June 25, 1997
clerk 6/25/97

Introduced By: Maggi Fimia

Proposed No.: 97-391

MOTION NO. 10293

1
2
3
4 A MOTION authorizing approval of the 1998-2003 Emergency
5 Medical Services Strategic Plan submitted by the Executive.
6

7 WHEREAS, emergency medical services in King County are funded by a six-year
8 voter-approved property tax levy, and

9 WHEREAS, emergency medical services are among the most important services
10 provided to County residents. These services include basic and advanced life support,
11 training in cardiopulmonary resuscitation, an effective communications system, emergency
12 medical technician training, defibrillation training, injury prevention, and related services.
13 In combination, these programs have made the emergency medical services network in
14 King County an invaluable life-saving effort and an important part of the quality of life
15 standards afforded citizens of this county, and

16 WHEREAS, cardiovascular disease is the leading cause of death in the nation and
17 in King County. The delivery of paramedic services in King County has tripled the
18 survival rate of victims of cardiac arrest; the initiation of cardio-pulmonary resuscitation by
19 bystanders or emergency medical technicians has doubled hospital discharge rates, and

20 WHEREAS, King County should continue to exercise leadership and assume
21 responsibility for assuring the orderly and comprehensive development and provision of
22 emergency medical services throughout the county, and

23 WHEREAS, a strategic planning committee was appointed by the executive and
24 included physicians, fire departments and paramedic providers, private ambulance
25 companies, labor groups, emergency medical technicians/firefighters, paramedics, health
26 plans and King County to establish future directions for the regional emergency medical
27 services system, and

10293

1 WHEREAS, the Emergency Medical Services Strategic Plan has assessed major
2 operational, service, and financial challenges for the region in the next six years, and
3 WHEREAS, the Emergency Medical Strategic Plan provides for necessary growth
4 in basic life support services provided by fire departments, paramedic services, and
5 regional service programs, and
6 WHEREAS, the Emergency Medical Services Strategic Plan has proposed strategic
7 initiatives designed to manage growth in demand for emergency medical services, use
8 existing resources more efficiently, enhance existing programs and add new programs to
9 meet emerging community needs, and establish an emergency medical services advisory
10 committee;

10293

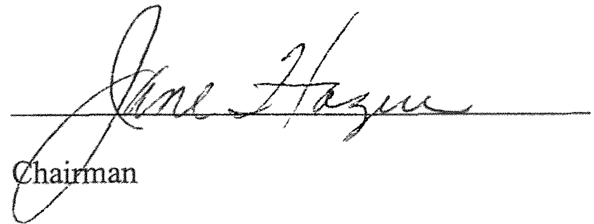
NOW THEREFORE, BE IT MOVED by the Council of King County:

The County Executive is hereby authorized and directed to proceed with the Emergency Medical Services Strategic Planning recommendations as outlined in Attachment A.

PASSED this by a vote of 13 to 0 this 8th day of September, 1997.

KING COUNTY COUNCIL

KING COUNTY, WASHINGTON



Chairman

ATTEST:

Clerk of the Council

ATTACHMENT: 1998-2003 Emergency Medical Services Strategic Plan

10293 97-391

1998 – 2003 Emergency Medical Services Strategic Plan

June, 1997

Seattle/King County Department of Public Health
King County Emergency Medical Services Division

1998 – 2003 EMS STRATEGIC PLAN

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PREFACE

The 1998-2003 EMS Strategic Plan builds upon the EMS Division's 1992 - 1997 Master Plan and its subsequent updates. The original plan, developed in 1991, represents a milestone in the history of collaborative effort between the City of Seattle and the King County EMS systems. It provides the foundation for ongoing coordination, collaboration, and regionalization.

This 1998–2003 EMS Strategic Plan is limited to the County portion of the EMS system. Unless otherwise indicated, financial and statistical data presented in this plan exclude Seattle Fire Department EMS at their request. Appendix B provides information, developed by the Seattle Fire Department and the City of Seattle Office of Management and Planning regarding Seattle's EMS funding plan.

Acknowledgements

The EMS Division would like to thank members of the EMS Strategic Plan Steering Committee who volunteered their time to assist in this planning effort. The assistance of the following people is greatly appreciated.

Dr. Alonzo Plough, Co-Chair
Director, Seattle/King County Department of Public Health

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Former Chief, Kirkland Fire Department

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TECHNICAL ADVISORS

Peter Harris
City of Seattle, Office of Management and Budget

The broad-based membership of the Steering Committee together with an open process that sought input from many interested constituencies, assures that the 1998–2003 EMS Strategic Plan clearly reflects the collective thoughts and perspectives of the communities served by the EMS system.

The EMS Division would also like to thank those who attended the Steering Committee meetings, participated in the subcommittee meetings, focus groups, and workgroups, and contributed valuable insights to make this Strategic Plan possible. Thank you.

1998-2003 Emergency Medical Services Strategic Plan

PURPOSE

The purpose of the 1998 - 2003 Emergency Medical Services Strategic Plan is to define the future roles and responsibilities of EMS providers in King County and to establish a framework for moving the County's EMS system into the 21st century. The Plan sets new EMS policies, identifies four new strategic directions for the County, and provides a financing plan to maintain existing out-of-hospital emergency services and to implement the strategic initiatives. The Plan also allows flexibility to address emerging health needs through coordination with other public and private health care organizations.

The financial plan focuses on the EMS levy. Seattle Medic One and King County EMS services are partially funded through a single, county-wide property tax levy that is voter approved every six years. In November, 1997, voters will be asked to approve the EMS property tax levy for the next six years. This 1998 - 2003 Emergency Medical Services Strategic Plan provides elected officials, voters, and the EMS community a description of the EMS services to be supported through the levy.

PLANNING PROCESS

Early in 1996, the EMS Division of the Seattle/King County Department of Public Health established the EMS Strategic Plan Steering Committee to develop this Plan. Committee members represented the full range of EMS providers, including: paramedics, EMT's, physicians, urban and rural fire departments, labor, health plans, the health department, private ambulance companies, and fire commissioners. Numerous focus groups, subcommittees, and technical workgroups have been convened throughout the planning process to gather additional perspectives. All meetings were open to the public and publicized through newsletters with a mailing list exceeding 200 interested parties. The newsletter summarized the Steering Committee's progress and provided a forum for public input and information dissemination.

The results of the Steering Committee's efforts are detailed in this 1998 - 2003 EMS Strategic Plan. The Executive Summary highlights major new strategic directions to be explored and implemented throughout the next six years and summarizes the proposed financing plan to achieve future goals and objectives.

BACKGROUND: SEATTLE MEDIC ONE AND KING COUNTY EMS SYSTEMS

Seattle Medic One and King County's EMS system are structured as "tiered response systems." The purpose of tiered response is to assure that callers to 9-1-1 for medical emergencies receive efficient and effective care by the most appropriately trained level of provider. This includes basic life support (BLS) services provided by Emergency Medical Technician (EMT)/fire fighters and advanced life support (ALS) services provided by paramedics.

As an incremental cost to the fire service, EMT/fire fighters have 120 hours of EMS training, allowing them to respond rapidly to all EMS calls and deliver immediate basic life support services. For more serious emergencies, paramedics with 3,000 hours of specialized university training, are also dispatched to the scene to provide extensive out-of-hospital emergency medical care for serious injuries and illnesses. The tiered response system involves a continuum of care with the following components:

- Citizen CPR
- Universal access through 9-1-1
- Criteria based dispatch triage guidelines
- Rapid response to all EMS calls by Emergency Medical Technician/Fire Fighters who deliver basic life support (BLS) services
- Rapid response to about 33% of all EMS calls by Harborview trained paramedics who deliver advanced life support services
- Integral participation of emergency medical technicians employed by private ambulance companies in continuing patient care and transport
- Emergency room physicians in designated hospitals who legally provide uniform medical direction and oversight to EMS providers and serve as medical control points for paramedic units
- A regional system that emphasizes uniformity across jurisdictions, excellent training, effective research, and quality assurance.

CITIZENS SERVED BY KING COUNTY'S EMS SYSTEM: 1992 TO 1996

The number of calls to 9-1-1 for emergency medical services throughout King County increased from 62,300 responses in 1992 to an estimated 81,100 responses in 1996 (excluding Seattle). This is a 30% increase in total services delivered by EMT/fire fighters, averaging 6% per year growth in call volume.

The number of EMS calls that received a paramedic response increased from 21,950 to 27,000 over the same time frame (excluding Seattle). This is a 23% increase in services delivered by paramedics, averaging 4.6% increase in call volume annually.

This rate of growth exceeds population growth or other demographic changes that may affect the demand for EMS services. Variables that may explain excess demand for services reflect overall changes within the broader health care system, such as early hospital discharges, increased use of outpatient procedures, and increased use of home health services. Additionally, there has been an increase in social problems leading to medical emergencies involving domestic violence and substance abuse. Increasingly, the EMS system is becoming the social and health services safety net.

As planned in 1991, the EMS Division increased King County's ALS service capacity from seven to fourteen ALS units to serve growth in service volumes that occurred during the 1992 – 1997 levy period. This expansion has associated costs to be sustained through the next levy period.

Future population growth trends and ongoing aging of the population will increase the need for EMS services in the future. The 1998 – 2003 EMS Strategic Plan provides a mechanism to assure continued capacity expansion to meet natural growth. The Plan also provides new strategies for addressing increased EMS call volume resulting from other factors.

FUTURE CHALLENGES

Assessment of the current EMS system in King County identified four issues and concerns to be addressed during the next six years.

1. *Is current EMS levy funding sufficient to sustain ongoing expansion of ALS service capacity to meet continued growth in EMS services through 2003?*

   As with most other public services, it is likely that EMS funding will be limited in the future. To manage future costs, this Plan focuses on service delivery methods that reduce the need for ongoing expansion of ALS services throughout King County.

2. *What is the most effective and efficient role for EMS providers?*

   As a key access point to needed social and health services, EMS providers will continue to serve a small but critical role as part of the larger "social and health care safety net." EMS's primary role is to provide emergency medical services in out-of-hospital settings and to refer non-emergent and primary care patients to more appropriate providers.

3. *Can existing EMS services be utilized more effectively to manage the need for future capacity expansion?*

   The 1992 – 1997 levy cycle focused on internal program improvements and capacity expansion to meet projected growth in demand for services. With eminent limitations on public funding, a major 1998 – 2003 goal is to manage future ALS expansion through two methods:

   - Increase utilization of existing ALS capacity; and
   - Work with other public and private health care providers to reduce the rate of growth in the demand for EMS services.

4. *In view of potential funding limitations, how should ALS, BLS, and Regional Services funding decisions be made in the future?*

   The County's 35 BLS agencies and four ALS providers recognize that the benefits of regionalization, collaboration, and cross-jurisdictional coordination far exceed the individual benefits associated with other EMS service delivery and funding mechanisms.

   With multiple and sometimes competing funding and program priorities facing the County's EMS providers, this strategic and financial plan emphasizes cooperative efforts to meet emerging challenges to the system. Regional service delivery and funding decisions will be made cooperatively and will balance the needs of ALS, BLS, and regional services from a system-wide perspective.

1998 – 2003 EMS STRATEGIC INITIATIVES

The 1998 – 2003 Strategic Plan identifies four major strategic initiatives for the next six years:

1. Diminish the rate of growth in demand for EMS services to 3% growth per year through:

- Public education
- Injury and illness prevention and intervention
- Referral to other types of assistance when medically appropriate

2. Use existing resources more efficiently by:

   - Revising and refining ALS dispatch triage criteria
   - Establishing a broader array of transport destinations
   - Coordinating with private ambulance companies
   - Revising ALS performance standards
   - Explore varying response time standards for medically appropriate calls
   - Exploring alternative ALS unit scheduling options.

3. Enhance existing programs and add new programs to meet emerging community needs.

   - Enhance dispatcher training
   - Enhance public education on the appropriate use of EMS services
   - Enhance responsiveness to the needs of special populations
   - Develop, implement and/or enhance a regional continuous quality improvement program.

4. Establish an EMS Advisory Committee to assist the EMS Division with implementation of the 1998 – 2003 EMS Strategic Plan.

Successful implementation of the strategic initiatives is projected to reduce the potential growth in EMS call volume by 10%. All calls to 9-1-1 will receive assistance, but in the future this may include referral by dispatch to other social and health services when appropriate.

Refinements to the ALS dispatch triage criteria are expected to reduce the percentage of EMS calls receiving an ALS response from 33% to 30%, thereby reducing the growth in ALS call volume by 5,000 calls in 2003. Cost savings for ALS services alone are projected to be $3.0 million over the six years through even better utilization and management of existing resources.

Collaboration and coordination with other public and private health care organizations will strengthen the ability of EMS providers to develop and implement the new strategies. The 1998 – 2003 Strategic Plan provides a structure for working with other health care entities to promote more cost-effective and efficient use of public as well as private health care resources.

1998 – 2003 FINANCIAL PLAN

The six-year financial plan for King County's EMS System is premised upon a combination of program and service initiatives to control costs, increase operating efficiencies and manage continued growth in demand for service. To accomplish this, the financial plan incorporates the following principles.

1. The EMS levy needs to support continuation of quality services and provide adequate funding to develop the 1998 – 2003 strategic initiatives.

2. Funding decisions will be approached from a system-wide perspective.

3. The financing plan recognizes individual jurisdictions' need for local autonomy to meet their communities' expectations for EMS services.

4. The plan depends upon coordination and collaboration between EMS providers and other health care entities.

5. The EMS Division is responsible for coordination and facilitation of collaborative activities necessary to assure the success of this regional strategic and financial plan.

6. As an essential public service, Advanced Life Support services will continue to be supported primarily by the EMS levy.

7. As an essential public service, Basic Life Support services will be funded through a combination of local taxes that support fire service functions together with EMS levy funds to support the incremental cost of BLS.

8. New sources of revenue may be needed to fund enhancements to the EMS system which may include grants and other non-levy funds.

The EMS levy is a significant source of revenue for the EMS system, particularly for ALS services and regional programs. For the last 12 years, the authorized levy rate in Seattle and King County has been $0.25 per $1,000 of assessed property value. State law allows jurisdictions to levy as much as $0.50 per $1,000.

Throughout the current levy period, increases in property valuations have not maintained pace with the growth in demand for EMS services and the added expense needed to serve this demand. Additional sources of revenue, such as county CX funds, grants, in-kind contributions from ALS providers, and cash accumulations of levy funds early in the levy period have allowed the EMS system to grow in response to increased demand.

The variance between EMS costs and EMS levy revenues is widening. Financial analysis indicates that the EMS system will incur operating deficits during the ensuing levy period if the levy is maintained at $0.250. Other sources of revenues will be insufficient to cover the expected deficits.

A combination of cost-saving programs together with an increase in the EMS levy rate is needed to provide EMS services through the next levy cycle. Projected cost savings will result from:

- strategic initiatives to manage growth in demand and improve utilization of existing resources;
- focus of EMS levy funds on core regional functions that support the EMS system;
- continuation of County CX support at current funding levels;
- development of a joint purchasing program for ALS and BLS providers;
- implementation of a more cost-effective vehicle replacement, salvage, and retrofit program;
- indexing future cost increases to reflect CPI; and
- an expectation that ALS providers will continue to provide in-kind financial contributions to cover indirect program costs.

Without these changes, the EMS system would need to increase its levy rate from $0.250 per $1,000 of assessed value to $0.340. With the cost-reducing strategies, the levy rate can be limited to $0.295 per $1,000. This will assure continuation of current services and it will provide sufficient resources to implement the 1998 – 2003 strategic initiatives.

It is anticipated that the strategic initiatives will be successful and will allow the opportunity to minimize growth in EMS levy funding in the later years of the levy period. As a matter of public policy, the EMS Division will monitor levy funds and expenditures to assure the ending fund balance in 2003 meets the County's 5% reserve requirement. This may result in an EMS property tax rate, in the later years of the levy cycle, that is less than the maximum allowable of $0.295 as recommended in this plan.

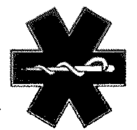
The following table summarizes the historical and projected revenues and expenses for the County's EMS system and reflects the strategic initiatives, financial assumptions and policies in this plan.

The EMS Strategic Plan Steering Committee thoroughly examined program and funding alternatives and identified efficiencies that are practical and support the quality of care and level of EMS services expected by the public. The assumptions incorporated into this financing plan are aggressive, but they reflect current perspectives on future EMS program requirements and respond to public sentiment to minimize taxes. It is difficult to project future funding requirements over a six year period and it is always possible that the assumptions in this Plan may be different from actual events. In anticipation of this, the 1998 — 2003 Strategic Plan includes a contingency planning process that will allow EMS providers to proactively respond to changing external events.

KING COUNTY EMERGENCY MEDICAL SERVICES
HISTORICAL AND PROJECTED REVENUES AND EXPENSES
Excludes Seattle EMS Levy Funds (1)
($ in thousands)

	Historical Revenues and Expenses Levy Rate: $0.25						Projected Revenues and Expenses Levy Rate: $0.295					
	1992	1993	1994	1995	1996	1997 Budgeted	1998	1999	2000	2001	2002	2003
BEGINNING FUND BALANCE	$2,850	$4,471	$5,716	$6,433	$5,907	$3,977	$1,290	$1,383	$1,397	$1,758	$1,409	$1,493
REVENUES												
EMS Levy - County Share	$16,484	$17,886	$19,070	$19,609	$19,784	$20,397	$24,600	$25,600	$26,500	$26,100	$28,600	$29,800
Other Revenues (2)	$274	$315	$587	$397	$297	$255	$103	$110	$112	$143	$112	$119
County CX	$375	$375	$375	$375	$375	$375	$375	$375	$375	$375	$375	$375
Total County EMS Funds	$17,133	$18,576	$20,032	$20,381	$20,456	$21,027	$25,040	$26,044	$26,945	$26,618	$29,087	$30,294
Total Available Funds (3)	$19,983	$23,047	$25,748	$26,814	$26,363	$25,004	$26,330	$27,427	$28,341	$28,376	$30,496	$31,787
EXPENDITURES												
County ALS Services (4)	$5,884	$10,878	$9,337	$10,767	$11,798	$12,735	$13,452	$14,310	$14,543	$14,577	$16,313	$17,149
County BLS Services	$6,522	$7,368	$7,707	$7,938	$8,017	$8,278	$8,500	$8,700	$9,000	$9,200	$9,500	$9,800
Regional Services	$1,279	$1,536	$2,163	$2,286	$2,610	$2,681	$2,500	$2,600	$2,700	$2,800	$2,800	$2,900
Strategic Initiatives (5)	0	0	0	0	0	$60	$495	$420	$340	$390	$390	$390
Total County Expenditures	$13,685	$19,782	$19,207	$20,991	$22,425	$23,754	$24,947	$26,030	$26,583	$26,967	$29,003	$30,239
REVENUES LESS EXPENDITURES	$6,298	$3,265	$6,541	$5,823	$3,938	$1,250	$1,383	$1,397	$1,758	$1,409	$1,493	$1,548
Adjustments (6)	($1,827)	$2,451	($108)	$84	$39	$40						
Ending Fund Balance	$4,471	$5,716	$6,433	$5,907	$3,977	$1,290	$1,383	$1,397	$1,758	$1,409	$1,493	$1,548
Target Fund Balance (7)						$1,051						$1,522

1 Seattle levy revenues and expenses are excluded from this table due to different budget methods
2 Includes interest income on accumulated reserves @ 5% plus very limited amounts from designated timber taxes and public donations
3 Includes Revenues plus Beginning Fund Balance
4 Includes ALS contracts, vehicle replacement, rural ALS services, new ALS unit start-up funds
5 See Table 3.5 for detailed budget
6 Adjustments reflect County Council designated reappropriations, encumbrances, and misc. budget adjustments
7 The King County Executive requires a 5% reserve at the close of each levy cycle



CHAPTER 1

INTRODUCTION AND BACKGROUND

PURPOSE OF THE EMS STRATEGIC PLAN

The EMS Strategic Plan provides a roadmap to guide the County's EMS system through the 1998 - 2003 levy period. The plan builds upon the 1990 Master Plan and establishes new policy directions, describes a new strategic plan for the County's EMS system, and provides a financing plan and implementation schedule.

This Plan is preceded by the 1995 EMS Master Plan Update which focuses on operational issues including: response time standards, numbers of ALS units needed, the location of ALS units throughout the county, 12-hour units, alternative staffing models, and other operational enhancements. The 1995 Master Plan Update provides a "nuts and bolts" approach for providing EMS services, and this Strategic Plan establishes policy directions for moving the County's EMS system into the 21st century[1].

EMS SYSTEM ORGANIZATIONAL DESIGN

The past twenty-five years has seen the development of a regional EMS system in the greater King County area. This system is based on the delivery model developed in the City of Seattle in the late 1960's. Pioneered by Leonard A. Cobb, M.D and Gordon Vickery, Former Chief of the Seattle Fire Department, the EMS program now incorporates a medically-oriented, tiered response system. Major components of the system functionally embrace the full continuum of care for out-of-hospital emergency services and include:

- Extensive training of citizens in cardiopulmonary resuscitation.
- Universal access to the system to all who call the countywide 911 emergency telephone number.
- Call receipt and triage by dispatchers to ensure that (1) the most appropriate levels of emergency medical providers are sent to the scene, and (2) assistance to callers by dispatchers is provided until the response team arrives (including delivering phone instructions in CPR).
- Rapid response and treatment at the scene by Emergency Medical Technician (EMT)/firefighters.
- Provision of advanced emergency medical care to patients with serious injuries or illnesses by Harborview-trained paramedics.
- Integral participation of EMT's employed by private ambulance companies in continuing patient care and transport.
- Physicians who provide legal medical authority, uniform medical oversight and medical direction to the EMS system.

[1] *See also Emergency Medical Services Master Plan Reports, Seattle-King County Department of Public Health, EMS Division, April 1990-1995.*

- Strong ties with local hospitals, especially those with emergency department physicians and staff who serve as medical control points for paramedic units.
- A systems approach which emphasizes excellent training, effective research, and quality assurance as the key to successful prehospital patient care.

The County's EMS system has adapted the Seattle Fire Department's Medic One Program model to accommodate the demographic, geographic and jurisdictional uniqueness of King County. ALS in both Seattle and King County have been primarily supported by an EMS levy since 1979. Seattle utilizes EMS levy funds to support the spectrum of EMS services within the city. The County portion of the regional system uses the EMS levy funds to support paramedic, fire department BLS and regional EMS programs. The City of Seattle and the County's EMS system function collaboratively and coordinate services across jurisdictional boundaries. The two programs operate under separate administrative structures and the remainder of this report addresses the County's regional system. (See Appendix B for more information on Seattle's EMS program.)

Legal Authority

The King County EMS program serves as a constituent of the statewide Emergency and Trauma Care System described in RCW 18.71.200 – 18.71.215, Chapters 18.73 Sections 70.68 and 70.24. This legislation is administered through WAC 246-976: Emergency Medical Services and Trauma Care System. All ALS and BLS personnel in Seattle and King County meet or exceed state EMS certification standards defined in RCW and WAC.

Within the state system, King County is designated as the "Central Region." The EMS Division is an active participant in the Central Region EMS and Trauma Council and supports the county's trauma registry and other council activities.

The County's EMS System

The County's EMS program serves over one million residents and 60,000 businesses located in 19 cities and 16 fire districts throughout King County. This area covers approximately 1,000 square miles of urban, rural, and wilderness areas. EMS response times, transport times and proximity to hospital services are challenged by geographic barriers, distance, time and traffic.

Currently, the King County EMS Division provides medical oversight to the system, helps coordinate regional services, and administers EMS levy funds under contract with 35 fire-based basic life support (BLS) providers and four agencies who provide paramedic or advanced life support (ALS) services. The four County ALS agencies include:

- Bellevue Medic One operated by Bellevue Fire Department (4 units)
- Evergreen Medic One operated by Evergreen Hospital Medical Center (4 units)
- King County Medic One operated by King County EMS Division (6 units)
- Shoreline Fire Department (1 ALS unit)

Tiered Response System

The regional tiered response system of 9-1-1, dispatch, BLS, and ALS enjoys an international reputation for innovation and excellence in out-of-hospital urgent and emergent care. For over twenty years, the system has maintained the highest reported survival rates in the treatment of out-of-hospital cardiac arrest patients across the nation. Resuscitation rates averaging 17% for sudden cardiac arrest patients and 29% for those

patients in ventricular fibrillation are typical in this region. By comparison, reported resuscitation rates as low as 1%-2% are typical in other areas of the United States.

Key to this success is integration of services into what the American Heart Association recognized in 1991 as the "Chain of Survival." This concept stresses a systems approach to successful treatment of cardiac arrest by identifying the interdependence of four essential links that are directly tied to cardiac patient survival and health status. These links include:

- early access to the EMS system through the 9-1-1 emergency telephone number;
- early CPR (with instructions provided by dispatchers, or provided by a trained citizen);
- early defibrillation by EMT/ firefighters (electric shocks given to restore a heart rhythm); and
- early paramedic care.

The success of the system is testimony to the commitment of all participants to providing high quality services to the residents of Seattle and King County.

The County's Criteria Based Dispatch Guidelines are another key component of the tiered response system. When a 9-1-1 medical emergency call is received by a dispatch center (see Appendix A, Map 1), the nearest fire department BLS unit is immediately called to the scene. Trained dispatchers use a series of predefined medical criteria for various types of medical problems. If the patient's signs and symptoms meet specific criteria, then a paramedic unit is also dispatched to the scene to provide advanced medical treatment for serious injuries and illnesses. Typically, both BLS and ALS units are simultaneously dispatched when needed.

Bystander CPR—whether performed with the assistance of a dispatcher or done on the basis of previous training—is a critical component of the tiered response system. While most BLS providers in the County are able to reach the scene within an average of four to six minutes, bystanders can improve patient outcomes by initiating CPR as soon as possible. The regional EMS system has been very successful in training citizens of all ages in CPR and has successfully incorporated "dispatcher assisted CPR" into dispatcher training.

All medical emergency calls to the EMS system receive a BLS response by one of the 35 fire service agencies serving the cities and unincorporated areas of King County. This response may involve a fire engine, a BLS aid unit, and occasionally in Seattle, a first response may be handled by a private ambulance company for medically appropriate calls.

If dispatchers determine that the medical emergency is potentially life threatening, then an advanced life support team of paramedics is also dispatched to the scene. Currently, about one-third of all EMS responses in the County receive both a BLS and an ALS response.

The regional structure of the County's program and the tiered response system of resource deployment have made it possible to respond to growing demands for EMS services. This is also made possible by uniform training and continuing education programs, uniform dispatch guidelines, and a strong commitment among the 35 BLS providers serving the county to cooperate and coordinate their service delivery methods.

Medical Control

The County's tiered response system is based on a medical model that operates under the legal authority of the Medical Program Director (MPD). The MPD is responsible for training, medical control

supervision, and quality review of the County's Emergency Medical Technicians (EMT's) and paramedic providers. The MPD delegates medical authority to other physicians who provide medical control to specific Medic One programs. Paramedics and EMTs trained in defibrillation operate as extensions of the physician and are legally authorized to provide care on a medical director's license. Other major functions performed by the Medical Program Director include establishing patient care guidelines for treatment, triage, and transport; establishing and supervising training and continuing education programs; and recommending certification, recertification, and decertification of EMS personnel.

Basic Life Support Services (BLS)

Basic Life Support Services are provided by 1,800 EMT/firefighters employed by 35 different agencies throughout the County (see Map 2). EMT/firefighters receive 120 hours of initial training and hospital experience, and most have also received additional training in cardiac defibrillation. EMT/fire-fighters are certified by the state of Washington which also requires ongoing continuing education to maintain certification. BLS teams are dispatched to all medically related calls to the EMS system. These fire department based units typically arrive on the scene within four to six minutes after dispatch. In 1996, EMT's responded to more than 133,800 calls countywide, of which 52,700 occurred in Seattle and 81,100 in the County.

Advanced Life Support Services (ALS)

King County paramedics are trained through the Paramedic Training Program at the University of Washington/ Harborview Medical Center (HMC), and with the Seattle Fire Department's Medic One program. Paramedics are trained to provide advanced emergency medical care to patients with serious or life threatening illness or injury. This program is one of the most advanced paramedic training programs in the world. All paramedics in Seattle and King County receive nearly 3,000 hours of training provided by leading physicians in emergency medicine, anatomy and physiology, pharmacology, and other subjects.

There are currently 20 paramedic units in the greater Seattle-King County region, with six paramedic units in Seattle and 14 units in the County (see Map 3). A paramedic unit is typically staffed by two paramedics and requires approximately nine paramedic FTE's (full time equivalent staff) to provide service 24 hours per day, 365 days per year. All six paramedic units in Seattle are staffed by two paramedics at a time. However, the paramedic program in the County includes a wider variety of staffing configurations in keeping with different geographic and demographic patterns. Eleven paramedic units in the County are staffed by two-paramedics at a time and operate 24 hours per day. In addition, there are two EMT/paramedic (EMT/P) units staffed by an EMT/ firefighter and one paramedic. EMT/P units are deployed in the more outlying areas of King County where response times for suburban-based units are typically long. When necessary, these units are backed up by two-paramedic units, and specific dispatch criteria exist to help send the additional paramedic unit whenever needed. These units currently respond to both BLS and ALS responses.

The County also operates two half-time ALS units, with an additional 12-hour unit planned for Southeast King County. These units are staffed with two paramedics at a time, operating 12-hours per day during peak workload periods. These units are effective in suburban areas which have rapidly growing workloads and long response times, but which have not yet grown busy enough to warrant a 24 hour unit. Over 60% of the workload occurring in a 24 hour

period can be served by these units. When the 12 hour units are not in service, the nearest 24 hour paramedic unit covers their service area.

In 1996, paramedics responded to 46,600 ALS calls in the region, of which 19,600 were in Seattle and 27,000 in the County. This represents about 35% of total EMS calls that year. More importantly, this is a 10.1% increase in paramedic calls over the 1992 call volume in the Seattle-King County region.

The majority of the growth in ALS call volume occurred outside Seattle. Excluding Seattle, other King County jurisdictions experienced a 23% increase in their ALS calls between 1992 and 1996. This growth occurred despite improvements to the County's ALS dispatch criteria. Without the improvements, it is likely that the rate of increase in the County's ALS responses would have been greater than 23%. A summary of BLS and ALS utilization for the first five years of the current EMS levy is summarized in Table 1.1.

Airlift Northwest is a not-for-profit air ambulance service that provides ALS air transport to critically ill and injured patients. Air transports are used primarily in situations where ground transport times are too long for seriously ill patients.

Private Ambulance Services

Private ambulance companies operating in King County employ over 300 Washington state certified EMT's. Privately employed EMT's receive the same EMS training and continuing education as EMT/firefighters with the exception of on-going training and use of automatic external defibrillators. The primary role of private ambulance companies in the King County EMS system is BLS transportation. In 1996, private ambulance companies transported 45,000 BLS patients in both Seattle and King County.

Transport Services

All medical emergency calls to 9-1-1 currently receive a BLS response and approximately one-third receive anALS response as well. Not all calls, however, require a transport and if one is needed, there are varying methods employed throughout the county to accomplish this. Paramedic units transport patients whose conditions or circumstances require advanced life support and stabilization from the field to the hospital. These patients frequently need monitoring or continuing care en route because they are medically unstable.

BLS transports are performed by either EMT's employed by private ambulance companies or by EMT/firefighters. As a local option, most jurisdictions use private ambulance companies for the majority of their BLS transports. Historically, private ambulance transport companies directly bill the patient or patient's health insurance for services rendered. Some BLS agencies prefer to handle their BLS transports with existing resources.

The decision to transport BLS patients by the fire service or to use private transport is based on a number of factors including:

- fire department or fire district policy
- medical necessity
- availability of private ambulance services in the area
- BLS unit availability
- the time of day
- weather
- destination, particularly to hospitals outside their response area or jurisdiction
- availability of backup resources

Regional Services

Regional coordination of the county portion of the EMS system is administered through the EMS Division of the Seattle/

King County Department of Public Health. The Division is responsible for the following regional EMS functions:

- Medical Program Director for the County
- EMT and First Responder Basic Training, Continuing Education and Instructor Training
- Emergency Medical Dispatch Guidelines and Triage Criteria Training
- Public Education
- Emergency Preparedness
- Critical Incident Stress Management
- Quality Assurance/Quality Improvement
- Data Collection, Analysis, and Planning
- Paramedic Continuing Education
- ALS and BLS Contract Administration and Oversight for ALS and BLS Providers
- General Administration and Coordination of the County's EMS Program
- Administration, Allocation, and Oversight of EMS Levy Funds

Current Funding Mechanisms

The County's EMS System is funded by a combination of EMS levy funds and other city and county taxes. State law allows jurisdictions to levy as much as $0.50 per $1,000 of assessed property values. For the last three levy periods, spanning 18 years, the levy rate in Seattle and King County has not exceeded $.25 per $1,000 of assessed value. Depending upon the growth in assessed valuations and the 106% levy lid, the actual levy rate has ranged from as low as $0.19 during the late 1970's up to the current rate of $0.25.

In King County, the EMS levy is a countywide levy and requires voter approval every six years. Voter turnout must exceed 40% of the prior general election with an approval rate of 60% or greater. Historically, voters have demonstrated strong support for the EMS system with approval rates exceeding 70%.

State law requires the King County Council as well as local jurisdictions with populations in excess of 50,000 to approve the levy proposal prior to placement on the ballot. Until recently, Seattle and Bellevue were the only cities to meet this threshold. The County now has three additional cities required to approve the ballot proposal, including Federal Way, Shoreline, and Kent.

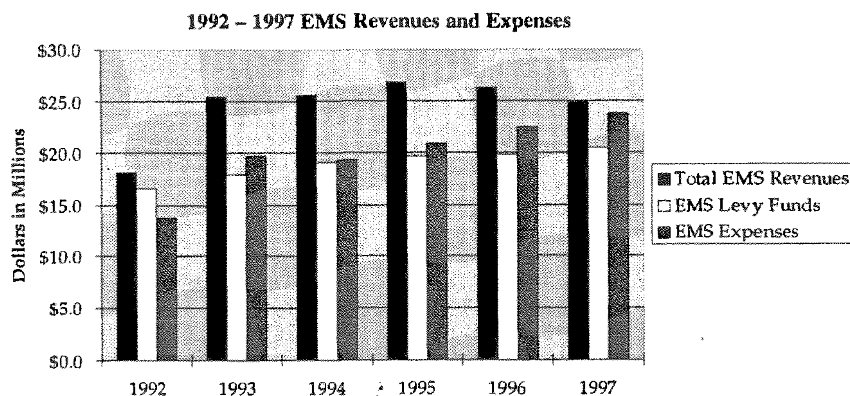
The County and the City of Seattle manage their EMS levy funds in different ways. Seattle contributes its share of the EMS levy to the city's general fund and allocates moneys back to the fire department as an integrated budget package. Its share of the EMS levy is based on actual funds collected from Seattle residents and commercial properties.

The EMS Division annually allocates EMS levy funds to the county's 35 BLS providers, four ALS providers, and regional programs. The EMS Division uses an allocation formula approved by the fire departments and fire districts for distribution of BLS funds. This formula takes into consideration urban and rural differences, as well as the population size, BLS call volume, and assessed property values in each fire department's service area. The BLS funding levels are calculated annually using this formula.

EMS levy funding for paramedic services is provided annually to contracted ALS providers through a standard unit cost methodology. The standard unit cost formula includes the annual average cost of personnel, medical equipment and supplies, and support services such as dispatch, training, and medical direction. The average unit cost is approximately $934,000 per paramedic unit in 1997.

Funding for periodic replacement of paramedic vehicles is a major, ongoing capital cost. Vehicle replacement occurs on a regular basis and is currently funded separately from the standard unit cost. Start up costs for new paramedic units cover personnel training, medical equipment and supplies, and other items. Start up costs are also funded apart from the standard unit cost. New ALS units are added whenever utilization exceeds capacity and/or response times exceed performance standards.

Figure 1.1



Note: EMS levy funds do not cover EMS Division expenses. Additional sources of revenue such as county CX funds and grants are needed. The variance between EMS costs and EMS levy revenues has increased over time. Total EMS revenues include accumulated reserves.

In addition to the EMS levy, ALS contractors contribute local funds to support the indirect costs of paramedic services, or to enhance their paramedic program to meet local community needs. BLS providers use local taxes to support the majority of their direct and indirect costs of BLS services. Fire departments represent a wide spectrum of communities and vary in their ability to generate local revenue to support their BLS programs.

Throughout the current levy period (1992 – 1997), increases in assessed property values have not maintained pace with the growth in the demand for EMS services and the added expense needed to serve this demand.

Figure 1.1 demonstrates that the EMS levy does not fund all activities for which the EMS Division is responsible. Other sources of revenues are needed, including County general funds, grants, and state contracts, as well as accumulated reserves. It is important to note that the difference between EMS levy revenues and the cost of EMS services is increasing.

GLOBAL ASSUMPTIONS

The current structure of the EMS system in King County is complex. There are facets of it that have proven effective, and which providers wish to maintain and strengthen. This plan assumes the following elements of the system will continue, providing the basis of operations for 1998 – 2003.

1. The EMS System in King County will continue to function as a tiered response system.
2. King County EMS providers of BLS, ALS, and regional services remain committed to the current system and organizational structure of regionalized programs.
3. EMS will continue as a public safety and public health program that functions collaboratively with other health care entities, both public and private.
4. The fire service will remain an integral part of the tiered response system.
5. Advanced Life Support services will continue to be an essential public service, funded primarily by tax dollars.

The global assumptions reflect a collective commitment among the County's EMS providers to strengthen an EMS program that has proven successful

throughout nearly 20 years of service. Collectively, EMS providers acknowledge that the benefits of regionalization, collaboration, and cross-jurisdictional coordination far exceed the individual benefits associated with other EMS service delivery models and funding mechanisms.

Seattle and King County's EMS programs have achieved cost savings and quality of service that is unparalleled in other parts of the country. Recent surveys on public services in Seattle and Bellevue found that EMS services were rated first or second in importance and in consumer satisfaction. In response to strong consumer support, this strategic plan assumes continuation of a publicly funded EMS system and does not explore other public or private service delivery or funding mechanisms.

Figure 1.2

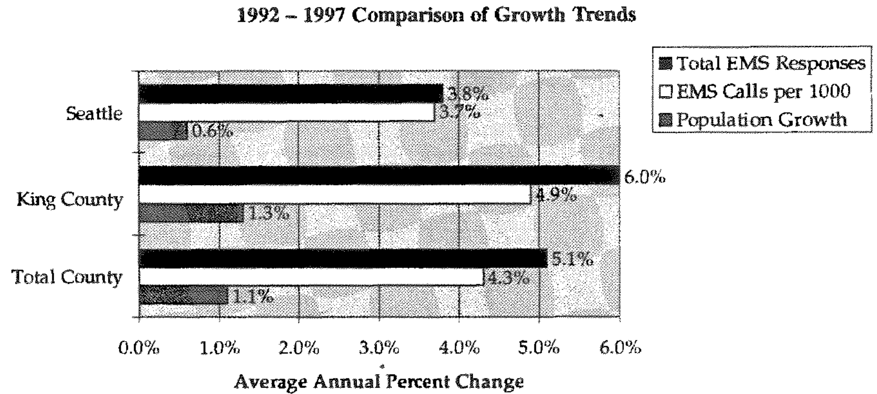


Figure 1.2 compares historical growth trends in population, EMS calls, and EMS calls/1,000 population.

ISSUES AND CONCERNS

While there are many positive aspects of the County's EMS system, there are also service delivery and funding issues that need to be addressed, including growth in demand for EMS services, perceived use of the EMS system as a health system safety net, and funding limitations for public services.

Growth in Demand for EMS Services

Citizens throughout King County are calling 9-1-1 for medical assistance at a rate that exceeds population growth or changing demographics. Population has grown approximately 1.1% per year since 1990 and the average age has increased by one year since the beginning of this levy period. The average annual rate of growth in EMS calls, however, has been 6.0% per year in the county.

Table 1.1

HISTORICAL EMERGENCY MEDICAL RESPONSES

	1992	1993	1994	1995	1996
Total EMS Calls					
Seattle	43,764	48,111	48,162	50,064	52,737
King County	62,272	68,643	71,288	79,504	81,107
Total	106,036	116,754	119,450	129,568	133,844
Total ALS Calls					
Seattle	20,404	20,823	18,873	18,339	19,609
King County	21,951	23,036	24,119	26,882	27,005
Total	42,355	43,859	42,992	45,221	46,614
Population (in 000's)					
Seattle	522	528	531	533	535
King County	1,043	1,060	1,068	1,081	1,094
Total	1,565	1,588	1,600	1,614	1,629
EMS Calls Per 1000 Population					
Seattle	84	91	91	94	99
King County	60	65	67	74	74
Total	68	74	75	80	82
ALS Calls per 1000 Population					
Seattle	39	39	36	34	37
King County	21	22	23	25	25
Total	27	28	27	28	29
Percent of EMS Calls with ALS Response					
Seattle	46.6%	43.3%	39.2%	36.6%	37.2%
King County	35.3%	33.6%	33.8%	33.8%	33.3%
Total	39.9%	37.6%	36.0%	34.9%	34.8%

Note: Differences between Seattle and King County ALS response statistics are due to variations in ALS dispatch criteria; recent changes to dispatch criteria in Seattle following the County's earlier changes; and differences between the demographics of population served.

Extrapolation of current growth trends through the next levy period result in a projected call volume of 120,000 EMS calls in the county by 2003. This compares to 81,000 in 1996 (See Figure 1.3).

Meeting the challenge of continued growth has come with associated costs to the EMS system. During the 1992 – 1997 levy period, the EMS Division has increased the County's ALS capacity by two ALS units, two EMT/P units and three 12 hour units.

Continuation of current service delivery methods and current ALS dispatch triage criteria would require four additional ALS units to serve the projected increase in workloads.

Figure 1.3

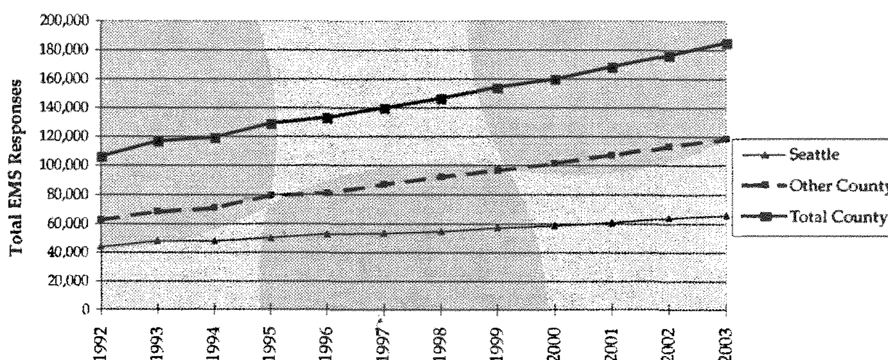


Figure 1.3 demonstrates the potential implications on EMS service volumes if current population growth trends and rates of increase in EMS calls/1,000 population continue.

At issue is whether the current EMS levy rate will be sufficient to fund current service requirements and continued ALS expansion.

EMS Providers' Roles and Responsibilities

Recent growth in EMS calls may be due to:

- overall changes in our health system
- increased social problems, and/or
- confusion about the roles and responsibilities of EMS providers.

For example, there is anecdotal evidence to suggest that the health care system itself may contribute to overall growth in EMS calls. Explanations of this phenomena may include:

- early hospital discharges;
- increased use of outpatient procedures;
- increased use of home health services; or
- overall changes within the health care system.

In addition, EMS providers are increasingly called to medical emergencies created by social problems associated with substance abuse, domestic violence, and crime-related trauma. These calls may involve life threatening situations and most EMT's and paramedics feel well prepared to handle the medical aspects of these calls. They may not, however, have immediate access to social service providers who are trained to handle the non-medical issues in these situations.

Citizens may not be clear about differences between the public role of the EMS system and the private role of their health plan and physician. While there is limited data to substantiate their observations, many paramedics and EMT's indicate that patients are increasingly confused about their health care benefits. For example:

- some residents may call 911 rather than schedule an appointment with a physician who is increasingly more difficult to see; and
- some patients may choose not to use the EMS system when they should for fear of incurring co-payments or being denied coverage due to differences between the patient's perception of an emergency and definitions used by their health plans.

Citizens may also be unclear about EMS transport responsibilities. Due to concerns over liability and risk issues, EMS providers are conservative in their transport decisions and many times transport to hospital emergency departments as a precautionary measure. This may lead to (1) higher costs for hospitals which are reimbursed less than the cost of care; and (2) higher costs to patients who are denied coverage by some health plans who retrospectively determine that the emergency room visit did not meet their definition of an emergency. It may also result in less efficient use of EMS resources, particularly for field responses that are geographically distant from hospitals and require long transport times when other equally appropriate and closer destinations are feasible.

A major issue challenging EMS providers is definition of its future role within the broader social and health system.

Funding Issues

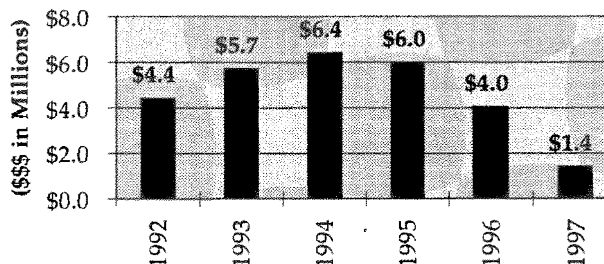
Management of EMS levy funds has required careful attention to current as well as projected service needs. Careful financial planning has historically been needed due to:

- the length of the levy period, covering six years;
- the 106% levy lid which limits the annual increase in funding to 6% over the prior year's funding level regardless of actual growth in the demand for services; and
- variation in property valuation increases that may not match the growth in demand for service.

It was projected in 1992 that excess fund balances during the early years of the levy period would be accumulated to cover expected deficits during the latter years when it was known that EMS costs would exceed revenues generated at the authorized levy rate of $0.250 per $1,000 AV.

Figure 1.4

1992 - 1997 Cash Accumulations From All Funding Sources



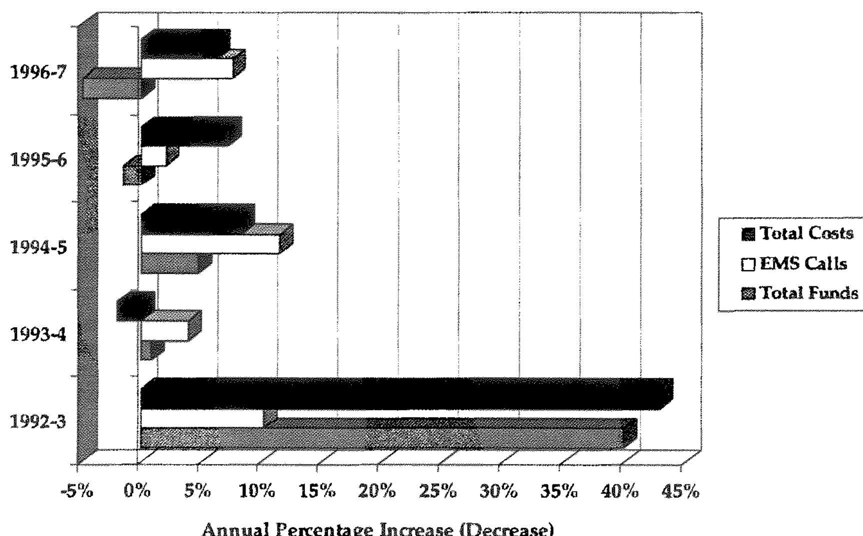
The current levy budget for 1992–1997, has been well managed to assure that existing funding (EMS plus additional sources) covered each year's expenses.

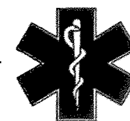
Although the 1996 authorized levy rate is set at $0.250 per $1,000 of assessed property values, the actual cost for EMS services in 1996 required funding equal to $0.270 per $1,000. Accumulated reserves together with non EMS levy funds have covered these anticipated increases in demand and cost for EMS services throughout the 1992–1997 levy cycle.

Figure 1.5 compares the annual rates of change in EMS call volume, expenses, and total revenues. Call volume in-

Figure 1.5

Comparison of Annual Percentage Change in Call Volume, Expenses, and Revenues





creased every year of the levy cycle and expenses increased in five of the six years. Revenues increased during the first three years then actually declined during the last three years, underscoring the value of cash accumulations during the early years of this levy period. While some non-levy funds may be available, it is uncertain whether these funds are sustainable on an ongoing basis or whether the EMS system can rely on non-levy funding sources.

Funding will be a major challenge during the next levy cycle. The current levy rate will need to be increased in order to support the major components of the current regional EMS system during the next six year levy period.

EMS Research

Excellent outcome data exists for trauma and cardiac arrest patients served by EMS providers. This data medically supports current EMS response time standards, dispatch guidelines, allocation of resources, and general deployment of aid and medic units. Additional research is needed to document the effectiveness of early pre-hospital intervention for other medical conditions.

As an international model in out-of-hospital care, King County EMS providers are challenged to secure sufficient funds for ongoing research and development in Emergency Medical Services.

EMS Operational Improvements

There are operational issues that need to be addressed during the next six years, including evaluation of:

- triage guidelines for dispatching ALS and BLS units;
- response time standards that consider varying emergency situations;
- expansion of quality assurance activities to include continuous quality improvement principles;
- BLS and ALS performance indicators;
- better efficiency measures; and
- technology improvements to enhance service delivery in the field.

At issue is whether there is funding to support development and implementation of these critical operational improvements within the time frame when potential benefits and cost-savings will be most needed.

SUMMARY OF EMS ISSUES AND CONCERNS

Analysis of utilization and financial trends demonstrate that the demand for EMS services has increased more rapidly than the funding base needed to support it. To assure that service delivery costs are aligned with available funding, it will be necessary to develop and implement a combination of cost-control strategies and demand management initiatives. It also may be necessary to access other revenue in addition to existing funding sources.

Efforts to align limited funding with operating expenses need to consider methods of meeting emerging community needs while finding ways to address funding challenges to the current system. Coordination and collaboration with other health care providers will be needed to assure EMS services continue to be delivered cost-effectively and efficiently.

EMS providers will continue to be challenged by competing demands for revenues. In the future, it may be necessary to establish funding priorities to assure that expenditures balance competing needs for systemwide improvements versus continuation of existing services to meet growth in demand.

MAJOR STRATEGIC FOCUS

With multiple and sometimes conflicting funding and program priorities facing EMS providers, the strategic and financial plan for the 1998 – 2003 levy period focuses on the following:

In the face of limited funding, County EMS providers will work together collaboratively and coordinate efforts with other public and private social and health care entities to:

1. *Address increasing workload volumes in BLS and ALS services;*
2. *Enhance existing programs and services to meet unmet community needs; and*
3. *Address emerging service delivery and financial challenges.*

CHAPTER TWO

1998 – 2003 Strategic Plan Initiatives

EMS SYSTEM COMPONENTS

The current levy period can be characterized as a time of system expansions and strengthening of internal relationships. Plans for the 1998 – 2003 EMS levy period are characterized as a time to strengthen external relationships and build a bridge to the future.

The Emergency Medical Services system in King County will continue its tradition as a public health and safety program. Structured as a tiered response system, Advanced Life Support services will continue to be provided by paramedics who are trained and certified by the University of Washington. Basic Life Support services will continue to be provided by Emergency Medical Technician/fire fighters.

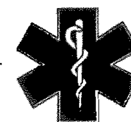
As essential public services, ALS services will be supported primarily by the EMS levy and BLS services will continue to be supported on an incremental basis by EMS levy and primarily funded through the fire service. The EMS Division will strengthen its role in coordinating regional EMS activities, quality assurance, and collaboration with other public and private health care entities.

Field Medicine
As a key access point into the broader health care system, EMS will play a small but critical role as part of the health care safety net. Its primary responsibility is to provide emergency medical services in the field, referring non-emergent and primary care calls to more appropriate providers.

Universal Access
The County EMS system will assure universal access to EMS services throughout King County, taking into consideration the financial and operational practicalities of serving residents in the more remote and lesser populated areas of the county.

Quality
As an internationally recognized regional model for Emergency Medical Services, the County EMS system will continue to deliver the highest quality service within available resources. Enhancement of quality assurance and quality improvement programs will be a primary focus during the ensuing levy period.

Funding
Direct costs for ALS services will be funded through the EMS levy with an expectation that host agencies will absorb indirect program costs through fire service budgets, hospital funds, or county general funds (CX funds). As an incremental cost to the fire service, EMS levy allocations for BLS services will support EMT training and continuing education, limited personnel costs, equipment purchases, and other related EMS costs.



Research
The County EMS system will continue to support field medicine research in collaboration with the University of Washington School of Medicine, Harborview Medical Center, and UWMC. Areas of analysis will expand beyond cardiac arrest and trauma to include other types of emergency services' outcome measures.

Collaboration
The County EMS system will collaborate with other public and private health care entities to minimize the rate of growth in health care costs and to ensure continued high quality patient care.

Community Service
As an essential community service, the County EMS system will provide service or assure access to more appropriate types of assistance to all in need regardless of ability to pay and with due respect to cultural and ethnic diversity.

Standards
EMS providers will meet uniform standards for ALS and BLS service delivery as defined by the Medical Program Director, including standards on quality, minimum levels of service, data collection and reporting, transport disposition guidelines, and other standards that promote cost-effective and efficient EMS services.

Pilot Projects
The County EMS system will initiate pilot projects to evaluate the feasibility of system improvements prior to implementation. Pilot studies will be used to evaluate intervention efforts, refinement of ALS triage guidelines, development of BLS quality and performance standards, and dispatch screening.

STRATEGIC INITIATIVES 1998 – 2003

Over the next six years, EMS providers will undertake a number of strategic initiatives to improve the County's EMS system and to assure it can deliver high quality services within available funds. Many of the initiatives are new to the EMS system and require coordination and cooperation across multiple jurisdictions as well as collaboration with non-EMS health care entities.

STRATEGIC INITIATIVE #1: Diminish the rate of growth in demand for EMS services to 3% growth per year.

County BLS service volumes increased an average of 6% per year and ALS services increased an average of 4.6% per year during the current levy period. This rate of increase exceeds population growth and aging factors. Other variables, such as general trends in our health and social service system, may also explain the rate of change.

To accommodate this growth, the County has increased its ALS capacity this levy period from seven to 14 units. Development, installation and ongoing costs for a new paramedic unit is a significant investment. Methods need to be found to improve management of the growth in paramedic workloads and to reduce the need for additional ALS capacity in the future.

There are three major approaches to diminish continued increases in EMS calls for medical emergencies, including (1) public education (2) injury and illness prevention and (3) referral to other types of assistance when medically appropriate.

Referral to other types of assistance may diminish the need to expand the EMS system beyond which future resources may support. The 9-1-1 telephone system must remain an open access point for all emergency calls. Some calls, however, do not require emergency ALS or BLS response and, in the future, the EMS system may respond differently by

expanding the types and levels of assistance available. Dispatch criteria and procedures will be revised to better match the appropriate response to the needs of the caller. This may include referral to social and health services when appropriate or non-emergency response by a BLS agency.

During the next levy period, the EMS system will pursue three major initiatives to diminish the number of BLS and ALS responses while providing the public with appropriate and effective assistance. The initiatives will be pursued through:

- coordination with the department of public health and other providers on injury and illness prevention and intervention programs;
- revision of dispatch and care guidelines to screen non-urgent calls for referral to social and health care services when medically appropriate; and
- collaboration with local health plans and providers to educate the public on when it is appropriate to call 911 for assistance and to offer practical and easily accessible alternatives.

STRATEGIC INITIATIVE # 2:
Use Existing Resources More Efficiently

Projections indicate that four more ALS units may be needed in the county unless existing resources can be utilized more efficiently and the rate of growth in demand minimized.

This poses a significant challenge to the County EMS system and the population it serves. To meet this challenge, EMS providers plan to:

- modify ALS service delivery and resource allocations;
- revise and refine ALS dispatch triage guidelines; and
- establish a broader array of transport destinations to shorten time and distance factors for both BLS and some ALS calls.

Such changes will be implemented in concert with a strong public information campaign to assure consumers and other health care providers are aware of the changes and are able to accommodate them. Specific program changes to be explored and, if feasible, implemented include:

(1) Revise and refine ALS dispatch triage criteria

Paramedics indicate that current criteria-based dispatch guidelines automatically call for their assistance on many calls where EMTs could handle the situation. To corroborate this, the EMS Division will study the feasibility of refining BLS and ALS triage guidelines to increase the focus of ALS care on patients who will most benefit from ALS services. This will effect the scope of service expected of BLS providers by expanding the number and types of BLS calls with EMT/firefighters as sole responders.

The EMS Division will work under the guidance of the Medical Program Director and with the assistance of other medical control physicians, paramedics and EMT's to assure that modifications to the ALS triage guidelines meet patient care standards and take into consideration the scope of practice and training requirements expected of EMT's.

This study should be completed within the first year of the levy period, allowing sufficient time during the second and/or third year to empirically test the validity of any dispatch modifications prior to implementation.

(2) Establish a broader array of transport destinations

A major component of the EMS system is transportation of the patient. Under current EMS guidelines, most transports are destined for hospital emergency rooms. This is medically appropriate for ALS transports which involve critically ill and severely injured patients. However, BLS transports involve patients whose conditions require medical attention, but not necessarily at the level of service and cost associated with hospital emergency departments.

The availability of a broader array of BLS transport destinations may reduce health care costs by treating patients closer to home and in more appropriate health care settings. It may also facilitate BLS providers' capacity to expand the types of cases they see as sole responders, by diminishing the number of long BLS transports.

County EMS providers will continue discussions with local health plans and other healthcare providers on the feasibility of establishing non-hospital transport destinations for medically appropriate EMS cases. In addition, it will be necessary to identify and work with urgent care centers and/or large medical groups interested in serving as EMS referral centers. And finally, the EMS Division will revise and refine dispatch guidelines and EMT/paramedic transport guidelines to implement this strategic initiative.

(3) Coordinate with private transport companies

As an integral component of the EMS system in King County, private transporters provide complementary resources that support the EMS system's responsibilities as an essential public service. EMS providers are encouraged to continue working with private transporters to explore new opportunities to collectively meet the growing needs of the population and to establish a process to examine the most effective role and relationship between public and private BLS transporters.

(4) Revise ALS performance standards

The EMS Division plans to revise performance standards for ALS units by increasing the annual utilization expected of each unit. Utilization of units varies from 600 – 3,200 calls per year. Variations in the utilization of County Medic Units are affected by current ALS service boundaries, geographic barriers, distance factors, and response time standards. Units operating 24 hours a day in urban settings average 3,000 calls per year while EMT/P units operating in rural parts of the county average 550 ALS calls per year, in addition to their BLS responsibilities. The 12-hour units began operation in December, 1996, and are currently meeting expectations. Their utilization efficiency will be substantiated after one year.

Recent expansion of ALS capacity this levy period allows reconfiguration of ALS service area boundaries. As service areas decrease in size, it is feasible to increase the number of calls served by each unit per year.

Higher utilization together with continuation of high quality services, requires extensive monitoring of call volume, response times, and other service indicators. The EMS Division has developed a monitoring system designed to track geographic changes in call volume and to measure performance indicators which

identify when to reallocate or redeploy resources, and/or realign service area boundaries. The EMS Division will continue this monitoring system, working with EMS providers to improve data collection and analysis capabilities, and to assure that utilization of existing resources is maximized.

(5) *Revise response time standards for medically appropriate calls*

A new service delivery option for EMS may involve standards that distinguish degree of urgency by type of call. The county's current response time standards are 4–6 minutes for BLS and 10 minutes for ALS. These standards are based on empirical research for cardiac arrest and trauma where there is medical evidence to support early medical intervention as a means to improve patient outcome; the earlier the intervention, the better the outcome.

Additional empirical research is needed to establish outcomes for early intervention among other medical illnesses or injuries. If response time standards can be lengthened or responses delayed for certain types of cases without adversely impacting patient outcomes, it may be possible to delay or minimize growth in ALS resources.

During the first year of the next levy period, the EMS Division under direction of the Medical Program Director, will undertake a pilot project to test the feasibility of varying response time standards for specific types of calls.

(6) *Explore alternative ALS unit scheduling options*

The EMS Division implemented two 12-hour paramedic units this levy period and a third unit is authorized. This scheduling option allows ALS capacity expansion to serve peak call periods without the cost of operating a unit 24 hours a day. Future use of this or other scheduling options will be explored as needed throughout the next six years as a means to manage ALS costs and to increase utilization of existing resources.

Timing to pursue the six program options is very important to successfully reduce the need for additional ALS units and to manage ALS costs. EMS providers will develop and implement program changes throughout the first three years of the levy period during which time there is projected to be sufficient capacity within the existing system to absorb additional ALS call volume. By 2000 or 2001, demand is projected to exceed existing capacity, requiring that program changes be in place.

A two to three year implementation schedule assures that prospective program refinements can be thoroughly studied and evaluated prior to implementation. It will also allow time for public education, dissemination of public information, and development of injury and illness prevention and intervention services that support this challenging effort.

STRATEGIC INITIATIVE # 3
Enhance Existing Programs and Add New Programs to Meet Emerging Community Needs

At this time, projected funding for EMS services in the County supports moderate enhancement of existing programs; provides limited funding to explore the feasibility of adding new programs; and allows evaluation of new programs through pilot projects. As a strategic initiative of the next levy cycle, the EMS Division will move forward with program enhancements as funds become available. To expedite funding of new

programs, the Division will collaborate with other private and public organizations to address emerging community needs. Specific program enhancements identified for the next six years include:

(1) Dispatcher training

It is a major priority during the next levy period to enhance dispatcher training. This is needed to revise ALS dispatch criteria, establish the infrastructure to refer appropriate 9-1-1 calls to other types of assistance, and to promote a stronger and more uniform dispatch capability throughout the county.

(2) Public Education

Successful implementation of this strategic plan requires increased public awareness of proposed changes to the EMS system. Through enhanced public education efforts, EMS providers will:

- inform citizens about the appropriate use of the 9-1-1 system;
- increase prevention and intervention activities; and
- identify other social and health organizations available for assistance.

(3) Special Populations

The EMS system will enhance its responsiveness to special populations.

- EMS providers throughout the County are increasingly responding to calls from people with English as a second language who may use the EMS system as an access point to primary care and other social services. The EMS system is in a position to educate such individuals, as well as other citizens, to the appropriate use of 9-1-1, and to guide them to appropriate follow-up services. The EMS Division will work with the EMS providers and the Health Department to develop a set of brochures or other information packets that BLS providers can leave during the initial call, guiding patients to alternative services and follow-up care when appropriate.
- EMS providers are responding to an increasing number of frail patients. This will continue to grow due to an aging population, increased use of home health services, as well as continued transition in the health care industry from inpatient to outpatient based services. In response, EMS providers will develop and initiate an intervention program to reduce the need for emergency services before the need arises. As funds become available the EMS Division will pilot an intervention project in collaboration with other health care entities and community services used by this segment of the population.

(4) Continuous Quality Improvement

The EMS Division will enhance its quality assurance activities through development of a uniform quality improvement program to be implemented throughout the county EMS system. Funding for development, implementation and on-going management of the enhanced program will include a combination of EMS levy funds together with additional revenues. The EMS Division will explore the availability of grants, both public and private, to supplement levy revenues earmarked for quality improvements.

(5) Enhanced Research

As funds become available, the EMS Division will explore the feasibility of collaborating with the Department of Public Health, health plans, hospitals, physician groups, and possibly the University of Washington on longitudinal patient outcome studies. The focus of the effort is to establish an integrated database, including information on pre-hospital, hospital, rehabilitation, and follow-up care. This data will support empirical research on the effectiveness of early medical intervention for conditions other than cardiac arrest and major trauma for which data already exist.

STRATEGIC INITIATIVE #4
Develop and Implement an EMS Advisory Committee

The purpose of the EMS Advisory Committee is to assist the King County EMS Division to implement the 1998 - 2003 EMS Strategic Plan. In its capacity as an advisory body, the Committee's primary activities will include the following. The EMS Division will expand this list of activities as additional needs emerge. At a minimum the Committee will advise on:

- clinical perspectives from physicians on the committee regarding regional EMS issues;
- operational issues related to EMS training, transport, communications, etc;
- annual review and status update of the 1998 - 2003 EMS Strategic Plan progress;
- potential opportunities for new and creative funding initiatives;
- EMS collaboration and coordination with other health care providers and health plans; and
- periodic review of the EMS system financial status, including discussion of funding issues, options, and implications for ALS, BLS and regional services.

The Committee will meet regularly, but not less than four times each year, including a meeting each Spring where financial forecasts and budgets for the upcoming year are presented. This permits linkage with the EMS Division's budget cycle each summer. In the event of major changes in service demands, program requirements or other factors that may impact the EMS system and/or implementation of this plan, the Committee will advise the EMS Division on proposed corrective actions.

Membership of the Advisory Committee will be broad based to assure representation of diverse constituencies within the Seattle and King County's EMS system. The Committee members will be appointed and confirmed by the EMS Division Manager and limited to local EMS providers representing the following organizations:

Physicians
King County Medical Program Director, Seattle Medic One Medical Program Director, and Chair of the Medical Director's Group or his designee

ALS Providers
One EMS representative from each ALS agency, including Bellevue Fire Department, Evergreen Hospital and Medical Center, Shoreline Fire Department, King County Medic One, and Seattle Fire Department.

BLS Providers
One EMS representative from each city over 50,000 population and not otherwise represented, to be selected by their fire department or fire department chief; one urban fire district provider to be selected by King County Commissioners; and one rural fire department provider to be selected by King County Commissioners.

Private Ambulance
One EMS representative from local private ambulance companies.

Dispatch
One representative selected by the Dispatch Centers.

Labor
One local BLS representative and one local ALS representative selected by the Washington State Council of Fire Fighters.

Health Plans
One representative selected by the Health Plan and Provider workgroup.

Regional Services
Manager of the EMS Division and agency staff as needed.

Many program initiatives need to be developed and implemented during 1997. The current EMS Strategic Plan Steering Committee will serve as an interim advisory committee to the EMS Division as it launches this strategic planning effort. Current members, or their designees, will serve in this capacity through December, 1997.

POTENTIAL IMPLICATIONS OF THE 1998 – 2003 STRATEGIC INITIATIVES

Successful implementation of the 1998 – 2003 strategic initiatives is projected to reduce the potential growth in EMS call volume in the county from about 119,000 EMS calls to 107,000, a 10% reduction. It is estimated that refinements to the ALS dispatch triage criteria could reduce the percentage of EMS calls receiving an ALS response from 33% in 1997 to 30% by 2003. This is projected to reduce the number of potential ALS calls from 38,000 to 33,000 by 2003, a 13.3% reduction (see Table 2.1).

The reduction in ALS call volume is projected to diminish the need for 2.5 – 3.0 ALS units by 2003. Strategic initiatives intended to increase existing ALS unit capacity will further reduce the need for added ALS units in the future.

Table 2.1

PROJECTED EMS RESPONSES FOR URGENT AND EMERGENT CARE
County Services Only/Excludes Seattle

	1998	1999	2000	2001	2002	2003
COUNTY EMS RESPONSES						
No Change in Current Trends	92,285	97,162	101,396	107,931	113,326	119,165
Successful Implementation of Strategic Initiatives	87,517	91,110	94,832	98,823	102,959	107,264
Potential Reduction in County EMS Call Volume Through Strategic Initiatives	4,768	6,052	6,564	9,108	10,367	11,901
COUNTY ALS RESPONSES						
No Change in Current Trends	30,425	31,767	32,909	34,893	36,460	38,104
Successful Implementation of Strategic Initiatives	29,139	29,880	30,626	31,421	32,222	33,033
Potential Reduction in County ALS Call Volume Through Strategic Initiatives	1,286	1,887	2,283	3,472	4,238	5,071

CHAPTER THREE

1998 – 2003 EMS FINANCIAL PLAN

The six-year financial plan for King County's EMS System is premised upon a combination of program and service initiatives to:

- control costs;
- increase operating efficiencies; and
- manage the growth in demand for service.

Additional assumptions include the following:

1. The EMS levy needs to support continuation of quality service and provide adequate funding to develop strategic initiatives described in this plan.
2. Funding decisions will be approached from a system-wide perspective.
3. The financing plan recognizes individual jurisdictions' need for local autonomy to meet their communities' expectations for EMS services.
4. This financing plan depends upon coordination and collaboration between EMS providers and other health care entities.
5. The EMS Division is responsible for coordination and facilitation of collaborative activities necessary to assure the success of this regional strategic and financial plan.
6. As an essential public service, Advanced Life Support services will continue to be supported primarily by the EMS levy.
7. As an essential public service, Basic Life Support services will be funded through a combination of local taxes that support fire services together with EMS levy funds to support the incremental cost of BLS.
8. New sources of revenue may be needed to fund enhancements to the EMS system which may include grants and other non-levy funds.

CURRENT SOURCES OF FUNDING

The County's EMS System is currently funded through a combination of local tax revenues including the county-wide EMS levy, local fire service contributions, ALS provider contributions, King County, and miscellaneous funding sources for special programs.

The EMS Levy

The primary source of funding for ALS services and regional programs is the EMS levy. BLS services are funded through a combination of EMS levy funds and local fire service funds. Authorized by state law, counties may levy up to $0.50 per $1,000 of assessed property values to finance their EMS system. Voters are asked to approve the EMS levy

every six years. In King County, voters have approved three county-wide six-year levies and will be asked to approve the next six-year levy during the November, 1997, general election.

Unlike most special property tax levies, voters approve the EMS levy rate, rather than the amount of EMS funds. The rate sets the EMS funding level during the first year of the six-year levy period. Funding during subsequent years is capped by the 106% levy lid or the levy rate, whichever is less. Under this funding methodology, the levy lid will cap EMS funding levels if assessed property values increase by more than 6% in any given year. Otherwise, the levy rate will determine the maximum level of funding available for EMS services.

This methodology does not flexibly respond to growth in the demand for services or other community needs that affect the expense structure of the EMS system. As such, management of EMS levy funds, monitoring of workload volumes, and ongoing evaluation of performance standards throughout each six-year period is very important.

The authorized EMS levy rate in King County has been $0.25 per $1,000 of assessed value for the last 12 years. This rate has provided sufficient revenues to expand the EMS system to meet historical growth in the demand for services. Between 1992 and 1996, the rate of growth in EMS has exceeded the rate of growth in revenues. Cash reserves accumulated early in the current levy period have made it possible to fund the EMS system and meet system demands through 1997 within existing revenues. Projections of future cost trends and future demand for EMS services will require an increase in the EMS levy rate, taking into consideration initiatives to manage the rate of growth in services, and increased utilization of existing resources.

Fire Service Contributions

A major source of financial support for the EMS system comes from the fire service through local tax contributions. Integration of BLS services into the fire service offers the public access to highly trained professionals committed to public health and safety at minimal cost. As an incremental cost to the fire service, the majority of EMT/firefighter salaries are funded through fire service budgets. Other public health and safety activities financed through the fire service include:

- fire suppression
- search and rescue
- vehicle extrication
- surface water rescue
- disaster preparedness
- hazardous materials response
- life safety building code inspections
- planning and administration
- training and continuing education
- injury and illness prevention

Approximately 40% of EMS levy funds are currently allocated to BLS providers throughout King County. As an integral component of the County EMS system, BLS providers will continue to receive EMS levy funding to support their incremental costs of EMS services.

ALS Provider Contributions

Providers of ALS units contribute local support by absorbing into their other program budgets many ALS indirect overhead costs, including payroll, facilities, and administration costs. In 1997, ALS contractors contributed an average of 9% of total ALS unit costs. It is projected within the 1998-2003 funding plan that ALS providers will continue to absorb a portion of the indirect overhead costs. Otherwise, allowable ALS program costs will be funded by the EMS levy.

Miscellaneous Funding

The EMS Division receives limited funding from a variety of sources, including the King County general fund for Division administration and overhead costs as well as grant funding to support specific programs, including the following.

- Seattle and King County trauma hospitals provide funding to support the Central Region Trauma Registry and to staff the Central Region EMS and Trauma Council;

- The State of Washington provides Seattle-King County with EMS and trauma funding for regional system development, training, major trauma registry maintenance, injury prevention, and other programs. These funds are given to the Central region, overseen by the Regional EMS and Trauma Council, and administered by the EMS Division.

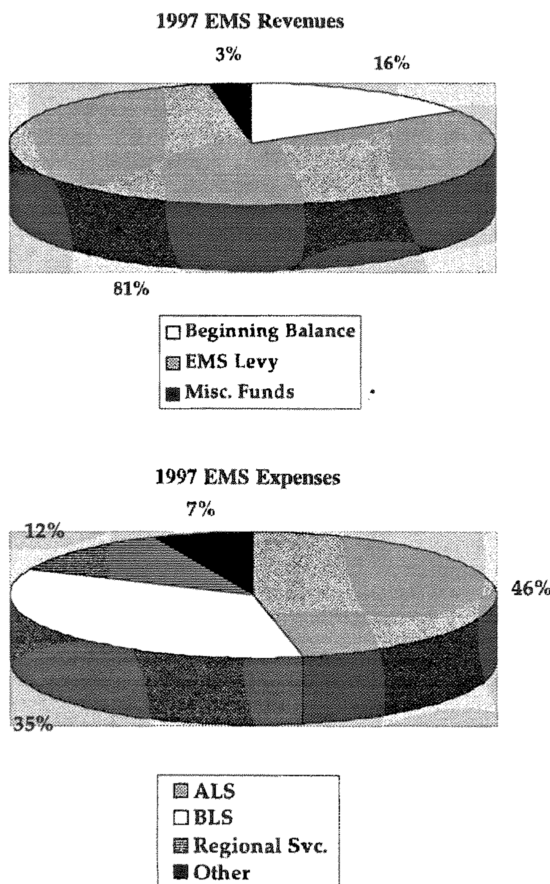
- Local and federal grant funding is available to the Division for on-going research in out-of-hospital field medicine, and the effectiveness of public education strategies.

While minor in comparison to the EMS levy support, these adjunct sources of revenue allow the EMS Division the flexibility to collect and analyze data for ongoing quality assurance as well as planning and monitoring of the EMS system. Should the funding for these special purposes be eliminated, the EMS Division will need to locate alternate funding sources in order to maintain these activities.

HISTORICAL FUNDS AND FUNDING ALLOCATION TRENDS

Figure 3.1 illustrates the 1997 distribution of revenues and expenses for EMS services. It is apparent that the EMS levy

Figure 3.1



is the largest source of revenue and ALS services represent the largest cost component within the County EMS system.

Growth in service demands and costs have increased more than growth in revenues. Planned early accumulation of cash reserves, shown in Figure 3.1 as "Beginning Balance" funds, have allowed the system to meet increased service demands without raising the levy rate.

As shown in Tables 3.1 and 3.2, EMS levy funds increased only 4% per year between 1992 and 1997. At the same time, operating costs increased 12% per year, primarily due to substantial growth in call volume.

The difference between EMS costs and EMS revenues is widening. While cash reserves and other sources of funding

make up the difference this levy period, it is clear that these will be insufficient through the next six years at the current levy rate of $0.25. Financial analyses indicate that substantial reductions in the County's level of service and/or quality of care will occur if the EMS levy rate is not raised.

ANNUAL LEVY RATE NEEDED TO COVER ACTUAL EMS EXPENSES

Identifying the optimal EMS levy rate is very complex and requires consideration of multiple variables projected over a six year period. The rate must provide adequate funds each year within the levy period, taking into consideration projected growth in population, assessed property valuations, call volume and service considerations that may increase costs.

Table 3.3 illustrates what the EMS levy rate would have been if the EMS system was funded on an annual basis rather than a six year levy period. The annual rates are derived by dividing actual EMS levy allocations (annual expenses) by annual assessed property values. The annual EMS levy rate to cover actual expenses ranged from $0.222 in 1992 to $0.268 in 1997. Since the EMS levy is a six year levy rather than an annual levy, ***the actual levy rate of $0.25 represents an average rate for the six year period.***

It is also important to note that the 1997 County EMS costs do not include a full year of expenses for one new ALS unit to be operationalized some time in 1997. If the cost structure is adjusted to reflect a full year of operation for this unit, then the EMS levy rate for 1997 would need to be $0.273.

Table 3.1 ($ in thousands)

HISTORICAL OPERATING COST TRENDS COUNTY EMS

	1992	1993	1994	1995	1996	1997	Average Annual % Change
ALS Services[1]	$5,884	$10,878	$9,337	$10,767	$11,798	$12,735	19%
BLS Services	$6,522	$7,368	$7,707	$7,938	$8,017	$8,278	4%
Regional Services	$1,279	$1,536	$2,163	$2,286	$2,610	$2,681	18%
Total EMS Division Expenses	$13,685	$19,782	$19,207	$20,991	$22,425	$23,694	12%

[1] *The historical cost trends reflect actual expenditures for each year. In 1992, some ALS providers billed the EMS Division in 1993 for services actually delivered in 1992. The difference between the 2 years is due to accounting methods and does not indicate as large of an increase in costs as might otherwise be interpreted.*

Table 3.2 ($ in thousands)

HISTORICAL EMS DIVISION REVENUE TRENDS

	1992	1993	1994	1995	1996	1997	Average Annnual % Change
Beginning Fund Balance	$2,850	$4,471	$5,716	$6,433	$5,907	$3,977	7%
EMS Levy Revenue	$16,484	$17,886	$19,070	$19,609	$19,784	$20,397	4%
Other Revenues	$274	$315	$587	$397	$297	$255	-1%
County CX	$375	$375	$375	$375	$375	$375	0%
Total Available Funds	$19,983	$23,047	$25,748	$26,814	$26,363	$25,004	4%

Table 3.3

1992 – 1997 LEVY RATE BASED ON ACTUAL EXPENSES

	Assessed Valuation[1] *($$$ in Millions)*	EMS Expenses[2] *($$$ in Millions)*	Levy Rate Needed To Cover Expenses	Rate of Change AV	Rate of Change EMS Expenses
1992	$104,450	$23.2	$0.222	2%	NA
1993	$117,809	$28.4	$0.241	13%	22%
1994	$118,222	$27.3	$0.231	<1%	(4%)
1995	$121,750	$29.8	$0.245	3%	9%
1996	$124,793	$31.9	$0.256	3%	7%
1997 Actual[3]	$127,913	$34.4	$0.268	3%	7%
1997 Adjusted	$127,913	$34.9	$0.273		

[1] *Assessed Values for 1996 and 1997 are estimates*
[2] *Includes Seattle's share of the EMS levy.*
[3] *1997 Adjusted: Reflects full year operating expenses if all 14 ALS units had been in operation for twelve months of the year. Three new half time units are scheduled for implementation throughout 1997.*

FUTURE FUNDING REQUIREMENTS ASSUMING NO CHANGE IN CURRENT TRENDS

Initial financial projections identified a levy rate approaching $0.34 per $1,000 of assessed property values. This would be the rate needed to fund current services and future expansion assuming continuation of current growth trends and the addition of four ALS units to serve projected increases in call volume. It also assumes continuation of inflationary cost trends.

In order to minimize tax increases and to reduce the percentage increase in the EMS levy, EMS providers will:

- initiate cost-saving programs to reduce the rate of increase in EMS costs;
- increase operating efficiencies within existing resources; and
- further enhance the ability to deliver EMS services in the most cost-effective manner.

COST SAVING PROGRAMS

The most significant cost saving strategy is to manage growth in demand for services as described in Strategic Initiative #2. This is expected to limit the number of additional ALS units to one unit during the next levy period. This is projected to save approximately $3.0 million per year (in constant dollars.) This cost-saving strategy allows 1998 and 1999 growth in ALS call volume to be served within existing capacity. If needed, one new ALS unit (or two new half-time units) may be added sometime in 2000 or 2001 depending upon growth trends and successful implementation of the 1998 – 2003 Strategic Initiatives. Other cost saving programs included in this financial plan are:

- development of a joint purchasing program;
- a five year vehicle replacement, salvage, or retrofit program;
- capping the number of paramedic FTE's to be funded through the EMS levy at nine per unit and a proportionate ratio thereof for EMT/P units and half time units;
- expecting ALS providers to fund administrative support and other ALS overhead through their other program budgets;
- indexing annual increases in ALS and BLS funding allocations to the Consumer Price Index. *(Decisions on the applicable CPI rate will be discussed by the EMS Division in concert with the EMS Advisory Committee on an annual basis.)*

The EMS Division will work with the EMS Advisory Committee to explore and develop financial incentives that encourage ALS and BLS providers to participate in cost saving programs.

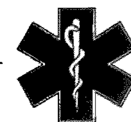
EMS LEVY RATE 1998 – 2003

The cost saving mechanisms are projected to decrease future EMS costs by 13.6%. While significant, these savings are insufficient to maintain current services with a levy rate of $0.250. Further reductions in costs may result in degradation of service levels and quality of care may suffer.

Financial projections indicate that a combination of cost savings and an increase in the EMS levy rate to $0.295 is needed to support this strategic plan through 2003.

Revenue Assumptions

Revenues to fund the EMS system are determined by assessed valuations and the levy rate. For the next six years, the King County Office of Management and Budget anticipates 2% per year growth in assessed valuations of current properties plus 2% per year increases due to



new construction. This results in a total of 4% per year growth in assessed values compounded over the six year time horizon.

The financial plan assumes continuation of County CX funds at the 1997 level of $375,000 per year, accumulation of interest on unspent fund balances at 5% per year, plus timber taxes and donations.

It is also assumed that the EMS Division will continue to receive grant funding for categorical programs. However, this revenue is excluded from the regional EMS system financial plan since elimination of grant support will end the special programs unless other funding can be secured. The expenses associated with categorical programs are excluded from this financial plan as well.

Projected Cost Assumptions

EMS system costs are affected by call volume, population growth, resource utilization, inflation, and other factors. Prior to 2000, the financial plan assumes that EMS providers will expand utilization of existing resources to accommodate continued growth in the demand for services. At the same time, it is assumed that EMS providers will work towards expanding and enhancing the cost-saving programs. It is also projected that EMS providers will be successful in their collaborations with other health care entities to minimize the rate of growth in demand for EMS services and to broaden the array of transport destinations available throughout the county.

The projected financial plans include funding to develop and implement the strategic initiatives, including funding to:

- revise and refine dispatch triage guidelines for ALS responses;
- expand and enhance ALS and BLS performance guidelines and contract standards;
- develop data collection and reporting systems to measure and assess the impact of strategic decisions on patient care, quality and outcome measures; and
- develop a continuous quality improvement program.

The EMS system funding plan includes sufficient resources to develop pilot projects prior to full implementation of proposed strategic initiatives and program improvements. This will assure that operational changes achieve the desired results .

The cost projections also include one new ALS unit to be added in 2001, depending on workload and other service indicators. The staffing model and scheduling option for this unit will be determined as service demands indicate. Projected reductions in the number of new ALS units from four to one assumes that increases in ALS workload will be managed by:

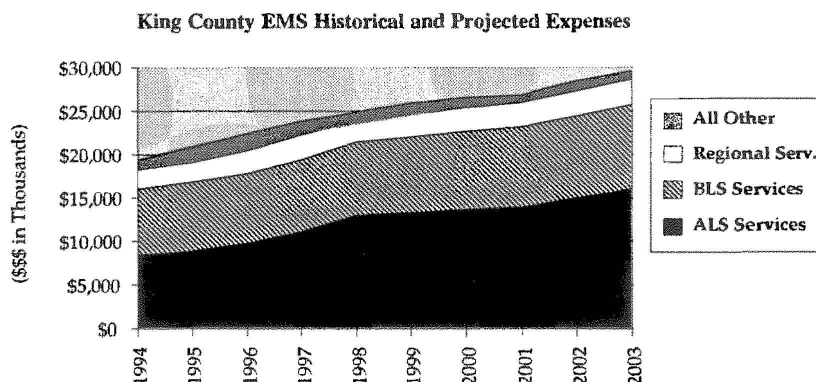
- minimizing the rate of growth in the demand for services,
- ongoing review and revision of ALS triage guidelines, and
- increased utilization of existing resources.

Projected Levy Rate for 1998 – 2003

Based on the financial assumptions plus successful implementation of the strategic initiatives and cost-saving programs, the EMS Strategic Plan Steering Committee recommends that the EMS levy rate be increased to $0.295 per $1,000 of assessed property values. A combination of cost reductions, operational efficiencies and increased revenues will allow EMS providers throughout the County to deliver the level and quality of service expected by the communities they serve. Table 3.4 illustrates the projected revenues and costs needed to support the County's EMS system through 2003.

The EMS system will need additional revenue to maintain current services if the financial assumptions are not met. In the event of limited revenues or increased demand beyond that which is funded in this plan, EMS providers may need to reduce the level and quality of services delivered. The EMS Advisory Committee will develop consensus recommendations about how and where proposed reductions may occur.

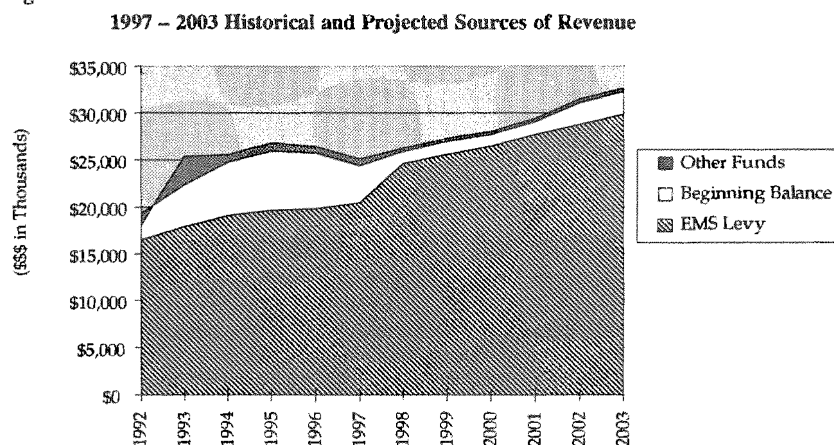
Figure 3.2



NEW PROGRAM DEVELOPMENTS

This funding plan recognizes that EMS funding will be limited during the next levy period. It is highly desirable, however, to initiate two new programs during the next levy period. The programs involve long term projects and will be pursued only if resources are available. The two major new projects include:

Figure 3.3



(1) *Outcome Research*

The EMS Division intends to expand its research and planning system to measure and monitor patient outcomes in all types of urgent and emergent care, building upon the current cardiac arrest surveillance program and the trauma registry.

(2) *Integrate data systems*

The EMS Division will continue its discussions with health plans and health care providers regarding development of a shared data system that integrates information on field medicine with hospital-based services.

The EMS Division will pursue alternative sources of funding to support these program enhancements, which may include:

- government grants;
- private foundation funds;

KING COUNTY EMERGENCY MEDICAL SERVICES
HISTORICAL AND PROJECTED REVENUES AND EXPENSES
Excludes Seattle EMS Levy Funds (1)
($ in thousands)

	Historical Revenues and Expenses Levy Rate: $0.25						Projected Revenues Levy Rate:		
	1992	1993	1994	1995	1996	1997 Budgeted	1998	1999	2000
BEGINNING FUND BALANCE	$2,850	$4,471	$5,716	$6,433	$5,907	$3,977	$1,290	$1,383	$1,397
REVENUES									
EMS Levy - County Share	$16,484	$17,886	$19,070	$19,609	$19,784	$20,397	$24,600	$25,600	$26,500
Other Revenues (2)	$274	$315	$587	$397	$297	$255	$103	$110	$112
County CX	$375	$375	$375	$375	$375	$375	$375	$375	$375
Total County EMS Funds	$17,133	$18,576	$20,032	$20,381	$20,456	$21,027	$25,040	$26,044	$26,945
Total Available Funds (3)	$19,983	$23,047	$25,748	$26,814	$26,363	$25,004	$26,330	$27,427	$28,341
EXPENDITURES									
County ALS Services (4)	$5,884	$10,878	$9,337	$10,767	$11,798	$12,735	$13,452	$14,310	$14,543
County BLS Services	$6,522	$7,368	$7,707	$7,938	$8,017	$8,278	$8,500	$8,700	$9,000
Regional Services	$1,279	$1,536	$2,163	$2,286	$2,610	$2,681	$2,500	$2,600	$2,700
Strategic Initiatives (5)	0	0	0	0	0	$60	$495	$420	$340
Total County Expenditures	$13,685	$19,782	$19,207	$20,991	$22,425	$23,754	$24,947	$26,030	$26,583
REVENUES LESS EXPENDITURES	$6,298	$3,265	$6,541	$5,823	$3,938	$1,250	$1,383	$1,397	$1,758
Adjustments (6)	($1,827)	$2,451	($108)	$84	$39	$40			
Ending Fund Balance	$4,471	$5,716	$6,433	$5,907	$3,977	$1,290	$1,383	$1,397	$1,758
Target Fund Balance (7)						$1,051			

1 Seattle levy revenues and expenses are excluded from this table due to different budget methods
2 Includes interest income on accumulated reserves @ 5% plus very limited amounts from designated timber taxes and public donations
3 Includes Revenues plus Beginning Fund Balance
4 Includes ALS contracts, vehicle replacement, rural ALS services, new ALS unit start-up funds
5 See Table 3.5 for detailed budget
6 Adjustments reflect County Council designated reappropriations, encumbrances, and misc. budget adjustments
7 The King County Executive requires a 5% reserve at the close of each levy cycle

- contributions from potential data sharing partners; and/or
- other public sources that may present themselves through the course of the 1998 - 2003 levy period.

It is anticipated that existing sources of EMS funding will be needed to support current services. However, it is possible that existing sources of funding may be available on a limited basis to support these new program developments.

ALS FUNDING

The EMS Division contracts with Bellevue and Shoreline Fire Departments and Evergreen Hospital to provide ALS services in North and Northeast King County. The Division provides ALS services in South King County. Funds are allocated to each ALS provider on a "Standard Unit Cost" basis. Budget items within the Standard Unit Cost cover all direct expenses and most indirect costs associated with the program. Allowable ALS expenses include:

Personnel
Paramedic wages including continuing education
Overtime pay, uniforms, and safety equipment
Benefits Based on a percentage of wages which varies by sponsor

Supplies
Medical, office, and vehicle supplies

Support Services
Utilities, rent, administrative staffing (MSO's), paramedic student training, travel, and dispatch costs

Equipment &Maintenance
Vehicle maintenance, communications, medical equipment, and office equipment

Other
Professional services, paramedic replacement, miscellaneous expenses.

A comparison of expenses across ALS providers indicates there is great similarity in the total cost of operating an ALS unit. Differences are due to variation in labor contracts or staffing mix. Some ALS providers employ paramedics who are cross trained in the fire service, allowing greater administrative flexibility in the event of illness, vacation leave, disability, etc.

Analysis also demonstrates that the current standard unit cost formula is equitable and assures consistency across jurisdictions in the type and level of ALS services delivered. The total cost per unit averages about $1.0 million per year. This is about 9% more than the funding provided through the standard unit cost formula. ALS providers absorb the incremental expense within their other program budgets.

During the 1998-2003 levy period, the same standard unit cost allocation formula will be used to allocate EMS levy funds for ALS services. This will include funding for nine paramedic FTE's per ALS unit and other direct costs. As a budget control measure, ALS providers will be expected to continue absorbing a portion of indirect overhead costs.

Beginning in 1998, the EMS Division will budget levy funds in support of EMT/P units and half time units up to half the standard unit cost for a 24 hour, 2 paramedic unit.

BLS FUNDING

Throughout the 18 year history of the EMS levy, King County BLS providers have shared in EMS levy revenues. This funding policy reflects the County's long standing philosophy that EMS is a publicly-funded system based on collaboration and teamwork between ALS providers, BLS providers, and regional services.

As an integral participant in this system, fire-service based providers of BLS ser-

vices require resources and training to continue to deliver quality out-of-hospital emergency patient care. A portion of EMS levy funds are allocated to BLS providers to support these incremental activities.

To assure there is stable BLS funding through 2003, financial support for BLS services from the EMS levy will be maintained at current levels, adjusted annually for inflation as measured by the CPI. This will assure county residents continue to receive the quality and standard of care now delivered, and that ALS providers receive the level and quality of support expected of their BLS counterparts.

This financial plan acknowledges that ALS funding has priority over other EMS services. The plan also recognizes that BLS services contribute extensively to the success of the EMS system. Throughout the next levy period, it will be the responsibility of the EMS Division, in concert with the EMS Advisory Committee, to assure that EMS funding decisions reflect system-wide needs.

If necessary, funding recommendations will be presented to the King County Executive and King County Council for approval.

BLS FUNDING FORMULA

Financial analysis indicates that the current formula used to allocate BLS funds from the EMS levy to individual BLS providers is equitable and assures stability over time. This formula will continue to be used through the next levy period.

The current BLS funding formula is based on three variables: assessed property values, population, and call volumes.

- Assessed valuation reflects the amount of tax dollars collected in each jurisdiction from the EMS levy;
- Changes in population allows for fluctuations attributed to growth patterns that naturally occur over time; and
- Call volume measures the actual use of EMS resources.

EMS levy funds available for BLS are divided equally into three pools, one for each variable. The funds are then distributed on a percentage basis to each BLS agency. The three distributions are added together to derive each jurisdiction's individual BLS allocation. BLS allocations are adjusted to reflect changes in jurisdictional boundaries due to annexations, incorporations of new cities, or changes in service contract arrangements.

Stable funding is important to all EMS providers. To stabilize funds allocated to individual BLS agencies, the EMS levy allocation formula assures that no agency receives less in any given year than was received in the prior year, except in the case of annexations and/or incorporations. In the event that total BLS funding is decreased, then all BLS providers will proportionately share in the decrease by applying the allocation formula to the lower amount of available funds.

REGIONAL SERVICES FUNDING

The roles and responsibilities of the EMS Division have grown over the last eighteen years in concert with the evolution of the EMS system in King County. Over time, the Division has accepted increasing responsibility for coordinating joint efforts to provide uniform training, dispatch, medical control, and planning across 35 BLS providers and four ALS providers.

The EMS levy currently funds $2.8 million to support regional services. The Division also receives EMS levy funds based on the standard unit cost formula to support its ALS program in South King County. As part of this financial plan, the Division's ALS funds are separated from funds that support regional services.

The EMS levy funds for regional services are aggregated with a portion of county general funds to support the EMS Division's regional EMS responsibilities. In the past, some of these responsibilities supported Department of Health activities and other county functions not related to the EMS system. The financial plan for 1998 - 2003 changes the funding mechanism for non-EMS system activities provided by or through the EMS Division.

Core Regional Functions

In the future, EMS levy funds will be devoted to core regional functions. Table 3.5 outlines the EMS Division's core services that are mandated by state law or county ordinance and which will be funded through the 1998-2003 EMS levy. The EMS Division is legally authorized to perform these activities and fund their operation through levy revenues.

The Division also receives funding from the County general fund of $375,000 per year. This financial plan assumes that this level of county funding will be continued during the next levy period to support indirect/overhead costs for the ALS program and other county administrative activities that support regional EMS programs. It is also assumed that the Division will continue to generate interest income on cash reserves at an annual rate of 5%.

Regional Services 1998 Program Changes

A recent review of internal EMS Division operations identified potential cost saving opportunities through:

- consolidation of certain programs with other health department functions;
- transfer of program responsibilities to external agencies providing similar services; and
- transfer of funding responsibilities for non-EMS system activities to other health department budgets.

The consolidations and transfers are projected to save $195,000 in EMS Division costs.

Recent reorganization and consolidation of services between the EMS Division and the King County Health Department allows the possibility for further cost-savings through integration of other programs. The EMS Division Manager will continue to explore opportunities for shared savings.

Categorical Programs

The Division currently administers about $183,500 in grant funding from the State of Washington to the Seattle-King County region in support of trauma training and other activities related to the statewide trauma initiative. Grant funding for categorical programs is not included in this financial plan, nor are the associated costs. If this grant funding is decreased or discontinued, the services will be modified to reflect the level of available support.

Unfunded Regional Programs

The EMS system's response to public sentiment on new taxes resulted in a decision to not fund two new programs or initiatives through EMS levy funds. Instead, it is recommended that funding

be sought through other sources as the opportunity arises.

(1) Health plan coordination and collaboration

Preliminary discussions with local health plan representatives and managed care providers are underway and will continue through the beginning of the next levy period. The discussions are focused on cost saving opportunities through public education, flexible transport destinations, and utilization management. Additional areas of focus for EMS and other health care providers include improved quality of care and an enhanced continuum of care. The EMS Division will explore the feasibility of developing a public/private partnership to fund continuation of these vital discussions and potential future collaborative efforts.

EMS levy funds for implementing Strategic Initiatives #1 and #2 include limited support for joint public/private discussions on EMS policy issues and feasibility studies. Additional funding will be needed to implement any policies that result from these discussions.

(2) Enhanced Research

Funding is not included in this financial plan for an integrated database that includes patient information from pre-hospital, hospital, rehabilitation, and follow-up care. Through the next levy period, the EMS Division will explore the feasibility of collaborating with other providers within the full continuum of care to identify potential funding to support this effort.

STRATEGIC INITIATIVES FUNDING PLAN

EMS levy funds have been earmarked for implementation of the 1998–2003 strategic initiatives. Funds will be needed to:

- explore the feasibility of proposed enhancements;
- evaluate program changes through pilot projects; and
- collaborate with non-EMS entities.

Potential cost estimates to support the planning, development and implementation process are described in Chapter 4. In total, the funding plan earmarks $2.3 million dollars for implementation.

Table 3.5

CORE REGIONAL FUNCTIONS SUPPORTED BY THE 1998 – 2003 EMS LEVY

Core Functions	Rationale
1. Medical Program Director	mandated by state law
2. EMT & First Responder Basic Training, CE Plus Instructor Training	cost effectiveness uniformity consistency across jurisdictions
3. Emergency Medical Dispatch	adjust ALS/BLS triage guidelines, control demand training uniformity, consistency, & cost effectiveness
4. Critical Incident Stress	very successful for EMS low cost peer volunteers
5. Quality Assurance	evaluation of ALS, BLS, & dispatch
6. Database	supports on-going planning, operations, and quality assurance
7. Paramedic CE	complements HMC program necessary to meet recertification requirements
8. Administration	ALS and BLS contract negotiation, monitoring and oversight regional EMS coordination activities EMS advisory committee

CHAPTER FOUR

Implementation Plan

The 1998 - 2003 EMS Strategic Plan is a very ambitious undertaking. Implementation will involve a series of critical decisions, many requiring time for detailed feasibility analysis, collaborative discussions, interagency coordination and, in many cases, pilot projects to assure that changes to the current EMS system will produce the intended benefits.

The following discussion provides a roadmap for guiding the EMS Division and the EMS Advisory Committee through the implementation process. It sets priorities, identifies who needs to be involved and establishes critical milestones that must be met to achieve the 1998 - 2003 strategic and financial goals.

The implementation plan is organized by year and builds upon the extensive work already initiated by the EMS Division and the EMS Strategic Plan Steering Committee. During transition to the new levy period, the Committee will continue to assist the Division in this effort.

1997

In preparation for the next levy period, the EMS Division and the EMS Strategic Plan Steering Committee will move forward with two major actions during the latter half of 1997. The first involves establishment of the EMS Advisory Committee.

1. The EMS Advisory Committee will provide valuable assistance to the EMS Division as it carries the EMS Strategic Plan forward. To expedite the implementation process, it will be important that the Advisory Committee be in place by January, 1998.

Development of the Advisory Committee requires completion of four actions by December, 1997:

- Develop membership criteria, establish an appointment/confirmation process, and determine the length of term;
- Solicit a list of candidates for Committee membership, as defined in Chapter Three of this Plan;
- Appoint/confirm EMS Advisory Committee members; and
- Review the Division's workplan which details major work elements to be achieved and identifies how strategic objectives will be monitored. This workplan will summarize the major goals of the six year levy, and detail specific activities for 1998.

Manager of the EMS Division, or his designee, will be responsible for assuring these tasks are completed.

2. The second major initiative to be started during 1997 is to enhance regional cost saving programs. Funding limitations require that BLS and ALS providers as well as regional services

monitor and reduce costs wherever possible. To assist in this effort, regional cost saving programs should be initiated early in the levy period to maximize potential benefits.

As a transitional advisory committee, the EMS Strategic Plan Steering Committee will work with the EMS Division to develop and implement the following cost saving programs:

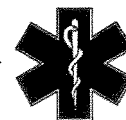
- A regional joint purchasing program for medical and office supplies will be developed, allowing EMS providers access to better purchasing discounts than might be available to individual agencies. Planning and development will be started during 1997 for full implementation first quarter, 1998.
- The feasibility of a new vehicle replacement, salvage, and retrofit program will be studied during 1997. The goal of this program is to extend the useful life of paramedic vehicles to as much as five years by:
  - purchasing heavier chassis with longer useful lives;
  - replacing chassis periodically rather than entire vehicles; and/or
  - recouping some of the cost through resells at the end of their useful lives.
- The EMS Division needs a mechanism to monitor strategic and financial performance throughout the next levy period. During 1997, the Division will enhance its monitoring database and work with BLS and ALS providers to assure that data are collected and reported in a timely manner. The EMS Division will work with the interim EMS Advisory Committee to develop measures for monitoring contract performance, utilization levels, funding requirements, and cost-savings.
- Participation in regional cost reduction programs and performance monitoring processes is very important to the success of the 1998 - 2003 Strategic Plan. The EMS Strategic Planning Committee will explore the feasibility of an incentive program that will encourage BLS and ALS providers to participate in these efforts. If possible, the incentive program should commence in January, 1998.

1998

Many strategic initiatives require substantial lead time for analyses and pilot studies. Early planning and development will assure that full implementation can commence in years two, three, or four of the levy period when the benefits of the strategies will be most needed. The following describes the strategic initiatives and financing mechanisms to be started in 1998.

1. During the new levy period, EMS providers will explore additional ways to optimally utilize existing resources. ALS and BLS providers may need to collaborate with other health care entities.

- The EMS Division will continue discussions with local health plans and providers on methods to educate consumers on cost-effective use of the Emergency Medical Services system. Collectively, EMS providers, health plans, and other health care providers will work to minimize duplication of services across the health care system through service delivery mechanisms that a assure patients receive care in the most appropriate setting by the most appropriate providers.
- A major strategic initiative during the next levy period is to utilize ALS resources as efficiently as possible.



One way to accomplish this objective is to explore the feasibility of revising the criteria based dispatch guidelines to:

- more narrowly focus ALS resources on very serious and major life-threatening injuries and illnesses;
- potentially redirect some BLS calls to more appropriate social and health services; and
- expand the scope of BLS responsibilities.

This requires continuing discussions with dispatch agencies about training and possibly funding. This will also require initiation of discussions and possible collaboration with other social and health service providers to assure that 9-1-1-callers are appropriately managed.

It is anticipated that this initiative will involve a series of incremental changes that will occur over the course of the next levy period. Definitive study and analysis of cost, quality, and value added issues will need to be completed before any changes can be implemented.

The Medical Program Director will have oversight responsibilities of this work effort. In that capacity, he will work with his medical control physicians , paramedic representatives, EMT's, and dispatchers to develop a process for planning, evaluating, implementing, and monitoring potential changes to the criteria based dispatch guidelines. During the first half of 1998, this group will develop the process and identify various types of cases as potential candidates for change. (Should timing and resources permit, this part of the implementation process may commence in 1997.)

Throughout the latter half of 1998 and during 1999, the MPD will oversee development and implementation of a series of pilot studies to evaluate the medical risks and liabilities of the proposed changes. The results of the studies will determine whether or not the changes should be implemented county-wide.

Management of growth in BLS and ALS calls is very important to the success of this strategic initiative. Prior to county-wide implementation of new triage guidelines, the MPD and the EMS Division will assure that dispatchers and EMT's are adequately prepared to carry out any new responsibilities through additional training and education. The EMS Division will explore collaborations with other social and health service entities to assure that the needs of EMS referrals can be appropriately met. If possible, a brochure outlining the availability of social and health services will be made available for BLS providers to leave with patients, directing them to non-EMS services for non-urgent needs.

- EMS providers have identified a need for more flexible transport destinations. Preliminary discussions with health plans and providers indicate that coordination and collaboration on this topic could result in cost savings, enhanced quality, and greater continuity of care. Development and implementation is very complex and may require a two to three year phase-in period. Major steps in the process include the following:

  - The EMS Division will finalize its initial discussions with health plans and providers to establish a common understanding about an array of transport destina-

tion options and to provide a set of policy guidelines for moving forward with this collaborative effort;

- The Medical Program Director will work with the medical control physician workgroup, EMS providers, and health plan representatives to identify and evaluate those EMS cases which may be medically appropriate for non-emergency room transport destinations;

- The EMS Division will identify health care facilities interested in accepting EMS transports and work with them to develop a program. This may involve a pilot project to test the efficacy and financial feasibility of the project prior to implementation county-wide;

- The EMS Division, in concert with the MPD, EMS Trauma Council, and the EMS Advisory Committee, will revise and refine transport disposition and destination guidelines for uniform implementation of this new program, assuring compliance and compatibility with other program plans; and

- The EMS Division will coordinate a public education campaign to increase awareness of this option. This effort could be integrated into other public education programs within the Health Department or the Fire Service.

- Increased utilization of existing BLS and ALS resources may involve greater coordination with private ambulance transporters. The EMS Division and the EMS Advisory Committee will continue to evaluate private ambulance transports.

2. The EMS Division is currently responsible for programs and services other than those defined as core regional functions. The Division will need to access additional sources of revenue to fund its non-core activities and to avoid any disruption of these services.

- The EMS Division will explore the feasibility of finding other funding sources or alternative service delivery methods necessary to support
  - Emergency preparedness services for the Health Department and
  - CPR training for County employees
  - School CPR
  - Injury and illness prevention and education programs

3. A major objective of the 1998 - 2003 EMS Strategic Plan is to manage the rate of growth in ALS and BLS call volume. This is a long term initiative, requiring extensive public education and injury and illness prevention programs in addition to strategies designed to use existing resources even more cost-effectively. EMS providers cannot achieve the desired results alone. Collaboration with other health care entities is needed.

- Consistent with plans currently in progress, the EMS Division will continue to work with the health department to integrate injury prevention and intervention programs into a uniform public health education program. The EMS Advisory Committee will assist the Division in developing the "message" to be publicized regarding the appropriate use of 911 for medical emergencies. This should be completed as early in the levy period as feasible.

- Referral of non-urgent 9-1-1 calls to more appropriate types of assistance may also help manage the rate of growth in demand. Dispatch screen-

ing criteria and on-site referral criteria will be developed by the MPD to assure all 9-1-1 calls receive a level of assistance appropriate to their needs. In the future, this may not always include a BLS response.

- Health plans and other health care providers can assist in educating their patients on the proper use of 911 for medical emergencies. The EMS Division will continue its coordinating efforts with health plan representatives to assure that EMS objectives for universal access and public/community service are consistent with appropriate patient disposition.

1999

The second year of the 1998 – 2003 EMS Strategic Plan will be devoted to ongoing development of strategic initiatives launched in 1998 as well as initiation of two new strategic efforts. Decisions about implementation funding will be decided in concert with the EMS Advisory Committee. While the first year focuses on establishing the foundation for collaborations and building of external relationships, the second year will focus on internal program improvements.

1. A major new initiative for the next levy period is to expand existing performance standards and incorporate those standards into EMS levy fund contracts for BLS providers.

The Medical Program Director will oversee development of new BLS standards. This may include working with the EMS Advisory Committee as well as ad-hoc subcommittees to provide substantive assistance as needed. There are three basic areas of exploration and development.

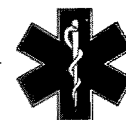
- Changes in service delivery methods and mechanisms posed within this strategic plan may require that BLS providers monitor additional performance indicators to measure how well the EMS system in total is meeting its new obligations. Previous to this Strategic Plan, BLS performance standards focused on response times, out-of-service times, call volume within the designated service area, and back-up call volume in neighboring jurisdictions. Additional detailed data may be needed to more efficiently monitor BLS services.

- With proposed strategic changes, it will be necessary to collect data on quality, outcome, patient satisfaction and other key elements. This information will provide input for ongoing system-wide improvement over the course of the next six years. In addition, BLS providers will need to collect and report data in support of contract compliance monitoring.

- Flexible transport destinations will require new BLS destination transport guidelines. The MPD will work with representatives of BLS providers, private transporters, and health plan representatives to develop a new set of transport criteria and standards.

- There is a need to establish BLS standards that promote medically appropriate, cost-effective and efficient EMS services. In connection with contract performance criteria, the EMS Division and the Medical Program Director will oversee development and implementation of incentives that promote accountability and stewardship of EMS levy funds expended by BLS contractors.

This may be a lengthy process of collaboration across BLS providers. However, there is time to pursue this area of exploration and development designed to improve service deliv-



ery across jurisdictional boundaries. Success will assure that a minimum level of EMS service will be established throughout the County and uniformly implemented.

2. The 1998 – 2003 Strategic Plan includes only one new ALS unit to serve County growth and expansion. This will be a significant operational challenge to the EMS System and new service delivery methods may be needed.

- Data collection and analysis will be very important to monitor utilization of ALS services throughout the County. It may be necessary to enhance technical support services within the EMS Division for expanded planning and management of the system. Current information systems are designed to monitor ALS unit locations, response times, out-of-service times, simultaneous responses, and out-of-area calls. This data is important, but will need to be expanded to include analysis of additional variables that support new service delivery options. Identification of additional data elements and revision to data collection methods needs to occur no later than 1999.

- New service delivery options include the possibility of varying response time standards for some ALS calls, alternative ALS scheduling mechanisms, or intervention programs for the chronically ill and recent hospital discharges. Data will be needed from EMS as well as other health care providers to assess the cost-effectiveness of service delivery options and to evaluate the impact on quality and patient outcomes. Data will need to be collected before any feasibility assessment can be completed.

  Potential operational changes within the ALS system will require careful evaluation and assessment though data analysis and pilot projects During 1999 and 2000, the EMS Division needs to be prepared to design and carry-out a number of pilot studies to test the operational and patient care implications of new ALS service delivery options.

3. During 1999, the EMS Division will initiate plans to develop and implement the practice of call prioritization through dispatch. This will build upon program initiatives implemented to date, assuring that dispatch services have the resources necessary to support new and revised EMS guidelines and service delivery methods.

2000

1. During 2000, the EMS Division will explore the feasibility of securing outside funding for new programs.

The 1998 – 2003 EMS Strategic Plan includes two new programs that will enhance the EMS system. Funding for these programs is not included in the financial plan, requiring the EMS Division to secure funding from external sources. By 2000, the EMS Division should be positioned to explore funding opportunities for the new programs. If time permits, this effort could occur in earlier years.

- During 2000, the EMS Division will work with the University of Washington to secure new grant funding to expand the cardiac arrest surveillance program to all EMS calls. This would provide a database for EMS research unparalleled across the nation, allowing outcomes research and analysis of EMS service delivery mechanisms.

- Collaborations with local health plans and providers provides an opportunity to share and integrate

EMS data with patients' medical records. This allows longitudinal outcome analysis of EMS services and provides health plans and providers with more comprehensive patient records. The EMS Division will explore the feasibility of information sharing and data integration with local health plans and providers. By 2000, many more should have electronic medical records, making this opportunity possible.

2. ***The EMS Division will initiate a financial feasibility study to explore additional revenue generating options.***

By the third year of the levy period, the EMS Division and the Advisory Committee should know the efficacy of their strategic and financial initiatives. Due to the plan's aggressiveness and the length of the levy period, there is a possibility that the rate of growth in demand may continue to increase beyond that which is assumed herein or that expenses may increase beyond existing funding levels. The EMS Division will initiate a feasibility study early in 2000 to analyze the implications of accessing new sources of revenues to support existing programs.

Table 4.1 outlines the proposed schedule and estimated costs for implementing the 1998–2003 EMS Strategic Plan.

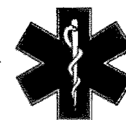


Table 4.1

Strategic Plan Initiatives
Estimates of Implementation Costs
($$$ in Thousands)

Major Strategic Initiatives and Tasks	1998	1999	2000	2001	2002	2003	Initiative Total
1. Establish and maintain EMS Advisory Committee	$5	$5	$5	$5	$5	$5	$30
2. Develop and maintain Regional Purchasing Program	$5	$5	$5	$5	$5	$5	$30
3. Develop New Vehicle Replacement Program	-	-	-	-	-	-	$0
4. Enhance ALS, BLS, regional services, and financial monitoring systems Identify data needs and outcome measures Revise data collection instruments Printing and electronic record development Technical upgrades Monitor and evaluate	$100	$75	$75	$75	$75	$75	$475
5. Develop EMS Policy Issues with other health care entitities	$5	$5	$5	$5	$5	$5	$30
6. Revise ALS Response and Dispatch Triage Criteria Planning and development Pilot project development Implementation and evaluation Technical upgrades Dispatcher training	$175	$150	$75	$75	$65	$50	$590
7. Review and enhance transport destination policies Planning and development Pilot project development Implementation and evaluation	$10	$10	$10	$10	$10	$10	$60
8. Public education on use of 911 Utilization survey Planning and development Ongoing public education campaign Monitor and evaluate	$50	$40	$40	$40	$40	$40	$250
9. Establish dispatch referral network for appropriate calls Identify types of calls to be referred and potential destinations Pilot study feasibility Establish contractual relationships with referral sources Monitor and evaluate	$50	$50	$20	$20	$20	$20	$180
10. Standardize BLS run review program and performance measures Review and establish contract performance measures Develop destination transport guidelines Implementation and evaluation	$50	$30	$30	$30	$30	$30	$200
11. Enhance and expand continuous quality improvement program Planning and development Training Implementation Review and monitoring	$20	$50	$75	$75	$50	$50	$320
12. Strategic planning for next EMS levy period				$50	$50	$50	$150
Total Estimated Budget For Initiative Implementation							**$2,315**

CHAPTER FIVE

PROCESS FOR CONTINGENCY PLANNING

The 1998 - 2003 EMS Strategic Plan involves many operational and funding assumptions that are new to the County's EMS providers. The levy period is very long, making it difficult to accurately estimate future call volume and funding needs.

This Strategic Plan and Financing Plan reflect the EMS System's and its providers' current understanding of future EMS needs and responds to the public's desire to minimize taxes. Many of the projections in this plan depend upon variables that are outside the direct control of EMS providers, such as:

- coordination and cooperation of other social and health care organizations;
- the economy and assessed valuations
- population growth; or
- the rate of growth in EMS calls.

Over the course of the next six year period, events may evolve that would redirect some of the efforts described in this plan. This makes it necessary and practical to have a process in place for monitoring trends that would identify a need for contingency planning.

PERFORMANCE MONITORING

The EMS Division will monitor ALS and BLS call volume on a monthly and quarterly basis to evaluate the effectiveness of strategic initiatives and to identify problems as early as possible. This requires that providers collect and report data in a timely manner and that the Division devote resources to monitor trends.

PERIODIC REVIEWS

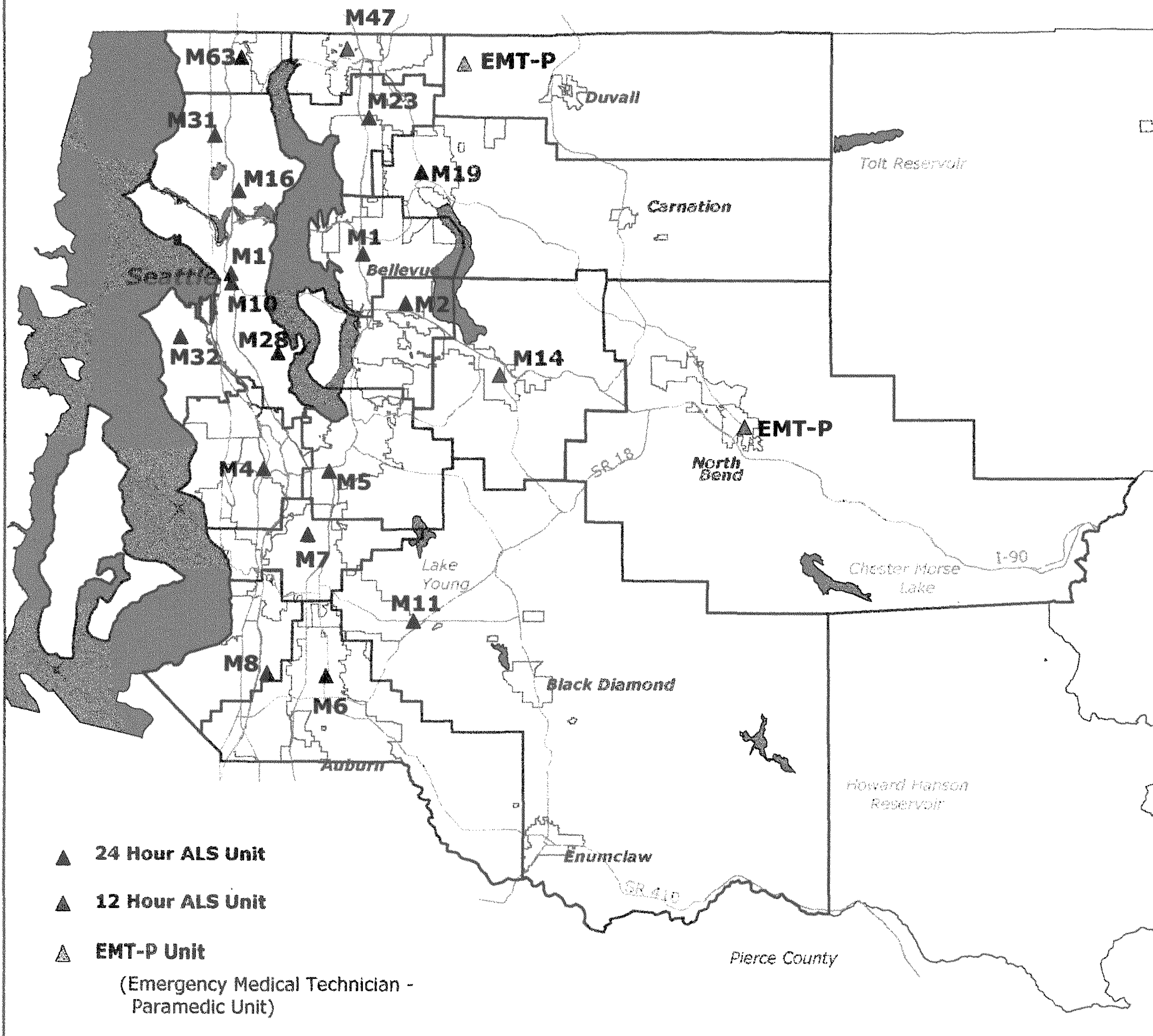
The Division will make periodic presentations and appropriate status updates to the EMS Advisory Committee on ALS and BLS performance standards, utilization trends, financial status and pilot studies. In the event that trends indicate a change of direction, the Division will work with the Advisory Committee to develop near term interventions.

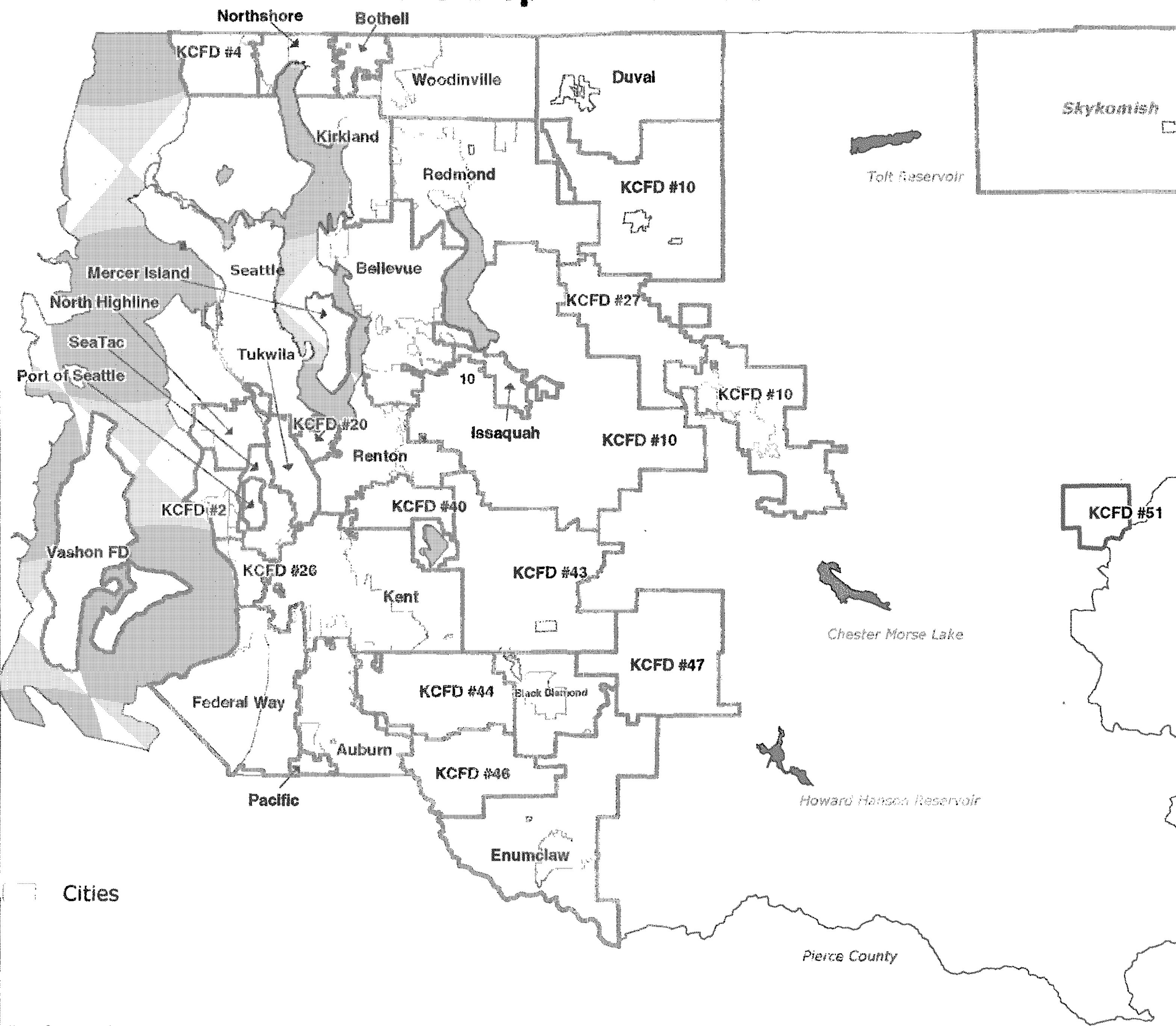
REVISE AND REFINE THE EMS STRATEGIC PLAN

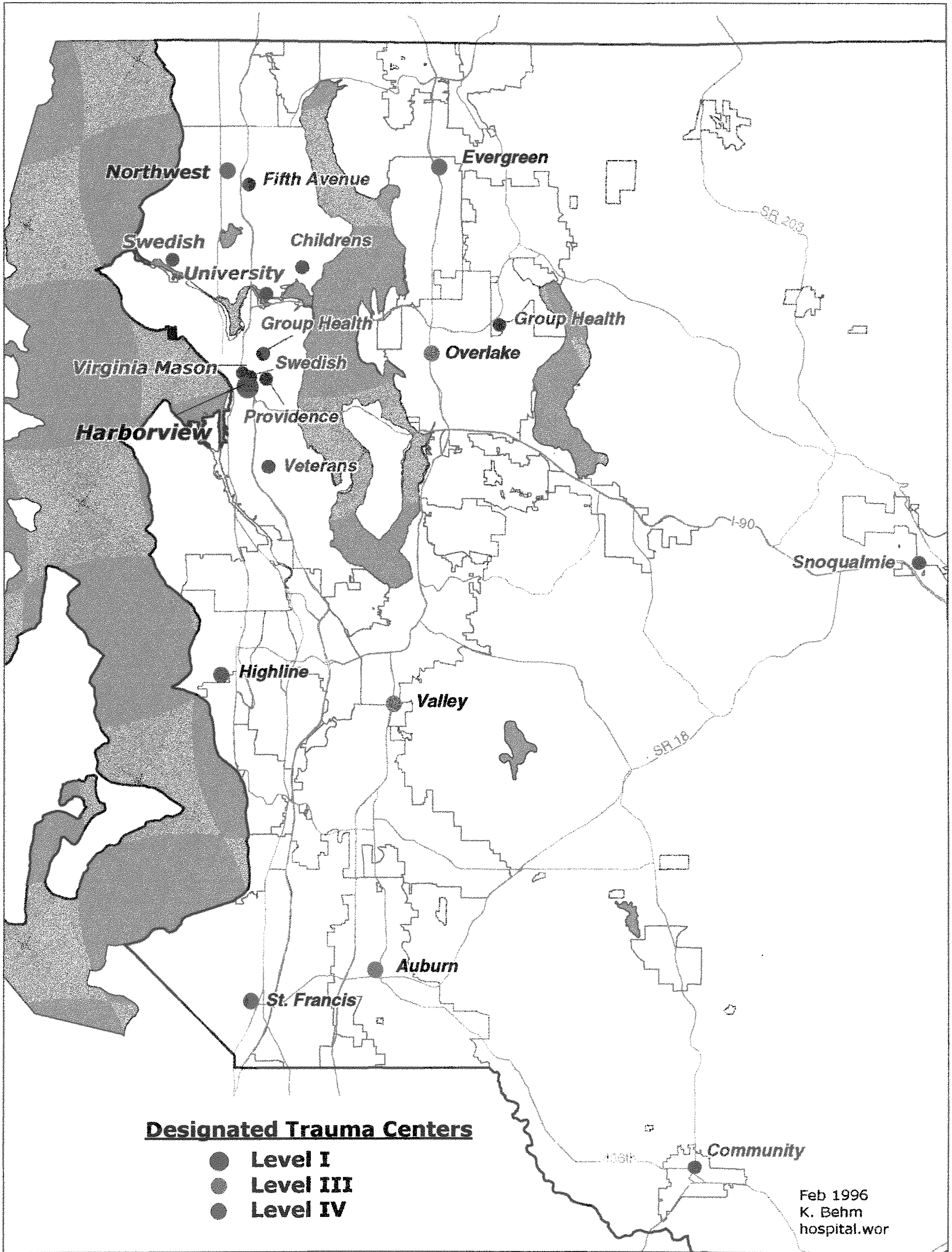
As a critical component of the broader health care system, the EMS system is potentially subject to rapid changes within the industry. The 1998 - 2003 EMS Strategic Plan is an evolving document that may need revision as new information becomes available. Similar to previous master planning efforts, the EMS Division will work with the EMS Advisory Committee to incrementally revise and refine this Plan as needed. Unanticipated events may call for significant new strategic and financial direction that may materially affect this Plan.

APPENDIX A

MAPS

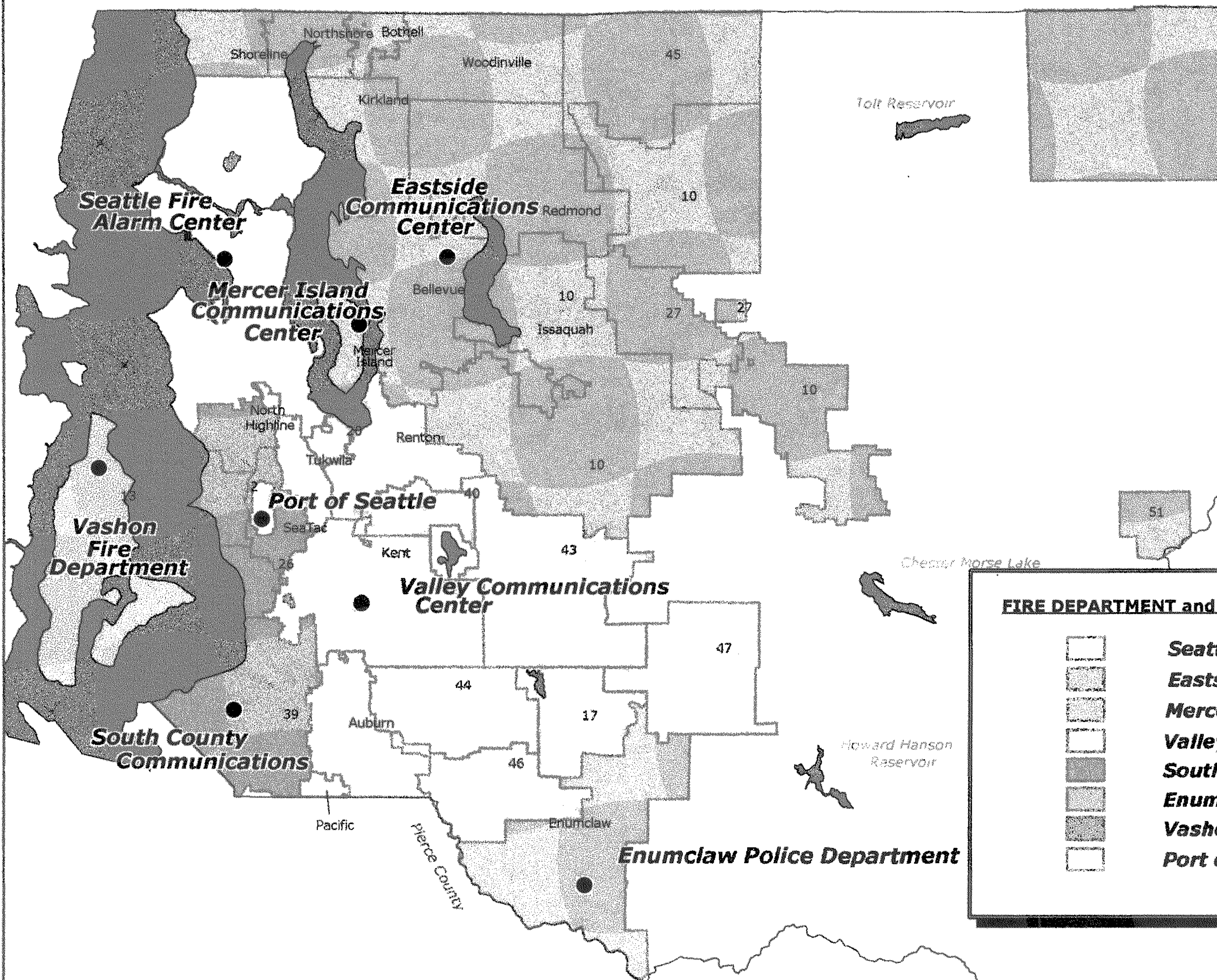

Advanced Life Support Units - Primary Response Ar
M47
M63
EMT-P
Duvall
M23
M31
M19
M16
Tolt Reservoir
Carnation
M1
M1
Bellevue
M10
M2
M28
M32
M14
EMT-P
SR 18
North Bend
M4
M5
M7
Lake Young
Chester Morse Lake
I-90
M11
M8
M6
Black Diamond
Auburn
Howard Hanson Reservoir
Enumclaw
SR 410
Pierce County
24 Hour ALS Unit
12 Hour ALS Unit
EMT-P Unit
(Emergency Medical Technician - Paramedic Unit)


Fire Department Service Area Boundari
Northshore
Bothell
KCFD #4
Woodinville
Duval
Skykomish
Kirkland
Redmond
KCFD #10
Tolt Reservoir
Mercer Island
Seattle
Bellevue
North Highline
KCFD #27
SeaTac
Tukwila
Port of Seattle
10
KCFD #10
KCFD #20
Issaquah
KCFD #10
Renton
KCFD #2
KCFD #40
KCFD #51
Vashon FD
KCFD #26
KCFD #43
Kent
Chester Morse Lake
KCFD #47
KCFD #44
Black Diamond
Federal Way
Auburn
KCFD #46
Howard Hanson Reservoir
Pacific
Enumclaw
Cities
Pierce County
King County Emergency Medical Services



King County Emergency Medical Services

King County Medical Control Hospitals


Dispatch Centers and Areas Dispatched
Seattle Fire Alarm Center
Eastside Communications Center
Mercer Island Communications Center
Port of Seattle
Valley Communications Center
Vashon Fire Department
South County Communications
Enumclaw Police Department
Shoreline
Northshore
Bothell
Woodinville
Kirkland
Redmond
Bellevue
Issaquah
Mercer Island
North Highline
Renton
Tukwila
SeaTac
Kent
Auburn
Pacific
Enumclaw
Pierce County
Tolt Reservoir
Chester Morse Lake
Howard Hanson Reservoir
45
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17
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FIRE DEPARTMENT and
King County Emergency Medical Services

APPENDIX B

SEATTLE'S EMS SYSTEM

The model described in Chapter 1 of this plan remains the basic organizational design for the Seattle EMS system. The Seattle EMS system is administratively simpler than the system in the rest of the county, because it serves only one jurisdiction. In Seattle, Advanced Life Support (ALS) and Basic Life Support (BLS) are both administered and operated by the Seattle Fire Department.

Seattle's population is 536,000 and its employment is 470,000. Because more people commute into Seattle to work than commute from Seattle to work elsewhere, the typical workday population of Seattle grows to approximately 700,000. In 1996, the Seattle Fire Department responded to more than 54,000 aid calls, of which more than 19,000 were ALS calls. EMS calls were approximately 75% of the total alarms to which the Fire Department responded, and EMS responses accounted for more than 40% of the total time the Fire Department spent responding to emergencies.

The Fire Department responds to these calls with 6 aid BLS units, 33 engine companies, 11 ladder companies, and 6 ALS paramedic units. The engine and ladder companies, aid units, and four of the paramedic units are distributed in 33 fire stations throughout the city. The other two paramedic units are stationed at Harborview Medical Center. These companies and units are staffed by 196 on-duty positions, filled by more than 920 EMT-firefighters and paramedics. Medical control, quality assurance, training, and certification for paramedics are provided by Harborview Medical Center and the University of Washington School of Medicine. The Fire Department provides ALS transport, and private ambulances provide BLS transport.

The Fire Department is entirely supported by the City's General Fund. In 1997, the EMS levy will generate $10.4 million in Seattle, as revenue to the General Fund. If the levy rate is increased to $.295 per $1000 of assessed value, it should generate $13.1 million in 1998. The endorsed 1998 budget for the Fire Department is $80.5 million. The endorsed 1998 budget for the Operations Division of the Fire Department, whose primary mission is emergency response for fire suppression and EMS, is $69.0 million. The endorsed 1998 budget for the Administration Division, which provides communications, training, and support for the Department, is $7.7 million.

In the last three decades, the Seattle EMS system has become a model for jurisdictions nationwide, as well as for King County. It also unquestionably has become a core municipal service. In a 1996 survey, Seattle residents identified EMS as the City service with which they are most satisfied, giving it an average rating of 6.2 on a 7-point scale. Seattle residents also identified EMS as the most important City service, ahead of such traditional municipal services as fire pro-

tection, water supply, policing, garbage removal, libraries, traffic management, and street maintenance.

Seattle has been happy to participate in the County EMS planning effort. Some of the future challenges the plan identifies and the strategic initiatives it calls for apply to Seattle as well as to the rest of the county. We look forward to working with other jurisdictions on reducing growth in EMS demand, finding ways to use existing resources more efficiently, and adapting programs to changes in community needs.