

**REGION OF WATERLOO****PLANNING, HOUSING AND COMMUNITY SERVICES
Transportation Planning**

TO: Chair Jim Wideman and Members of the Planning and Works Committee

DATE: June 22, 2010 **FILE CODE:** D09-90(A)

SUBJECT: MOVING FORWARD 2031 - REGIONAL TRANSPORTATION MASTER PLAN (RTMP)

RECOMMENDATION:

THAT the Regional Municipality of Waterloo approve the new Regional Transportation Master Plan as detailed in Report No. P-10-059, dated June 22, 2010;

AND THAT Regional Council proceed to initiate an Environmental Assessment for improving access to Highway 401 west of Homer Watson Boulevard; including in the study area the land bounded by Trussler Road, New Dundee Road, Homer Watson Boulevard and Highway 401.

SUMMARY:

Waterloo Region is at a crossroads in transportation. Since the completion of the last Region-wide Transportation Master Plan in 1999, strong community growth has placed increasing pressure on transportation infrastructure. This pressure is expected to continue, as the Region is forecast to grow by almost 50% in the next 25 years. In recognition of these growth pressures, Regional Council initiated a new Regional Transportation Master Plan (RTMP) in 2007, which has involved extensive data collection, analysis and extensive community consultation. The RTMP is now in the final stages and the recommended strategy for the transportation system over the next twenty years is presented as "Modified Alternative C" in this report for Council consideration. The recommended strategy proposes a significant shift in how people move throughout and beyond Waterloo Region, builds on more recent successes in increasing transit ridership, and supports new cycling and pedestrian infrastructure. All of this is not to the exclusion of automobiles, however, which are expected to continue to be a major means of travel. The RTMP is ultimately about moving goods and people, as well as shaping our community into a more compact form.

The Regional Transportation Master Plan – Moving Forward 2031 (RTMP) places greater emphasis on the role of public transit to provide a more balanced transportation system. It is guided in particular by the Ontario government's *Places to Grow Growth Plan*, the Regional Growth Management Strategy, the Regional Official Plan, and the Rapid Transit Environmental Assessment. It also reflects increasing public interest in greater transportation choice, which was strongly reflected in consultation and survey results undertaken as part of this process.

Our transportation network is beginning to experience the symptoms of increased demand. Congestion, traffic through our neighbourhoods, overfilled buses on major corridors and a greater need for new and safer walking and cycling routes are all symptoms of a growing community. It is recognized that any remaining capacity in the existing road system is being absorbed at a rate faster than it is being replaced and the system is becoming strained. Today, about 210 lane kilometres of the major road network in the urban areas are at or over capacity during the afternoon peak hour. If the Region did nothing to improve the transportation system, by 2031 planned growth would result in over 500 lane kilometres of the major road network being at or over capacity.

To continue with road-centred solutions is neither sustainable nor consistent with guiding Provincial and Regional policies, as demonstrated by the following:

- a) The Regional road network would need to be expanded by about 25 per cent or add about 500 new lane kilometres (added to current roads or by building new roads) within the urban areas. This is equivalent to building about 25 new Hespeler Roads.
- b) Road widenings would result in many more instances of mature neighbourhoods experiencing both increased traffic levels and the removal of homes within required rights-of-way.
- c) Cultural heritage resources, particularly buildings close to roads, would be further threatened.
- d) Potential natural environmental impacts from new road construction including habitat destruction, storm water impacts, and the interruption of natural linkages and corridors
- e) New or wider roads can facilitate increased sprawl and potentially place more pressure for growth beyond the Region's Countryside Line.
- f) Limitations caused by physical constraints imposed by existing infrastructure (utilities, bridges) may result in significant construction costs.
- g) Notwithstanding the proposed RTMP strategy described in this report, approximately 280 lane kilometres of Regional roads would still experience congestion by 2031.

When developing the plan, consideration was given to the following:

- a) There is a need for greater transportation choice (transit, cycling and walking). A 2006 survey found that 43% of residents lived within five kilometres of their place of work. Many of these residents represent potential active transportation commuters.
- b) Studies have indicated that a sedentary lifestyle and poor air quality are contributing to various health ailments at an unprecedented rate. The health benefits of less auto reliance include air quality improvements and walking as a form of exercise.
- c) Auto congestion continues to increase, causing transit to experience more challenges in adhering to schedules that users depend on. Approximately 40% of land in urban areas is already used for roads and parking.
- d) The Provincial Growth Plan requires at least 40% of new development to occur within the "built boundary" of the Region, anticipates higher order transit, and prescribes increased development densities.

In order to address the community's future mobility needs, the RTMP initially developed three transportation network alternatives. All three alternatives involve significant transit system improvements and include strategic road improvements to either support the transit system or provide capacity to address operational issues. Each alternative was evaluated against a set of transportation, social, natural environment and economic criteria related to the goals, principles and objectives of the RTMP, developed through the community consultation process. The results of the evaluation supported the implementation of the "High Frequency Low Transfer" alternative (Alternative C).

The Regional tax levy increase needed to support the implementation of Alternative C would be in the range of 3 to 3.5% per year in the first 5 years, 1.0 to 1.5% per year for years 5-10, and 0.25 to 0.5% per year in years 10 to 20. This level of investment in the early years would result in significant financial pressure on the tax base. As a result, the implementation of this alternative was refined, and a "Modified Alternative C" was developed.

This Modified Alternative C defers expenditures during the early years and moves funding to later in the plan. This results in lower total funding over the life of the plan as the cumulative impact of the operational component is reduced during the first five years of the plan. However, the expenditures and amount of transit service will reach similar levels by 2031.

The modified Alternative C is based on the level of transit service that could be provided with the annual tax levy impact outlined in the table below.

Year	Operating ¹	Capital (Debt servicing)	Annual Tax Levy Increase
1 - 5	1.0 %/year	0.15 % – 0.20 %/year Average 12 new buses/year	1.15 % - 1.2 %
6 - 20	1.0 %/year	0.30 % – 0.50 %/year Average 22 new buses/year ² plus new storage and maintenance facility	1.30% - 1.5 %

¹ A 1% increase to the 2010 Property tax levy is \$3,676,233.

² Includes conventional and articulated buses.

Although the modified Alternative C is still expected to achieve 17% transit share in 2031, the interim years are expected to experience lower transit ridership and greater roadway congestion than the more aggressive Alternative C.

The preferred transit oriented network and implementation plan (Modified Alternative C) was presented at a Public Input Meeting of the Planning and Works Committee on May 18, 2010. The comments received from the public were generally supportive of the preferred alternative, and are described in greater detail in this report.

Modified Alternative C is a comprehensive strategy spanning several areas of transportation, including the following examples;

- Active Transportation (walking and cycling),
 - policies and direction on planning sidewalks and cycling lanes
- Transportation Demand Management (TDM) – Travelwise,
 - car sharing, the Universal transit pass for post secondary students, corporate bus pass programs, etc.
- Intelligent Transportation System Improvements (ITS),
 - real time scheduling of transit vehicles, transit priority, incident management systems, etc.
- Transit Network Plan & Priorities,
 - New and more frequent transit service in targeted areas.
- Inter-Regional Transit Service Integration,
 - VIA, GO Transit, Greyhound, etc.
- Road Network Improvements (including the prioritization of Provincial Highway improvements),
 - Fischer Hallman Road, Townline Road, Maple Grove Road, etc.
- Policy Support,
 - Integration of land use and transportation, parking, TDM, roads
- Parking,
 - Parking management, including supply and cost
- Congestion Management,
 - Encouraging trips that are not essential to occur outside peak periods
- Action Plan, and
 - Implementation actions

- Transition and Monitoring.
 - Tracking plan progress and adjust as necessary

Modified Alternative C would be funded from a combination of contributions from Development Charges and the Regional tax levy. Funding of transportation initiatives, particularly transit, is becoming an issue for communities within the Greater Golden Horseshoe Area that are working toward implementation of the Provincial *Places to Grow Growth Plan*. To reduce the longer term financial impact, particularly in years 5-20, alternative financing strategies are being investigated and pursued, such as amendments to the Development Charges Act, a more competitive fare strategy, and other potential solutions being advanced by the Region together with other municipalities through discussions with Provincial and Federal staff.

Area Municipal staff and politicians were invited to participate on the Steering Committee and their input has been considered during the development of the plan. The recommended plan will also be presented to each of the Area Municipal Councils prior to June 22, 2010.

The Regional Transportation Master Plan is building upon a solid foundation of success. Over the past decade, the following shifts and achievements have already occurred.

- The Regional Growth Management Strategy and the new Regional Official Plan set the stage to align and integrate land use and transportation planning as a means of shaping our community.
- The new Regional Official Plan includes transit and active transportation policies.
- Regional walking and cycling works are closely coordinated with Area Municipal trail, pedestrian and cycling master plans.
- Overall Grand River Transit ridership has increased by 74% over the past 10 years (16.4 million riders in 2009).
- iXpress is now carrying almost 2 million riders per year (9,000 daily boardings). The success of this service demonstrates that a higher quality transit service will attract ridership.
- New transit technology is being implemented that includes online transit trip planning, next bus texting service, transit priority for iXpress buses, automatic vehicle location and control (70% of fleet) and automatic bus passenger counters.
- Approximately 85 to 90% of the urban population lives within a 5 minute walk of a transit stop.
- The average transit wait time in some key areas is 3 to 5 minutes.
- There are already 309 kilometers of cycling facilities on Regional roads.
- Implementation of the Travelwise program, which involves working with businesses and the community to introduce programs such as ride sharing to encourage more transit, walking and cycling trips.
- New Regional Road Transportation Corridor Guidelines that incorporate design principles that dedicate space for walking and cycling as well as more streetscaping (e.g. trees, plants, furniture, bus shelters, etc.).
- The new pedestrian bridge over Highway 401 near Conestoga College, the first bridge of its kind that spans Highway 401.

The Regional Transportation Master Plan proposes to build on progress already achieved in transit walking and cycling, while recognizing that travel by auto will still be an essential component of the community's future mobility needs. In the absence of such a continued shift, the community can expect to be further challenged by even greater automobile congestion.

REPORT:

The new Regional Transportation Master Plan – Moving Forward 2031 was initiated in 2007. The project is being led by a Steering Committee consisting of Regional and Area Municipal staff and

politicians. The process is following the requirements of Phases 1 and 2 of the Municipal Class Environmental Assessment process for Transportation Master Plans.

State of the Transportation System

Our transportation network is beginning to experience the symptoms of increased demand. Congestion, traffic through our neighbourhoods, overfilled buses and a greater need for new and safer walking and cycling routes are all results of a growing community. Road capacity that has been built in the past is being absorbed at a rate faster than it is being replaced. Today about 210 lane-km of the major road network in the urban municipalities is at or over capacity during the afternoon peak hour.

If the Region continues to address growing congestion through road expansion only, we would need to expand the road network by about 25 per cent or add about 500 new kilometres of lanes (added to current roads or by building new roads) within our cities. This is equivalent to building about 25 new Hespeler Roads!

Specific areas of concern where new lanes would be required include;

- the west side of Kitchener and Waterloo crossing Westmount Road;
- the middle of Cambridge; and
- new crossings over the Grand River in all three cities.

Many of these road expansions would be very difficult to accomplish without impacting adjacent commercial centres, homes and natural environmental features. Expansion could prove to be destructive to communities and businesses. With about 40 per cent of the land in our urban areas already being used for roads and parking, we cannot continue to consume this amount of land and remain sustainable. Also, there has been substantial public opposition to several new roads and road widening projects that may need to be reconsidered with a road based solution. Roads such as the East-West Arterial (impacts on Dumfries Conservation Area), West Side Arterial (impacts on bald eagles, Cruickston Estates) and Myers Road Widening (impacts on schools, churches, community intrusion) are examples of the magnitude of impacts of previously planned projects. Pressure to re-examine some or all of these new corridor initiatives may increase if new solutions to addressing growing travel demand are not implemented.

The roads are the foundation of the system, even for the provision of transit, and have been developed in response to growth within the community. With planned improvements in the Region's current capital program and an investment in Rapid Transit in the Central Transit Corridor, it is expected that approximately 370 lane-km of the major road network will still experience peak period congestion by 2031 as compared to 500 lane-km if nothing is done.

Since 1999, annual transit ridership has increased from 9.5 million rides in 2000 to 16.4 million rides in 2009; a 74 per cent increase or 6.3 per cent annually. This increase is significant compared with the population increase of 1.85 per cent per year in the region. The commitment to funding increased service levels and new initiatives such as the iXpress has played a key role in ridership increases. Census data indicates transit modal share for the work trip has increased from 3.9% in 2001 to 4.8% in 2006.

The Region has a well established Regional Cycling Master Plan with both on and off road routes. In 2005, Regional Council adopted the Region of Waterloo Pedestrian Charter with a purpose of fostering awareness and support for walking. The continued funding and support of active transportation is an important part of the Regional Transportation Master Plan. In 2006, more than

43 per cent of residents in the region lived less than five kilometres from their place of employment. Many of these residents represent potential active transportation commuters.

Without continuous and substantial investment in all components of the transportation system, there will be areas that will become dysfunctional, affecting not only the ability of residents to move around the Region but also the quality of life for the community from a social, environmental and economic perspective. Businesses have indicated that preferred locations include areas that have an effective multi-modal transportation system that provides choice and travel options, and an availability of a strong sustainable work force.

Guiding Policies

The previous Regional Transportation Master Plan was completed in 1999 and laid the foundation for a balanced transportation system with greater emphasis placed on the role of public transit, walking and cycling. Since 1999, several new provincial and local policy initiatives have been introduced that have a significant influence on the future direction of transportation within Waterloo Region including;

- Places to Grow: Growth Plan for the Greater Golden Horseshoe
- Regional Growth Management Strategy
- Regional Official Plan/Area Municipal Official Plans
- Rapid Transit Project

With the above policies guiding the RTMP process along with public input, the following goals were developed for the project (See Attachment A for detailed study objectives) ;

Optimize the Transportation System

- Make the most of what exists: preserve and maximize the use of facilities and services — avoid or defer the need for new infrastructure that does not support the other goals.

Promote Transportation Choice

- Provide and maintain a transportation system that offers competitive choices for moving people and goods in an integrated and seamless manner while minimizing single occupancy vehicle trips.

Foster a Strong Economy

- Provide a transportation system that supports the retention of existing businesses and attraction of sustainable economic activity.

Support Sustainable Development

- Provide and maintain a transportation system that supports sustainable growth in both urban and rural areas and reduces transportation contributions to climate change.

As part of supporting sustainable development, a review of the approach to identifying transportation priorities was undertaken, particularly around future high density growth nodes and transit station areas. While it is recognized that local context will influence transportation design choices, in these high growth areas priority will be given in the following order:

- Walking;
- Cycling;
- Public transit;
- Carpooling and other smart commute strategies; and
- Single occupant vehicles.

Screening of Alternative Strategic Plans

For the first step of the evaluation process, alternative ‘plans’ for transportation system development were developed and assessed to determine if they met the basic goals and objectives of the study prior to completing a more detailed evaluation. For the initial screening, two main strategic alternative plans were considered;

- *The Road Oriented Plan* would essentially represent a continuation of current trends with about 4% of peak period trips using public transit and most future capacity deficiencies met through road widening or new road construction.
- *The Transit Oriented Plan* would include a balanced program of investment in both transit and road improvements. Strategic road improvements would be implemented to support transit (e.g. transit priority, bus lanes, etc), to support people and goods movement, or to address capacity deficiencies where required.

A screening process was used to compare the two strategies. The five key criteria used reflect the goals of the plan. Table 1 below shows the results of the screening process.

Table 1: Screening of Alternatives

Criteria	Road Oriented Plan	Transit Oriented Plan with Strategic Road Improvements
Consistent with Places to Grow and the Regional Official Plan	No	Yes
Optimize the transportation system	No	Yes
Promote transportation choice	No	Yes
Foster a strong economy	Yes	Yes
Support sustainable development	No	Yes
Recommendation	Do Not Carry Forward	Carry Forward

Based on this analysis, it was recommended that the Transit Oriented Plan with Strategic Road Improvements be carried forward as the basis for developing the Transportation Master Plan.

Alternative Transit Oriented Networks

The first step in development of a transit oriented plan was to establish Transit Mode Share (TMS) targets that increase the current overall PM peak hour transit mode share. The next step was to consider complementary strategic road improvements to address the remaining capacity deficiencies in the system. Three alternative networks were then initially developed that feature the Council approved rapid transit system, include increasing conventional transit service to increase the system wide transit ridership throughout the Region of Waterloo and include strategic road improvements.

Alternative A - High Frequency, High Transfer Network:

- Most bus routes provide service every 10 minutes or better by 2031.
- Most routes feed into the rapid transit system.
- Provides direct bus service to the rapid transit route.
- The percentage of trips using transit is expected to increase to 6% in 2016, 6.5% in 2021 and 8.3% in 2031.

Alternative B - Medium Frequency, Low Transfer Network:

- Some routes provide less frequent service compared to Alternative A, but many more routes are able to provide service every five minutes or better.
- Provides more express routes and cross regional routes and more direct routes that reduce the need for passengers to transfer from one route to another.

- Provides more attractive service for transit trips in the suburban areas.
- The percentage of trips using transit is expected to increase to 6% in 2016, 6.9% in 2021 and 13.8% in 2031.

Alternative C - High Frequency, Low Transfer Network:

- Improves on the Alternative B network by increasing the number of routes with service every five minutes or better.
- Provides some routes parallel to the rapid transit system with stops closer together to attract riders that are beyond a convenient walking distance of a rapid transit station.
- Additional routes could be implemented in the later years of the plan as the rapid transit system matures.
- The percentage of trips using transit is expected to increase to 6% in 2016, 13% in 2021 and 17.3% in 2031.

The three alternatives were developed with progressively more aggressive transit mode share and system wide ridership targets as illustrated in Table 2. The 2006 PM peak hour transit modal share was 3.8%.

Table 2: Characteristics of Alternative Transit Oriented Networks (PM peak hour)

Alternative	Horizon Year					
	2016		2021		2031	
	Trips	Transit Share	Trips	Transit Share	Trips	Transit Share
A	9,200	6%	11,600	6.5%	13,100	8.3%
B	9,200	6%	12,400	6.9%	21,900	13.8%
C	9,200	6%	20,000	13.0%	27,100	17.3%

Each of these alternatives would require a transition from the basic level of transit service currently provided to a higher quality transit service and the adoption of supportive land use, parking and TDM policies.

Evaluation of Alternatives

Each of the alternatives were assessed and evaluated to determine how well they incorporate the principles of sustainability as well as the goals, principles and objectives developed for the RTMP consistent with the Municipal Class Environmental Assessment process.

Evaluation criteria were developed that directly link to the four RTMP goals as stated previously. The economic comparison of the three alternatives is shown in Attachment B.

Table 3: Evaluation of Alternatives

	Alternative A	Alternative B	Alternative C
Transportation Criteria	HFHT	MFLT	HFLT
Managing Congestion	Least Preferred	Moderate	Preferred
Transit Mode Share	8.4%	13%	17%
Avg. Travel Time	Least Preferred	Moderate	Preferred
Transit Convenience	Least	Moderate	Preferred

	Preferred		
TDM Compatibility	Least Preferred	Moderate	Preferred
Transportation Rating			Preferred

	Alternative A	Alternative B	Alternative C
Social / Cultural Criteria	HFHT	MFLT	HFLT
Accessibility to Frequent Transit Service	Preferred	Preferred	Preferred
Compatibility with Active Transportation	Least Preferred	Moderate	Preferred
Potential to Impact Cultural & Heritage Resources	Least Preferred	Moderate	Preferred
Potential to Impact Stable Neighbourhoods	Least Preferred	Moderate	Preferred
Social / Cultural Rating			Preferred

	Alternative A	Alternative B	Alternative C
Natural Environment Criteria	HFHT	MFLT	HFLT
Greenhouse Gas Emissions	Least Preferred	Moderate	Preferred
Air Quality	Least Preferred	Moderate	Preferred
Land Taken for Infrastructure	Least Preferred	Moderate	Preferred
Potential to Impact Provincial Environmentally Sensitive Areas	Least Preferred	Moderate	Preferred
Potential to Impact Other Municipal Environmentally Sensitive Areas	Least Preferred	Moderate	Preferred
Natural Environment Rating			Preferred

	Alternative A	Alternative B	Alternative C
Economic Criteria	HFHT	MFLT	HFLT
Capital & Operating Costs	Preferred	Moderate	Least Preferred
Share of Funding to Sustainable Modes	Least Preferred	Moderate	Preferred
Accessibility to Economic Centres	Preferred	Preferred	Preferred
Requirement for New Infrastructure	Least Preferred	Moderate	Preferred
Support for Goods Movement	Preferred	Moderate	Least Preferred
Opportunities for Partnerships	Preferred	Preferred	Preferred
Economic Rating	Preferred		Preferred

Overall Recommended Network			Preliminary Preferred
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Results and Conclusions

Based on the results of the evaluation, Alternative C was identified as the preliminary preferred alternative.

Implementation of the Preliminary Preferred Alternative C

Alternative C planned to significantly invest in transit early on in order to build up transit ridership and result in the ability to defer road projects. Implementing Alternative C as first envisioned would require an annual tax increase of more than 3 per cent per year in the first 5 years. A modified alternative with an evenly paced financial investment was developed to help make this option more affordable in the short term (Modified C).

The modified Alternative C is based on the level of transit service that could be provided with the tax levy impact outlined in the table below.

Year	Operating ¹	Capital (Debt servicing)	Annual Tax Levy Increase
1 - 5	1.0 %/year	0.15 % – 0.20 %/year Average 12 new buses/year	1.15 % - 1.2 %
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¹ A 1% increase to the 2010 Property tax levy is \$3,676,233.

² Includes conventional and articulated buses.

This Modified Alternative C defers expenditures during the early years and moves funding to later in the plan. This results in lower total funding over the life of the plan as the cumulative impact of the operational component is reduced during the first five years of the plan. However, the expenditures and amount of transit service will reach similar levels by 2031. Some road projects would be completed earlier in this alternative than the preferred alternative as the ability to defer is lessened. This alternative results in 287 new lane-kilometres of road infrastructure.

Although still a substantial plan, it is approaching the minimum required to meet the plan objectives of providing greater transportation choice, a higher quality transit service and a manageable level of service. The implications of this scenario include:

- It would take longer to reach the transit ridership projections which would impact operating conditions over the interim period;
- Some road projects would not be deferred in the interim period; and,
- Additional congestion may occur on the regional road network in the interim but this congestion would be addressed through other non-structural strategies.

Throughout the study, public input was sought to provide ideas and feedback. The preferred plan (Modified C) was presented at a series of public information centres in April 2010.

Public Process

Public consultation is an important component of the Transportation Master Plan process, allowing the Region and its representatives to:

- Advise the public on study activities;
- Facilitate community involvement in this planning process;
- Respond to the inquiries and concerns of the residents; and
- Encourage public ownership of the resulting Plan.

Throughout the RTMP process, the study website www.movingforward2031.com was used to disseminate publications, record completed activities, and advertise upcoming events. The public had the opportunity to submit inquiries via email, phone, fax, post or in person to Regional staff. In addition to the website, public consultation centres, public workshops, and a public telephone survey were specifically designed to engage the community in discussions and elicit feedback.

This valued contribution from the public was used to guide the study process. Public participation assisted in the development of the goals, principles and objectives, and resulted in a greater emphasis being placed on transit and active transportation. Public input also contributed to the development of:

- Travel demand management (TDM) options recommended for the TravelWise program;
- Target mode shares (TMS) for key screenlines; and
- Evaluation criteria.

The vision for the future transportation system outlined in the preferred alternative is consistent with the feedback obtained from several public events as summarized below.

Launch Event - Nov 2007

The event objectives were to generate stakeholder interest in the study and to obtain feedback from the public about how they see their future mobility and community as it relates to the transportation system. The program featured introductory remarks from Regional Chair Seiling, a presentation by Glen Murray (Chair of the National Round Table on the Environment and Energy), and a panel discussion with experts in the area of culture, heritage, human health and transportation. The feedback received during this event was positive and reflected an understanding that the Region is at a crossroads when it comes to its future transportation system. The public expressed support for creating a transportation system that provides greater choice and better balances the interrelationship between the environment, the economy and social well-being.

Public Opinion Survey – Nov/Dec 2007

Ipsos Reid polled residents on issues related to transportation and possible improvements to the transportation system, and compared the results to a similar study conducted in 1997. Overall, the results showed that there is more awareness about the transportation challenges facing the Region today than in 1997, including the health, social and natural environment impacts. Residents are supportive of the direction to provide greater transportation choice in the future. To attract more users to transit, the group to focus on appears to be those who currently use transit occasionally and those who do not use it at all, but are open to using it if upgraded service is provided.

Public Workshop 1 – Feb 2008

The purpose was to explore key issues relating to growth in the Region as well as transportation related concerns and discuss how the public wants the community to develop and how they want to travel around the region. An overview of the Regional Transportation Master Plan study process was presented followed by group discussions, where the dialogue focused on the vision for the future of transportation in the Region, how walking, cycling, transit, roads and the movement of goods will fit into this vision, and the public's role in the study process. Overall, the workshop discussions were in support of the direction suggested for the RTMP, specifically the development of a transportation

system that puts moving people first and provides more opportunities for mode choices and which recognizes the interrelationship between the environment, the economy and social and cultural resources.

Workshop 2 - Nov 2008

The purpose was to review and discuss key elements of the RTMP including goals, principles and objectives and suggested travel demand management (TDM) strategies for the Region. The goals, principles and objectives are critical to the development of a new RTMP as they form the framework or map for future planning and decision making relative to the development of the transportation network within the Region. With input received from these workshops along with feedback from the Steering Committee, the Goals and Objectives were refined. The TravelWise (TDM) options were also refined and priorities were set for specific items that are part of the final plan.

Workshop 3 - Jun 2009

These workshops were specifically designed to gain feedback on the proposed study direction for transit ridership targets, future preliminary transportation alternative networks, along with the proposed evaluation criteria. An overview of current travel trends and projected future travel demands as well as information on the implications of a “business as usual” approach to transportation planning and the recommendation to pursue transit mode share (TMS) targets for critical corridors within the Region was presented followed by group discussions. Preliminary TMS targets for key screenlines within the Region were identified for discussion as were alternative future networks and the criteria to be used in evaluating these networks.

Public Consultation Centres – Apr 2010

The draft RTMP detailing the components of the preferred transit oriented network, and the associated transportation priorities, recommended investment priorities and supporting policy was presented at these Centres, which were arranged as Open House forums. The comments were generally supportive of the preferred alternative and some suggest that more should be done in terms of transit and active transportation modes, and done faster. However, many recognized that the main mode of transportation will remain auto in the future and change will take time and financial commitment.

Public Input Meeting (PIM) - Planning and Works Committee

A Public Input Meeting was held at Planning and Works Committee on May 18, 2010 with seven delegations appearing. The following summarizes the public comments and project team responses:

Comment: Show the extension of Strasburg Road to connect with New Dundee Road.

Response: The City of Kitchener is undertaking a Class EA for the extension of Strasburg Road which will determine the final alignment to New Dundee Road. A reference to this study will be made in the RTMP.

Comment: Revise the transit service map for transit routes in the Doon South Area to reflect roads that will be closed.

Response: The transit routes identified on the Transit Service Map are conceptual only. The detailed transit route planning for the Doon South Area will be undertaken prior to implementation and will take into account the scenic road designations, contemplated road closures and the overall collector network approved for the Doon South Community.

Comment: Improve the east-west linkages on the west side of Kitchener (i.e. Bleams Road and Huron Road from Fischer-Hallman Road to Trussler Road)

Response: The RTMP did not identify the need to widen Bleams Road or Huron Road within the 20 year time frame. Both roads are on the edge of the urban area and there is no demand generated from west of Trussler Road. The developments on the north and south side of Bleams Road both have direct access to Fischer Hallman Road that allows for good trip distribution. The need for widening will be reviewed during the next scheduled update of the RTMP. We will recommend that the road allowance for Bleams Road, from Trussler Road to Fischer Hallman Road, be increased to 35 m from 30.5 m, to protect for potential, long term widening. Bleams Road is scheduled for reconstruction in the Transportation Capital Program for 2014, subject to budget approval. Any shorter term operational improvements will be considered as part of the reconstruction project.

The City of Kitchener is conducting their Transportation Master Plan and the Southwest Kitchener Study which will identify operational improvements required as a result of the development on the south side of Huron Road. Regional staff is participating in this study and will raise this issue with the City of Kitchener through this process.

Comment: Revisit the RTMP after the completion of the Kitchener Transportation Study

Response: The RTMP will be updated on a 5 year cycle. The results from the Southwest Kitchener Transportation Study will be incorporated during the next scheduled RTMP update. Regional staff are participating on the project team for the Southwest Kitchener Transportation Study.

Comment: Support “unmodified” Alternative C, do more, sooner.

Response: With Alternative C, an annual tax increase of more than 3 per cent per year in the first five years is required to quickly expand the transit network and increase route frequencies. The aggressive implementation of conventional transit service in the first five years would help build a stable foundation for achieving the 17.3% transit modal share (by share of motorized trips) targeted for 2031 and reduce the amount of new road network capacity improvements that would otherwise be required. This alternative would provide residents a competitive transportation choice in the short term thus promoting the development of a transit culture and influencing lifestyle decisions including where to live and work and the need to purchase a first or second vehicle. However, the rapid expansion of the transit service would put considerable pressure on transit operations with the need to hire drivers and mechanics, build facilities, etc. Recognizing that for the average resident, the impact of Alternative C on the tax burden in the first five years of the plan would be significant, staff proposed a modified financial plan (Modified Alternative C) with a lesser impact. This plan will still provide the same transit service levels by 2031, however congestion in the interim years will be greater and some road projects would need to be advanced. Modified Alternative C presents a plan that is affordable and can realistically be implemented.

Comment: Place more emphasis on Active Transportation (walking and cycling).

Response: An increase in active transportation mode share from 7.9 to 12 % in the PM peak hour is targeted for 2031. This translates to an 89 % increase in the number of walking trips and a 555% increase in cycling trips during the pm peak hour. These are ambitious, yet achievable targets which will be reviewed during updates of the RTMP (see Attachment C for detailed target rates for all modes).

Comment: Freeze the number of auto trips at current levels.

Response: Along with an increase in the percentage of active transportation trips, a decrease in the percentage of auto driver trips from 69.6 to 58.0% in the PM peak hour is targeted for 2031. With the growth in population over the next 20 years there would still be a 25% increase in the number of auto trips even with this significant reduction in the auto mode share. The cost of implementing the transit service associated with a further reduction in the number of auto driver trips would have significant short term impacts on the tax levy.

Comment: Consider high speed passenger rail

Response: There is an ongoing joint high speed rail feasibility study for the Quebec City to Windsor

Corridor being undertaken by the Province of Ontario, Province of Quebec and the federal government. In the short term, the Region is committed to continuing to work with the Province, Metrolinx, GO Transit and VIA Rail to pursue improved inter-regional transit and high-speed rail connections. The Region is also committed to working with the Ministry of Transportation to investigate opportunities to implement transit and transportation demand management improvements on the corridor between the Region and the Greater Toronto Area (GTA).

Comment: Include fostering active communities as a stated objective

Response: The RTMP study was directed by four goals, two of which are supported by objectives that specifically identify active transportation. The goal *Promote Transportation Choice* includes the objectives:

- Provide reasonable access to a variety of transportation modes;
- Develop safe, convenient and well-integrated bicycle and pedestrian networks and facilities that link key activity nodes within the Region; and
- When designing and operating the transportation system, consider the personal security need of users so as not to limit their choice of transportation mode.

The goal *Support Sustainable Development* includes the objective to ensure that the health and social benefits of an active lifestyle direct transportation planning and design decisions. Generally priority will be given in the following order:

- Walking;
- Cycling;
- Public transit;
- Carpooling and other smart commute strategies; and
- Single occupant vehicles.

However, local context will influence transportation design choices.

Providing transportation choice and supporting sustainable development will foster active communities. Although supported within a number of objectives, it was felt that including this specific objective would give more emphasis to the concept and has been added.

Comment: Provide paved multi use trails outside of urban areas (Waterloo to St. Jacobs).

Response: There are a number of existing multi use trails in the rural areas that connect communities including the Kissing Bridge Trailway connecting Guelph to Millbank through Elmira and the Health Valley Trail connecting St. Jacobs and Conestogo which is also part of the trail system that connects Waterloo to St. Jacobs. There is often limited road allowance on the rural roads to accommodate multi use trails, mainly resulting from the ditch/drainage requirements. Staff will continue to collaborate with the Area Municipalities through the Cycling Master Plan update to identify off road and on road opportunities.

Comment: Use grade separated roundabouts to facilitate cycling and pedestrian activity. (i.e. Homer Watson/ Block Line)

Response: The grade separated roundabout is an innovative approach to address pedestrian and cycling movements at busy intersections, although its high cost and large land requirements make it rather restrictive as a design alternative. This concept can be considered during the update of the Cycling Master Plan. The suitability of this approach for the Homer Watson / Block Line intersection was considered during the design process for this intersection and it was determined that the cost and land requirement was too great.

Comment: Emphasize intercity rail passenger service (more grade separations on North Mainline)

Response: The Region is currently undertaking an Environmental Assessment for Weber Street, from Victoria Street to Guelph Street, including a grade separation that is scheduled for construction by 2017. Regional Council previously approved a partial grade separation (Rapid transit only), at King

Street. There may be a need to revisit this location once details of the future rapid transit station and integration with GO Transit and VIA Rail are finalized. The Region will continue to work with GO Transit, VIA Rail and Goderich Exeter Railway to determine the need for grade separations on the North Mainline.

Other Comments Received

Following the Public Input Meeting additional comments were received and responses prepared.

Comment: Construct the Trussler Road interchange with Highway 401 sooner than beyond the 20 year time frame

Response: The project team reviewed the need for improved/new access to Highway 401 west of Homer Watson Boulevard. Currently there is a need for one interchange based on operational limitations at Homer Watson and the need to improve accessibility to the area north of Highway 401. From a network perspective, a connection to the current Cedar Creek / Highway 401 interchange would provide the greatest benefit. It is recommended that an Environmental Assessment be initiated in 2011 to investigate a new access to Highway 401 west of Homer Watson Boulevard. This Environmental Assessment will be required to consider planning alternatives including Trussler Road and the extension of Fischer Hallman Road to connect with the Cedar Creek interchange by assessing the social, environmental, economical and transportation impacts of each corridor. This study will be carried out as a Schedule "C" study under the Environmental Assessment Act and will include an extensive public and stakeholder consultation component.

It is also recommended that the need for a second Highway 401 interchange be reviewed during the next scheduled update of the RTMP.

Comment: How do we continue with greenfield development and how do we recognize the intensification targets? Will people be convinced we are making a change?

Response: Currently, there is a 10 year supply of greenfield land in the Region that translates to a population of about 90,000 people. There are intensification targets that are legislated by the province and they are included in the new Regional Official Plan. These new greenfield areas will also be required to have minimum densities and designed to be more transit supportive. It will be important to provide transit service to these areas early to establish transportation patterns that will minimize the pressure on the road network. Supportive community planning and policy combined with the implementation of infrastructure to encourage transportation choice will help demonstrate to the community that there are legitimate options for the way we travel.

Comment: How will the conventional system be integrated with the Rapid Transit system?

Response: The new rapid transit system will essentially replace the current iXpress route, however new high frequency bus service like iXpress will be introduced on other routes. The proposed rapid transit system is based on rapid transit and conventional bus service working together. There will be bus stops in between and at the rapid transit stops along the Central Transit Corridor. Conventional bus service will remain necessary along the central transit corridor to provide frequent stops at intermediate locations, allowing rapid transit to stop only at key locations and offer a faster travel option. New iXpress-style routes and cross-town routes will create a comprehensive and integrated Regional transit system, both feeding to rapid transit and serving

destinations outside of the CTC.

Comment: Will the plan be flexible to adapt to a changing environment?

Response: The RTMP has recommended a number of action items and processes to be able to adjust the plan to respond to changes including:

1. Monitor key performance indicators and prepare annual reports regarding the Region's progress towards achieving the RTMP goals;
2. The RTMP will be updated on a 5 year cycle to permit adjustments to targets and priorities;
3. A Business Plan will be prepared every 4 years for Grand River Transit;
4. A Business Plan will be prepared every 3 years for the TravelWise program to identify priority initiatives; and
5. Funding and priorities for transportation infrastructure and priorities will be considered through the annual budget process.

Road improvement projects identified in this plan will also be implemented through the undertaking of project specific Environmental Assessment (EA) studies. During the EA process, flexibility exists to incorporate new or updated information to reconfirm the recommended solution or consider other appropriate alternatives.

Comment: What are the implications for the RTMP if funding is not received for the Rapid Transit project?

Response: The Region of Waterloo is required to plan for higher order transit in accordance with the Provincial Places to Grow Growth Plan for the Greater Golden Horseshoe Area. The fundamental direction in the RTMP is to create greater transportation choice by investing in transit and active transportation modes. The RTMP has integrated rapid transit as a feature of the plan. If implementation of the RT is delayed, the plan can be adjusted through greater investment in conventional transit in the short term to help build ridership and develop integration with the iXpress service in the Central Transit Corridor. In fact, the first five years of the RTMP are founded on both a gradually increasing investment in conventional transit and a strategic roads program.

The finalization of a new RTMP is very important from a number of perspectives. The current RTMP is over 10 years old and is becoming obsolete with the significant growth and policy changes that have occurred in this time period. Delaying the investment in conventional transit will result in increasing congestion and lost opportunities. There are also a number of initiatives that are relying on an approved RTMP to set the context for localized issues, including:

1. Southwest Kitchener: Plans of subdivision in this area are awaiting the outcome of the RTMP to finalize the land use and required road network.
2. East Side: Development of the east side lands in Cambridge (north of Maple Grove Road, east and west of Fountain Street) are moving forward and the RTMP is required to plan the transit service and road requirements. The RTMP also identifies road corridors in the area that need to be protected for future growth.
3. North Waterloo: Northwest Waterloo is one of the last areas for greenfield development in Waterloo. The area is developing quickly and increasing pressure to provide the transportation infrastructure and service. The RTMP identifies the required transit service and road projects to meet future demands.
4. Fischer Hallman Road (south of Bleams Road): The traffic analysis for Fischer Hallman Road at Ottawa Street and Westmount Road identified high motorist delays. A six-lane cross section on Fischer Hallman Road was tested as part of the Environmental Assessment Study and didn't resolve the issues on its own. The RTMP investigated broader network solutions and is recommending high quality express transit along Fischer Hallman Road to help service this area. The development in the greenfield areas south of Bleams Road is being planned as transit oriented development and will anchor this future

transit service. The Environmental Assessment for this road requires approval of the RTMP in order to proceed.

5. The RTMP is a major factor in establishing priorities for the transportation expansion program, addressing planning alternatives and establishing need and justification in accordance with the Municipal Class Environmental Assessment process. Approval of the new RTMP will help avoid delays related to need and justification for transportation projects during the design process.

Description of the Preferred Alternative – Modified C

The preferred alternative incorporates transportation demand management and active transportation initiatives and parking and land use policies that are designed to make transit a competitive and desirable choice for users that have access to an automobile. A complementary road network plan has been developed to assist in prioritizing road network improvements including expansions, widening, intersection improvements and transit priority improvements.

The preferred alternative is a comprehensive plan spanning several areas of transportation including;

- Transit Network Plan & Priorities,
- Active Transportation(walking and cycling),
- Transportation Demand Management (TDM) – Travelwise,
- Intelligent Transportation System Improvements (ITS),
- Inter-Regional Transit Service Integration,
- Road Network Plan and Priorities (including the Road Network Prioritization of Provincial Highway Improvements),
- Policy Support,
- Parking,
- Congestion Management,
- Action Plan, and
- Transition and Monitoring

Transit Network Plan & Priorities

The proposed transit priority plan for the 0-5, 5-10 and 10-20 timeframes are identified in Attachment D and include additional limited stop express routes, new routes, increased frequencies and route adjustments. Major components of the implementation of the transit improvements will include;

- Finalize Phase II of the Transit Business Plan to incorporate initiatives outlined in the RTMP and provide an annual report to Council to update and monitor the Transit Business Plan to ensure continuing progress towards achievement of its objectives.
- Provide operating funds for the first three years of operation of all new routes to encourage ridership growth within the constraints of the net operating budget as outlined in the Alternative Modified C.
- Develop and implement smart card technology for transit
- The Region should continue to fund and support the Mobility Plus transit service for those unable to take conventional transit.
- Provide appropriate bus lane priority measures in corridors with combined hourly flows of ± 25 buses.
- Review opportunities to implement new road widenings as multipurpose lanes (e.g. High Occupancy Vehicle lanes) to improve efficiency and interconnectivity as part of future Environmental Assessments

Active Transportation (walking and cycling),

Active transportation is a critical component of any balanced transportation system and will play a much larger role in urban areas as the urban municipalities build-out and begin to achieve higher land use densities in the Central Transit Corridor. The target is to increase the walking and cycling mode share, from 8% of PM peak period trips today to 12% by 2031 (complete mode share targets and amounts are in Attachment C). Achieving this increase will require investment in active transportation infrastructure and will require a number of policy initiatives to encourage greater usage for non-recreational based trips. The major recommendations included in the plan regarding active transportation include:

- Update the Cycling Master Plan and develop a Pedestrian Master Plan to create an Active Transportation Plan
- Over time, increase funding for active transportation modes as a share of overall transportation funding to a level commensurate with the target of 12% mode share.
- Use Travelwise to encourage employees to walk and cycle and provide comfortable pedestrian and cycling infrastructure at all municipal work sites;
- Aim to ensure that workplaces are designed to support those who walk and cycle to work and develop an incentive program to encourage more employees to cycle or walk to work at least one day per week.
- Continue to promote and install bike racks on buses.
- Continue and expand the program to distribute active transportation and TDM information packages available to developers, large employers, property owners and the general public, with information on the Region's and Area Municipal programs, tips to change travel behaviours, and initiatives that can be implemented at a small scale to promote active transportation.
- Connections between Regional streets, local streets and neighbourhood parks, schools, natural corridors and other open space areas should be provided in all new subdivision development plans.

Transportation Demand Management (TDM) – Travelwise

The Region's Transportation Demand Management unit, known as Travelwise, develops policies, programs and services to influence why, when, where and how people travel. The goal of Travelwise is to improve the efficient use of Regional infrastructure, transit services, as well as to increase the use of active and sustainable transportation. To build on the successes of Travelwise, and to support the RTMP, a series of recommendations are proposed grouped under four key categories: Land Use and Transportation Integration; Transportation Supply; Education, Promotion, Outreach; and Travel Incentives and Disincentives. A Travelwise Business Plan will be prepared to identify priority initiatives. As well, the Transportation Impact Study requirements for developments to support active transportation modes and TDM plans will need to be strengthened.

Intelligent Transportation System Improvements (ITS)

During peak periods, portions of the existing road network are under utilized as travel is often occurring in a peak direction. To optimize the existing transportation system, it is important to investigate operational and non-structural strategies. Implementation of this part of the RTMP will involve developing an Intelligent Transportation System (ITS) strategic plan that includes;

- Expanded transportation information systems, including real-time information, providing traveler information for transit and road users
- Real time scheduling of transit vehicles
- Real time optimization of transit priority and traffic signal operations and coordination

- Incident management plans for key locations and connections to deal with congestion due to incidents or provincial highway closures
- Update existing traffic management system to an advanced traffic management system allowing the above items to be integrated
- Growing congestion on the road network will impede surface transit routes and increase transit travel times, traffic signal control - transit priority measures will be required at key intersections.

Inter-Regional Transit Service Integration

The Region will continue to work with the Province and Metrolinx to pursue the extension of GO Transit service into the Region. The Metrolinx Transportation Plan includes rail passenger connections from the Greater Toronto Area to both Kitchener and Cambridge. GO Transit has completed an Environmental Assessment Study to extend rail passenger service from Georgetown to Kitchener and is considering implementing service in this corridor. The Region has also completed a study indicating the feasibility of extending GO Transit rail service from Milton to Cambridge. The extension of GO Transit service to Waterloo Region would remove trips along the heavily congested Highway 401 to allow for better goods movement. The plan is recommending that we continue to work with the Province, Metrolinx, GO Transit and VIA Rail to pursue improved inter-regional transit connections to the Region.

Road Network Plan & Priorities

Road Network

- As part of the RTMP, projections have been made to assist in prioritizing road network improvements required within 0-5 years, 5-10 years, 10-20 years and beyond 20 years. The road network priority plan is outlined in Attachment E. These improvements take the form of roadway expansions (i.e. new roads), widenings, intersection improvements, and transit improvements (e.g. transit by-pass lanes and transit priority).
- Further operational improvements may still be required and identified through individual transportation impact studies or smaller area wide transportation studies. The implementation plan will include the requirement that all road and land use projects include an assessment of the impact on the achievement of the established transit modal share targets.

Prioritization of Provincial Highway Improvements

- A number of improvements to the Provincial Highway network will be required to support future population and employment growth in the Region of Waterloo and to support enhanced Goods Movement to/from major industrial employment nodes in the area. Improvements such as the current widening of Highway 8 will improve access into the urban areas, and portions of this widening will be used to support implementation of the aBRT portion of the Rapid Transit system. The plan is recommending that we continue to work with the Province to undertake a strategic transportation study for the area west of the GTA. Also, the Environmental Assessment for improving connectivity to Highway 401 should be initiated within the next year.

Policy Support

As our community grows, congestion will increase throughout the region and transit will become a more competitive travel choice if a high quality transit service is provided. With the level of transit investment proposed, it is critical that there is a supportive policy framework in place.

The Regional Transportation Master Plan includes Transportation Demand Management initiatives and parking and land use policies;

- Transit Supportive Policies

Policies that integrate land use and transportation to support intensification and encourage transit are important to the success of the plan.. Transit Modal shares will be tracked as part of the monitoring policy requirements.

- **Parking Policies**
Through a coordinated approach, parking policies will be considered that manage parking supply and costs, supports intensification and encourages transit use.
- **Travelwise (Transportation Demand Management)**
Transportation Demand Management policies will build upon the success of the Region's TravelWise program and support measures to reduce auto travel during the peak periods.
- **Active Transportation Policies**
Active transportation policies will encourage more cycling and walking within the community.

The implementation of the above polices will be as part of an overall amendment to the Regional Official Plan that will involve consultation with the Area Municipalities and incorporate other recommendations from the RTMP.

Parking

A coordinated approach to actively manage the price and supply of parking is a key feature to the success of the plan. A coordinated approach recognizes that area municipalities will continue to manage parking within their communities, but encourages them to act in a unified manner and implement parking management policies and practices to support the common objectives, support for land use intensification, transit and non-auto modes of travel, the need for good urban design approaches in our urban areas, and to foster sustainable economic development. Implementation of the parking strategy includes;

- Establish a Parking Coordination Committee with the Area Municipalities and develop a Terms of Reference to review areas of common interest and initiatives required to support intensification and transit. Examples of potential initiatives include requiring parking in excess of minimum parking standards to be provided in a garage or reducing minimum parking by-law requirements at certain locations.
- Complete a Commuter/Park-N-Ride/Kiss-N-Ride parking lot feasibility study. New commuter parking lots adjacent to Regional Roads, transit or Provincial Highways will assist in providing commuting options for residents who work in the urban areas in the Region or in our adjacent communities.

The true cost of making a trip is rarely a factor in choosing which mode to use because the real cost difference is not explicit. The cost and supply of parking have been shown to have a major influence on mode choice because they represent an immediate out-of-pocket cost that cannot be avoided. Parking fees also provide a potential revenue source for funding transit improvements to reinforce the preference of transit development and use.

Congestion Management

A major component of this transportation plan is to re-focus how infrastructure investment will be made and how congestion or, perceived areas of congestion, are addressed. The following strategies should be considered along with influencing changes to personal travel characteristics to ensure that the Region is making more efficient use of the transportation network:

- Peak period spreading;
- Implementation of travel demand management strategies aimed at promoting active transportation modes, increasing auto occupancy and shifting travel times;
- Develop information and communication technologies on the road and transit systems to use the existing network more efficiently. Such as real-time information for transit riders.; and
- Transfer of non-discretionary trips to outside peak periods.

Action Plan

The RTMP establishes broad strategic direction. There are several action items that need to be undertaken to develop more specific operational plans to implement the RTMP as summarized in Table 4:

Table 4: Summary of Action Items and Proposed Timing

No.	Description	Proposed Timing
1	Update the Cycling Master Plan and develop a Pedestrian Master Plan to create an Active Transportation Plan	2010-2011
2	Strengthen the Transportation Impact Study requirements for developments to support active transportation modes and TDM plans	2012
3	Finalize Phase II of the GRT Business Plan to incorporate initiatives outlined in the RTMP	2010-2011
4	Develop and implement smart card technology for transit	2013
5	Prepare 3 year TravelWise Business Plan to identify priority initiatives	2011-2012
6	Complete a Commuter/Park-N-Ride/Kiss-N-Ride parking lot feasibility study	2013
7	Develop an Intelligent Transportation System (ITS) Strategic Plan	2011-2014
8	Establish a Parking Coordination Committee with the Area Municipalities and develop a Terms of Reference to review areas of common interest and initiatives required to support transit	2010-2012
9	Prepare a detailed Goods Movement Study	2013
10	Work with Province to undertake a strategic transportation study for the area west of GTA	2011-2012
11	Work with the Province, Metrolinx, GO Transit and VIA Rail to pursue improved inter-regional transit connections to the Region	2010
12	Initiate the Environmental Assessment for improved connection to Highway 401	2011
13	Prepare annual reports regarding the Region's progress towards achieving RTMP goals	Annual
14	Investigate and prepare a report on financing opportunities/strategies to fund infrastructure improvements	2010-2011
15	Pursue with the Province modifications to the Development Charges Act	2011
16	Incorporate policy initiatives into the Regional Official Plan and other regional policy documents	2011
17	Meet regularly with the Area Municipalities and the Province to ensure alignment/coordination of transportation initiatives	Ongoing

Transition and Monitoring

This strategy may result in a period of transition where vehicle delay experienced on the road network will increase and there may be public pressure to widen/expand roadway infrastructure. Responding too early to construct roadway infrastructure will jeopardize the long term Growth Management Strategy and transportation objectives and will compete directly with transit initiatives. Consistent with the overall plan, it is recommended that investment in all infrastructure and transit services be based on criteria that are outcome driven, performance based and relate to the Region's transportation priorities. The plan is proposing that a report to Council be completed annually showing the progress and the actual peak direction PM peak hour established transit modal shares achieved across each of the screenlines.

A monitoring program designed to track progress towards achievement of the RTMP goals is proposed. A series of targets will be established to monitor progress on meeting each of the goals, and a reporting framework will be recommended to guide the Region on sharing results with council and the public. A mechanism to monitor growth and demographic changes, policy changes and other external influences, along with changing transportation needs will be utilized to identify when changes

to the plan may be required.

Benefits of the Preferred Alternative

The proposed Transportation Master Plan results in a reduction of the roads capital cost by \$270 million (from \$988.7 Million) during the duration of the plan. In addition to this cost avoidance there are considerable additional benefits including:

- Reduces impact of transportation infrastructure on mature neighbourhoods and businesses,
- Greater ability to preserve cultural heritage features,
- Greater ability to preserve natural environmental features,
- Increases activity on the street and community vibrancy,
- Increases community health with less air emissions and more active travel,
- Reduces community impact on climate change with reduced greenhouse gas emissions,
- Encourages economic development with improved mobility options, and
- Reduces personal transportation costs (CAA reports annual car ownership and operating costs between \$7800 and \$13,600),

Building on Our Success

The Transportation Master Plan is building upon a solid foundation and successes that have been developed and achieved over the previous decade including:

- The Regional Growth Management Strategy set the stage to align and integrate land use and transportation planning. The RGMS identified provision of transportation choice as a key goal and featured Rapid Transit.
- The New Regional Official Policy Plan incorporates transit and active transportation policies that supports the RGMS and direction of the draft RTMP.
- Co-ordination with Area Municipal trail, pedestrian and cycling master plans.
- Overall Grand River Transit ridership has increased by 74% over the past 10 years (16.4 million riders in 2009).
- iXpress is now carrying almost 2 million riders per year (9,000 daily boardings). The success of this service demonstrates that a higher quality transit service will attract ridership.
- New transit technology that includes online transit trip planning, next bus texting service, transit priority for iXpress buses, and automatic vehicle location and control / automatic bus passenger counters (by the end of 2010 70% of fleet will be equipped).
- There are already 309 km of cycling facilities on Regional roads.
- Implementation of the Travelwise program that is a suite of initiatives to provide opportunities for staff and the public to use transit, walk or cycle.
- New draft Regional Road Transportation Corridor Guidelines that incorporate design principles that provides space and improves the environment for walking and cycling but still continues to accommodate cars.
- New pedestrian bridge over Highway 401 near Conestoga College and the planning underway for an additional Highway 401 pedestrian bridge in Cambridge.

It is recognized that spare capacity in the existing road system is being absorbed at a rate faster than it is being replaced and that continual expansion of the road network will encroach on the natural environment, communities and businesses and is not sustainable in the long term. The proposed Transportation Master Plan continues the direction of advancing active transportation and transit while providing strategic road improvements recognizing that travel by auto will still be an essential component of the community's future mobility needs.

Area Municipal Consultation/Coordination

Area Municipal representatives were invited to participate on the Steering Committee and included staff and/or politicians from Cambridge, Kitchener, North Dumfries and Waterloo and their input has been considered in the development of the plan. Presentations will be made to all Area Municipal Councils prior to June 22. Kitchener and Waterloo are preparing local Transportation Master Plans and utilizing the results from the RTMP.

CORPORATE STRATEGIC PLAN:

This report is aligned with the following Strategic Focus areas;

Focus Area One: Environmental Sustainability: Protect and Enhance the Environment

- Improve air quality in Waterloo Region.

Focus Area Two: Growth Management: Manage and shape growth to ensure a livable, healthy, thriving and sustainable Waterloo Region

- Enhance, develop, promote and integrate sustainable and active forms of transportation (public transit, cycling and walking)

Focus Area Five: Infrastructure: Provide high quality infrastructure and asset management to meet current needs and future growth.

- Optimize the use of existing infrastructure and ensure it is adequately maintained.
- Provide infrastructure needed to accommodate planned growth.

FINANCIAL IMPLICATIONS:

A summary of the capital, operating and maintenance costs for transit and roads is presented in Attachment F for the Preferred Transportation Master Plan. The total costs are outlined in the following table.

Combined Roads and Transit Capital and Operating Costs by Alternative & Time Period (years)

Total Costs (\$M)	Preferred Alternative - Modified C		
	1 - 5	6-10	11-20
Current Planned	\$725.0	\$622.5	\$916.0
Additional Costs	\$112.4	\$251.4	\$1,125.2
Total Costs by Period	\$837.4	\$873.9	\$2,041.1
Total Program Costs	\$3,752.4		
Present Value of Program Costs	\$1,760.2		

The report identifies the need to make additional investment in transportation to facilitate the provision of greater transportation choice and to maintain a functional transportation system. The Plan would be funded from a combination of Development Charges and tax levy. The modified Alternative C is based on the level of transit service that could be provided with the tax levy impact outlined in the table below.

Year	Operating ¹	Capital (Debt servicing)	Annual Tax Levy Increase
1 - 5	1.0 %/year	0.15 % – 0.20 %/year Average 12 new buses/year	1.15 % - 1.2 %
6 - 20	1.0 %/year	0.30 % – 0.50 %/year Average 22 new buses/year ² plus new storage and maintenance facility	1.30% - 1.5 %

¹ A 1% increase to the 2010 Property tax levy is \$3,676,233.

² Includes conventional and articulated buses.

Funding of transportation initiatives, particularly transit, is becoming an issue for communities within the Greater Golden Horseshoe Area that are working towards implementation of the Provincial Places to Grow Plan. To reduce the long term financial impact, particularly in years 5-20, alternative financing strategies should be investigated and pursued. Two potential sources include amendments to the Development Charges Act and a more competitive fare strategy.

Active Transportation Funding (walking and cycling)

Sidewalks and cycling facilities are currently funded through the Transportation Capital Program supported by tax levy (Cycling Facility and Roads Rehabilitation Reserve Funds) and development charges. These facilities are generally constructed in conjunction with road infrastructure projects. There is limited funding available for new projects that aren't part of these projects. The proposed Active Transportation Master Plan (Cycling and Pedestrian) will review priorities of sidewalks and cycling facilities, identify which facilities will best support the increase in walking and cycling modal share, and identify a funding source and strategy. Budget issue papers would be submitted from year to year for Council's consideration as additional funding is required.

OTHER DEPARTMENT CONSULTATIONS/CONCURRENCE:

Transportation and Environmental Services and Public Health have representatives on the Steering Committee for this project that includes the following Regional Councillors; Doug Craig, Kim Denouden, Jean Haalboom, Claudette Millar, Sean Strickland, Jim Wideman, and Carl Zehr.

ATTACHMENTS:

- Attachment A - Detailed Study Goals and Objectives
- Attachment B - Economic Comparison of Alternatives A, B and C
- Attachment C - Regional and Area Municipal Mode Share Targets
- Attachment D - Transit Service Improvement Priorities (0-5, 5-10, 10-20, 20+ year periods)
- Attachment E - Road Improvements Priorities (0-5, 5-10, 10-20, 20+ year periods)
- Attachment F - Capital and Operating Cost Estimates

PREPARED BY: *Paula Sawicki*, Manager, Strategic Transportation Planning
Graham Vincent, Director, Transportation Planning

APPROVED BY: *Rob Horne*, Commissioner of Planning, Housing and Community Services

Attachment A: Detailed Study Goals and Objectives

<p>GOAL Optimize the Transportation System</p>	<p>GOAL Promote Transportation Choice</p>	<p>GOAL Foster a Strong Economy</p>	<p>GOAL Support Sustainable Development</p>
<p>Make the most of what exists: preserve and maximize the use of facilities and services — avoid or defer the need for new infrastructure that does not support the other goals.</p>	<p>Provide and maintain a transportation system that offers competitive choices for moving people and goods in an integrated and seamless manner while minimizing single occupancy vehicle trips.</p>	<p>Provide a transportation system that supports the retention of existing businesses and attraction of sustainable economic activity.</p>	<p>Provide and maintain a transportation system that supports sustainable growth in both urban and rural areas and reduces transportation contributions to climate change.</p>
<p>Objectives:</p> <ol style="list-style-type: none"> 1. Fill the gaps —add connections and linkages within the existing transportation system to minimize the need for more infrastructure. 2. Improve the way that the components (i.e. traffic signals, roundabouts, pedestrian/cycling facilities, transit priority intelligent transportation systems (ITS), intersection improvements, etc.) work together to reduce delays and best use available capacity. 3. Think ahead — embrace a comprehensive, long-term transportation planning approach that considers all modes. 4. Invest in integrated public transportation services to manage high levels of travel demand in key transportation corridors within and outside the region. 5. Use transportation demand management (TDM) measures to improve the efficiency of the transportation system. 	<p>Objectives:</p> <ol style="list-style-type: none"> 1. Ensure that public transit services are planned and operated to be competitive with other modes, including the automobile. 2. Develop safe, convenient and well-integrated bicycle and pedestrian networks and facilities that link key activity nodes within the region. 3. Encourage and preserve opportunities for rapid transit, where appropriate. 4. Collaborate with other agencies to improve intercity transit. 5. Continue to support new and innovative approaches to expand the existing transit system. 	<p>Objectives:</p> <ol style="list-style-type: none"> 1. Support the planning, design, delivery, and ongoing maintenance of a fully integrated transportation system composed of roads, walkways, bikeways, transit, railways and the Region of Waterloo International Airport. 2. Work with the Provincial government and other agencies to upgrade and expand their transportation network and corridors including the provision of improved road, rail (freight), and bus/rail transit linkages/connections to the region. 3. Develop a transportation system that provides service to new and developing areas. 4. Foster partnerships between the all levels of government, the private sector, educators and other stakeholders to improve the transportation system. 	<p>Objectives:</p> <ol style="list-style-type: none"> 1. Ensure that the health and social benefits of an active lifestyle direct transportation planning and design decisions. Generally, priority will be given in the following order: <ul style="list-style-type: none"> • Walking, • Cycling; • Public transit; • Carpooling and other smart commute strategies; and • Single occupant vehicles However, local context will influence transportation design choices. 2. Consider urban design, zoning and parking management strategies that support transit, walking and cycling, and minimize land consumed to support automobile travel (e.g. parking lots). 3. Support changes to the transportation system that will result in a reduction in vehicle emissions, minimize energy consumption, and limit environmental impacts. 4. Ensure that new development and redevelopment support greater levels of transit, walking and cycling and that transit service is provided at an early stage in new developments.

GOAL Optimize the Transportation System	GOAL Promote Transportation Choice	GOAL Foster a Strong Economy	GOAL Support Sustainable Development
		5. Develop a transportation system that allows for the efficient movement of goods and is adaptable to accommodate changing needs.	5. Be a leader in the implementation of greenhouse gas emission and carbon reduction measures to meet the challenge of current and emerging climate change issues. 6. Provide opportunities for cyclists, transit vehicles and pedestrians to cross natural or man made features (rivers, freeways, etc.). 7. Foster the development of communities that support active transportation such as walking, cycling.

Attachment B: Economic Comparison of Alternatives A, B and C

	Alternative		
	A	B	C
Transit Capital	\$509.8	\$629.3	\$758.5
Transit Net Operating and Maintenance	\$1,770.9	\$1,963.6	\$2,145.1
Road Capital	\$993.7	\$832.0	\$718.7
Road Net Operating and Maintenance	\$695.0	\$687.1	\$679.4
Total	\$3,969.5	\$4,111.9	\$4,301.7

Attachment C: Regional and Area Municipal Mode Share Targets (some corridors will have higher targets)

	2006 PM Peak Hour		2031 PM Peak Hour	
	Person Trips	Share	Target	Person Trips
Auto Driver	85,038	69.6%	58.0%	106,422
Auto Passenger	19,098	15.6%	12.0%	22,073
Local Transit*	4,651	3.8%	14.8%**	27,101
School Bus	3,294	2.7%	2.7%	4,954
Cycle	841	0.7%	3.0%	5,505
Walk	8,719	7.1%	9.0%	16,514
Other	514	0.4%	0.5%	917
Total	122,154	100.0%	100.0%	183,487

* Translated into annual transit ridership

- **2009 = 16.4 M**
- **2016 = 20.2 M (adjusted for constrained service levels)**
- **2021 = 28.1M (adjusted based on achieving 2016 peak ridership by 2021 + additional off peak ridership due to overall population growth to 2021)**
- **2031 = 53.6 M**

**This is less than the 17.3% previously stated because it includes cycling and walking trips as opposed to just motorized trips.

2006 PM Peak Hour Trips by Local Municipality and By Mode of Travel - TTS Data

	Cambridge		Kitchener		Waterloo		Rural Municipalities	
	Person Trips	Share	Person Trips	Share	Person Trips	Share	Person Trips	Share
Auto Driver	21,269	71.5%	35,939	68.9%	18,068	68.0%	9,762	71.5%
Auto Passenger	4,978	16.7%	8,242	15.8%	3,911	14.7%	1,967	14.4%
Local Transit	660	2.2%	2,784	5.3%	1,179	4.4%	29	0.2%
School Bus	595	2.0%	1,265	2.4%	530	2.0%	905	6.6%
Cycle	107	0.4%	223	0.4%	361	1.4%	150	1.1%
Walk	2,068	7.0%	3,568	6.8%	2,450	9.2%	633	4.6%
Other	64	0.2%	175	0.3%	59	0.2%	216	1.6%
Total	29,741	100.0%	52,196	100.0%	26,558	100.0%	13,662	100.0%

2031 PM Peak Hour Trips by Local Municipality and By Mode of Travel – Target

	Cambridge		Kitchener		Waterloo		Rural Municipalities	
	Person Trips	Share	Person Trips	Share	Person Trips	Share	Person Trips	Share
Auto Driver	26,758	62.8%	37,096	56.0%	31,511	54.1%	11,057	67.4%
Auto Passenger	5,550	13.0%	7,694	11.6%	6,136	10.5%	2,693	16.4%
Local Transit	5,012	11.8%	11,280	17.0%	10,475	18.0%	334	2.0%
School Bus	886	2.1%	1,838	2.8%	1,016	1.7%	1,215	7.4%
Cycle	831	1.9%	1,801	2.7%	2,646	4.5%	227	1.4%
Walk	3,396	8.0%	6,110	9.2%	6,244	10.7%	764	4.7%
Other	183	0.4%	396	0.6%	225	0.4%	114	0.7%
Total	42,616	100.0%	66,215	100.0%	58,253	100.0%	16,404	100.0%

Growth in PM Peak Hour Trips By Local Municipality and By Mode of Travel

	Cambridge		Kitchener		Waterloo		Rural Municipalities	
	Person Trips	% Growth	Person Trips	% Growth	Person Trips	% Growth	Person Trips	% Growth
Auto Driver	5,489	25.8%	1,157	3.2%	13,443	74.4%	1,295	13.3%
Auto Passenger	572	11.5%	(548)	-6.6%	2,225	56.9%	726	36.9%
Local Transit	4,352	659.4%	8,496	305.2%	9,296	788.5%	305	1051.7%
School Bus	291	48.9%	573	45.3%	486	91.7%	310	34.3%
Cycle	724	676.6%	1,578	707.6%	2,285	633.0%	77	51.3%
Walk	1,328	64.2%	2,542	71.2%	3,794	154.9%	131	20.7%
Other	119	185.9%	221	126.3%	166	281.4%	(102)	-47.2%
Total	12,875	43.3%	14,019	26.9%	31,695	119.3%	2,742	20.1%

Attachment D: Transit Service Improvement Priorities (0-5, 5-10, 10-20, 20+ year periods)**Service Improvement Priorities, 0-5 Years**

Service Improvement	Description	Municipality
<i>Limited Stop Express Routes</i>		
iXpress	Increase to frequency and service hours iXpress	Cambridge / Kitchener / Waterloo
Fischer-Hallman Road Limited Stop Express	Limited stop express service connecting U of W, RIM Columbia Campus, Sunrise Centre, Forest Glen Plaza Transit Terminal	Kitchener / Waterloo
Erb St West, University Ave, Bridge Street Limited Stop Express	Limited stop express service connecting Ira Needles Commercial Centre, Erb St W, U of W, WLU, Conestoga College Waterloo, Bridge Street, RIM Northfield Campus	Waterloo
Coronation Limited Stop Express	Limited stop express service connecting Ainslie St Transit Terminal, Cambridge Memorial Hospital, Preston, Sportsworld Crossing, Fairview Park Mall Transit Terminal	Cambridge / Kitchener
Highland-Victoria Limited Stop Express	Limited stop express service connecting Ira Needles Commercial Centre, Highland Rd employment and commercial areas, Downtown Kitchener, Victoria St E employment and commercial areas	Kitchener
Cambridge Limited Stop Express Phase 1	Limited stop express service connecting Galt via Ainslie St Transit Terminal to Hespeler Rd, Cambridge Centre, and Lovell Industrial Park employment area	Cambridge
<i>Local Routes</i>		
West Kitchener Phase 1	New service to Sunrise Centre, improvements to service in Forest Heights, Victoria West, Laurentian, Alpine, Glencairn areas	Kitchener
West Waterloo Phase 1	New north-south service on Erbsville Rd, additional service on Columbia St, additional service on Keats Way, additional service on Erb St W, service to Ira Needles Commercial Centre	Waterloo
East Waterloo	Improvements to local routes in Lincoln, Eastbridge, and Lexington, new service in Lincoln-Bluevale, improved connections to Uptown Waterloo	Waterloo
Preston and Cambridge Business Park	Additional service to Cambridge Business Park and King-Coronation corridor, new service to Conestoga College South Campus	Cambridge / Kitchener
South Cambridge Phase 1	Additional service to Northview and Shades Mills, Galt, improved connections to Ainslie St Transit Terminal, Cambridge Centre, Lovell Industrial Park	Cambridge
East Kitchener Phase 1	New service to Shirley Ave employment area, new service in Lackner Woods area, improved service on Victoria St E, Frederick St, River Rd, Lackner Blvd, and in Chicopee and Heritage Park	Kitchener

	areas	
Westmount Road	New trunk route serving Westmount Rd between University Ave and Block Line Rd connecting destinations such as U of W and Forest Glen Plaza Transit Terminal	Kitchener / Waterloo
Doon/Southwest Kitchener Phase 1	New service in Doon South, increased service to Pioneer Park, Brigadoon, Conestoga College Doon Campus	Kitchener
Additional service to townships	Improvements in service hours and addition of new routes	Townships
Improvements to minimum level of service on selected routes	Increases in frequency, span of service hours, level of service on evenings and weekends	
Extra service required to meet increased student demand and improve schedule reliability		

Service Improvement Priorities, 5-10 Years

Service Improvement	Description	Municipality
<i>Limited Stop Express Routes</i>		
Ottawa St Limited Stop Express	Limited stop express service connecting Sunrise Centre, Laurentian Power Centre, Central Kitchener, Stanley Park Mall, East Kitchener	Kitchener
Cambridge Limited Stop Express Phase 2	Limited stop express service connecting Galt via Ainslie St Transit Terminal to Hespeler Rd, Cambridge Centre, and Lovell Industrial Park employment area	Cambridge
Mid-Region Limited Stop Express	Limited stop express service connecting Fairview Park Transit Terminal, Conestoga College, Sportsworld Crossing, Cambridge Business Park, Hespeler, Lovell Industrial Park	Cambridge / Kitchener
<i>Local Routes</i>		
East Kitchener Phase 2	New service to Shirley Ave employment area, new service in Lackner Woods area, improved service on Victoria St E, Frederick St, River Rd, Lackner Blvd, and in Chicopee and Heritage Park areas	Kitchener
West Kitchener Phase 2	New service to Sunrise Centre, improvements to service in Forest Heights, Victoria West, Laurentian, Alpine, Glencairn areas	Kitchener
West Waterloo Phase 2	New north-south service on Erbsville Rd, additional service on Columbia St, additional service on Keats Way, additional service on Erb St W, service to Ira Needles Commercial Centre	Waterloo
South Cambridge Phase 2	Additional service to Northview and Shades Mills, Galt, improved connections to Ainslie St Transit Terminal, Cambridge Centre, Lovell Industrial Park	Cambridge
Doon/Southwest	New service in Doon South, increased service to	Kitchener

Kitchener Phase 2	Pioneer Park, Brigadoon, Conestoga College Doon Campus	
North Cambridge	Additional service connecting Hespeler to Cambridge Business Park, Lovell Industrial Park	Cambridge
North Waterloo	Additional service to Lakeshore and Northlake areas, improved connections to UWaterloo and WLU, additional service to R&T Park, improvements to industrial area services	Waterloo
Expansion of Limited Stop Express and aBRT Network	Increased level of service along Hespeler Rd corridor, expansion of transit priority to limited stop express routes	Cambridge
New growth areas	New service expanded to areas such as Wilmot Line subdivisions, Woolwich St/Falconbridge Dr, Southeast Cambridge, Southwest Kitchener	Cambridge / Kitchener / Townships
Additional service to townships	Improvements in service hours and addition of new routes	Townships
Improvements to minimum level of service on selected routes	Increases in frequency, span of service hours, level of service on evenings and weekends	
Extra service required to meet increased student demand and improve schedule reliability		

Service Improvement Priorities, 10-20 Years

Service Improvement	Description	Municipality
New routes developed to enhance connections and improve customer service by reducing transfers	<p>New routes developed to enhance connections between:</p> <ul style="list-style-type: none"> • Kitchener and Cambridge via Hwy 8 and Hwy 401 • West Kitchener and Central Waterloo, North Waterloo, East Waterloo, East Kitchener • West Waterloo and Central Kitchener, North Waterloo • East Kitchener and West Waterloo • South Kitchener and East Cambridge, East Kitchener, Hespeler • Southwest Kitchener and Central Kitchener, Central Cambridge, West Waterloo • South Cambridge and Hespeler, Central Cambridge 	Cambridge / Kitchener / Waterloo
Additional service to townships	Improvements in service hours and addition of new routes	Townships
Improvements to minimum level of service on selected routes	Increases in frequency, span of service hours, level of service on evenings and weekends	
Extra service required to meet increased student demand and improve schedule reliability		

Attachment E: Road Improvements Priorities (0-5, 5-10, 10-20, 20+ year periods)**Road Improvements Priorities, 0-5 Years**

Name	Section	Road Work	Municipality
Ottawa Street South (RR#4)	Mill Street to King Street East	Widen	Kitchener
King Street (RR# 8)	Eagle Street South to Shantz Hill Road	Widen	Cambridge
Weber Street West (RR# 8)	College Street to Guelph Street	Widen	Kitchener
Townline Road (RR# 33)	Can-Amera Parkway to Saginaw Parkway	Widen	Cambridge
Franklin Boulevard (RR# 36)	Avenue Road to Highway 401	Roundabouts & Access Management	Cambridge
Franklin Boulevard (RR# 36)	Myers Road to Avenue Road	Roundabouts & Access Management	Cambridge
Maple Grove Road (RR# 38)	Cherry Blossom Road to Fountain Street	Widen	Cambridge
Maple Grove Road (RR# 38)	Fountain Street to Speedsville Road	Intersection Improvements	Cambridge
Eagle Street North (RR# 39)	Concession Road to Industrial Road	Widen	Cambridge
Fairway Road Extension (RR# 53)	Zeller Drive to Fountain Street	New Road	Kitchener
Victoria Street North (RR#55)	Bruce Street to Edna Street	Widen	Kitchener
Highway 8	Fairway Road North to Sportsworld Drive	Transit By-pass Lanes	Kitchener
Highway 401	Highway 8 to Highway 24	Widen	Cambridge
University Avenue East	Auburn Drive to New Bedford Drive	Widen	Waterloo

Road Improvements Priorities, 5-10 Years

Name	Section	Road Work	Municipality
Ottawa Street North (RR# 4)	Keewatin Avenue to Forwell Road	New Road	Kitchener / Woolwich
Erb Street West (RR# 9)	Erbsville Court to Beechwood Drive	Widen from 3 to 4 lanes	Waterloo
Fountain Street Extension (RR#17)	Victoria Street North to Highway 7	New Road	Woolwich
Fountain Street North (RR# 17)	Maple Grove Road to Kossuth Road	Widen	Cambridge
Northfield Drive (RR# 22)	Davenport Road to University Avenue East	Widen	Waterloo
Homer Watson	Conestoga College Boulevard	Widen to 6	Kitchener

Boulevard (RR# 28)	to Doon South Drive		
Franklin Boulevard (RR# 36)	South Boundary Road to Myers Road	New Road	Cambridge
River Road Extension (RR# 56)	Wilson Avenue to King Street East	New Road	Kitchener
Bleams Road (RR# 56)	Manitou Drive to Wilson Avenue	New Road	Kitchener
University Avenue West (RR# 57)	Fischer-Hallman Road South to Erb Street West	Transit Priority	Waterloo
University Avenue West (RR# 57)	Erb Street West to Keats Way	Widen	Waterloo
Fischer-Hallman Road (RR# 58)	Ottawa Street South to Bleams Road	Widen	Kitchener
Fischer-Hallman Road (RR# 58)	Bleams Road to Plains Road	Widen	Kitchener
Fischer Hallman Road (RR# 58)	New Dundee Road to Cedar Creek/Highway 401 Interchange	Upgrade	North Dumfries
Manitou Drive (RR#69)	Webster Road to Bleams Road	Widen	Kitchener
Ira Needles Boulevard (RR#70)	Highview Drive to Erb Street West	Widen	Kitchener / Waterloo
Highway 7	Kitchener to Guelph	New Road	Kitchener / Woolwich
Highway 7/8	Highway 8 to Fischer-Hallman Road	Widen	Kitchener
South Boundary Road	Water Street to Franklin Boulevard	New Road	Cambridge / North Dumfries
Block Line Road	Courtland Avenue to Lennox Lewis Way	New Road	Kitchener
Columbia Street West	Erbsville Road to Fischer-Hallman Road North	Widen	Waterloo
Columbia Street West	Fischer-Hallman Road to Albert Street	Transit Priority	Waterloo
Strasburg Road	Huron Road to New Dundee Road	New Road	Kitchener

Road Improvements Priorities, 10-20 Years

Name	Section	Road Work	Municipality
Highland Road West (RR# 6)	Ira Needles Boulevard to Fischer-Hallman Road South	Widen	Kitchener
Fountain Street South (RR# 28)	Blair Road to Dickie Settlement Road	Widen	Cambridge
Homer Watson	Doon South Drive to Pioneer	Widen to 6	Kitchener

Boulevard (RR# 28)	Drive		
Townline Road (RR# 33)	Saginaw Parkway to Avenue Road	Widen	Cambridge
Maple Grove Road (RR# 38)	Fountain Street North to Speedsville Road	Widen	Cambridge
Maple Grove Road (RR# 38)	Speedsville Road to Hespeler Road	Widen	Cambridge
Roseville Road (RR#46)	Dickie Settlement Road to Edworthy Side Road	Upgrades	North Dumfries
Northfield Drive (RR# 59)	Westmount Road to Davenport Road	Transit Improvements	Waterloo
Bridge Street (RR# 52)	University Avenue East to Northfield Drive East	Transit Priority	Waterloo
Fairway Road North (RR# 53)	Old Chicopee Trail to Zeller Drive	Widen	Kitchener
Victoria Street South (RR# 55)	Lawrence Avenue to Park Street	Transit Priority	Kitchener
Bleams Road (RR# 56)	Fischer-Hallman Road to Strasburg Road	Widen	Kitchener
University Avenue (RR# 57)	Ira Needles Boulevard to Fischer-Hallman Road South	Widen	Kitchener / Waterloo
Fischer Hallman Road (RR# 58)	Highway 7/8 to Columbia Street West	Transit Lanes	Kitchener / Waterloo
Fischer Hallman Road (RR# 58) / Bearinger Rd	Columbia Street West to Westmount Road North	Widen	Waterloo
Fischer Hallman Road (RR# 58)	Plains Road to New Dundee Road	Upgrades	Kitchener
Fischer Hallman Road (RR# 58)	New Dundee Road to Roseville Road	Upgrades	North Dumfries
Erbville Road (RR# 70)	Erb Street West to Columbia Street West	Widen	Waterloo
Trussler Road (RR# 70)	Highway 7/8 to Ottawa Street South	Widen	Kitchener / Wilmot
Trussler Road (RR# 70)	Ottawa Street South to Bleams Road	Widen	Kitchener / Wilmot
Dickie Settlement Road (RR# 71)	Fountain Street to Roseville Road	Upgrades	Cambridge / North Dumfries
Edworthy Side Road (RR# 71)	Roseville Road to Alps Road	Upgrades	North Dumfries
Can-Amera Parkway (RR# 80)	Conestoga Boulevard to Franklin Boulevard	Widen	Cambridge
Arthur Street South (RR# 85)	Highway 85 to Sawmill Road	Widen	Woolwich
Alps Road	Edworthy Side Road to Spragues Road	Upgrades	North Dumfries
New Dundee Road (RR# 12)	Trussler to Hwy 401	Upgrades	Kitchener / North Dumfries

New Dundee Extension crossing Highway 401	New Dundee Road to Dickie Settlement Road	New Road	Cambridge / Kitchener
Highway 7/8	New Hamburg to Stratford	Widen	Wilmot
Highway 8	Sportsworld Drive to Highway 401	Widen	Kitchener
Highway 24	Brantford to Highway 401	New Road	Cambridge / North Dumfries
Highway 401	Cedar Creek interchange	Widen to upgrade	North Dumfries
Highway 401	Highway 8 interchange westbound ramps	New Road	Cambridge / Kitchener
South Boundary Road	Franklin Boulevard to Dundas Street South	New Road	Cambridge / North Dumfries
Speedsville Road	Maple Grove Road to Eagle Street North	Widen	Cambridge
Bridge Street West	King Street North to Northfield Drive East	Widen or New Road to Highway 85	Waterloo
Highway 85	Lancaster Street West to King Street North	Widen to 6 lanes	Kitchener / Waterloo

Road Improvements Priorities, 20+ Years

Name	Section	Road Works	Municipality
Ottawa Street North (RR# 4)	Old Chicopee Trail to Keewatin Avenue	Widen	Kitchener
Ottawa Street Extension (RR# 4)	Forwell Road to Fountain Street	Bridge	Kitchener / Woolwich
Ottawa Street Extension (RR# 4)	Fountain Street to Shantz Station Road	Upgrade	Woolwich
King Street North (RR# 15)	Northland Road to Bridge Street West	Widen	Waterloo
Fountain Street (RR# 17)	Kossuth Road to Victoria Street	Widen	Woolwich
Water Street (RR#24)	Myers Road to Ainslie Street	Widen	Cambridge
Hespeler Road (RR# 24)	Old Hespeler Road to Queen Street West	Transit Priority	Cambridge
Hespeler Road (RR# 24)	Maple Grove Road to Regional Boundary	Widen	Cambridge
Kossuth Road (RR# 31)	Fountain Street to Hespeler Road	Widen	Cambridge / Woolwich
Townline Road (RR# 33)	Jamieson Parkway to Blackbridge Road	Widen	Cambridge
Pinebush Road (RR# 39)	Franklin Boulevard to Townline Road	Widen	Cambridge
Westmount Road East (RR# 50)	Fischer-Hallman Road to Block Line Road	Widen	Kitchener

Fairway Road (RR# 53)	King Street East to Wilson Avenue	Widen	Kitchener
Victoria Street South (RR# 55)	Ira Needles Boulevard to Fischer-Hallman Road South	Widen	Kitchener
Erbsville Road (RR# 70)	Columbia Street West to Wideman Road	Widen	Waterloo
East Boundary Road	Avenue Road to South Boundary Road	New Road	Cambridge / North Dumfries
Cambridge South Link	Water Street to Spragues Road	New Road	Cambridge / North Dumfries
Laurelwood Extension	R&T park/LRT station	New Road, Potential transit only road	Waterloo
Shantz Station Road (RR# 30)	New Highway 7 Interchange	New Road	Woolwich
Shantz Station Road (RR# 30)	New Highway 7 to Kossuth Road	Widen	Woolwich
Shantz Station Road (RR# 30)	Speedsville Road Connection	Upgrade / Widen	Cambridge / Woolwich
Middle Block Road	Fountain Street to Speedsville Road	Upgrade	Cambridge
Middle Block Road Extension	Speedsville Road to Hespeler Road	New Road	Cambridge
Speedsville Road	Maple Grove Road to Kossuth Road	Upgrade / Widen	Cambridge
Beaverdale Road	Maple Grove Road to Kossuth Road	Upgrade	Cambridge
Blackbridge Road	Townline Road to Hespeler Road	Upgrade	Cambridge
Trussler Road (RR# 70)	Bleams Road to Highway 401	Upgrade	Kitchener / North Dumfries / Wilmot
Trussler Road (RR# 70)	Highway 401 Interchange	New Road	North Dumfries

Attachment F - Capital and Operating Cost Estimates**Transit Capital Costs by Time Period (years)**

Transit Capital Costs (\$M)	Preferred Alternative - Modified C Plan		
	1 - 5	6-10	11-20
Current Planned ¹	\$125.5	\$109.3	\$110.1
Additional Costs	\$51.9	-\$1.5	\$275.3
Total Transit Capital Costs	\$177.4	\$107.8	\$385.4
Total Cost	\$670.6		

- 1) Includes fleet expansion, current / new fleet replacement, and garage expansion – projected out to 20 year horizon. Capital costs for the Rapid Transit System are being reported separately to council and therefore have not been included in the financial analysis for the RTMP.

Roads Capital Costs by Alternative & Time Period (years)

Road Capital Costs (\$M)	Preferred Alternative - Modified C Plan		
	1 - 5	6-10	11-20
Current Planned	\$305.7	\$160.6	\$65.2
Projects Deferred ²	(\$59.0)	(\$0.1)	\$35.1
Additional Costs	\$0.0	\$54.7	\$156.5
Total Road Capital Costs	\$246.7	\$215.1	\$256.9
Total Cost	\$718.7		

- 2) Projects from Current Program that can be deferred due to higher transit use and lower auto volumes- negative indicates decrease and positive indicates increase in costs due to shifting of project timing

Transit Net Operating Costs by Alternative & Time Period (years)

Transit Net Operating Costs (\$M)	Preferred Alternative - Modified C Plan		
	1 - 5	6-10	11-20
Current Planned ¹	\$188.7	\$188.7	\$377.5
Additional Costs	\$59.1	\$194.6	\$673.0
Total Net Operating Costs	\$247.8	\$383.3	\$1,050.5
	\$1,681.7		

- 1) Includes existing operating costs net of fare revenue, but excluding other non fare revenues (ex. Advertising revenue)

Roads Operations Costs by Alternative & Time Period (years)

Road Operation & Maintenance Costs (\$M)	Preferred Alternative - Modified C Plan		
	0-5	5-10	10-20
Current Planned	\$164.0	\$164.0	\$328.1
Additional Costs	\$1.4	\$3.6	\$20.2
Total Operation & Maintenance Costs	\$165.4	\$167.6	\$348.3
	\$681.4		

Combined Capital and Operating Costs by Alternative & Time Period (years)

Total Costs (\$M)	Preferred Alternative - Modified C Plan		
	1 - 5	6-10	11-20
Current Planned	\$725.0	\$622.5	\$916.0
Additional Costs	\$112.4	\$251.4	\$1,125.2
Total Costs by Period	\$837.4	\$873.9	\$2,041.1
Total Program Costs	\$3,752.4		
Present Value of Program Costs	\$1,760.2		