section 4.

During the redevelopment phasing, smaller service and route changes may be required to address immediate needs in the system. As areas within the city intensify and new neighbourhoods are built, the phasing proposal may need to be modified to accommodate these changes.

The full implementation to 2015 is shown in Figure 15.
Figure 15 - Express and Local Routes Implementation in 2015
6 Service Standards

6.1 Service Frequency for Phase 1 and 2

To support the redevelopment of the routes, a new service frequency standard will be deployed with each phase. Beginning with Phase 1 in September 2013, the following frequency of service will be adopted on the routes:

<table>
<thead>
<tr>
<th>Route Type</th>
<th>Daytime (Mon – Sat) 6AM – 7PM</th>
<th>Evening (Mon – Sat) 7PM – 11:30PM</th>
<th>Sunday 8:30AM – 8:30PM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current</td>
<td>Planned</td>
<td>Current</td>
</tr>
<tr>
<td>Express</td>
<td>N/A</td>
<td>15 min – extended peak 30 min – off peak / Saturday</td>
<td>N/A</td>
</tr>
<tr>
<td>Local</td>
<td>30 min</td>
<td>30 min</td>
<td>60 min</td>
</tr>
<tr>
<td>Collector</td>
<td>30 min</td>
<td>30 min</td>
<td>60 min</td>
</tr>
</tbody>
</table>

Table 5 - Service Frequency for Phase 1 and 2

6.2 Daytime and Extended Peak Service

The express routes will operate on a 15-minute frequency during an extended commuter peak period in the morning (6AM – 9:30AM) and afternoon (4PM – 7:30PM) from Monday to Friday. This represents an overall increase of three hours of peak service a day based on the current weekday peak operating hours of 7AM – 9AM and 4PM – 6PM. During all other periods the express routes will operate on a 30 minute frequency. The extended peak hours have been selected to cover the working hours and shift changes at the City’s major employers. As the implementation of Phase 1 and 2 are refined these hours may shift to better align with the needs of the riders and employers at that time.

This increase in 15 minute service coverage provided by the express route backbone builds upon the current 15-minute service area and extends this level of service into the suburban areas of the City. This increased frequency and availability is a necessary service level improvement to make transit a viable choice for new riders. This expansion of service is best illustrated by comparing our existing coverage (Figure 16) with the implementation of Phase 1 and 2 shown in Figure 17.

The redevelopment plan assumes that the daily hours of operation remain the same as currently provided (see Table 5). However, these hours and the type of service that is available will be evaluated on an ongoing basis to best meet the needs of our riders, employer partners, and the operational budget.
6.3 Evening and Sunday Service Levels

Our riders often cite the infrequent evening and Sunday service, operating at a 60-minute frequency, as a major deterrent in choosing transit. The service hour models for this plan include operating the express routes at a 30-minute frequency which represents a substantial increase in the existing area served by 30-minute service during the evening and Sunday period.

Evening and Sunday riders will benefit from increased access to their neighbourhoods along the express backbone but may have to travel further from the express bus stop to their final destination if they choose not to wait for a connecting bus. Transit will monitor ridership and rider requests along the local/collector routes during the evening and Sunday hours to ensure the best balance of service is achieved.

6.4 Service Hours

The increased service hours associated with redevelopment phases 1 and 2 are outlined in Table 6.

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2012</th>
<th>2013 (Phase 1 - September)</th>
<th>2014 (Phase 1)</th>
<th>2015 (Phase 2 - January)</th>
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<tbody>
<tr>
<td>Express</td>
<td>0</td>
<td>0</td>
<td>9,920</td>
<td>32,240</td>
<td>76,960</td>
</tr>
<tr>
<td>Local and Collector</td>
<td>161,742</td>
<td>161,742</td>
<td>167,503</td>
<td>170,768</td>
<td>153,062</td>
</tr>
<tr>
<td>Total</td>
<td>161,742</td>
<td>161,742</td>
<td>177,423</td>
<td>203,008</td>
<td>230,022</td>
</tr>
</tbody>
</table>

Table 6 – Projected Annual Service Hours

Within the context of these service hours transit staff will review the type of service provided on holidays to better align the service to accommodate transportation needs to and from special events that may exist on these days.

6.5 Service Frequency for Future Phases (Post 2015)

Transit recognizes that frequency of service is a major determinant in choosing to ride the bus. As ridership builds Transit will develop plans to extend the 15-minute frequency on the express routes to the remainder of the daytime, evenings, and weekends. Increasing the time period that 15 minute frequency is available on the express routes will require increased service hours however it can be accomplished within the existing bus fleet.

Service frequency will also be increased on the local and collector routes during the evening/Sunday period to 30 minute service from 60 minute service to provide riders with transit options closer to their homes and destinations.

The long term service frequency provided across the City would be similar to that shown in Figure 18.
Figure 18 – Long Term Service Frequency Plan (Post 2015)
7 Transit Fleet

7.1 Existing Fleet

The Kingston Transit fleet consists of 48 buses, 36 full-size buses and 12 small-size buses. The full-size buses, which are 40 feet in length and provide seating for 32-38 people, are assigned to the main corridor routes and local routes that carry a large volume of riders. Small buses, which are 30 feet in length and provide seating for 18-27 people, are generally assigned to the collector routes that provide service to residential neighbourhoods.

The existing service level requires 39 buses to meet peak demand in the morning and afternoon, leaving 9 vehicles available as spares or an approximate 18.8% spare ratio. This spare ratio is slightly lower than the accepted industry standard of 20%, however, the phased expansion plans outlined in 7.2 results in a ratio of 19.0%.

7.1.1 Full-Size Fleet

The full-size fleet is comprised of two bus models: the Orion 6 and the New Flyer. Both models are fully accessible and are equipped with a ramp, designated areas for mobility devices, and a low-floor configuration that eliminates the step up into the bus.

New Flyer DLF40
- Models purchased from 2003 to present, 28 in fleet
- 40-foot length
- Seating for 38 people
- Low floor with no stairs
- Kneeling capability
- Ramp at the front door of bus
- Two rear-facing wheelchair areas
7.1.2 Small Bus Fleet

The small bus fleet is comprised of four models: the International 3200, Ford E450, Chevrolet 4500, and Thomas. Of the four models, only the International 3200 and Chevrolet 4500 are available for future purchase, as the other models have been discontinued. The small bus fleet is accessible with all models providing space for riders using a wheelchair or other mobility device. All models, except the Ford E450, offer a low floor configuration and deployable wheelchair ramp. The Ford E450 is a high floor model with a rear door wheelchair lift for riders that require it.

**Orion 6**
- Purchased in 1998, 8 in fleet
- 40-foot length
- Seating for 32 people
- Low floor with no stairs
- Kneeling capability
- Ramp at the front door of bus
- 2 rear-facing wheelchair areas

**International 3200**
- Purchased in 2009 and 2010, 6 in fleet
- 30-foot length
- Seating for 22 people
- Low floor with no stairs
- Kneeling capability
- Ramp at the front door of bus
- Space for 2 wheelchairs
Ford E450
- Purchased in 2006, 3 in fleet
- 28-foot length
- Seating for 18 people
- High floor with stairs
- Kneeling capability
- Wheelchair lift at the rear of the bus
- Space for 1 wheelchair
- Model no longer available

Chevrolet 4500
- Purchased in 2010, 1 in fleet
- 28-foot length
- Seating for 18 people
- Low floor with no stairs
- Kneeling capability
- Ramp at the front door of bus
- Space for 2 wheelchairs

Thomas
- Purchased in 2003, 2 in fleet
- 30-foot length
- Seating for 27 people
- Low floor with no stairs
- Kneeling capability
- Ramp at the front door of bus
- Space for 3 wheelchairs
- Model no longer available
7.1.3 Fleet Lifecycle and Replacement

The average age of the fleet is 5.1 years. The lifecycle of each large bus is assumed to be 12 years with a major power train refurbishment planned at the 8-year point. The lifecycle of each small bus is assumed to be 6 years. Kingston Transit plans for the replacement of these assets within the lifecycle through regular contributions to the Transit Capital Reserve Fund from the operating budget.

Contributions to the fund are increased annually to reflect inflation and the known cost of fleet replacement. This practice of asset management for the fleet will continue for any new fleet acquired as part of Kingston Transit’s redevelopment plans.

7.2 Required Fleet for Growth

The service expansion outlined in Section 6 will require an additional 15 full-size buses to deliver Phase 1 and 2 while maintaining an appropriate fleet spare ratio. The current delivery time for a full-size bus is approximately 12 months from the time the order is confirmed with the supplier. A summary of the existing fleet and expansion is summarized in Table 7.

<table>
<thead>
<tr>
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<tr>
<td>Existing Fleet</td>
<td>48</td>
<td>48</td>
<td>48</td>
<td>58</td>
<td>58</td>
</tr>
<tr>
<td>Expansion</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total Fleet</strong></td>
<td>48</td>
<td>48</td>
<td>58</td>
<td>58</td>
<td>63</td>
</tr>
</tbody>
</table>

Table 7 - Fleet Expansion Schedule

7.3 Fuel

The City of Kingston is committed to sustainability. Our ‘Green Fleet’ initiative seeks to reduce the overall environmental impact of the vehicles that the city operates. To that end, the transit fleet, which is powered by diesel fuel, has adopted several measures to mitigate the environmental impact created by the operation.

- The use of low and ultra-low sulphur diesel fuel;
- Operating with a bio-diesel mix of 20% from April to October and 5% for the remainder of the year;
- Requiring all replacement and new fleet to be equipped with the latest clean diesel technology such that emissions meet or exceed existing or planned Canadian emission standards.
8 Bus Stops and Infrastructure

8.1 Main Transfer Points

Kingston Transit has six main transfer points in the existing system:

- Downtown, on Bagot and Brock Streets
- Kingston Centre
- Cataraqui Town Centre
- St. Lawrence College
- Gardiners Town Centre
- Coach Canada Bus Terminal

These transfer points have multiple routes that converge at common time points to allow riders to transfer from one route to the next with minimal delay. These locations generally have a number of larger shelters, transit information, and dedicated bus bays to allow multiple buses to dwell out of regular traffic.

![Image of Downtown Transfer Point and Gardiners Town Centre Transfer Point](image)

Figure 19 - Downtown Transfer Point and Gardiners Town Centre Transfer Point

The express route redesign will utilize most of the existing main transfer points and also create a number of new nodes that will be upgraded to accommodate the increased transit activity. These nodes, which will provide convenient transfers between the express and local/collector routes, may include:

- Bayridge Drive at Taylor-Kidd Boulevard
- Montreal Street at 401 Park and Ride
- Days Road at Front Road
- Barrie Street at Stuart Street
8.2 Bus Stops

The existing Kingston Transit system contains more than 800 bus stops that range from curbside, accessible stops with shelters and lighting, to roadside stops located on gravel shoulders or grass boulevards. There are currently 134 shelters deployed at various stops in the city along with 97 advertising supported benches.

The hierarchy of routes (express, local, collector) introduced with the route redesign also creates a hierarchy of stops within the transit system – express, local, and collector. Each stop type has a different rider amenity requirement.

To that end, Kingston Transit is developing a set of bus stop design guidelines to create a more uniform experience for the rider and to address accessibility issues within the system. In partnership with the City’s Engineering Department, Kingston Transit began piloting several new accessible stop designs in 2010. Several local and collector route stops have been upgraded as part of the planned refurbishment of roadways and sidewalks to test these new, larger designs. Highlights of the pilot bus stop design include:

- A larger 9m pad length to allow riders to step onto a hard surface at both the front and rear doors;
- A pad width of at least 1.5 m and up to 3m along the curb-side to provide sufficient space for queuing riders and maneuvering of mobility devices;
- Protected space for future shelter or bench installation;
- Requirements for linkage to existing pathways or sidewalks;
- Provision for future accessibility requirements such as tactile strips and signage.

These guidelines will be further refined to develop a stop design appropriate for each type of route. Preliminary design information about each stop type is outlined in the sections below.

8.2.1 Express Stops

Express stops will be branded to clearly identify the location and differentiate the stop from local and collector stops. The increased spacing of express route stops and higher rider use will require increased amenities. These stops will include the minimum guidelines discussed above but may also include:

- Larger shelters and seating areas that provide protection from the elements;
- Lighting;
- System information, including provisions for future real time bus arrival times;
- Bicycle Parking.

Generally, spacing between express stops will be between 900m and 1200m. This spacing allows the express route to maintain a higher frequency of service and reduce rider travel times. An example of a typical express route stop from Waterloo Ontario that includes many of these features is shown below:
Local stops typically exist along collector and arterial roadways at locations that may be interspersed between express stops along express routes. Multiple local and collector routes may serve these stops and limit transfers between routes may occur. These stops will be located to minimize rider walking distance and to maximize the connection to the existing pedestrian/cycling network. The stops will provide a curbside pad with sidewalk connection. Local stops will be equipped with shelters based on sustained ridership and other factors such as surrounding land use, distance from other shelters, route stability, and exposure to elements. Local route stops will generally be spaced 300m–400m apart.
8.2.3 Collector Stops

Collector stops are typically located along suburban/low density residential areas that serve a single route and small number of riders. Curbside pads with connections to existing sidewalk networks will be provided but the length may be reduced from the standard 9m length to allow for front door use of the vehicle and maneuvering space for mobility devices. Remaining rider amenities will be minimal to reflect the lower usage of the stop. Certain collector stops may be upgraded with shelters and benches if ridership warrants the installation. Collector route stops have a general spacing of 200m–300m. This may be modified based on the pedestrian conditions along the route.

![Examples of Several Upgraded Collector Stops along Portsmouth Avenue and Taylor-Kidd Boulevard](image)

8.3 Park and Ride Areas

Park and Ride areas provide options for rural and out-of-town individuals to access the transit system for trips into the urban areas of the city. These facilities, which provide free or low-cost, long-term parking, can also encourage suburban commuters who only want to use the express service to access higher density employment and commercial areas of the city.

The City of Kingston has two Park and Ride facilities:

- INVISTA Centre (10 spaces)
- Montreal Street at 401 (93 spaces) – Under Construction

The existing facilities noted above align with Express Route 2 and 3. Transit will identify additional locations for Park and Ride sites as the express routes are brought into service. Opportunities to utilize existing parking lots, similar to the setup at the INVISTA Centre, in the west and east ends will be explored to reduce capital costs, timelines, and ongoing maintenance costs. Park and Ride spots can be
added into existing surplus parking areas or be created as part of development applications that are seeking a parking supply reduction.

### 8.4 Transit Priority Measures

Transit Priority Measures (TPM) include both infrastructure and technology components to reduce transit travel times on corridors that are prone to traffic congestion. TPM can result in a more efficient use of the transit fleet and can make transit a more attractive alternative to private vehicles. These measures are most effective on express bus routes to ensure that the bus frequency remains consistent at all times.

A transit priority study of the Princess Street corridor from the Cataraqui Town Centre to the Kingston Centre has identified seven intersections in which TPM can be added. These measures include:

- Queue jump and discharge lanes that allow buses to jump to the front of the vehicle queue at an intersection;
- Dedicated transit signal lights, denoted by a vertical white bar, that allow transit vehicles to proceed through the intersection prior to other traffic;
- Transponders and on-board technology that allow buses to hold a green light or shorten a red light.

Construction of queue jump and discharge lanes is planned for the intersection of Princess Street and Centennial Drive in 2012. Transit will continue to explore additional TPM opportunities for other areas and coordinate this work with engineering and traffic system upgrades as appropriate. More information about the TPM technology is provided in Section 9.

### 8.5 Transit Site Facilities

Kingston Transit’s garage and administrative facilities are located at 1181 John Counter Boulevard. The existing 30,000 square-foot facility includes:

- Outdoor storage for the existing fleet of 48 buses
- 6 maintenance bays with hoists and 1 cleaning bay
- A wash lane for exterior cleaning and fueling
- Dispatch and bus operator lounge
- Supervisory and administrative offices
- Fleet mechanic and supervisor areas

The existing outdoor storage of the fleet is problematic for reliability and cleaning in the winter months. A 2010 facility study recommended a two-phase expansion to address the existing operational concerns and provide for the long-term growth of the site of up to 100 buses.
The short term facility expansion includes a 72-bus indoor storage building and adds 1 maintenance bay and 1 dedicated cleaning bay. Funding for this short term facility expansion is approved and construction is expected to begin in the fall of 2012. This facility expansion would provide fully for the proposed Redevelopment Plan.

Long term expansion of the facility allows the indoor storage building to house up to 100 buses and reconfigures the mechanical maintenance area to provide service for future fleet expansion. This expansion is included for long-term planning purposes of the Municipal Campus at John Counter Boulevard and reserves the space within the site for future growth needs.

<table>
<thead>
<tr>
<th>Facility Characteristics</th>
<th>Space Required (sq-ft)</th>
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</thead>
<tbody>
<tr>
<td><strong>Existing Facility</strong></td>
<td></td>
</tr>
<tr>
<td>Garage</td>
<td>20,000</td>
</tr>
<tr>
<td>Wash Lane</td>
<td>4,000</td>
</tr>
<tr>
<td>Administration and Operator Areas</td>
<td>6,000</td>
</tr>
<tr>
<td><strong>Facility Expansion - Short Term (Construction Fall 2012)</strong></td>
<td>41,500</td>
</tr>
<tr>
<td>Provide indoor storage for existing fleet and growth for all phases of the Redevelopment Plan</td>
<td></td>
</tr>
<tr>
<td>Add dedicated cleaning area and increase mechanical service bays to provide for new fleet</td>
<td></td>
</tr>
<tr>
<td><strong>Facility Expansion – Long Term (Construction 2020 – 2025)</strong></td>
<td>40,500</td>
</tr>
<tr>
<td>Provide additional storage for a fleet of up to 100 buses.</td>
<td></td>
</tr>
<tr>
<td>Add additional mechanical service bays to provide for new fleet.</td>
<td></td>
</tr>
<tr>
<td><strong>Long Term Requirements (100 bus fleet)</strong></td>
<td>112,000</td>
</tr>
</tbody>
</table>

Table 8 - Transit Facility Requirements
9 Technology

A wide range of transit technologies exist that can improve system efficiency, reliability, rider experience and overall customer service. This section outlines the existing technology in place at Kingston Transit and provides the rationale and roadmap for the integration of additional technology over the life of this plan.

9.1 Existing Transit Technology

Significant investment in both centralized and on-board technology has been made at Kingston Transit in the past four years. All buses were equipped with a new electronic fare box system in 2008 and an automated next stop announcement system in 2009. Through the City’s website and Google Maps, riders can also access online trip planning tools to create a door-to-door trip plan based on the scheduled transit service for a trip that day or in the future.

9.1.1 Smart Card Fare System

The electronic fare system installed allows riders to tap a credit card-sized smart card to pay their fare while boarding the bus. The smart cards, which can be loaded as a monthly pass or with a preset number of rides, also automatically store the transfer, which eliminates the paper slips that riders had to carry previously. The cards can be reloaded at a number of area vendors and the option to reload via the City’s website is planned for launch by the end of 2011. Riders who participate in the Transpass employer program benefit from automatic monthly reloading of their passes with the cost being deducted by their payroll department. For riders that use cash, a transfer slip can still be printed and then scanned when boarding their next bus.

The electronic fare box reduces the need for operator fare handling allowing them to focus on customer service. The system records all of the transactions and downloads them into the transit central system when the bus returns in the evening. Data related to ridership and revenue is automatically uploaded into the central transit database. The current fare box system allows for flexible fare structures to better align to future needs and wants of the passengers.

Through the use of an on-board GPS system, the fare box also records the location of each transaction that occurs on the bus. This information is used for system and infrastructure planning to identify high use bus stops and areas where ridership is growing.

9.1.2 Next Stop Announcement System

As part of Kingston Transit’s commitment to make the system accessible to all of our riders, an on-board automated next stop announcement system was installed in August 2009. The system uses on-board GPS technology to determine the next stop along the route and displays the information on an electronic sign and calls out the stop over the bus speaker system.
This technology allows riders with visual and auditory disabilities to travel with greater confidence on the system by informing them of their upcoming stop. Other riders, such as those unfamiliar with the system, travelling at night, or not seated directly by a window, also benefit from the real-time information that allows them to travel without concern for missing their stop.

9.1.3 Online Trip Planning Tools

When using a printed transit schedule, the rider must select the most appropriate route, interpret the schedule, estimate the arrival time of the bus, and plan their trip to the bus stop. Published transit schedules provide a static snapshot of the service available to the rider but can be confusing to both seasoned and new riders.

The online trip planning tools provided through the City of Kingston website and Google Maps seek to take the guesswork out of any transit journey. Once the rider provides an origin and destination, the tools can:

- Provide multiple route options including trips that minimize walking, time, or transfers between buses;
- Provide information on the closest bus stop and a map on how to get to the stop;
- Estimate arrival times of the buses at the bus stop;
- Estimate time of arrival at the destination and provide a map from the bus stop complete with walking distances.

In addition to the enhanced trip information, the tools are also updated with the latest schedule information allowing us to publish changes not reflected in the annual guide printing. These tools will be expanded in the future to provide real time bus information as the fleet adds Automatic Vehicle Location (see 9.2.1).

9.2 Future Transit Technology

Technology allows transit to run a more efficient, reliable service while enhancing the rider experience. A technology needs assessment and feasibility study will be completed in 2011 to determine the future suite of technology most appropriate for Kingston Transit. A preliminary list of the technology that will be reviewed is outlined below.

9.2.1 Automatic Vehicle Location

Automatic Vehicle Location (AVL) uses GPS transponders on the fleet of buses to communicate, in real-time, their position and speed. Real-time information about a bus or route allows the transit management to monitor the status of the network and make more informed decisions to address service issues.
Archived AVL data is very valuable for transit route planning as it allows the monitoring of run time variation, system efficiency, and issues that may be related to the type of service that is in place. This data can also be used for detailed run modeling to test new route configurations and service changes.

9.2.2 Text Based Operator Messaging and Computer Aided Dispatch

Communication between the central dispatch and buses is currently handled by a two-way, hand-operated, radio system over an open channel. Messages sent from dispatch are transmitted to all buses in the fleet even when the message is intended for a single bus operator. The system also allows the operators to communicate with each other and dispatch over the open channel.

As the number of routes and buses has increased, the ability to effectively manage the fleet using this radio system has diminished. Additionally, the radio requires the operators to use their hands while driving which will not be permitted after October 2012 under the hands-free communication legislation.

To address these concerns, transit systems are moving towards text communication systems from a centralized dispatch area. Messages from the central dispatch are sent as text messages to specific routes or buses to advise the operators about specific actions that need to be taken. Radio communication is minimized and is only available by operator request or in an emergency situation.

Computer Aided Dispatch (CAD) is a software operation tool that uses AVL to semi-automate the management of the transit system. The software monitors the location and spacing of buses on each route to determine if they are ahead or behind schedule and provides direction to the bus operator to help maintain the on-time performance of the system. Management of frequency and spacing will be particularly important for the express routes operation.

9.2.3 Enhanced Rider Information Tools

The real-time location of a bus is important for the efficient operation of a transit system but is also one of the most important pieces of information for our riders. Knowing the location and true expected arrival time of the next bus reduces a rider’s anxiety and makes transit a more attractive option.

Transit will explore how information from the AVL system can be provided to riders through a variety of means including:

- Applications for smart phones, tablets and mobile devices;
- Web-based information for desktops, laptops and tablets;
- Electronic displays at major transfer points;
- Text based bus location updates.

9.2.4 Transit Priority Measures (Technology)

Technology based transit priority measures (TPM) are generally focused on reducing the delays that buses face at intersections. Technology on the buses communicates with the traffic signals along the
route either to reduce the time of the red signal or to hold a green signal longer to allow the bus to clear the intersection.

These technologies can be combined with on-road infrastructure, such as the queue jump and discharge lanes outlined in Section 8.4, to further expedite the transit service. Intersections that are upgraded with transit queue jump lanes can include specialized transit signals to allow transit vehicles a head start around normal traffic.

TPM will be generally focused along the express route corridors during the initial phases. A 2007 study of the Princess Street corridor identified seven intersections that would benefit from the introduction of TPM signal control for the transit fleet. Additional corridors along the express routes will be evaluated and included in future capital works.

9.2.5 Automatic Passenger Counting

Automatic Passenger Counting (APC) is a system that records how many riders step on or step off the bus at a certain stop. APC supplements the rider information that is gathered by the smart card fare box and provides more information about the rider volume and time of use that a particular stop is seeing. This information is useful in planning for bus stop infrastructure upgrades and amenities.

Transit systems often employ APC as a mobile system that is installed on several vehicles in the fleet. These vehicles are rotated through the system on routes that are being monitored.

9.2.6 Online Ride and Pass Purchase

Existing monthly pass and multi-ride cardholders, with the exception of Transpass holders, must visit City Hall or a sales outlet to renew or reload their pass. The smart card system can be linked to the City’s existing online payment system to allow riders to complete most transactions from their computer.

This capability will be tested with regular monthly pass cards in 2011 and expanded to multi-ride and other products in the future.
10 Marketing

The service that Kingston Transit provides must be supported by a strong marketing strategy. This is particularly important for the fundamental system changes that are contained in the phased redevelopment plan and our desire to attract new riders. The following section outlines the marketing strategies to support the operational objectives and strategies outlined in this plan.

10.1 Marketing Research

Kingston Transit has very limited and often unreliable data to profile riders and potential riders of the system in terms of their demographics, transit usage patterns, and usage of other transportation choices. For example, at present, it is impossible to know with any certainty what Kingston Transit’s share of ‘choice riders’ is (riders who are able to choose whether to drive, walk, ride a bike, or take transit). Knowing where these choice riders live and work, how they communicate and purchase, and understanding and meeting their needs is critically important to growing ridership and the success of the planned express service.

In general, research data is important as input into developing the transit system, to measure the satisfaction level of current riders, and to understand how to attract new riders. By developing a consistent framework and process for collecting this data and analyzing it at regular intervals, Kingston Transit is better able to understand and meet the needs of existing riders and attract choice riders as they change. This information will serve as a continuing basis for enhancing and refining our operations, infrastructure, services, communications, and marketing and gauging the success of the transit service with riders over time.

Kingston Transit will conduct market research in advance of the implementation of the express routes to establish a customer profile of needs, wants and behaviours to create targeted marketing strategies and campaigns. The marketing research will include the following components:

10.1.1 Demographic Research

Kingston Transit will establish demographic profiles of our current riders and potential riders, including characteristics such as family size, income, sex, age, location, and employers.

10.1.2 Psychographic Research

Kingston Transit will gather data to understand how and why transit riders and non-riders choose or not choose to use transit. This research will focus on:

- How people become aware of the service offered by Kingston Transit?
- What motivates people to try Kingston Transit?
• The perceived barriers to trying Kingston Transit?
• Why riders continued to remain committed to Kingston Transit?
• Why riders choose to leave Kingston Transit?

10.1.3 Usages and Attitudes

Kingston Transit will gather qualitative and quantitative information to determine transit usage patterns and attitudes of the transit service. Consideration will be given to riders, non-riders, employers, media, and government. Dimensions to evaluate will include:

• Service quality (speed and reliability);
• Service availability (accessibility);
• Convenience (location);
• Pricing (competitiveness);
• Competency (customer service);
• Responsiveness (problem-solving).

10.1.4 Market Research Strategies

Kingston Transit will use the following market research strategies to gather the demographic, psychographic, and usage and attitudes of our riders and potential riders. These strategies are broken down into two categories: primary and secondary research.

10.1.4.1 Primary Research Strategies

Primary research involves the collection of data that does not already exist, or research to collect original data. Data will be collected from the following sources:

• Fare box and smart card use;
• Transactional surveys at point of sale;
• Intercept surveys on the street, transfer points or on the bus itself.

10.1.4.2 Secondary Research

Secondary research involves the summary, collation and/or synthesis of existing primary research. Kingston Transit will conduct this data gathering using the following strategies:

• Annual comparison and review with other transit systems;
• Review and analysis of best practices used by other transit systems.
10.1.5 Understanding Our Riders Better

Segmenting riders by type is an effective basis for better understanding and meeting the individualized needs of each group of rider in terms of service provision and customer communication. It is broadly recognized by the transit industry that there are three major segments of transit customers:

10.1.5.1 No Immediate Access/Unable to use to Private Transportation

A proportion of riders choose transit on a regular and consistent basis because they lack immediate access to or are unable to use another form of transportation. Kingston Transit does not currently have any market research data to identify definitively how many of our riders fit this ridership profile. However, given the challenges with the existing system identified in Section 2.3, it is reasonable to assume that many current riders fit into this category and are choosing transit because they have no other transportation option available to them.

It is critically important to Kingston Transit to satisfy and retain this core group of riders, as they are the base ridership. Programs such as our monthly pass, multi-ride card, ‘Fee Assistance Program’ and ‘Easier Access Routes’ are examples of how Kingston Transit is doing this today. Therefore, the service and fare levels for this market segment must remain a high priority while we pursue new riders during the implementation of the Redevelopment Plan.

Kingston Transit will communicate with these existing committed riders during implementation to ensure they understand the changes to the transit system.

10.1.5.2 Choice Riders

Choice riders are riders and potential riders who have a choice to use public transit or use another mode of transportation, usually inferred to be an automobile, but can also including riding a bike or walking. Choice riders typically have access to or are able to use another form of transportation, if required. A primary focus of the redevelopment plan is to attract choice riders who have immediate access to the use of a private automobile.

Kingston Transit expects to attract choice riders by the implementation of express service supported by automated vehicle location (AVL) technology integrated with web and mobile communications to riders, and more informative stop signage.

Kingston Transit will communicate with choice riders using all available marketing communications means, including analogue and digital media, to support our campaign to roll out express service. The key will be to establish a two-way dialogue with choice riders to engage them and to ensure we understand and meet their ever-changing needs using all of the latest technologies such a mobile real-time communications, social media, and the Web. So-called ‘traditional media’ such as newspaper and radio advertising will be used to drive choice riders to purchase online or on their mobile device. As part of the research program, we will continue to gather more and better refined data about our choice riders.
10.1.5.3 Employer Groups

Large employers in Kingston play an important role in Kingston Transit’s present and future. Kingston Transit offers the ‘Transpass’ which is an employer-provided bus pass program that makes it easy for employees to renew their transit passes at a discounted rate. Employees receive a discounted monthly pass, pay through payroll deductions, and receive a public transit tax credit.

As part of the ramp up and roll out of express service, Kingston Transit will target the largest employers currently not members of the Transpass program in order to build new ridership. Current members will be supported to encourage higher Transpass participation rates and utilization to build ridership.

10.2 Marketing Product/Service Development

The following are the product/service development strategies to support the objectives of this redevelopment plan:

10.2.1 Integration with Transportation Demand Management

Transportation Demand Management (TDM) focuses on the mobility of people and goods, not the mobility of the personal automobile.

In order to maximize results from Kingston Transit’s phased redevelopment plan, express services must be executed in the context of other TDM strategies in order to maximize the ridership and in turn make the City’s broader TDM strategy more successful.

Kingston Transit will implement our redevelopment plan in the context of other TDM strategies to influence if, when, how, and where individuals travel. TDM is critical to Kingston Transit achieving the redevelopment plan objective of an increasingly higher share of the modal split for transit through express service.

Kingston Transit will work with other transportation organizations, municipal planning, and engineering departments, to articulate and promote an effective TDM plan that includes transit as primary alternative modality.

10.2.2 Transit Technology and Mobile Communications

The technologies described in Section 9 converge on a mobile or other wireless communications platform to provide instantaneous and reliable performance data to meet the real-time needs of riders. When these technologies are integrated with mobile phone technology which is the most ubiquitous and fastest growing means to reach riders, this platform is a superior tool for marketing communications.

Kingston Transit will utilize integrated Web and mobile platforms, including social media and text-based applications to communicate with users in the near term. As AVL technology is made available Kingston
Transit will increase the frequency, quality and interactivity of the mobile communications with riders and non-riders alike.

10.2.3 Social Media and other Online Applications

Web and social media applications (apps) like Google, Yahoo, Wikis, Outlook, Facebook, Twitter, YouTube and blogs have changed the way people share information. Kingston Transit will explore how it can use these technologies to better serve and communicate with riders.

Best practice transit operations surveyed are already making effective use of online communications, the Web, and social media. At present, Kingston Transit has very limited presence on the Web and in social media.

Kingston Transit will work with the City’s Communication department to interact with users directly while ensuring City security and communications guidelines are met. Once established, Kingston Transit will work aggressively over the course of this redevelopment plan to execute a state-of-the-art Web and social media environment to interact with people.

10.2.4 Signage

Kingston Transit’s stop and terminal signage are at various levels of wear and tear and there are varying designs in use. Many bus stop locations show an inconsistent approach to stop location and sign placement. Current signs are static without the capability to provide information on routes and schedules in real-time, with continuous updates on actual arrival times and system disruptions. This electronic signage is available and is implemented with AVL technology.

Over the course of this plan, Kingston Transit will update static signage to achieve consistency and improve content on signage to make transit signs more visible and communicate more effectively. As AVL technology is implemented, Kingston Transit will install electronic signage at terminals and high-traffic stops to provide updated information to riders.

10.3 Marketing Communications

Marketing communications include advertising, branding, direct marketing, graphic design, promotion, publicity and public relations, sales and sales promotion, online, mobile and traditional forms of communications with riders and non-riders. Of particular emphasis for Kingston Transit over the course of this redevelopment plan, are the following:

10.3.1 Branding

Our brand is the identity, personality, and attributes associated with Kingston Transit in the minds of consumers. Kingston Transit does not have data on how our brand is perceived which is necessary in
order to understand how the brand should be positioned. This information will be gathered through the research process described above.

All of the best practice transit operations surveyed have implemented express services, and with the notable exception of B.C.’s Translink, have branded their express services differently. They have done so to attract attention from the public, most particularly choice riders, and to support the idea that express service is a preferable alternative to driving your automobile to work. This fresh look branding is the marketing communications component of the express services promise – smart card easy payment, new, more comfortable buses, faster commuting times, handy stops for feeder routes and convenient, smoothly operated transfer hubs.

In keeping with industry best practice, Kingston Transit will develop a brand, associated tag line and colour scheme, and other associated messaging, in advance of the express route services.

10.3.1.1 Current Transit System Marketing - Cost and Environmental Savings

As the new express service will not start until September 2013, Kingston Transit can begin a marketing campaign that highlights the current benefits available by using Kingston Transit. Even with the existing service challenges, Kingston Transit can continue to focus on the cost savings and environmental benefits of using public transit. Every transit operation in Canada, even those which are operating older buses and employing legacy technology, have a compelling story to tell riders and non-riders regarding personal cost savings for riders versus automobile ownership and travel and the environment savings through a reduced carbon footprint.

Until the implementation of the redevelopment plan begins, Kingston Transit will execute a marketing campaign in 2012–2013 that focuses on the positive financial and environmental benefits of using public transit. This campaign will raise awareness of Kingston Transit ahead of specific marketing campaigns for Express Route services. The use of social media will be a priority in this campaign.

Conceptual marketing materials to be included in the campaign are shown below:

- **Logo** – Figure 25 shows the logo sample developed as the basis for branding the campaign to create an instantly recognizable emblem and convey the core message of cost and environmental savings. This logo would appear on all Kingston Transit communications during the campaign, and as the emphasis shifts to express service, the logo can remain a signature on all communications to remind riders and the public of these important benefits of Kingston Transit.

- **Web and mobile communications** – Figure 26 shows an example of a revamped Web page. The Web and social media apps such as Facebook and Twitter would be the principle means of communicating and updating the message with useful content regarding fares, cost savings and environmental savings facts.

- **Newspaper advertising** – Kingston Transit will purchase newspaper advertising to support message delivery.

- **Transit advertising** – Figure 24 shows an example of an exterior bus side panel. Kingston Transit will make extensive use of this of advertising space available on the buses. As well, Kingston
Transit will launch the campaign with a full bus wrap on one bus to dramatize the messaging and draw attention to the campaign.

- **Maps, brochures, and pocket schedules** – Figure 23 and Figure 25 show a sample brochure and pocket schedule that provide useful information about the campaign and for riding the system. A map showing all of the routes and pocket map schedules for each route would be available in print, and as a download from the website.

- **Public and media relations** – Kingston Transit will launch the program with a public relations campaign directed at the editorial media as described above and provide regular updates on actual savings of riders using Kingston Transit and aggregated savings of individual and employer group users on a periodic basis. With the advent of AVL technology, the level of detail and scope of the savings would provide more useful and comprehensive data to individuals and employer groups about their travel savings.

![Figure 23 – Brochure Layout Sample](image-url)
Figure 24 – Bus Exterior Advertising

Figure 25 – Pocket Schedule and Logo Sample
10.3.1.2 Route Redevelopment and Express Services Marketing

Kingston Transit will execute a marketing communication campaign to effectively communicate the many benefits of express services including low fares, faster speed, wider access, and greater convenience to current and prospective riders of the express service. As with the savings campaign described above, an important tactic of the campaign will be to drive potential riders to the Kingston Transit website, Facebook page or Twitter page.

10.4 Marketing Operations

Best practice transit operations surveyed who have implemented express services, have marketing personnel on staff who are deeply involved in the day-to-day business of transit marketing and administration. Given the large capital and operating investment Kingston Transit is making, the scope of marketing research and marketing communications required, and desire to effectively promote the service to new riders, dedicated transit marketing resources are fundamental to mitigating the financial risk undertaken and increase the likelihood of achieving forecasted ridership and revenue.

To that end, Kingston Transit will acquire marketing resources in order to support the achievement of the objectives in this redevelopment plan.
11 Financial Model

To address current system challenges and to realize the future benefits to the City’s transportation infrastructure and overall sustainability a significant investment in infrastructure, fleet, technology, and service levels must be made. This investment in transit is a critical component of the City’s transportation policy objectives and will allow more efficient use of the road and parking infrastructure that are already in place.

The redevelopment of the transit system envisioned in the goals outlined in Section 3 must be linked to an efficient and effective use of the City’s resources. Operating and capital monies, fleet, facilities, and people must be deployed to provide the most productive and best service value transit system possible. To choose transit, riders must be confident that service is in place for the long term and will not be reduced or removed in the future.

To that end, Transit staff has developed a detailed financial model to forecast the expected investment in the system through 2015. This model forecasts the expected revenue, operating costs, and capital investment required to realize the first two phases of the plan and to continue funding the level of service for the long term. Financial modeling of the future phases is not included in this analysis.

This section provides a summary of the financial model in terms of the operating and capital requirements, the assumptions made in the model, and the financial indicators to reflect the increased investment from the City’s tax base.

11.1 Operating

Please refer to the operating model provided in Table 9 for a summary of the revenue, costs, and contributions that Phase 1 and 2 of the Redevelopment Plan will required. An explanation of each operating section is provided with the major assumptions made in the mode. Unless otherwise noted the model assumes annual inflation of 2%.
### Table 9 – Summary of Financial Operating Model

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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SCHEDULED ANNUAL SERVICE HOURS</strong></td>
<td>161,742</td>
<td>161,742</td>
<td>177,423</td>
<td>203,008</td>
<td>230,022</td>
</tr>
<tr>
<td><strong>RIDERSHIP</strong></td>
<td>3,504,305</td>
<td>3,640,498</td>
<td>3,724,229</td>
<td>3,910,441</td>
<td>4,105,963</td>
</tr>
<tr>
<td>Annual Ridership Increase</td>
<td>2.3%</td>
<td>2.3%</td>
<td>2.3%</td>
<td>5.0%</td>
<td>5.0%</td>
</tr>
<tr>
<td><strong>OPERATING REVENUE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger revenue</td>
<td>$5,294,983</td>
<td>$5,921,909</td>
<td>$6,183,907</td>
<td>$6,903,004</td>
<td>$7,267,767</td>
</tr>
<tr>
<td>Advertising and other revenue</td>
<td>$85,000</td>
<td>$86,500</td>
<td>$88,030</td>
<td>$89,591</td>
<td>$91,182</td>
</tr>
<tr>
<td><strong>Total Operating Revenue</strong></td>
<td>$5,379,983</td>
<td>$6,008,409</td>
<td>$6,271,937</td>
<td>$6,992,595</td>
<td>$7,358,950</td>
</tr>
<tr>
<td><strong>OPERATING COSTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salaries and Wages</td>
<td>$8,029,991</td>
<td>$8,251,163</td>
<td>$9,006,358</td>
<td>$10,134,588</td>
<td>$11,545,999</td>
</tr>
<tr>
<td>Fleet Costs</td>
<td>$4,870,487</td>
<td>$5,029,912</td>
<td>$5,479,946</td>
<td>$6,152,219</td>
<td>$7,058,738</td>
</tr>
<tr>
<td>Services, Supplies, and Other Costs</td>
<td>$725,673</td>
<td>$650,600</td>
<td>$794,937</td>
<td>$828,007</td>
<td>$851,657</td>
</tr>
<tr>
<td>Direct Operating Costs</td>
<td>$13,626,151</td>
<td>$13,931,676</td>
<td>$15,281,241</td>
<td>$17,114,814</td>
<td>$19,456,394</td>
</tr>
<tr>
<td>Contribution to Transit Reserves</td>
<td>$1,818,542</td>
<td>$3,022,038</td>
<td>$3,201,123</td>
<td>$3,508,472</td>
<td>$2,752,029</td>
</tr>
<tr>
<td><strong>Total Public Transit Costs</strong></td>
<td>$15,444,693</td>
<td>$16,953,714</td>
<td>$18,482,363</td>
<td>$20,623,286</td>
<td>$22,208,423</td>
</tr>
<tr>
<td><strong>NET PUBLIC TRANSIT COSTS</strong></td>
<td>$10,064,710</td>
<td>$10,945,305</td>
<td>$12,210,427</td>
<td>$13,630,691</td>
<td>$14,849,473</td>
</tr>
<tr>
<td>Provincial Contribution</td>
<td>$2,005,018</td>
<td>$2,067,476</td>
<td>$2,108,825</td>
<td>$2,151,002</td>
<td>$2,194,022</td>
</tr>
<tr>
<td>Municipal Contribution</td>
<td>$8,059,692</td>
<td>$8,877,829</td>
<td>$10,101,601</td>
<td>$11,479,690</td>
<td>$12,655,452</td>
</tr>
</tbody>
</table>
### Table 10 – Proposed Fare Structure

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FARES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult Cash</td>
<td>$2.50</td>
<td>$2.50</td>
<td>$2.50</td>
<td>$2.75</td>
<td>$2.75</td>
</tr>
<tr>
<td>Youth Cash</td>
<td>$2.25</td>
<td>$2.25</td>
<td>$2.25</td>
<td>$2.50</td>
<td>$2.50</td>
</tr>
<tr>
<td>Senior Cash</td>
<td>$2.25</td>
<td>$2.25</td>
<td>$2.25</td>
<td>$2.50</td>
<td>$2.50</td>
</tr>
<tr>
<td>Adult Multiride (10 rides)</td>
<td>$21.50</td>
<td>$21.50</td>
<td>$21.50</td>
<td>$23.00</td>
<td>$23.00</td>
</tr>
<tr>
<td>Youth Multiride (10 rides)</td>
<td>$16.25</td>
<td>$16.25</td>
<td>$16.25</td>
<td>$17.50</td>
<td>$17.50</td>
</tr>
<tr>
<td>Seniors Multiride (10 rides)</td>
<td>$16.25</td>
<td>$16.25</td>
<td>$16.25</td>
<td>$17.50</td>
<td>$17.50</td>
</tr>
<tr>
<td>Adult Monthly Pass</td>
<td>$68.25</td>
<td>$68.25</td>
<td>$68.25</td>
<td>$71.50</td>
<td>$71.50</td>
</tr>
<tr>
<td>Youth Monthly Pass</td>
<td>$50.50</td>
<td>$50.50</td>
<td>$50.50</td>
<td>$53.00</td>
<td>$53.00</td>
</tr>
<tr>
<td>Seniors Monthly Pass</td>
<td>$46.25</td>
<td>$46.25</td>
<td>$46.25</td>
<td>$48.50</td>
<td>$48.50</td>
</tr>
</tbody>
</table>

*Phase 1 Starts in September 2013, Phase 1 - Full Year Fare Increase - January 2014, Phase 2 Starts in January 2015*
11.1.1 Operating Revenue

Transit revenue is derived from three sources: fares, advertising, and contract revenue.

Fare revenue is based on projected ridership levels shown at the top of Table 9 and the proposed fare strategy summarized in Table 10. The following assumptions are built into the model:

- Ridership increases at 2.3% annually except during the redevelopment years where ridership increases by 5%. These assumptions are based on growth predicted in the 2009 Transportation model and transit projections for increased ridership associated with each redevelopment phase;
- Proportion of the type of fare that riders use (monthly pass, cash, multi-ride card, etc.) remains constant;
- Proportion of adult, student, youth, seniors and riders using other discounted passes remains constant;
- A fare increase occurs in January 2014 with cash fares increasing by 10%, multi-ride fares by 7.5%, and monthly pass fares by 5%. No premium is charged for riding on the express service routes;
- The pass program with St. Lawrence College and Queen’s University are renewed and adjusted to reflect the increased service level.

Different fare options will be explored as transit staff gains additional information on our customers’ wants and needs. Transit expects additional advertising revenue with the expansion of the service but without additional market information, this revenue has been modeled to grow with inflation only.

Based on these assumptions total operating revenue is expected to grow from $5.4M in 2011 to $7.4M in 2015.

11.1.2 Operating Costs

Transit operation costs are comprised primarily of labour, fuel, fleet maintenance, and asset replacement. The direct operating costs modeled assume the following:

- Salaries, wages, and benefits are forecast to grow according to the current labour contract valid through 2014;
- Staffing levels are based on proportional growth with incremental increases in service hours. These assumptions include the additional bus operators, fleet, and administrative staff required;
- Fuel is forecast to grow at 3.8% in 2011, 5% for 2012, and 2% for other operating years modeled;
- Maintenance costs for infrastructure and fleet have been increased proportionally based on the expansion plans;
The model also includes increased contributions to the Transit Capital Reserve Fund. This contribution reflects the annual cost to plan for and replace the existing bus fleet and infrastructure. This contribution increases by 3% each year to recognize the replacement of the existing fleet plus an additional contribution of 10% of the total replacement cost for each new bus added to the fleet. An additional $1.15M is contributed to this reserve in 2012, 2013, and 2014 in preparation for the express route implementation and start-up.

Based on these assumptions the total annual public transit costs are expected to grow from $15.4M in 2011 to $22.2M in 2015.

11.1.3 Provincial Contribution

The annual provincial contribution is the portion of the provincial gas tax funding that Kingston Transit receives. This funding is based on a fixed amount of money from the Province that is divided among eligible municipalities each year based on population, transit ridership, and service.

For the purpose of the model, the contribution has been assumed to grow annually with inflation but the actual allocation may change depending on the available funds and developments in our peer systems.

11.1.4 Municipal Contribution

The municipal contribution is the annual operating funding required from the City’s tax base. Full implementation of the first two phases of the redevelopment plan requires this contribution to grow from $8.1M in 2011 to $12.7M in 2015.

11.2 Capital

The redevelopment plan includes capital investment in new buses, technology, and infrastructure while also continuing investment in the existing assets. A summary of the capital expenditures is included in Table 11. This table summarizes the capital required in terms of new investment for this redevelopment plan and funds that are required to maintain the existing operation. The investment in the types of capital, such as buses, technology, and infrastructure are also outlined for each section. Funds previously committed, including the 2011 approved budget, are included for reference.

The financial model estimates total capital funding of $24.9M will be required from 2012 - 2015 of which $18.0M is associated with new requirements outlined in the redevelopment plan and $6.9M is required for the existing operation.
<table>
<thead>
<tr>
<th>Capital - Attributed to Redevelopment Plan</th>
<th>Works in Progress (Previously Committed)</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fleet</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Fleet - Full Size Buses</td>
<td></td>
<td>$0</td>
<td>$1,200,000</td>
<td>$4,520,000</td>
<td>$3,142,870</td>
</tr>
<tr>
<td><strong>Technology</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transit Technology (AVL, Communications)</td>
<td></td>
<td>$0</td>
<td>$3,315,000</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Signal Priority</td>
<td></td>
<td>$379,253</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Website and Online Technology Development</td>
<td></td>
<td>$50,000</td>
<td>$0</td>
<td>$0</td>
<td>$50,000</td>
</tr>
<tr>
<td><strong>Infrastructure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus Stop Infrastructure</td>
<td></td>
<td>$165,351</td>
<td>$250,000</td>
<td>$250,000</td>
<td>$250,000</td>
</tr>
<tr>
<td>Bus Stop Shelters</td>
<td></td>
<td>$394,652</td>
<td>$100,000</td>
<td>$100,000</td>
<td>$300,000</td>
</tr>
<tr>
<td>Downtown Terminal - Construction</td>
<td></td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Subtotal - Capital Attributed to Redevelopment Plan</strong></td>
<td></td>
<td>$989,256</td>
<td>$4,865,000</td>
<td>$4,870,000</td>
<td>$3,742,870</td>
</tr>
<tr>
<td><strong>Capital - Existing Operation Requirements</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fleet</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Transit Van</td>
<td></td>
<td>$22,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Replacement - Transit Full Size Buses</td>
<td></td>
<td>$1,533,052</td>
<td>$1,596,435</td>
<td>$997,846</td>
<td>$1,151,130</td>
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<tr>
<td>Replacement - Transit Small Buses</td>
<td></td>
<td>$0</td>
<td>$513,442</td>
<td>$0</td>
<td>$272,355</td>
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<tr>
<td>Replacement - Transit Vans</td>
<td></td>
<td>$28,822</td>
<td>$0</td>
<td>$0</td>
<td>$33,699</td>
</tr>
<tr>
<td>Replacement - Transit Bus Refurbishment</td>
<td></td>
<td>$159,073</td>
<td>$10,676</td>
<td>$131,127</td>
<td>$225,244</td>
</tr>
<tr>
<td><strong>Technology</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onboard Asset Replacement</td>
<td></td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$475,000</td>
</tr>
<tr>
<td>Transit Technology Feasibility Study</td>
<td></td>
<td>$550,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Infrastructure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transit Facility Upgrade (Temp Storage/Wash Lane)</td>
<td></td>
<td>$10,100,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Park and Ride Facility - Montreal Street</td>
<td></td>
<td>$535,341</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>VIA Train Station - John Counter Boulevard Upgrades</td>
<td></td>
<td>$250,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Downtown Terminal - Feasibility/Design</td>
<td></td>
<td>$200,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Subtotal - Capital for Existing Operation Requirements</strong></td>
<td></td>
<td>$13,380,288</td>
<td>$2,120,573</td>
<td>$1,128,973</td>
<td>$2,157,449</td>
</tr>
<tr>
<td><strong>Total Capital Expenditures</strong></td>
<td></td>
<td>$14,369,544</td>
<td>$6,985,573</td>
<td>$5,998,973</td>
<td>$5,990,319</td>
</tr>
</tbody>
</table>

Table 11 – Summary of Planned Capital Expenditures
11.2.1 Capital – Attributed to Phase 1 and 2 of the Redevelopment Plan

The upper portion of Table 11 outlines the proposed capital costs associated with the redevelopment plan. The capital investment generally falls into three categories; fleet, technology, and infrastructure. A summary of each category is included below.

11.2.1.1 Fleet

The long lead-time for bus delivery requires the buses to be ordered at least 12 months prior to the start of new service. Replacement of fleet provides some flexibility as the bus slated for retirement can, in most cases, remain in service for several additional months if the orders are delayed. The capital costs associated with the fleet are based on the following assumptions:

- Phase 1 will require 10 additional large size buses;
- Phase 2 will require 5 additional large size buses;
- Buses are all full size, low-floor accessible buses;
- Cost of bus is escalated from a base 2010 quote by 4% annually;
- Funds to secure the additional fleet begin to appear in the capital plan in 2012.

11.2.1.2 Technology

Transit Technology capital includes systems that will be installed on the fleet, transit operations centre, bus stops, and online. The express routes will act as the pilot programs for real time bus location with the remainder of the fleet outfitted in the future phases. The bulk of this funding is shown in 2012 to allow for the system to be integrated into the existing operation prior to the startup of the first express route in September 2013. These costs are based on similar hardware costs installation costs at Waterloo Transit on a per bus cost. Additional cost information will be available as part of a technology feasibility study that will be completed in late 2011.

Funds associated with signal priority have been allocated to the upgrade a pilot intersection at Princess Street and Centennial Drive in 2012. This work, to be completed in partnership with the planned cycling lane and sidewalk upgrades at this intersection, will create a queue jump and discharge lane for the buses travelling along Princess Street. This pilot project will be used to evaluate future intersection improvements along the Princess Street corridor. Additional funds are tentatively planned for 2015.

Web site and Online Technology upgrades are planned to create a rider focused online portal to compliment the changes in the transit service. The initial funds committed in 2011 will focus on creating an online pass renewal program.

11.2.1.3 Infrastructure

Infrastructure investments include the express bus stops, terminal upgrades, and programs to increase the accessibility and visibility of our existing bus stops. The majority of the investment will be along the major corridors, express routes, and areas that develop as high use nodes in the future.
The final locations and design of the express route stops and shelters will be determined as part of the route planning in 2011 and 2012. Construction of these upgraded stops will begin in 2012 and the costs are based on typical shelter and bus stop construction costs from the 2010 and 2011 season. Transit staff will review these estimates and designs against the expected accessibility requirements to ensure that the infrastructure built as part of these capital programs is consistent with the new standards.

An estimate for the downtown terminal construction of $4M is included in 2015. This estimate is based on preliminary information that will be updated as part of the downtown terminal feasibility study to be completed in 2012.

11.2.2 Capital – Attributed to Existing Operation Requirements

The lower section of Table 11 outlines capital expenditures required for the ongoing operation of the existing transit system. This capital is largely related to the replacement of the fleet and other assets at the end of life. A brief summary of each category is provided below.

11.2.2.1 Fleet

Regular, planned replacement of the transit fleet of vehicles is part of the City’s asset management program. The fleet is managed to maximize the life span of each vehicle and a replacement is budgeted for in the year of its expected replacement. An additional transit van will be added to the fleet to increase on-road supervision.

11.2.2.2 Technology

The transit fleet is equipped with already equipped with a number of complex pieces of technology including the farebox and next stop announcement system. Lifecycle review and replacement funds are included in 2014 to address any end of life issues that may be developing with the existing technology.

Funds are committed for a technology feasibility study in 2011 that will develop a technology road map for transit including the upgrade and replacement of the existing communication system that is required under the Provincial Hands-Free legislation.

11.2.2.3 Infrastructure

Several transit infrastructure projects are currently underway or have funds committed as part of future planned work. The Transit Facility Upgrade will provide enclosed storage and expanded cleaning facilities for the fleet that will address current operating issues. This project is being coordinated as part of the Municipal Campus at John Counter Boulevard.

Funds have also been committed to complete the Montreal Street Park and Ride, investigate the feasibility of the downtown transit terminal, and to upgrade the transit stop at the VIA Rail train station as part of the John Counter Boulevard expansion.
11.3 Financial Indicators

Kingston Transit uses a number of indicators to gauge the impact of service changes on the financial health of the system. These indicators are summarized in Table 12.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue / Cost (CUTA Measure)</td>
<td>39.4%</td>
<td>43.1%</td>
<td>41.0%</td>
<td>40.8%</td>
<td>37.8%</td>
</tr>
<tr>
<td>Municipal Contribution (as % of Total Public Transit Costs)</td>
<td>62.2%</td>
<td>62.4%</td>
<td>64.7%</td>
<td>65.7%</td>
<td>57.0%</td>
</tr>
<tr>
<td>Direct Operating Costs / Service Hour</td>
<td>$79.56</td>
<td>$81.36</td>
<td>$83.36</td>
<td>$84.31</td>
<td>$84.58</td>
</tr>
<tr>
<td>Total Public Transit Costs / Service Hour</td>
<td>$90.18</td>
<td>$98.99</td>
<td>$100.82</td>
<td>$101.69</td>
<td>$85.65</td>
</tr>
</tbody>
</table>

Table 12 - Summary of Financial Indicators

Revenue/Cost measures the ratio of revenue, excluding government contributions, to the operating costs of the system. This is an industry standard measure that does not include any internal contributions to a capital reserve or operating reserve fund. A higher ratio indicates a lower reliance of the transit system on funding from the municipality.

Municipal Contribution (as % of Total Public Transit Costs) measures the percentage of total annual operating funding that the municipality is providing to the system once contributions to the various reserve funds and funding from the Province is included. A higher ratio indicates a higher reliance of the transit system on funding from the municipality.

Direct Operating Costs/Service Hour is a measure of the average annual direct cost to provide a single hour of bus service. This measure does not include contributions to reserve funds but is useful in gauging daily service hour costs largely related to fuel and labour. This measure is also used to validate the assumptions in the model to ensure the cost per hour of service is not dramatically changing year over year.

Total Public Transit Costs/Service Hour includes the contributions to the capital reserve fund and provides a more comprehensive cost per service hour calculation. The measure reflects the costs associated with fleet asset management, which is approximately 13% of the overall cost per hour of operation.
12 Performance Measurement

To realize the vision and goals of the transit redevelopment plan the performance of the system will need to be measured, evaluated, and managed over the course of the phased introduction of the changes. As part of the redevelopment plan, transit staff will develop a set of internal and external measurements to gauge performance. This section outlines service-focused measures that Kingston Transit will put in place over the course of this redevelopment plan. Some of these measurements, especially those related to market analysis or schedule adherence, will be introduced as the systems are installed in the fleet.

12.1 Rider Satisfaction

Kingston Transit exists to serve our riders so they have a convenient and reliable means to travel in the city. This suite of measures tracks how satisfied our riders are with our service.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
<th>Information and System Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ridership</td>
<td>A count of the daily, weekly, and annual trips that our riders are taking on the system.</td>
<td>Gathered automatically through the existing fare box.</td>
</tr>
<tr>
<td>Average Trip Time</td>
<td>Measure of average trip time between major destinations in the city to gauge transit performance against automotive choices. Trip time reduction indicates a more viable transit option.</td>
<td>Developed with route modeling and tracked using AVL technology</td>
</tr>
<tr>
<td>Rider Comments</td>
<td>Tracking rider comments and complaints promptly and with personal contact. Address trending issues on a route or across the system.</td>
<td>Gathered as part of the existing city customer service system.</td>
</tr>
<tr>
<td>Number and Type of Pass Holders</td>
<td>Monitoring pass sales and shift of ridership from cash fare to pass holders. Pass holders generally use the system more frequently and can indicate a greater confidence in the system.</td>
<td>Gathered automatically through our point of sale system.</td>
</tr>
<tr>
<td>Rider Satisfaction Surveys</td>
<td>Route or system based surveys of riders to determine how transit can serve them better.</td>
<td>Part of the marketing plan development.</td>
</tr>
</tbody>
</table>

Table 13 - Rider Satisfaction Performance Measurement
12.2 System

The timeliness and reliability of the transit service is a major component in building rider confidence and satisfaction with the system. These measures will track the daily operational goals of the system and highlight route or system issues that are developing.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
<th>Information and System Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schedule and Frequency Adherence</td>
<td>A measure of the on-time operation of the local/collector buses and the consistency of the 15-minute frequency for express buses.</td>
<td>AVL data gathering</td>
</tr>
<tr>
<td>Service Reliability</td>
<td>Tracking of runs that are missed and alternate service provided.</td>
<td>Gathered as part of current daily operations.</td>
</tr>
<tr>
<td>Service Availability and Coverage</td>
<td>Measure of the rider population that has access to the service both in areas and during various times of day.</td>
<td>In development with route modeling and GIS systems</td>
</tr>
<tr>
<td>Route Capacity</td>
<td>Real time counts of the number of riders on a bus to ensure suitably sized buses and frequency is in place.</td>
<td>Data required from automatic passenger counters and fare box system.</td>
</tr>
</tbody>
</table>

Table 14 - System Performance Measurement

12.3 Fleet and Infrastructure

Rider satisfaction is also linked to the comfort, safety, and accessibility of the bus stop they use and the bus that they ride.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
<th>Information and System Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessible Bus Deployment on Routes</td>
<td>Measure of the number of buses equipped with low floor configurations and wheelchair ramps/lifts</td>
<td>Gathered as part of current daily operations.</td>
</tr>
<tr>
<td>Bus Cleanliness and Comfort</td>
<td>A measure of the frequency of minor and major interior cleaning of the fleet</td>
<td>Gathered as part of current daily operations.</td>
</tr>
<tr>
<td>Accessible Bus Stop Inventory</td>
<td>Measure percentage of stops in system and along route with accessible bus stop Assess coverage of transit service based on accessible bus stop locations</td>
<td>In development with route modeling and GIS systems</td>
</tr>
<tr>
<td>Bus Stop Amenities</td>
<td>Number of stops with shelters, benches, lighting, and connection to sidewalk network</td>
<td>In development with route modeling and GIS systems</td>
</tr>
</tbody>
</table>

Table 15 – Fleet and Infrastructure Measurement
12.4 Financial

The transit redevelopment plan is based on a comprehensive financial model. These measures allow transit to track adherence to the annual budget and the longer-term model to ensure that service level can be maintained.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
<th>Information and System Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger Revenue</td>
<td>Track growth by rider type and location against financial model.</td>
<td>Gathered automatically through the existing fare box.</td>
</tr>
<tr>
<td>Contract Revenue</td>
<td>Track contract service rider usage by type and location against financial model.</td>
<td>Gathered automatically through the existing fare box.</td>
</tr>
<tr>
<td>Advertising</td>
<td>Track against financial model.</td>
<td>To be developed with marketing model</td>
</tr>
<tr>
<td>Revenue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating</td>
<td>Track costs according to budget line items and financial model.</td>
<td>Completed as part of monthly/annual reporting</td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital Expenses</td>
<td>Track costs according to budget line items and financial model.</td>
<td>Completed as part of monthly/annual reporting</td>
</tr>
<tr>
<td>Cost per Service</td>
<td>Indicator of full costs, including capital replacement funding, required to operate one hour of service with one bus.</td>
<td>Completed as part of monthly/annual reporting</td>
</tr>
<tr>
<td>Hour</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenue/Cost</td>
<td>Indicator of cost of operating the system borne by the rider versus the tax base.</td>
<td>Completed as part of monthly/annual reporting</td>
</tr>
<tr>
<td>Ratio</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 16 – Financial Performance Measurement
13 Conclusion

The transit system in its current form has been stretched beyond capacity and faces systemic issues that impact both reliability and its ability to compete with the automobile. This Redevelopment Plan introduces a new model for the operation of transit in the City. It fundamentally changes the way in which the service is provided and will allow us to grow and enhance the system in the future to meet the City’s transportation needs.

The three express routes will create a backbone of service across the urban area of the City that significantly increases the system frequency and reduces travel time for our riders. The backbone will address the systemic issues faced today and also creates the framework for future expansion of local service and integration with other transportation modes. Additionally, the phased introduction of the express routes provides flexibility in how the service is implemented to best address the needs of the riders. As the ridership grows, the 15-minute express service currently planned for the weekday peak periods can be expanded within the existing fleet without additional capital investment.

This investment in service will be complemented with upgraded, accessible stops and shelters that will make waiting for the bus more pleasant and encourage people to add an active transportation component into their daily trips. Real time bus location and arrival information will help riders plan their travel in a more efficient and convenient manner.

When fully implemented the system will be faster, more frequent, more reliable, easier to use, and will provide an enhanced transit experience when compared to the existing system. Creating a more viable transit system is a key requirement in achieving the goals of the transportation demand management, active transportation, and sustainability policies of the city. This Redevelopment Plan will allow Kingston Transit to position itself as a true alternative transportation option in the City.