

LAND AMBULANCE SERVICES

(Essex County, Windsor and Pelee Island)

YEAR 2000 REPORT

Final Report



Land Ambulance Technical Advisory Committee

March, 1999

February, 1999 EXECUTIVE SUMMARY

By September 30, 1999, the County of Essex must identify to the Ministry of Health's Emergency Health Services Branch (EHSB) the entity that will be licensed to deliver land ambulance service for Essex County, Windsor and the Pelee Island commencing on January 1, 2000.

A two year transition period (1998-1999) has been established that will allow for the full transfer of land ambulance service from the Province to Essex County no later than January 1, 2000. All existing private ambulance provider's licenses expire at midnight on December 31, 1999. In addition, as of December 31, 1999, the management and control of the Windsor Provincial Ambulance Service ceases to be the responsibility of the Ministry of Health. At this time, all vehicles and equipment currently operating within the existing system will be transferred to the County.

In transferring the responsibility for land ambulance service, the Province is mandating that upper tier municipalities ensure that future service delivery models adhere to the following five principles:

- Accessible
- Accountable
- Responsive
- Seamless
- Integrated

On July 15, 1998, Essex County Council approved the formation of a Land Ambulance Technical Advisory Committee (TAC) to evaluate the existing land ambulance service and develop future land ambulance service delivery options in Essex County, Windsor and Pelee Island. The composition of this Committee includes representatives from the Ministry of Health, the Base Hospital Program, the Essex-Kent-Lambton District Health Council, the Windsor-Essex Health Unit, the County of Essex, the City of Windsor and Pelee Island.

The Land Ambulance Technical Advisory Committee has identified the following best practices to be in the best interest of the Essex County, Windsor and Pelee Island communities for the delivery of Land Ambulance Services:

- A consumer focused and responsive service
- Enhanced efficiency through one administration
- Appropriately qualified / trained staff
- Retention of local staff resources
- Appropriate number of land ambulance operators
- Service contracts that are performance based
- Regular clinical and financial auditing
- Appropriate location of ambulance stations to meet the needs of the community
- Performance based region wide dispatch
- Centralized purchasing (supplies, repairs, fuel, etc.)
- Appropriate vehicle / equipment technology (maintenance and replacement)
- Appropriate and efficient cost for all aspects of service delivery

RECOMMENDATION #1:

Based on their analysis and comparison of public and private models, the Land Ambulance Technical Advisory Committee recommends that a public land ambulance system would be the most effective service delivery model for the residents of Essex County, Windsor and Pelee Island.

Notwithstanding the decision of County Council to adopt a public or private service delivery model, the following recommendations are applicable to both public and private models:

RECOMMENDATION #2:

That an Emergency Medical Services (E.M.S.) Board be established with appropriate representation from all affected service areas (i.e. County of Essex, City of Windsor, Township of Pelee).

RECOMMENDATION #3:

That there be one administration for land ambulance service delivery in Essex County, Windsor and Pelee Island.

RECOMMENDATION #4:

That dispatch be fully integrated with Essex County's responsibility for service delivery.

RECOMMENDATION #5:

That land ambulance service be performance based.

RECOMMENDATION #6:

That support for continuity of employment and conditions of employment are expected in situations where service providers must be replaced.

RECOMMENDATION #7:

That there are differences and challenges between urban, suburban, and rural areas that must be considered in land ambulance planning and service delivery options.

RECOMMENDATION #8:

That all emergency services become better integrated across Essex County, Windsor and Pelee Island (i.e. ambulance, fire and police).

RECOMMENDATION #9:

That alternate delivery options be supported for non-emergency transport (i.e. inter-facility / stabilized patient transfers).

1.0 PURPOSE

The purpose of this report is to outline service delivery options for a future land ambulance service for Essex County, Windsor and Pelee Island. Part I of the report provides an overview of the fundamental aspects of the existing land ambulance system and discusses relevant issues in the context of a future system. Part II of the report outlines performance measures, service delivery options, recommendations and next steps in order to implement a high quality, cost effective land ambulance service for the year 2000 and beyond.

2.0 BACKGROUND & LEGISLATIVE AUTHORITY

On January 1, 1998, the County of Essex became responsible for all costs associated with the provision of land ambulance services (i.e. emergency, non-emergency and elective patient transfers) within the County, the City of Windsor and Pelee Island. This transfer of responsibility is a result of amendments made to the *Ambulance Act* by Bill 152, the *Services Improvement Act*, 1997 and *Regulation 19*. Under this legislation, the Province will continue to fund and manage air ambulance operations, central dispatch centres and base hospitals. (It is anticipated that new *Regulations* will be released by the Ministry of Health in the spring of 1999).

A two year transition period (1998-1999) has been established that will allow for the full transfer of land ambulance service from the Province to Essex County no later than January 1, 2000. All existing private ambulance provider's licenses expire at midnight on December 31, 1999. In addition, as of December 31, 1999, the management and control of the Windsor Provincial Ambulance Service ceases to be the responsibility of the Ministry of Health. At this time, all vehicles and equipment currently operating within the existing system will be transferred to the County.

By September 30, 1999, the County of Essex must identify to the Ministry of Health's Emergency Health Services Branch (EHSB) the entity that will be licensed to deliver land ambulance service for the region commencing on January 1, 2000. If EHSB is not advised by this date, the Province may allow for a one year extension that would delay the decision regarding service provision until December 31, 2000. Nevertheless, during this time, the County would be required to enter into a one year contractual arrangement with one or all of the existing land ambulance providers. The County would not only be responsible for the funding of the service, but would also assume full responsibility for the management of the contractual agreement(s). In addition, it would be necessary to provide service for the City of Windsor in lieu of the fact that the Province will no longer operate the Windsor Provincial Ambulance Service after December 31, 1999. On January 1, 1999 the Ministry of Health will continue to oversee *the Ambulance Act* and its *Regulations*.

There had been a significant lobbying effort by the Association of Municipalities of Ontario (AMO) to persuade the Province to retain land ambulance as a provincial service responsibility; however, on December 16, 1998, the Province advised municipalities that they will be continuing with the transfer of land ambulance service. Nevertheless, the Ministry assured AMO that they are committed to discussing outstanding transition issues such as the important matter of ambulance dispatch (discussed further in Section 4.3).

In order to facilitate the transition, AMO and the Ministry of Health are establishing a Joint Land Ambulance Steering Committee.

In transferring the responsibility for land ambulance service, the Province is mandating that upper tier municipalities ensure that future service delivery models adhere to the following five principles:

□ **Accessible**

Upper tier municipalities have a responsibility to ensure access to ambulance services and have an obligation to ensure that ambulance services respond regardless of the location of the request.

□ **Accountable**

Upper tier municipalities have an obligation to ensure that ambulance services be provided according to the legislation and regulations. The level and quality of care that is provided to patients by municipalities will be monitored by appropriate hospital based medical staff.

□ **Responsive**

Municipalities will be responsive to the fluctuating health care, demographic, socio-economic and medical demands of the constantly changing environment.

□ **Seamless**

The closest available and appropriate ambulances will respond to a patient at any time and in any jurisdiction regardless of political, administrative or other artificially imposed boundaries. This is accomplished through the Central Ambulance Communications Centres (CACC) having up-to-the-moment information on the location and availability of each ambulance in their own and neighbouring dispatch jurisdictions. Upper tier municipalities have an obligation to ensure that ambulance service is readily available to an emergency situation regardless of the location of the request.

□ **Integrated**

Each and every ambulance service and ambulance is an integrated part of both the health care and emergency services systems of the Province. Upper tier municipalities have a responsibility to ensure that land ambulance service continues to be an integrated part of the Emergency Health Services System of the Province.

3.0 PLANNING METHODOLOGY

On July 15, 1998, Essex County Council approved the formation of a Land Ambulance Technical Advisory Committee (TAC) to evaluate the existing land ambulance service and develop future land ambulance service delivery options in Essex County, Windsor and Pelee Island. The composition of this Committee includes representatives from the Ministry of Health, the Base Hospital Program, the Essex-Kent-Lambton District Health Council, the Windsor-Essex Health Unit, the County of Essex, the City of Windsor and Pelee Island.

Since its formation, the Land Ambulance TAC has been meeting on a regular basis to develop the service delivery options outlined in this report. As part of this process, the TAC conducted extensive stakeholder and public consultation. The TAC also analyzed provincial land ambulance statistical and budgetary information, in addition to reviewing service delivery models from other jurisdictions, both in Canada and the United States.

PART I

OVERVIEW OF EXISTING SERVICE SYSTEM
AND DISCUSSION OF ISSUES

4.0 OVERVIEW OF EXISTING SYSTEM & DISCUSSION OF ISSUES

The following sections are an overview of the existing land ambulance system and discuss relevant issues in the context of a future system.

4.1 Legislative Requirements

Currently, ambulance operators and their employees must abide by the Ambulance Act as amended by the Service Improvement Act (1997) and its Regulations. While the control and funding responsibility for land ambulance service delivery will be transferred to the County, the legislative authority for the Ambulance Act and its Regulations will continue to remain at the Provincial level. These Regulations are currently in the process of being revised by the Province and are currently anticipated to be available by April, 1999.

In the case of liability, it is safe to assume that the County will now also become liable for all aspects of land ambulance service. The Corporation will have to determine what, if any, additional liability insurance it will require in order to provide land ambulance service.

The responsibility for funding land ambulance services is the responsibility of upper tier municipalities in Southern Ontario and designated delivery agents in the North. The distribution of costs to separated municipalities (Windsor and Pelee Island) will need to be negotiated.

4.2 Operators

In Essex County, the City of Windsor and Pelee Island, land ambulance service is provided by the following four operators:

- 1) Harrow Ambulance Service
- 2) Sun Parlour Emergency Service
- 3) Amherstburg, Anderson, Malden (A. A. & M.) Volunteer Ambulance Service
- 4) Windsor Provincial Ambulance Service

(Refer to Appendix 1 for further information on each of the above operators).

Although each of these ambulance services have established station(s) of operations (refer to map in Appendix 2), there are no geographic restrictions (within Ontario) on where they may be dispatched. These ambulances are dispatched through a voice-radio system on the basis of the closest vehicle available. This same fleet of ambulances and paramedics handle both emergency and non-emergency transfers (inter-facility, home, nursing home, etc).

Land ambulance service in Essex County, Windsor and Pelee Island is considered to be a "level of effort" system. In a "level of effort" system, the service providers agree to provide good service, but are not subject to

specific clinical and response time performance criteria as a condition of their license. (See Section 7.0 for more information of “level of effort” systems). Under the current Ambulance Act, operators are not under a contract but rather operate under a license.

4.3 Emergency and Non-Emergency Services

Ambulance calls are classified as “Codes” and are defined as follows:

Code 0*	Administrative call
Code 1	Unscheduled transfer (i.e. discharge from hospital to nursing home)
Code 2	Scheduled transfer call (i.e. patient transported for appointment)
Code 3	Urgent call (non-life threatening – i.e. broken limb)
Code 4	Emergency call (high priority – i.e. life threatening illness)
Code 5*	Patient is “obviously dead”
Code 6*	Patient is “legally dead”
Code 7	Vehicle out of service (i.e. no available bed at hospital for patient)
Code 8	Protective stand-by call (vehicle covers both adjacent and own area)
Code 9*	Vehicle is out of service for maintenance

** Codes 0, 5, 6 and 9 are not relevant to analysis.*

Collectively, the existing four ambulance services responded to an average of 36,308 Code 1, 2, 3 and 4 calls in 1996, 1997 and 1998. All calls (emergency and non-emergency) are dispatched through the Central Ambulance Communication Centre (CACC).

Figure 1 in Appendix 3 depicts a three year graphical comparison and breakdown of total call volumes for emergency/high priority (Codes 3 & 4). As Figure 1 illustrates, emergency call volumes and demand on the system has increased over the last three years. Over the same period of time, staff, vehicle and equipment resources have not changed.

Figure 2 in Appendix 3 depicts a three year graphical comparison of non-emergency transfers (Codes 1 & 2). Code 2 calls are pre-booked 24 hours in advance, but only constitute approximately 25% of all non-emergency calls. Figure 2 indicates a slight decrease in non-emergency transfers. This is possibly due to an increased reliance on private companies that specialize in non-emergency transfers who may be able to respond faster, as they are not required to prioritize emergency calls. The 1998 Provincial average for non-emergency ambulance calls is 33%. In Essex County, Windsor and Pelee Island, 28% of ambulance calls fell into the category of non-emergency patient transfers in 1998. In many cases these calls are for inter-facility transfers, and under the *Health Insurance Act*, are considered a publicly funded service. It is important to remember that day-time non-emergency transfers often average well over 50% of total call volume, while night-time transfers are usually under 10%; therefore, during the day, resources for emergency calls are often limited. In the Essex County-Windsor-Pelee Island area, there are 2 dedicated transfer vehicles used primarily for inter-facility transfers (1 at the Windsor Provincial Ambulance Service and 1 at Sun Parlour Emergency Service); however, the majority of non-emergency calls are made with fully equipped ambulances.

Figure 3 in Appendix 3 depicts a three year graphical comparison of Code 7 and 8 calls (i.e. “vehicle out of service” and “protective stand-by”). This Figure indicates an increase in these types of codes. This is more than likely a result of recent changes to Ontario health services, as many ambulances are required to be put out of service (Code 7) and care for a patient until a room is available in the hospital. During this time, other ambulances are put on protective stand-by (Code 8) in order to “cover” for the out of service vehicle. While a Code 7 is an “extension” of a Code 3 or 4, the current call reporting structure counts both Code 7 and 8’s as additional calls in annual call volume totals.

For the purposes of this report, Code 7 and 8’s have not been included in the total call volume analysis; nevertheless, both Code 7 and 8 calls are an important issue in the context of a future land ambulance system. Due to the changes in funding and service responsibility, the current situation where ambulances are being put out of service to allow paramedics to care for patients at hospitals is no longer fiscally acceptable. Changes to the current hospital system will be required to ensure that UTM-funded ambulances are not acting as “props” to provincially-funded hospitals. The solution to this issue will require up-staffing and increased resources being made available at area hospitals. Ottawa-Carleton Region is currently having success with a special hospital units attached to emergency rooms that care for patients until beds become available.

During “normal” operations the existing land ambulance system is working near 100% capacity, and therefore, becomes quickly overtaxed when a “major event” or a “series of smaller events” inundates the system. The net effect is marginally “adequate”, response times during “normal” operations and total system delays during busy operations which cascade from low priority calls to high priority call delays. Figures 4 and 5 in Appendix 3 are a graphical comparison of 1998 day-time and night-time ambulance system utilization. These two charts clearly illustrate the peak demand times of the existing system for each of the three work “shifts”. The busiest shift is 7 a.m. to 3 p.m. with an average of 16,412 Code 1, 2, 3 and 4 calls; whereas, volumes during the 11 p.m. to 7 a.m. shift fall to less than half this number. Nevertheless, evening weekend shifts are generally busier than during the week due to an increase in public activity. It is also important to note the significant decrease in non-emergency transfers during the late afternoon and evening hours; this is simply a result of medical offices and/or nursing homes’ hours of operations for patient transfers and/or scheduled appointments.

While increased system optimization may produce a minor improvement, the solution may be one (or a combination) of the following approaches:

- 1) increased number of vehicles (i.e. ambulances* and non-transport units)
- 2) increased availability of paramedics (including first response paramedics with non-transport units)

* currently under review by the Ministry of Health

- 3) reduce current system demand by:
 - a) development/utilization of a separate transfer fleet
 - b) improved public education on appropriate calling of enhanced 911

- c) review and audit of dispatch practices

4.4 Dispatch and Communications

The Central Ambulance Communication Centre (CACC) for Essex County, Windsor and Pelee Island is directly operated by the Ministry of Health and operates out of Windsor. Under the current *Ambulance Act*, the responsibility and financing of the CACC is to remain with the Provincial Government. Similarly, the dispatch/deployment of all ambulances in the Windsor-Essex-Pelee Island area are to remain under the control of the Central Ambulance Communication Centre (CACC).

In the context of designing a future land ambulance service delivery model, the retention of dispatch control by the Province is a serious concern. While the Province has expressed its intention to retain complete control of ambulance dispatch, the impact of that function on the delivery of service is a key issue to be examined. Available literature generally suggests that the integration of ambulance dispatch with service delivery is essential to achieve cost containment and performance management. Improved accountability and productivity in the delivery of ambulance service is dependent upon dispatch practices and technology.

As stated in Section 2.0, the Province has recently advised municipalities that it will re-visit the issue of dispatch. If control of dispatch was transferred to municipalities, it would significantly improve the County's ability to design a more cost effective and efficient land ambulance system for the region.

4.5 Base Hospital Program

The Base Hospital Program in Essex County, the City of Windsor and Pelee Island is administered by Hotel Dieu Grace Hospital in Windsor. It provides medical direction, leadership and advice in the provision of ambulance based services, as well as providing training, patient care quality assurance, advanced life support training, continuing education and guidance to all paramedics and land ambulance management. The Base Hospital Program also supplies selected medical equipment and drugs to ambulance operators, oversees quality control and standards of practice for ambulance services, collects statistics and compiles data on emergency services in its area of jurisdiction. With the introduction of the Advanced Paramedic Certification Program (Ontario Pre-Hospital Advanced Life Support Study – O.P.A.L.S.) in Windsor, the role of the Base Hospital Program in providing medical direction, control and quality assurance has expanded significantly.

The Base Hospital Program is also very active in strengthening the other links in the "*Chain of Survival*" (early access, early CPR, early defibrillation and early advanced care) through:

- 1) Public Awareness (i.e. promoting citizen C.P.R. through mass training)
- 2) Developing and implementing a community defibrillator program by ensuring accessible defibrillators and trained personnel in the workplace.
- 3) Developing and expanding "Tiered Response" agreements (see Section 4.11)

The Base Hospital Program is, and will continue to be, 100% funded by the Ministry of Health.

4.6 Paramedics

There are 178 paramedics currently employed by the four existing service providers: 96 full-time, 58 part-time (and 24 volunteer from Pelee Island and A. A. & M. Ambulance Services). Essex County, Windsor and Pelee Island are extremely fortunate to have a group of highly skilled and dedicated paramedics. The public consultation conducted by the Land Ambulance TAC indicated that paramedics are one of the most important and valued assets of the existing ambulance service.

While there is presently a diversity in paramedic providers (professional and volunteer), the optimal situation for all residents of Essex County and Windsor would be access to professional staff on duty 24 hours per day, 7 days per week. The utilization of volunteers on Pelee Island would continue to be appropriate, given its seasonal low density. While the decision to utilize some part time paramedics may be an operational one, it is important that the requirements/qualifications of paramedics be consistent regardless of employment status.

4.7 Training and Level of Care

The development of pre-hospital medicine in Ontario over the past 15 years has led to three occupational levels of paramedics in Ontario: (1) Primary Care; (2) Advanced Care; (3) Critical Care. The skill set under each of these levels define the minimum skills that are required for classification.

Primary Care (Basic Life Support Paramedic) - includes a 1,100 hour course at a Community College - successful completion of the Emergency Medical Care Attendant (E.M.C.A.) Ministry of Health exam - Semi-automatic defibrillator and symptom relief drug administration. Cost - 100% by paramedic.

Advanced Care (Advanced Life Support Paramedic) - additional 17 week course presently taught at the Michener Institute in Toronto - 6 to 12 week consolidation period locally - certified by local Base Hospital Medical Director. Once certified by the Base Hospital, advanced paramedics are then permitted to perform a wide range of controlled medical acts including administration of emergency drugs, advanced airway procedures, intravenous therapy, defibrillation and other advanced emergency skills. Cost - 100% by Ministry of Health (as of January 1, 1998 this cost became the responsibility of the County).

Critical Care - additional training as required to handle added skill set needed for Air Ambulance service. Cost - 100% by Ministry of Health.

In order to provide as much coverage as possible the available A.L.S. paramedics are partnered with a Primary Care Paramedic. While such a crew configuration does provide for 6 - 8, 24 hour ambulances with A.L.S. capability, it also greatly increases the workload, stress and responsibility of the sole A.L.S. provider of each crew.

Currently there are 30 A.L.S. paramedics working in Windsor and 6 in Tecumseh; therefore, a very small portion of Essex County has access to Advanced Life Support (refer to Appendix 4 for the O.P.A.L.S. coverage area). The cost of education for each A.L.S. paramedic was borne by the Ministry of Health, through the O.P.A.L.S. study grant money. The cost includes wages, benefits, expense and tuition fees for a 17 week period is estimated to be between \$35,000 to \$38,000 per medic. This cost can be reduced dramatically if the Advanced Life Program is delivered at a Community College in a module format. (St. Clair College is currently investigating this feasibility pending local needs). The impact of A.L.S. is additional lives saved and reduced demand on hospital resources due to a decrease in the average hospital stay and patient acuity (i.e. level of care) for individuals admitted via land ambulance. Even if the hospital stay and recovery of each patient is only reduced by one week then the economical savings through decreased health care and decreased time lost at work is sizable.

In actual statistical terms, we know that with each minute that passes before an A.L.S. paramedic arrives, survival rates are reduced by 2%, and if the patients heart has stopped then with each passing minute before defibrillation the chances of survival decrease by 10% (refer to Appendix 5 for a graphical representation of survival rates).

While advanced life support is “new” to Essex County, it has been available to the citizens of Toronto, Hamilton, Oshawa for over a decade. It is the standard of care in North America. Should A.L.S. coverage be extended to include the entire County under a new service delivery model, the result may be an increase in cost.

4.8 Vehicles, Buildings and Assets

Under the existing legislative regime all ambulances, medical equipment and other items necessary for the provision of ambulance services are owned by the Ministry of Health. Vehicles are purchased centrally and maintained locally by the Ministry of Health. The average vehicle life for an ambulance is 69 months (5 years); however, factors such as highway versus urban driving conditions effect this average. For example, it is generally accepted that rurally based ambulances last longer than urban ambulances due to less idling and “stop and start” driving conditions. The most recent figures provided to the County from the Province indicate that there are currently 28 ambulances being operated by the four service providers within Essex County, Windsor and Pelee Island; the condition and age of these vehicles vary. All vehicles and equipment currently being utilized within Essex County, Windsor and Pelee Island will become the property of the County on (or about) December 31, 1999.

Costs through the Provincial Emergency Health Services Branch (excluding taxes) for new ambulances built on 1998 Ford diesel with an ambulance package chassis are as follows:

- \$62,500 Type II single main cot (high rise roof on a van chassis);
- \$81,700 Type III single/two main cot(s) (modular body on a RV cutaway);

These costs reflect a minimum volume of business of 60 to 80 units (ambulances) per year; other volumes may affect cost. Decommissioned ambulances are usually

still useable for many other applications and can be sold at either wholesale or retail prices; in addition, decommissioned ambulances can be retained and used for part replacement purposes. Six percent of the billing to the UTM allows for vehicle replacement; an additional three percent allows for equipment and supplies.

In addition to complete unit replacement, Type II and Type III ambulances are built with a re-mountable modular body containing the patient compartment; this body is installed on a light truck chassis. When the chassis has reached the end of its economic life, the body may be removed and reinstalled on a new chassis. This generally represents approximately a 30 percent savings over complete unit replacement. The remounted vehicle is considered to be equal in service life to a new ambulance.

In Windsor, buildings operated by the Windsor Provincial Ambulance Service are owned by the Province, with the exception of the Jefferson Avenue Base (leased from private owner) and the LaSalle Base (leased from the municipality). With the exception of the A. A. & M. Volunteer Ambulance Service, all buildings being used for the purpose of supporting other ambulance services in Essex County are leased by the private ambulance services from a second or third party; lease costs are charged back to the funding agency through the individual operating budgets. Pelee Island Volunteer Ambulance Service's building is owned by the municipality and operates under a long-term occupancy agreement. In total, there are 9 ambulance stations within the County and the City of Windsor, as well as 1 in Tilbury and 1 on Pelee Island (refer to map in Appendix 2).

The administration of vehicle, equipment and building ownership and/or leases for a future service delivery model is a complex issue that will be highly dependent on the structure of the new system. In addition, because the Province could utilize bulk purchasing principles for vehicles and equipment, significant cost savings were realized. It is anticipated that designated delivery agents (i.e. County of Essex) purchasing their own vehicles or equipment on a regional level may be faced with higher costs.

4.9 Air Ambulance Service

Ontario's air ambulance system was established in 1977 to transport critically ill patients to hospital. Air ambulance teams also provide for special services such as transporting specially trained neonatal teams from various facilities. The critical care flight paramedics are Ministry of Health staff, while the pilots and aircraft staff are all from the private sector. The primary use of air ambulance has traditionally been inter-facility transport of patients and trauma response in remote areas. Air ambulances for Essex County, Windsor and Pelee Island are based in London. The Provincial Government will retain responsibility and financing obligations for air ambulance service throughout Ontario.

4.10 Cross Boundary Service

Currently, ambulance service in Ontario is seamless; prior to January 1, 1998, it was wholly funded by the Province. In light of this structure, within the Province of Ontario there was no need for mutual aid agreements or reimbursement for cross-boundary ambulance trips.

In 1997, Essex County and Windsor ambulances responded to a total of 625 external calls (out of County); this was down from the 1,222 calls made in 1996. The majority of these calls were hospital transfers to Chatham-Kent and Middlesex; this is largely due to the number of specialized services offered at hospitals within these municipalities. In contrast, ambulance calls from out of County service providers coming into the Essex-Windsor-Pelee Island region totaled under 100 in both 1996 and 1997.

The Ministry of Health will continue to dispatch whichever ambulance can provide the quickest and most efficient response to both emergency and non-emergency calls. Chatham-Kent and Middlesex ambulances will still be sent to a call in Essex County and Windsor if that vehicle is the closest available unit to the patient, and subsequently, Essex County and Windsor based ambulances will continue to be dispatched outside the County as deemed necessary by the CACC.

The issue of compensation and billing for cross boundary emergency calls and/or non-emergency transfers will need to be reviewed under a new service delivery model. Agreements will be required between neighbouring municipalities such as Chatham-Kent and Middlesex for ensuring that the cost of such calls are being adequately distributed.

4.11 Tiered Response and Agreements

Throughout Ontario there has been difficulty in maintaining the North American standard of a four minute rapid response time needed to save lives. (This standard has been set by the Heart and Stroke Foundation and stipulates that 4 minutes is the recommended time in which CPR should be initiated for a cardiac-related emergency). In recent years, given the greater availability of fire department personnel and their strategic placement through the area, a tiered response program was established. As a result, area fire trucks now carry medical equipment and fire personnel are now trained by the Base Hospitals in "first response" defibrillator and basic airway intervention. At present in Essex County, the following fire departments are involved with tiered response agreements:

- 1) Windsor Fire Department
- 2) LaSalle Fire Department
- 3) Former Belle River Fire Department
- 4) Former Comber Fire Department
- 5) Former Essex Fire Department
- 6) Former Gosfield North Fire Department
- 7) Former Kingsville Fire Department
- 8) Former Maidstone Fire Department
- 9) Former Sandwich South Fire Department
- 10) Former Tecumseh/St. Clair Beach Fire Department
- 11) Former Tilbury Fire Department
- 12) Former Rochester Fire Department

Note: *The above agreements are currently under review due to the restructuring of most County fire departments.*

While this service was offered/proposed to all fire departments, there remains areas in Essex County where tiered response is not available (refer to the map in Appendix 6 for coverage areas). With the restructuring of the various County fire departments it is hoped that participation in this life saving program will reach 100%.

Enhanced tiered response and the maintenance of a public ambulance system are both key elements for improving the effectiveness of an emergency medical services system through increased integration between ambulance, fire and police services. In addition, local control of dispatch is essential for improving overall system performance and efficiency.

The Base Hospital is also currently negotiating with a number of police departments to establish a tiered agreement in their receptive area. Further consideration will need to be given to the integration of the Base Hospital with the land ambulance service in order to offset the costs and increase performance.

4.12 Co-Payment

Currently, medically necessary ambulance trips are funded under the Ontario Health Insurance Plan (OHIP), with the patient being responsible for a \$45 co-payment. (Patients on social assistance/disability and inter-facility transfers are exempt from this co-payment). Hospitals or other receiving institutions bill for and collect the \$45 fee and keep \$30 per call; the remaining \$15 is remitted to the Province. In the event that the land ambulance service (in any single case) is deemed to be a medically non-essential ambulance trip or the individual transported does not have a valid Ontario Health Card, there is a \$240 fee charged to that person; again, \$15 is remitted to the Province, while the remainder is retained by the receiving hospital.

There are to be no changes to the ambulance user fee amount, structure or process. The *Ambulance Act* specifies that the only ambulance user fees that can be charged are those allowed under the *Ambulance Act* or the *Health Insurance Act*. The funds collected by hospitals from ambulance users are used by the hospital to offset the cost of collecting these fees and for the provision of alternative transportation services where an ambulance is not required. The funds remitted to the Province are used in part to offset the cost of providing air ambulance, dispatch and base hospital services. The operators of land ambulance services are only authorized to bill an eligible patient when there is no hospital involved in either sending or receiving that patient. In such instances the funds recovered by the operator may be used to offset expenditures. The issue of the current revenue stream will require further review.

5.0 ESTIMATED SERVICE BUDGET & FINANCIAL IMPLICATIONS

Land Ambulance Health Services costs have proven to be a challenge to predict for the year 2000, not only because of the lack of financial and operating budget information available from the Ministry of Health to date, but also because of the unknowns of possible changes to the current system.

The Province has provided the Essex County, Windsor, Pelee Island area with a figure of \$7.9 million for the 1998 operations of the Land Ambulance Health Services. At this time, it is extremely difficult to predict the "real" cost of service for

the Essex County, Windsor and Pelee Island area; however, estimates by other Upper Tier Municipalities around the Province have generally predicted an increase in costs above the current Provincial figures. For example, Hamilton-Wentworth in an April 27, 1998 report from the Medical Officer of Health and the Commissioner of Transportation regarding land ambulance services estimated cost increases of 16% to 26% (or more); and, according to the Ottawa-Carleton September, 1998, *Land Ambulance Health Services Year 2000 Directions Report*, they are estimating cost increases of 36% to 68%. Future costs will depend largely on system design and established performance criteria.

The following chart summarizes the 1998 Provincial budget figures for this area:

COST SUMMARY

	%	\$
Salaries & Wages & Management Compensation Package	73.3%	\$ 5,812,013
Employee Benefits	15.8%	\$ 1,252,794
Transportation & Communications	0.6%	\$ 47,574
Services & Rentals	6.4%	\$ 507,461
Supplies & Equipment	3.9%	\$ 309,234
TOTAL	100.0%	\$ 7,929,077

The above cost summary will also be affected, either positively or negatively depending on the system design and performance criteria established, by cost factors such as: administration, employee training, vehicle purchases and maintenance, property and equipment ownership (and possible integration thereof), property tax implications of ambulance station ownership, insurance liabilities, economies of scale and cross boundary service agreements.

In Ontario, public policy requires that land ambulance services are provided from general tax revenues, as opposed to fee-for-service billings to patients and their insurers. However, certain ambulance services, such as dedicated stand-by's at sports or other special events, are legitimate areas of direct billing revenue for Land Ambulance Health Services. The issue of the current revenue stream and future revenue generation requires further review.

Developing and coordinating a safe, cost effective and accountable land ambulance service is a major new challenge for the County of Essex. Clearly the financial implications are large in scope and variable in nature, dependent on the decisions made regarding system design and performance criteria at the local level.

6.0 STAKEHOLDER & CONSUMER CONSULTATION

The Land Ambulance Technical Advisory Committee undertook a stakeholder and consumer consultation process during the summer and fall of 1998. The following is a summary of the input received through this process:

Stakeholder Survey:

The stakeholders surveyed through this process included: existing ambulance service providers; unions; county and separated municipalities; local fire and police departments; hospitals, nursing homes, home care and other health care providers. This survey generated wide variation of responses to the questions about both the existing service delivery system and criteria for future models; a total of 44 stakeholder surveys were completed. The common themes/trends identified through the stakeholder survey are as follows:

Existing System:

- Existing system meets stakeholder needs/expectations = 60% Yes; 40% No
- Existing system meets consumer needs/expectations = 60% Yes; 40% No

Suggested Improvements:

- Relocation and/or additional ambulance stations are needed within the County
- Must be consistent level of training for paramedics in both City and County
- Need for increased integration with other emergency / health care agencies
- Better system is needed for non-emergency transfers

Strength of Existing System:

- Skilled, professional, experienced, well-trained paramedics
- Good response times for emergency calls (i.e. Code 4)

Weaknesses of Existing System:

- Dispatch should be in municipal control / integrated with other agencies (i.e. fire)
- More ambulance stations needed in strategic locations (i.e. areas of weak service)
- High cost and delays with non-emergency transfers

Areas of Concern:

- Uncertainty of future has created low morale among ambulance workers
- Fear of privatization (i.e. loss of jobs and reduced service level)
- Retention of good service level for ratepayers under a new system
- Control of costs

Other:

- The majority of respondents (91%) agreed that a seamless delivery of services is important to the well-being of the consumer.
- Good response times and highly trained paramedics were cited as the two most important aspects for a future service delivery model.

Consumer Survey:

The consumer consultation process involved the surveying of land ambulance users through the local hospitals; a total of 74 consumer surveys were completed. This survey indicated a high level of satisfaction with the existing service from almost all respondents. The common themes/trends identified included:

Existing System

- Good response time for emergency calls (i.e. Code 4)
- Kind, professional, caring, highly skilled personnel

Concerns:

- Maintain good response times
- Keep good personnel
- Don't reduce level of service – increase if possible
- Keep cost to consumer low or at same level as today

PART II

PERFORMANCE MEASURES

SERVICE DELIVERY OPTIONS

RECOMMENDATIONS

NEXT STEPS

7.0 PERFORMANCE MEASURES

Ontario's land ambulance system grew mostly out of market pressures and provincial government policies, and is not necessarily based on clinical and performance outcome criteria. There is industry-wide agreement, that of all the forces influencing a land ambulance service's ability to convert financial resources into clinical performance and response time reliability, system design is the most powerful. Experience throughout North America demonstrates that the design of the system has more influence on its success than any other single element.

There are two fundamental types of land ambulance service: those which are based on "level of effort" and those which are "performance based". They imply substantially different management and public accountability structures, and have significant implications for patient and medical control.

Level of Effort Service:

Land ambulance service in Essex County, Windsor and Pelee Island is considered to be a "level of effort" system. Under the current *Ambulance Act*, operators are not under a contract but rather operate under a license. In a level of effort system, the service providers agree to provide good service, but are not subject to specific clinical and response time performance criteria as a condition of their license. Level of effort systems are remarkably common, despite their disadvantages. The perception of service quality is measured by consumer complaints rather than on actual performance data. As a result, it is usually difficult to determine whether the service failure arose from the performance of the provider or the design of the system itself.

Performance Based Service:

Performance based systems are outcome based. The system design specifies the result and not the activity. For example, a benchmark could be: "Ensure an Advanced Life Support unit arrives at 90% of emergency calls within 7 minutes or less". The expectations are clearly stated, simple and objective.

Performance based systems can be applied equally to internally (a department) and externally delivered services. Performance reporting is new to Canada and has been used primarily in the United States for privately or publicly operated municipal services.

In a performance based system an agreement would be struck between the County and the operator(s) delivering the service. In a detailed performance contract the service provider would agree to pre-defined standards of care and response time criteria. Compliance could be monitored by an independent review committee and/or County Council. Performance based systems are designed to be "fail safe" for the community. No amount of capital investment, expertise, skill or good intention would be considered as a substitute for precise and consistent pre-determined performance measures.

One prominent feature of this type of system is that the contract would have provisions to ensure that if the provider failed to perform, they would be subject to immediate replacement without intervening litigation. A performance based system

also has the advantage of certain, pre-defined and orderly replacement of a faltering contractor long before a crisis of confidence can emerge in the community. Nevertheless, it is vital that in order to permit an orderly take over from a failed service provider and prevent the provider from holding the County hostage, all major infrastructure assets must remain under the ownership of the County or within its ability to seize through a three-way leasing agreement.

Existing data on other criteria associated with land ambulance service that can be used to determine the overall performance of the system is very limited. As stated earlier, the focus on land ambulance service in Ontario has traditionally been “how much”, rather than “how well”. Currently, there are very few measures in place to ascertain how well the system is performing. Response times to pick-up and transport patients are not established as part of any provincial legislation or through contractual obligations. Nevertheless, the local CACC has maintained detailed records of area response time averages for the various types of Code calls; as a whole, local ambulance providers have maintained an acceptable average for high priority calls. (Refer to the Table 1 in Appendix 7 for a breakdown and comparison of existing response times).

As stated earlier in Section 4.4, the integration of ambulance dispatch with service delivery is essential to achieve cost containment and performance management. Improved accountability and productivity in the delivery of ambulance service is dependent upon dispatch practices and technology.

7.1 Benchmarks

A “benchmark” is a specific measurable criteria used to evaluate a performance based delivery model. As previously stated in Section 7.0, performance based systems must have predefined standards, which are simple and objective. While there are numerous requirements, two benchmarks are paramount: *Level of Care (Basic vs. Advanced)* and *Response Time*. Simply put, these two benchmarks answer the most basic questions and objectives of any system.

While time intervals vary dramatically throughout the industry, the time interval for successful resuscitation of critically ill or cardiac arrest patients does not. E.M.S. must reach a patient within 4 - 6 minutes of the critical event, after that time period survival rates drop dramatically. While these times are achievable in urban and suburban communities, they are very difficult to achieve in rural or remote areas where it is more reasonable that the response time be no less than 8 - 12 minutes. This added travel time underscores the importance of tiered response assistance.

Advanced Life Support (A.L.S.) is the standard of care in North America. Should A.L.S. coverage be extended to include the entire County under a new service delivery model, the result may be an increase in cost.

It should be noted that the above time frame must be met 90% of the time and is for the arrival of the paramedic provider only, the ability to transport the patient is not required until 5 - 10 minutes within first contact with the patient. (Refer to Table 2 in Appendix 7 for more detail on level of care and response time).

7.2 Best Practices

A best practice is a judgement, based on the consensus of service providers, consumers and policy makers that a process/service is effective and meets the highest standards of excellence.

The Land Ambulance Technical Advisory Committee has identified the following best practices to be in the best interest of the Essex County, Windsor and Pelee Island communities for the delivery of Land Ambulance Services:

- A consumer focused and responsive service
- Enhanced efficiency through one administration
- Appropriately qualified / trained staff
- Retention of local staff resources
- Appropriate number of land ambulance operators
- Service contracts that are performance based
- Regular clinical and financial auditing
- Appropriate location of ambulance stations to meet the needs of the community
- Performance based region wide dispatch
- Centralized purchasing (supplies, repairs, fuel, etc.)
- Appropriate vehicle / equipment technology (maintenance and replacement)
- Appropriate and efficient cost for all aspects of service delivery

8.0 SERVICE DELIVERY OPTIONS

The Land Ambulance Technical Advisory Committee (TAC) has conducted a review of both public and private land ambulance systems. Under either a public or private delivery model, the County retains “control” of the service. The control of a private model is achieved through the power of contractual terms and conditions, as well as through performance measures. The primary difference between a public and private ambulance service is in the area of “operations”. Under a public model land ambulance operations would be managed by the County, whereas under a private model, operations would be managed by a private operator/company.

Using the mandated Provincial service delivery principles outlined in Section 2.0 (i.e. Accessible, Accountable, Responsive, Seamless and Integrated), the Land Ambulance TAC determined that both a public and private model would achieve desirable levels of accessibility, accountability and responsiveness. In the area of seamlessness, the TAC concluded that a public model would provide more opportunity for a truly seamless service, as it would be much easier and cost effective for the County to enter into service agreements with other Upper Tier Municipalities (i.e. Chatham-Kent and Middlesex). The Land Ambulance TAC also concluded that a public land ambulance model would provide a greater opportunity for enhanced integration and communications with other municipal services (i.e. fire and police).

A private service delivery model has the advantage of fixed costs; however, private companies generally request contractual arrangements of at least five years in order to achieve profitability. Private models can also be terminated by the County if contractual performance measures are not being met; however, such terminations could prove to be costly and cumbersome for the County during the period of transition to another provider. It has also been the experience of some U.S. municipalities that once a private system has been established, any transition back to a public model is extremely difficult and expensive.

Day to day management of operations are simplified for the County under a private service delivery model; however, research has indicated that publicly managed models can be more cost effective in the area of administration due to economies of scale (i.e. insurance and legal costs). For example, insurance costs for a privately owned and operated ambulance is thousands of dollars annually, whereas, a municipally owned and operated vehicle is considerably less to insure due to the ability to consolidate overall insurance costs with other service vehicles.

Under a public model, it would be easier to design a system that could retain the highly skilled and dedicated paramedic work force that was identified through the stakeholder and public consultation process as the most valuable asset of the existing system.

It is also the opinion of the TAC that a decision to adopt a public service delivery model would lead to significantly less disruption during the transition period. In addition, it is felt that a public model would be considerably easier to monitor and audit. Finally, for obvious reasons, the traditional role of government in Ontario has been to manage and coordinate protective services (i.e. ambulance, fire and police). While at a much smaller scale than the existing provincial system, a municipally managed land ambulance service for Essex County, Windsor and Pelee Island would be in the best interest of public safety.

While there is a strong recommendation for a public service delivery model, there should also be consideration given to private partnerships for certain aspects of service delivery and operations (i.e. inter-facility / stabilized patient transfers).

RECOMMENDATION #1:

Based on their analysis and comparison of public and private models, the Land Ambulance Technical Advisory Committee recommends that a public land ambulance system would be the most effective service delivery model for the residents of Essex County, Windsor and Pelee Island.

9.0 RECOMMENDATIONS

The main purpose of this report is to provide advice that will lead to the development of a safe, cost effective and accountable land ambulance service for all residents of Essex County, Windsor and Pelee Island for the year 2000 and beyond. Clearly, the information contained in this report indicates that land ambulance planning is a complex area both in terms of design and service implementation. Strategic planning in this area, although a new challenge for Ontario's Upper Tier Municipalities, creates a terrific opportunity to improve service and increase public accountability.

The Technical Advisory Committee has identified a number of issues (throughout the report) and is providing a series of recommendations to County Council as a means of retaining and improving the existing land ambulance service in Essex County, Windsor and Pelee Island. Notwithstanding the decision of County Council to adopt a public or private service delivery model, the following recommendations are applicable to both public and private models:

RECOMMENDATION #2:

That an Emergency Medical Services (E.M.S.) Board be established with appropriate representation from all affected service areas (i.e. County of Essex, City of Windsor, Township of Pelee). ***The responsibility of this Board would be to oversee the financial and operational aspects of the service and ensure that performance measures are being met.***

RECOMMENDATION #3:

That there be one administration for land ambulance service delivery in Essex County, Windsor and Pelee Island. This will lead to improved accountability, the development of economies of scale, and the achievement of performance measures that will result in improved service delivery.

RECOMMENDATION #4:

That dispatch be fully integrated with Essex County's responsibility for service delivery. The control of dispatch is essential to clinical excellence, cost containment, reduced duplication, and system responsibility. Since dispatch defines response time and system cost through deployment, then whoever controls dispatch is responsible for system performance.

RECOMMENDATION #5:

That land ambulance service be performance based. Performance based systems are outcome-based, that is the service provider would have to agree to pre-defined standards of care and response time with compliance being monitored on a daily basis. This recommendation recognizes that no amount of capital investment, expertise, skill or good intention (level of effort) is a substitute for precise, consistent, pre-determined and agreed upon outcomes.

RECOMMENDATION #6:

That support for continuity of employment and conditions of employment are expected in situations where service providers must be replaced. This recommendation recognizes that in Essex County, Windsor and Pelee Island we are fortunate to have a group of highly skilled and dedicated paramedics that form the most valuable asset of the land ambulance service in our community.

RECOMMENDATION #7:

That there are differences and challenges between urban, suburban, and rural areas that must be considered in land ambulance planning and service delivery options. An example of these differences that may effect cost of service is response time between urban and rural areas. Due to cost considerations, response time is expected to be greater in rural areas (i.e. longer distances to travel) than in urban centres, hence performance measures will be different depending on location.

RECOMMENDATION #8:

That all emergency services become better integrated across Essex County, Windsor and Pelee Island (i.e. ambulance, fire and police). This approach will help to reduce duplication in areas such as administration, communications and capital needed for service delivery bases, thus lowering overall costs. It may also improve response times (i.e. tiered response) resulting in improved care and responsiveness.

RECOMMENDATION #9:

That alternate delivery options be supported for non-emergency transport (i.e. inter-facility / stabilized patient transfers). This direction recognizes that some non-emergency transfers are an inappropriate use of qualified staff and specialized equipment. Furthermore, cost savings could be achieved through non-emergency patient transfers by other than fully equipped vehicles, as this would free up more emergency vehicles and staff to be used more appropriately within the system.

10.0 NEXT STEPS

It is the advice of the Land Ambulance TAC that the following actions be taken regardless of the choice to adopt a public or private service delivery model. These actions must be taken as soon as possible (prior to December 31, 1999) in order to meet provincial timelines and ensure that the residents of Essex County, the City of Windsor and Pelee Island retain adequate land ambulance service.

RECOMMENDATION #1:

Formation of a "Emergency Medical Services (E.M.S.) Board" to coordinate the transition of land ambulance service, implement a new service delivery model; and, continue to oversee and manage the future land ambulance service for Essex County, Windsor and Pelee Island.

Following the implementation of a new service delivery model, it is suggested that the proposed mandate of the E.M.S. Board be as follows:

- (1) to act as a regulatory body and provide accountability;
- (2) to establish and oversee standards for clinical excellence;
- (3) to ensure a consistent quality of service throughout the region;
- (4) to make recommendations to County Council and carry-out its decisions

The E.M.S. Board would have appropriate political representation, as well as appropriate technical representation from other health related agencies. It is proposed by the Land Ambulance TAC that the membership of this Board be as follows:

Representation:
County Council Representatives* <i>* One member of County Council would represent the Township of Pelee</i>
City Council Representatives
Consumers** <i>** Appointed separately by County and City Councils</i>
Base Hospital
District Health Council
Ministry of Health (advisory capacity for the 1 st year only)

It is also suggested by the Land Ambulance TAC that the E.M.S. Board be comprised of a maximum of 10 representatives in order to maintain a level of manageability. Furthermore, a "General Manager of Emergency Medical Services (E.M.S.)" should be engaged as soon as possible to carry-out the directives of the Emergency Medical Services Board and County Council.

The transition of land ambulance services from the Province to the County will be a very complex and comprehensive task that cannot feasibly be carried-out by existing County staff. Working closely with the E.M.S. Board, the “General Manager of E.M.S.” would follow the same mandate of the Services Board to coordinate the transition of land ambulance service, implement a new service delivery model; and, continue to oversee and manage the future land ambulance service for Essex County, Windsor and Pelee Island.

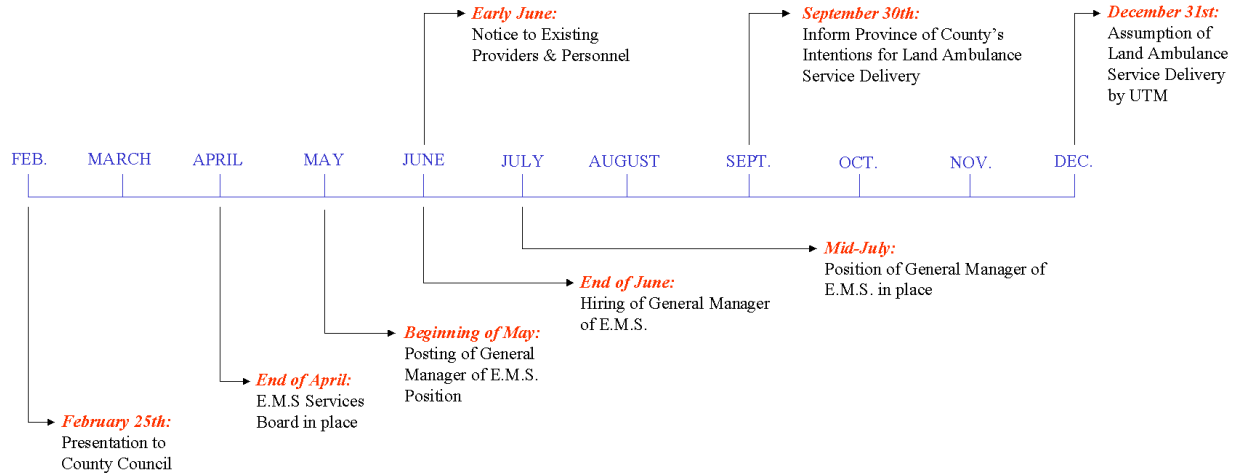
The “General Manager of Emergency Medical Services” would be engaged by the County upon the recommendation of the E.M.S. Board and would possess comprehensive knowledge and experience in the areas of emergency health services, project management and budget administration. In addition, the individual would also have an in-depth knowledge of Ontario ambulance and health care systems, emergency communications, patient care and all relevant acts and legislation (i.e. Ambulance Act, Occupational Health and Safety, Employment Standards Act, etc).

It is further suggested that there be a Emergency Medical Services (E.M.S.) Technical Advisory Committee established with appropriate technical and agency representation that would act on an advisory level to the E.M.S. Board and provide an interface with other emergency services. The “General Manager of E.M.S.” would Chair this Committee and liaise with the Services Board and County Council. (Refer to Appendix 8 for the proposed reporting and advisory structure for land ambulance services).

As stated in Section 2.0, by September 30, 1999, the County of Essex must identify to the Ministry of Health's Emergency Health Services Branch (EHSB) the entity that will be licensed to deliver land ambulance service for the region commencing on January 1, 2000. If EHSB is not advised by this date, the Province may allow for a one year extension that would delay the decision regarding service provision until December 31, 2000. Nevertheless, during this time, the County would be required to enter into a one year contractual arrangement with one or all of the existing land ambulance providers. In addition, it would be necessary to provide service for the City of Windsor in lieu of the fact that the Province will no longer operate the Windsor Provincial Ambulance Service after December 31, 1999.

If a E.M.S. Board is established and a E.M.S. General Manager is hired within the next two months, there should not be a difficulty in advising the Province of the County's intentions for the provision of land ambulance service delivery on September 30, 1999. Nevertheless, due to the complexities surrounding the transition of land ambulance services, it is anticipated that there will need to be an extension of contracts with existing service providers on January 1, 2000 (with the exception of the Windsor Provincial Ambulance Service). This extension would be regardless of the choice to adopt a public or private service delivery model and would allow for adequate planning during the year 2000. During this time, service delivery and employment of personnel would be status quo; however, the existing providers (excluding the existing Provincial Ambulance Service in Windsor) would be accountable to the County via the E.M.S. Board for funding and operational aspects of the service.

The following timeline is a proposed implementation schedule for 1999:



The extension period beginning on January 1, 2000 will be essential to ensure that appropriate systems are in place for a full transition of service delivery on or before January 1, 2001. In the event of a public service delivery model, a hiring and job bidding process would be established early in 2000; inversely, in the event of a private service delivery model, a request for proposals process would be undertaken.

10.1 Communications Strategy

During the transition period, the Land Ambulance TAC also suggests that there be a comprehensive communications strategy implemented in order to advise existing providers and personnel on the activities and decisions of County Council. In addition, there should also be a significant media and public education component of the communications strategy to ensure that the residents of Essex County, Windsor and Pelee Island are adequately informed as to the changes in land ambulance service delivery.

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APPENDIX 1

Existing Operators

APPENDIX 2

Ambulance Station Locations

APPENDIX 3

Call Volumes and Ambulance Code Analysis

APPENDIX 4

Ontario Pre-Hospital Advanced Life Support Study (O.P.A.L.S.)
Coverage Area

APPENDIX 5

Survival Rates

APPENDIX 6

Tiered Response Coverage Areas

APPENDIX 7

Existing Response Times
E.M.S. Benchmarks / Requirements

APPENDIX 8

Proposed Reporting and Advisory Structure
for Land Ambulance Services

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The Corporation of the County of Essex wishes to acknowledge the dedication and efforts of the Land Ambulance Technical Advisory Committee in the preparation of this report:

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