Technological Advances and Their Impacts on Police Vehicle Pursuits by the Year 2002

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Abstract

This study consists of research on the impacts of intervention technology on police vehicle pursuits by the year 2002. The study consists of four segments: data collection and analysis in which Trends and Events are identified and future scenarios are developed including a desired future; a strategic plan which incorporates alternative policies that will help achieve the desired future; a transition plan to manage the proposed change; and summary and conclusions. This study identifies future potential technologies for application to pursuit intervention. The results of this study indicate that alternative funding sources must be identified and partnerships developed between the public sector and private industry if these technologies are to be available to law enforcement. A stand-alone journal article incorporates the technical research in a condensed narrative report with endnotes and bibliography.

TECHNOLOGICAL ADVANCES AND THEIR IMPACT ON POLICE VEHICLE PURSUITS BY THE YEAR 2002

JOURNAL ARTICLE

by
Robert Cashion

Commission on Peace Officer Standards and Training
(POST)

Command College Class XVII

Sacramento, California
January 1994

This Command College Independent Study Project is a FUTURES study of a particular emerging issue in law enforcement. Its purpose is NOT to predict the future, but rather to project a number of possisble scenarios for strategic planning consideration.

Defining the future differs from analyzing the past because the future has not yet happened. In this project, useful alternatives have been formulated systematically so that the planner can respond to a range of possible future environments.

Managing the future means influencing the future--creating it, constraining it, adapting to it. A futures study points the way.

The views and conclusions expressed in the Command College project are those of the author and are not necessarily those of the Commission on Peace Officer Standards and Training (POST).

INTRODUCTION

Imagine a high-speed police pursuit routinely ending without accident, injury, or further incident. Studies suggest that approximately one third of all high-speed pursuits result in accidents.[1] This occurs when a pursuing law enforcement vehicle, or the fleeing vehicle, crashes into another vehicle, pedestrian, or fixed object, causing property damage and possible injury or death. As a result, a close examination of police pursuits has been on going by the public, the courts, special interest groups such as the American Civil Liberties Union (ACLU), the media and the law enforcement community.

This examination is driven, in part, by the media, a powerful and visible segment of today's society. In addition to the number of exposes focusing on the drama of death and destruction resulting from pursuits, the news media, using their eye in the sky, now brings these "real time" dramas into the homes of television viewers as they are occurring.

"Braking point: L.A. deaths spur police chase protest."[2]

"5 Hurt, Fetus Killed During Police Chase."[3]

"Six killed and thirteen injured in pursuits in less than two weeks."[4]

"5 more injured in crash during police pursuit."[5]

"Man Fleeing Police Killed when He Crashes Car."[6]

"Youth Killed When Errand Takes Him in Path of Police Chase."[7]

"3 More Killed in High-Speed Police Chases."[8]

These are examples of the headlines which appeared during a media blitz covering police chases in southern California newspapers during a 2-week period in mid November 1992 - real life tragedies being played out on the streets of Los Angeles, Orange, Ventura Counties, and in many other areas of the United States. While it has been suggested by some that this rash of police pursuits, within a 14-day period, was an abnormality, it has been the genesis for others to propose the curtailment of law enforcement's involvement in high-speed pursuits altogether.

The perils of the high-speed pursuit are not a new concern. The courts and legislature have continuously wrestled with the problem since enactment of the first exemption of emergency vehicles from the "rules of the road" in 1905. However, it was not until the decade of the 1960's that the police pursuit was perceived as a danger by the public.[9] According to Alpert and Fridell, a report released in 1968 states in part: 1) 1 out of 5 pursuits ends in death; 2) 5 out of 10 pursuits end in serious injuries. While some experts have questioned the report's scientific validity,[10] the study was responsible, in part, for generating increased discussion within the law enforcement community during the 1970's and 1980's resulting in sparked interest within the criminal justice system and generated additional pursuit studies.

The first complete study on pursuits was a 1970 report by Edmund Fennessy sponsored by the U.S. Department of Transportation.[11] The researchers

concluded, based on limited quantitative data and their thorough review of other available information, that "Hot pursuit is a highly controversial topic, bound up in the broader issue of what constitutes effective law enforcement."[12] From the police viewpoint "...their freedom to pursue law violators is a vital measure of their deterrent capability not only in terms of their traffic supervision mission, but also in relation to their broader crime control responsibilities." The basic argument stated, "If police were forbidden to engage in hot pursuit or unduly restricted then chaos on the highways would be the result." However, there also existed an opposing point of view held by the public which believed that "...high speed pursuits result in an unacceptable number of casualties." This study suggested that "...the reduction of crashes, injuries and deaths are the main goals of any policy or practice."[13]

The second generation of research on police pursuits was initiated in the early 1980's by the California Highway Patrol.[14] An exploratory study, limited to a 6-month period, this study analyzed 683 pursuits and found, in part, that 198 pursuits (29 percent) resulted in accidents, 99 pursuits (11 percent) resulted in injuries, and 7 pursuits (1 percent) resulted in deaths. This study concluded that the "attempted apprehension of motorists...is necessary for the preservation of order on the highways of California....Undoubtedly, innocent people may be injured or killed because an officer chooses to pursue a suspect, but this risk is

necessary to avoid the even greater loss that would occur if law enforcement agencies were not allowed to aggressively pursue violators."[15]

Subsequent to the California Highway Patrol study, other researchers (during the 1980's) initiated additional pursuit studies. Among the most comprehensive studies are those of the Solicitor General's Office, Ontario, Canada (1985)[16] Alpert and Dunham (1989, 1990),[17] and the Minnesota Board of Police Officers Standards and Training (1989).[18] These studies resulted in findings similar to those which preceded them in that on the average 35 percent of police pursuits end in accidents, 17 percent result in injuries, and 1 percent end in fatalities.

In 1992 a study, conducted by the Illinois State University, Department of Criminal Justice Sciences, found that a negative outcome such as death, personal injury, and property damage was estimated as high as 41 percent of reported police pursuits.[19]

The public has responded to this public safety issue by creating a surge of social upheaval and demanding accountability by the police. In response, the California State Legislature passed a mandatory statewide pursuit reporting statute which became effective January 1, 1992. This law requires all California law enforcement agencies to report every vehicle pursuit involvement to the California Highway Patrol. During 1992, the California Highway Patrol reported a total of

7,658 law enforcement pursuits which resulted in 5,924 arrests and 33 deaths, of which 23 were occupants of the pursued vehicle and 10 were innocent bystanders.[20]

Moreover, the courts have not been silent on this issue of police pursuits. In the past, the courts have emphasized the right and duty of police officers to apprehend law violators. But in the present climate, courts are tending to balance the need to apprehend law violators against the threat of injury and death that any given chase poses to the public. The latest appellate decisions suggest that the California courts will increasingly restrict law enforcement's availability to engage in pursuits. In Colvin,[21] the court observed:

> "This court can also take a judicial notice of prominent and pervasive news coverage of at least ten pursuit-related deaths in Southern California in the recent weeks alone, as well as personal injuries and property damage to uninvolved parties (citations omitted), and the inescapable conclusions that high-speed chases are dangerous even under the best of circumstances."

As the result of these increased civil liabilities and tighter restrictions resulting from police pursuits, law enforcement officials have responded by creating stricter policy statements and controls.[22] However, history has shown that tighter controls, absent banning pursuits altogether, have not resulted in a successful conclusion to the police vehicle pursuit issue. Innocent civilians, law enforcement officers, and

criminals are still being injured and killed while official investigations report the pursuits were within policy.

The purpose of this study is to provide law enforcement, and the public it serves, an alternative to the historical "unsuccessful" conclusion to police vehicle pursuits. While the studies previously cited have addressed statistical and attitudinal causation, as well as policy and training issues relative to police pursuits, there is an apparent lack of information available which focuses on alternative intervention application to police pursuits. It is the researcher's belief that emerging technology is a viable answer to making police pursuits less hazardous to innocent citizens, law enforcement officers, and criminals. Its application holds the promise to dramatically increase the effectiveness of police pursuits. While policy and training will continue to be examined by policy makers, it is the impact of technology that will enable law enforcement officers to safely terminate vehicle pursuits that might otherwise end in tragedy.

While no single technology has been developed with specific application to the external intervention of vehicle pursuits, there exists today several technologies which have potential future application. In recent years, science has introduced the public to technologies such as Lojack, Teletrac, and micro chip applications which have enhanced automotive safety. By the turn of the 21st Century, significant change and advancement will occur within the application of satellite,

laser and radar technologies.[23] Technologies which, with further development and application, could be used by law enforcement for the intervention of vehicle pursuits. These include vehicle locate and identification systems[24] as well as gradual fuel restriction systems and gradual hydraulic braking systems.[25]

Advances in micro chip technology have also progressed to the stage where, with further development, the use of a microcomputer processor in the automobile's engine computer control system would allow for law enforcement's external intervention. Using locate and identification technology, a targeted vehicle could be identified and a vehicle engine control inhibitor activated which would sequentially reduce power to the vehicle's engine, restrict fuel access, and activate the braking system thereby bringing the vehicle to a gradual and safe stop.[26]

Notwithstanding the identification and development of this technology, law enforcement will also have to create policy guidelines which promote and support the deployment, exploration, funding, and public acceptance of this technology. The potential application of this intervention technology to the problem of police pursuits is worthy of analysis and is the reason for this futures study.

Having identified the past and present environments, a concern was raised about the future environment of the police pursuit. It was out of this concern that a primary issue question: *What Impact Will Technology Have On Police Pursuits*

by the Year 2002? and 3 sub-issue questions were formulated to address this study. The 3 sub-issue questions are:

- What affect will funding sources, public and private, have on law enforcement obtaining this technology?

- To what extent will public support affect the use and acceptance of this technology?

- To what extent will technology affect statewide civil litigation generated from parties involved in police pursuits.

SUMMARY OF THE FUTURES STUDY

Trends and events which could significantly impact the primary issue and sub-issues were identified using a carefully selected Nominal Group Panel (NGT). The criteria for trend selection stated that each trend: must be clearly defined and stated with terms which are understood; must be worth forecasting; must be non-directional and that later forecasting would determine direction; and must be comprehensive and address the issue question. The criteria for event selections stated that each event: must be occurrences that a future historian could

determine did or did not occur; must be comprehensive and relevant to the issue and sub-issues; must impact the issue if they occurred; and must be worth forecasting.

The panel identified 10 key trends and 10 key events which were then graphed to document the panel's median forecasts, as well as their upper and lower mean deviations from the median. This method was used to soften the possibility of a single individual or a small group of individuals from skewing the data. Each trend and event was then assessed on its respective evaluation table. Finally, a cross impact matrix was used to analyze how each of the forecasted events would impact the other trends and events.

TRENDS (T)

T-1: *Concern of financial impact to communities resulting from civil litigation.* The panel was in agreement and consistent as to the level of impact to communities from civil litigation indicating a continuing increase of 50 percent by 1997. However, between 1997 and 2002 there was disagreement among panel members. The median and low ranges indicated a downturn by 65 and 45 percent, respectively, because of anticipated "caps" on damage awards. The high range represents some panel members' beliefs that this trend will continue to skyrocket primarily because of increased officer accountability.

T-10: *Number of private industry searching for new technology markets*. The median forecast shows an increase of 70 percent of this trend over the next 10 years. However, there was a significant deviation by some panel members who projected a dramatic 120 percent increase during the 5-year period between 1997 and 2002. There was consensus among the panel that private industry will recognize and search out new markets. The group felt that this reaction would be because of a "need-driven" trend, coupled with the de-militarization of the defense industry and the privatization of traditional public policing responsibilities.

EVENTS (E)

E-1: *Locator devices required by law which allow police to control fleeing vehicles.* The panel projected that this event will not occur for at least 5 years with the probability of occurrence increasing dramatically between 1997 and 2002. Causation for this event's occurrence will be driven by increased public pressure on lawmakers to pass enabling legislation.

E-2: *City declares bankruptcy as a result of police vehicle pursuit liability*. While there was consensus that this event could occur today and will probably occur by 1997, there was a difference of opinion as to the degree of probability. The median forecast reflects a 10 percent probability within 5 years doubling to 20 percent by the year 2002. However, based on current large punitive- and general-

damage awards being assessed, others felt this event had a 15 percent probability of occurrence within one year climbing to a 75 percent probability by 1997.

E-3: *State legislature repeals municipality "pursuit immunity" statute*. The median forecast shows this event will not occur until 1997 and then increasing in probability to 25 percent within the next 5 years. However, the legal experts and public administrators on the panel deviated from the median - forecasting this event as having a 20 percent probability of occurrence by 1996, doubling to 40 percent within one year, and then climbing gradually to 45 percent over the next 5 years. The panel's forecasts were based on what they project as a "whittling" away of this immunity statute based on an attempt to pass such legislation in 1991.

E-4: *Law enacted requiring forfeiture of vehicle and license for causing pursuit.* The panel forecasts that this legislation will not occur until 1996 and that the probability would then increase sharply to a 55 percent occurrence within a one-year window. The consensus of opinion was that such an event occurring would be driven by the public's demand that responsibility and accountability extend to the criminal.

E-5: *Supreme Court bans pursuits: Rules it is a use of deadly force*. There is an interesting picture painted by the diverse forecasts in the probability and intensity of this event occurring. Panel members representing law enforcement and the

legal system forecast a 40 percent probability that this event will occur by 1997 and then increasing to 50 percent by 2002. The median forecast, however, suggests this event will not occur before 1994 and then gradually increasing to only 10 percent by 2002. The later opinion was based on the belief that other events with higher probability of occurrence would take place prior to a ban. It was also the panel's belief that a ban on pursuits would be viewed by the public as a loss of law enforcement credibility.

E-6: *Media coverage of a catastrophic pursuit.* A significant event relative to the issue, the median forecast reflected the probability of this event occurring was immediate and climbing dramatically to a 100 percent probability within 5 years.

E-7: *Supreme Court rules technology is a violation of civil rights.* The panel's median forecast indicates this event will not occur for 6 years with a 10 percent probability by 1999 and increasing to 50 percent by 2002. The panel felt that it will take at least 5 years for the Supreme Court to rule on such a case and that, as technological applications increase, so will these challenges.

E-8: *Law requiring mandatory sentencing for causing pursuit.* The median forecast reflects this event's probability of occurrence will not occur until 1995 and then increase dramatically to 60 percent within 2 years. During the next 5 years, this

event's probability will continue to increase by 15 percent, capping at 75 percent by the year 2002. As with Event 4, the public will demand criminal accountability.

E-9: *Law restricting police officer conduct in pursuit*. The median forecast shows this event will not occur prior to 1994 and then will increase dramatically to 50 percent by 1997 and then level off and remain constant during the next 5 years. The panel felt that given the increasing number of pursuits (T-7) coupled with the increased media coverage (E-4) that new policy will be created by law enforcement prior to new legislation being mandated.

E-10: *Voluntary integration of vehicle identifier into new vehicles*. The median forecast reflects that this event will not occur until 1997, as automobile manufacturers will be reluctant to install this technology pending legal challenges. The probability increases significantly over the next 5 years reaching 80 percent by 2002.

CROSS-IMPACT ANALYSIS

Each of the described events were assessed in a cross-impact analysis to determine how each of the events would impact the other events and trends. Analysis of these impacts allows for judgments as to the future impact that one event might have on another event or trend should it occur first.

Event #1 - *Locate devices required by law which allow police to control fleeing vehicles (18 impacts).* This Event had an impact on 8 events and 10 trends. Vehicle locating devices, as defined by the panel, is technology which will allow law enforcement the ability to locate, identify, and monitor a fleeing vehicle. This technology would have a dramatic impact on law enforcement's pursuit management capabilities. This technology would decrease the probability of Event #2 (city declares bankruptcy) and Trend #1 (concern of financial impacts to cities) as a result of decreased liability through control. Event #3 (repeal of pursuit immunity) as well as punitive damage awards against police officers (Trend #9) would also probably decrease.

The application of locating technology would increase the probability of a vehicle forfeiture law (Event #4) and also the restriction of pursuit conduct (Event #9). Since technology would be available to control pursuits, it is expected that penalties for misconduct would increase for the criminal as well as stricter guidelines for law enforcement. Trends #2 and #3 (public's demand for personal security and the level of the public's acceptance of technology) would also be positively impacted. The probability of private industry's search for new markets (Trend #10) would also increase.

Event #5 - *Supreme Court bans pursuits - rules it is a use of deadly force (18 impacts).* If this Event were to occur, it would have an impact on 8 events and 10

trends. The impact of the Supreme Court banning pursuits would increase the probability of a city declaring bankruptcy (Event #2) and Trend #1 (concern of financial impact to cities). Additionally, this Event would positively impact Event #9 (restricting officer conduct) and the availability of vehicle disabling technology (Trend #4). With the banning of pursuits comes increased liability for an agency's failing to comply and the basis for increased litigation. This Event would decrease the probability of pursuits resulting from criminal activity (Trend #7) as it would reduce the frequency of pursuits.

Event #6 - *Media coverage of a catastrophic pursuit (19 impacts)*. This Event, were it to occur, would impact 9 events and 10 trends. This Event would increase the probability of the public's demand for personal security from pursuits (Trend #2), Event #9 (restriction of officer pursuit training), as well as Trend #5 (police officer pursuit training). Correspondingly, this Event would increase the probability of a city declaring bankruptcy (Event #2) as a result of "front page" liability. Should Event #5 (Supreme Court bans pursuits) also occur, the impact on Event #2 would increase dramatically.

Event #7 - *Supreme Court rules technology is a violation of civil rights (18 impacts*). Were this Event to occur, it would have an impact on 8 events and 10 trends. Event #7 would decrease the probability of Event #1 (locate technology) and Trend #10 (industry searching for new markets) occurring.

Event #10 (integration of vehicle identifier) as well as the availability of vehicle disabling technology (Trend #4) would also be negatively impacted. Correspondingly, the occurrence of Event #7 would drive up the concern of financial impact to communities (Trend #1) and the public's demand for personal security (Trend #2).

FINDINGS

> "...Police agencies throughout the world are entering an era in which high technology is not only desirable, but necessary in order to combat crime effectively."[27]

Significant change and advancement are waiting on the horizon within the application of satellite, laser and radar technologies. Technologies which, with further development and application, could be used by law enforcement for the intervention of vehicle pursuits. Technologies which will allow law enforcement to systematically and safely locate, control and stop a fleeing vehicle. These include vehicle locate and identification systems,[28] as well as gradual fuel restriction systems and gradual hydraulic braking systems.[29]

Advances in micro chip technology have also progressed to the stage where, with further development, the use of a micro computer processor in the automobile's engine computer control system would allow for law enforcement's external

intervention. Using locate and identification technology, a targeted vehicle could be identified and a vehicle engine control inhibitor activated which would sequentially reduce power to the vehicle's engine, restrict fuel access, and activate the braking system thereby bringing the vehicle to a safe and gradual stop.[30]

The availability and effective application of pursuit intervention technology are dependent upon funding. If funding sources, public and private, are not identified and managed effectively, pursuit intervention technology will not be developed. To this end, partnerships between government and private industry at the local, state, and federal level are a necessity. While possible opposition from the automobile manufacturers and civil rights organizations cannot be ignored, this resistance can be overcome through careful planning and a combined, orchestrated effort of strategic management by the public and private sector.

The NGT panel determined that pursuit intervention technology is dependent on public support. The panel identified the media as playing a key role in determining the public's acceptance of this technology. The public's acceptance of these technologies will be favorable but only if law enforcement's management and control of this technology is consistent with public opinion and perceived by society as beneficial. If in the alternative the public views pursuit intervention technology as threatening to their welfare, law enforcement's ability to effectively apply these crime-fighting tools will be negatively impacted.

Law enforcement officers may experience future increased, punitive damage awards because of a demand for officer accountability as pursuit technology becomes available and not used. However, the question of civil litigation of those involved in pursuits affected by technology was not adequately answered during this study and should be considered for inclusion in future studies.

With a focused vision on the future, a clear memory of the past, and applying the concepts of futures forecasting, ***the responsible law enforcement leader of the 21st Century will be prepared to greet the future with confidence, not surprise, by understanding, not ignorance.*** He or she will be prepared to have a positive influence on the future of police pursuits.

FOOTNOTES

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29. Gallash, Jr., H. Frederick, Dr., "Telephone Interview," Segment Planning and Engineering, General Motors, October 15, 1993.

30. Du Frense, Jared, W., "Personal Interview," Forensic Science Center, Lawrence Livermore National Laboratory, September 30, 1993.

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Futures Forecasting - analyzes and examines the general issue. This is accomplished through the application of information review, evaluation of relevant trends and events by means of a modified Nominal Group Technique (NGT), cross-impact analysis of those trends and events, scenario analysis, and policy consideration.

Strategic Planning - provides a road map to attain the identified, desired future state based on a selected scenario from the previous futures section. Strategic planning makes use of an organizational mission statement, situational and stakeholder analysis, as well as policy development. This process will isolate policies and strategies that will form the foundation for the transition plan.

Transition Planning - identifies a structure to facilitate that desired change. Policies previously identified will be placed into a model management structure.

Commitment planning will occur; the critical mass will be identified and analyzed. Responsibility charting will be completed and supporting technologies and other relevant factors will be discussed.

Conclusions - Finally, the study offers an overview of the findings from the research conducted and provides findings as well as recommendation for future study.

INTRODUCTION

Imagine a high-speed police pursuit routinely ending without accident, injury, or further incident. Studies suggest that approximately one third of all high-speed pursuits result in accidents.[1] This occurs when a pursuing law enforcement vehicle, or the fleeing vehicle, crashes into another vehicle, pedestrian, or fixed object, causing property damage and possible injury or death. As a result, a close examination of police pursuits has been on going by the public, the courts, special interest groups such as the American Civil Liberties Union (ACLU), the media and the law enforcement community.

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"Youth Killed When Errand Takes Him in Path of Police Chase."[7]

"3 More Killed in High-Speed Police Chases."[8]

These are examples of the headlines which appeared during a media blitz covering police chases in southern California newspapers during a 2-week period in mid November 1992 - real life tragedies being played out on the streets of Los Angeles, Orange, Ventura Counties, and in many other areas of the United States. While it has been suggested by some that this rash of police pursuits, within a 14-day period, was an abnormality, it has been the genesis for others to propose the curtailment of law enforcement's involvement in high-speed pursuits altogether.

The perils of the high-speed pursuit are not a new concern. The court and legislature have continuously wrestled with the problem since enactment of the first exemption of emergency vehicles from the "rules of the road" in 1905. However, it was not until the decade of the 1960's that the police pursuit was perceived as a danger by the public.[9] According to Alpert and Fridell, a report released in 1968 states in part: 1) 1 out of 5 pursuits ends in death; 2) 5 out of 10 pursuits end in serious injuries. While some experts have questioned the report's scientific validity,[10] the study was responsible, in part, for generating increased discussion within the law enforcement community during the 1970's and 1980's resulting in sparked interest within the criminal justice system and generated additional pursuit studies.

The first complete study on pursuits was a 1970 report by Edmund Fennessy sponsored by the U. S. Department of Transportation.[11] The researchers

concluded, based on limited quantitative data and their thorough review of other available information, that "Hot pursuit is a highly controversial topic, bound up in the broader issue of what constitutes effective law enforcement.[12] From the police viewpoint "...their freedom to pursue law violators is a vital measure of their deterrent capability not only in terms of their traffic supervision mission, but also in relation to their broader crime control responsibilities." The basic argument stated, "If police were forbidden to engage in hot pursuit or unduly restricted then chaos on the highways would be the result." However, there also existed an opposing point of view held by the public which believed that "...high speed pursuits result in an unacceptable number of casualties." This study suggested that "...the reduction of crashes, injuries and deaths are the main goals of any policy or practice."[13]

The second generation of research on police pursuits was initiated in the early 1980's by the California Highway Patrol.[14] An exploratory study, limited to a 6-month period, this study analyzed 683 pursuits and found, in part, that 198 pursuits (29 percent) resulted in accidents, 99 pursuits (11 percent) resulted in injuries, and 7 pursuits (1 percent) resulted in deaths. This study concluded that the "attempted apprehension of motorists...is necessary for the preservation of order on the highways of California...Undoubtedly, innocent people may be injured or killed because an officer chooses to pursue a suspect, but this risk is

necessary to avoid the event greater loss that would occur if law enforcement agencies were not allowed to aggressively pursue violators."[15]

Subsequent to the California Highway Patrol study, other researchers (during the 1980's) initiated additional pursuit studies. Among the most comprehensive studies are those of the Solicitor General's Office, Ontario, Canada (1985),[16] Alpert and Dunham (1989, 1990),[17] and the Minnesota Board of Police Officer Standards and Training (1989).[18] These studies resulted in findings similar to those which preceded them in that on the average 35 percent of police pursuits end in accidents, 17 percent result in injuries, and 1 percent end in fatalities.

In 1992 a study, conducted by the Illinois State University, Department of Criminal Justice Sciences, found that a negative outcome such as death, personal injury, and property damage was estimated as high as 41 percent of reported police pursuits.[19]

The public has responded to this public safety issue by creating a surge of social upheaval and demanding accountability by the police. In response, the California State Legislature passed a mandatory statewide pursuit reporting statute which became effective January 1, 1992. This law requires all California law enforcement agencies to report every vehicle pursuit involvement to the California Highway Patrol. During 1992, the California Highway Patrol reported a total of

7,638 law enforcement pursuits which resulted in 5,924 arrests and 33 deaths, of which 23 were occupants of the pursued vehicle and 10 were innocent bystanders.[20]

Moreover, the courts have not been silent on this issue of police pursuits. In the past, the courts have emphasized the right and duty of police officers to apprehend law violators. But in the present climate, courts are tending to balance the need to apprehend law violators against the threat of injury and death that any given chase poses to the public. The latest appellate decisions suggest that the California courts will increasingly restrict law enforcement's availability to engage in pursuits. In Colvin,[21] the court observed:

> "This court can also take a judicial notice of prominent and pervasive news coverage of at least ten pursuit-related deaths in Southern California in the recent weeks alone, as well as personal injuries and property damage to uninvolved parties (citations omitted), and the inescapable conclusions that high-speed chases are dangerous even under the best of circumstances."

As the result of these increased civil liability and tighter restrictions resulting from police pursuits, law enforcement officials have responded by creating stricter policy statements and controls.[22] However, history has shown that tighter controls, absent banning pursuits altogether, have not resulted in a successful conclusion to the police vehicle pursuit issue. Innocent civilians, law enforcement officers, and

criminals are still being injured and killed while official investigations report the pursuits were within policy.

The purpose of this study is to provide law enforcement, and the public it serves, an alternative to the historical "unsuccessful" conclusion to police vehicle pursuits. While the studies previously cited have addressed statistical and attitudinal causation, as well as policy and training issues relative to police pursuits, there is an apparent lack of information available which focuses on alternative intervention application to police pursuits. It is the researcher's belief that emerging technology is a viable answer to making police pursuits less hazardous to innocent citizens, law enforcement officers, and criminals. Its application holds the promise to dramatically increase the effectiveness of police pursuits. While policy and training will continue to be examined by policy makers, it is the impact of technology that will enable law enforcement officers to safely terminate vehicle pursuits that might otherwise end in tragedy.

While no single technology has been developed with specific application to the external intervention of vehicle pursuits, there exists today several technologies which have potential future application. In recent years, science has introduced the public to technologies such as Lojack, Teletrac, and micro chip applications which have enhanced automotive safety. By the turn of the 21st Century, significant change and advancement will occur within the application of satellite,

laser and radar technologies.[23] Technologies which, with further development and application, could be used by law enforcement for the intervention of vehicle pursuits. These include vehicle locate and identification systems[24] as well as gradual fuel restriction systems and gradual hydraulic braking systems.[25]

Advances in micro chip technology have also progressed to the stage where, with further development, the use of a microcomputer processor in the automobile's engine computer control system would allow for law enforcement's external intervention. Using locate and identification technology, a targeted vehicle could be identified and a vehicle engine control inhibitor activated which would sequentially reduce power to the vehicle's engine, restrict fuel access, and activate the braking system thereby bringing the vehicle to a gradual and safe stop.[26]

Notwithstanding the identification and development of this technology, law enforcement will also have to create policy guidelines which promote and support the deployment, exploration, funding, and public acceptance of this technology. The potential application of this intervention technology to the problem of police pursuits is worthy of analysis and is the reason for this futures study.

A FUTURES STUDY

"A prudent man foresees the difficulties ahead and prepares for them; the simpleton goes blindly on and suffers the consequences."
Proverbs 22:3 (LB)

This study is an effort to plan for the vision of law enforcement's high technology vehicle pursuit needs by the turn of the 21st Century: An opportunity for the forward thinking leader to influence the future of the vehicle pursuit issue. This report is not a prediction but rather an attempt to forecast that future.

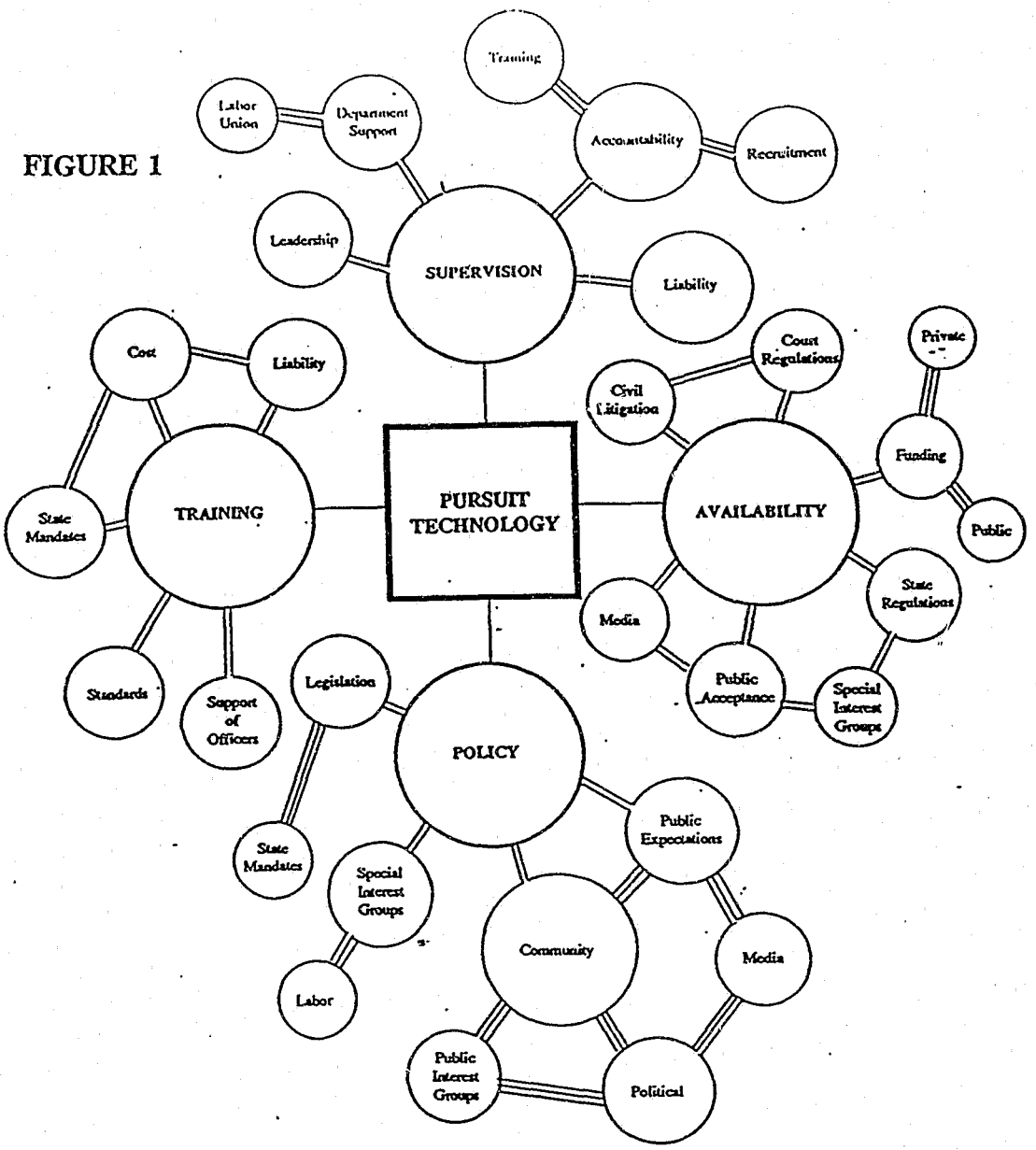
This concern is the motivation which led to the formation of this future issues study: What impact will technology have on police pursuits by the year 2002?

The assumption is that the future can be shaped through action and policy decisions. It is the writer's intent that this report serves as a foundation for shaping that desired future.

Sub-Issue Development:

A Futures Wheel was constructed by the writer to identify the sub-issues, develop information, and evaluate the importance of that information to the issue question. This process also helps to graphically analyze the pursuit technology issue and to give the reader a better understanding of the sub-issues (Figure 1).

FIGURE 1



The project issue - pursuit technology - was placed in the center rectangle and from that point four related, major sub-issues were identified. Each of these four sub-issues (identified by large, bold circles) was then analyzed to the second and third generation sub-issue level which, for clarity, are identified as progressively smaller circles. For the focus of this report, the writer selected the identified sub-issue - pursuit technology availability - for further study. The final sub-issue selections for focus of this study are:

- What affect will funding sources, public and private, have on law enforcement obtaining this technology?
- To what extent will public support affect the use and acceptance of this technology?
- To what extent will technology affect statewide, civil litigation generated from parties involved in police pursuits?

Nominal Group Technique (NGT)

A Nominal Group Technique panel was carefully selected and provided with the issue and sub-issue questions. The panel was assembled for the purpose of generating and identifying a list of relevant trends and events which would likely impact technology and its impact on police vehicle pursuits by the year 2002. The methodology used by the panel was the Nominal Group Technique (NGT). The panel members included a police chief, a scientist of automotive technology, a city manager, an emergency vehicle technician, a state law enforcement emergency deployment and response officer, an engineer of advanced technology, an attorney experienced in police pursuit policy issues, a journalist, an auto safety professional, an attorney experienced in defense litigation and pursuit liability, and a police captain (Figure 2).

FIGURE 2

FUTURES PANEL

Aeronautical Engineer *- (Joe Smalanskas) A manager/engineer responsible for advanced concepts and marketing for a major southern California aerospace corporation. Experience includes research and development, advanced development systems engineering, and technology development proposals.*

Police Chief *- (Tim Grimmond) A career law enforcement officer and Command College alumnus with over 20 years experience, in all levels of municipal law enforcement, with a Los Angeles County police department.*

City Manager *- (Bill Smith) Employed by a southern California municipality with more than 10 years' experience as a public administrator in northern and southern California cities. A 20-year career military officer.*

Vehicle Services Technician *- (Dick Rhea) Employed by a southern California municipality with more than 20 years' experience in research and development of vehicle equipment and maintenance in both the private and public sector.*

Police Officer *- (T.J. O'Donnel) Employed with a state police agency with over 24 years' experience in all facets of emergency vehicle operations. Experience includes technological research and development for emergency vehicle deployment and response.*

Scientist/Engineer *- (Pete Staudhammer) Research scientist employed by a major southern California space defense corporation. Vice President of its Center for Automotive Technology.*

Attorney *- (Greg Priamos) Employed by a major Los Angeles law firm serving several southern California cities. Experience in third-party liability as well as police pursuits and policy issues is well established. His expertise as a civil litigator includes Superior and Federal Court.*

Journalist *- (Richard Frank) Editor/publisher of a southern California newspaper.*

Auto Safety Professional *- (Bill Sauber) Manager of a southern California office of a national automobile traffic safety organization.*

Attorney *- (Joe Austere) Civil attorney/investigator retired from a major Los Angeles law firm serving numerous southern California municipalities. Experience includes extensive defense litigation of pursuit liability issues.*

Police Captain *- (Mike Skogh) A career law enforcement officer with over 20 years' experience in three law enforcement agencies serving Los Angeles and Orange Counties. Experience includes all levels of municipal law enforcement - a Command College graduate.*

The members represented diverse vocations and disciplines which provided the panel with a variety of experiences and expertise from the members' respective fields.

Trends

The NGT panel used a 3-stage screening process which resulted in the generating, defining, and selecting candidate trends relating to the issue.

Each panel member began generating trends one at a time in a round-robin process continuing around the room until all contributions were exhausted. When the list was completed, the panel reviewed each trend for definition, clarity, issue importance, and forecasting capability. As a result, the following 28 trends were identified by the panel:

- *Special interest groups driving issue in both directions.*
- *Concern of financial impact to communities resulting from civil litigation.*
- *"Real time" media coverage of pursuit when happening.*
- *Public's demand for personal security from pursuits.*
- *Public's expectation of police perfection.*
- *Level of public's acceptance of technology giving law enforcement more control of pursuits.*
- *Level of social acceptance of running from police.*
- *Availability of vehicle disabling technology.*
- *Level of congestion/population.*
- *Requirement for police officer pursuit training.*
- *Change in traffic control technology.*
- *Level of government funding of technology.*
- *Level of public's perception that cities are liable for pursuits.*
- *Number of police pursuits resulting from criminal activity.*
- *Number of technology transfer centers.*
- *Availability of information systems to law enforcement.*
- *Demand for safer police vehicles/size and power.*
- *Level of punitive damage awards against police officers.*
- *Demand to eliminate pursuits through use of technology.*
- *Number of private industry searching for new technology markets.*
- *Level of public education/right to know vs. right of confidentiality.*
- *Level of public's distrust of law enforcement.*
- *Level of interagency communication/cooperation.*
- *Demilitarization of the economy.*
- *Number of fatalities resulting from pursuits.*

- *Level of response to technology by automotive industry.*
- *Availability of defensive technology to criminals.*
- *Level of training for entry-level police officers.*

From the list of 28 identified trends, the panel members then selected, through a voting process, the 10 trends which were the most critical to the issue question. This process forced a choice as to the trends relevance and ranking of importance to the issue. Those 10 trends are:

1. *Concern of financial impact to communities resulting from civil litigation.*
2. *Public's demand for personal security from pursuits.*
3. *Level of public's acceptance of technology giving law enforcement more control of pursuits.*
4. *Availability of technology giving law enforcement more control of pursuits..*
5. *Requirement for police officer pursuit training.*
6. *Level of government funding of technology.*
7. *Number of police pursuits resulting from criminal activity.*
8. *Availability of information systems to law enforcement.*
9. *Level of punitive damage awards against police officers.*
10. *Number of private industry searching for new technology markets.*

At the conclusion of the NGT, the panel members were then instructed relative to forecasting each trend in that, once a trend is established and there are not

intervening events, it will continue. These forecasts involved projecting into the future their best estimates of how the level of each trend might change. The panel relying on their respective experience, used a value scale to forecast each trend. Today's value (present) was equal to 100. An estimate *equal to today* would be 100, *less than today* would be less than 100, and *greater than today* would be more than 100. The forecasts included past estimates, 5 years ago, and estimates for the future, 5 and 10 years from now (Table 1).

TABLE 1

TREND EVALUATION FORM

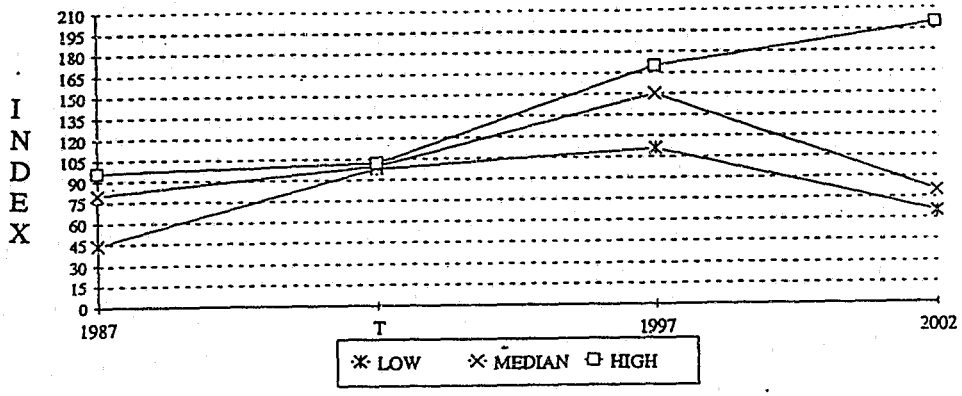
TREND STATEMENT	LEVEL OF THE TREND* (today = 100)			
	Five Years Ago	Today	5 Years From Now	10 Years From Now
	Median		Median	Median
CONCERN OF FINANCIAL IMPACT TO COMMUNITIES RESULTING FROM CIVIL LITIGATION	80	100	150	80
PUBLIC'S DEMAND FOR PERSONAL SECURITY FROM PURSUITS	75	100	150	180
LEVEL OF PUBLIC'S ACCEPTANCE OF TECHNOLOGY GIVING LAW ENFORCEMENT MORE CONTROL OF PURSUITS	50	100	125	150
AVAILABILITY OF TECHNOLOGY WHICH DISABLES FLEEING VEHICLE	10	100	150	200
REQUIREMENT FOR POLICE OFFICER PURSUIT TRAINING	75	100	125	150
LEVEL OF GOVERNMENT FUNDING OF TECHOLOGY	125	100	100	90
NUMBER OF POLICE PURSUITS RESULTING FROM CRIMINAL ACTIVITY	50	100	125	115
AVAILABILITY OF INFORMATION SYSTEMS TO LAW ENFORCEMENT	50	100	150	200
LEVEL OF PUNITIVE DAMAGE AWARDS AGAINST POLICE OFFICERS	50	100	125	150
NUMBER OF PRIVATE INDUSTRY SEARCHING FOR NEW TECHNOLOGY MARKETS	40	100	150	170

*Panel Medians N = 11

The forecasts were calculated to determine the median forecast as well as the high and low range for each trend. These forecasts were then discussed with the panel with special attention given to any wide range between median and high, median and low, and high and low deviations. The panel members then had an opportunity to revote using the same value scale.

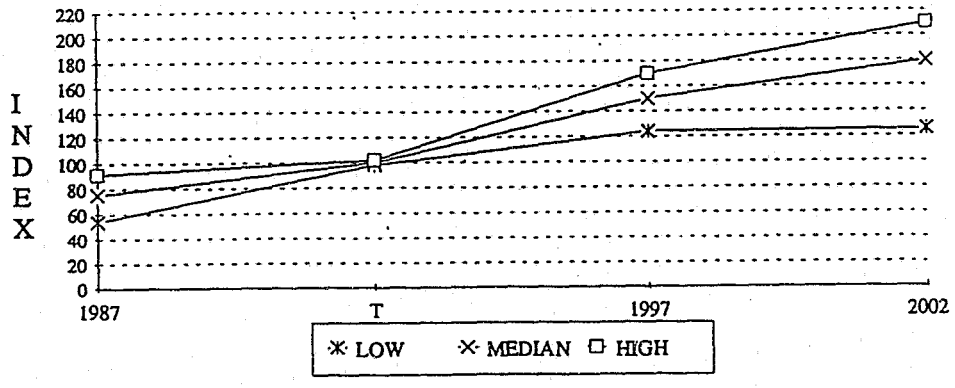
Graphs of each trend level, and the meaning of each forecast, are shown immediately following on Figures 3-12:

FIGURE 3 (T1): CONCERN OF FINANCIAL IMPACT TO COMMUNITIES RESULTING FROM CIVIL LITIGATION



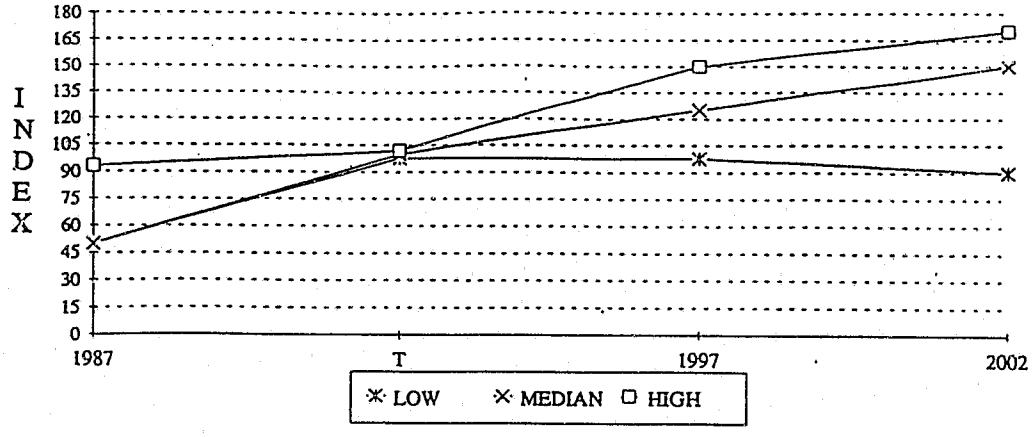
The panel was in agreement and consistent as to the level of impact to communities from civil litigation between 1987 and 1997 indicating a continuing increase. However, between 1997 and 2002 there was disagreement. The median and low ranges indicate a downturn from 1997 to 2002 due to anticipated "caps" on damage awards. The high range represents some panel members' beliefs that this trend will continue to skyrocket.

FIGURE 4 (T2): PUBLIC'S DEMAND FOR PERSONAL SECURITY FROM PURSUITS



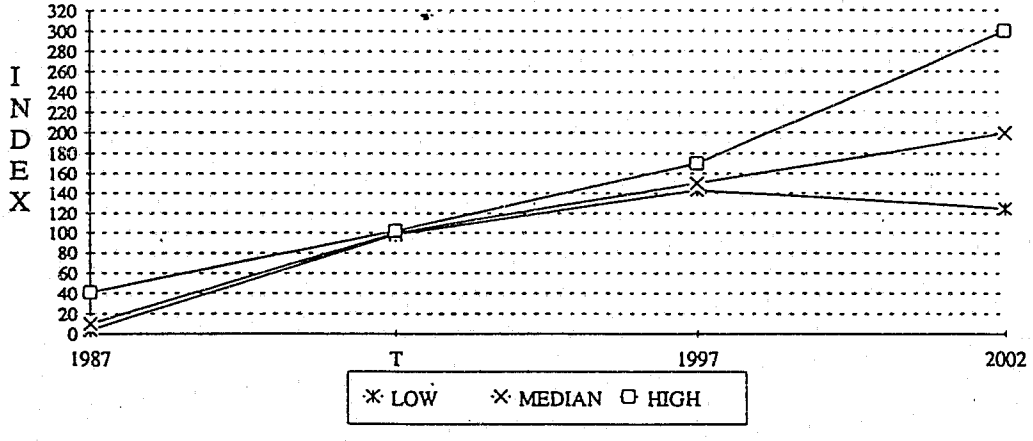
The panel believes that there will be an increase of concern in public safety and security over the next ten years as a result of a projected increase in pursuits, the media's "real time" coverage of these chases, and because of a projected increase in injuries and fatalities, a heightened awareness will occur.

FIGURE 5 (T3): LEVEL OF PUBLIC'S ACCEPTANCE OF TECHNOLOGY GIVING LAW ENFORCEMENT MORE CONTROL OF PURSUITS



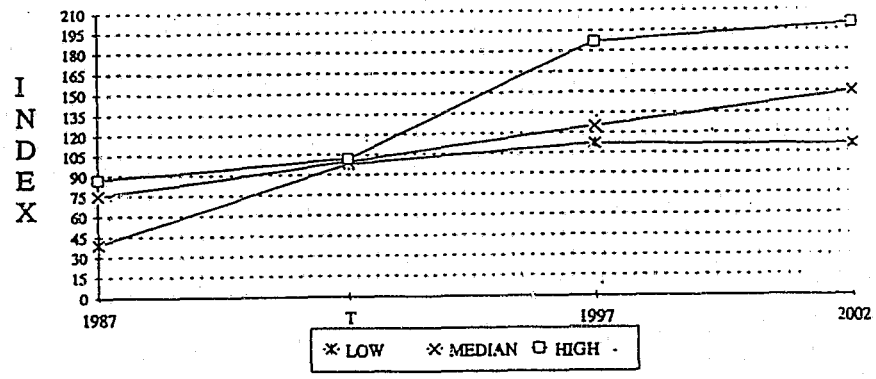
The consensus of the panel was that 5 years ago the application of technology was not as high as it will be in 5 and 10 years. While there will be a segment of society who will question its use, there will be a greater acceptance of technological advances relating to impacting pursuits.

FIGURE 6 (T4): AVAILABILITY OF TECHNOLOGY WHICH DISABLES FLEEING VEHICLE



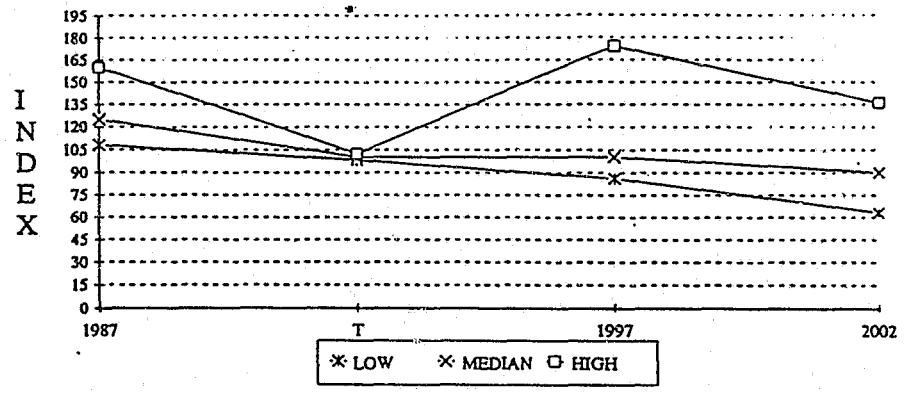
Five years ago disabling technology was for the most part a nonissue outside of law enforcement. The panel believes that within the next 5 years the sophistication of this technology will be developed to the degree that it will be viable. However, the panel felt that the application of this technology by automakers will most likely be driven by the public's demand for security coupled with future legal-mandated restriction involving pursuits.

FIGURE 7 (T5): REQUIREMENT FOR POLICE OFFICER PURSUIT TRAINING



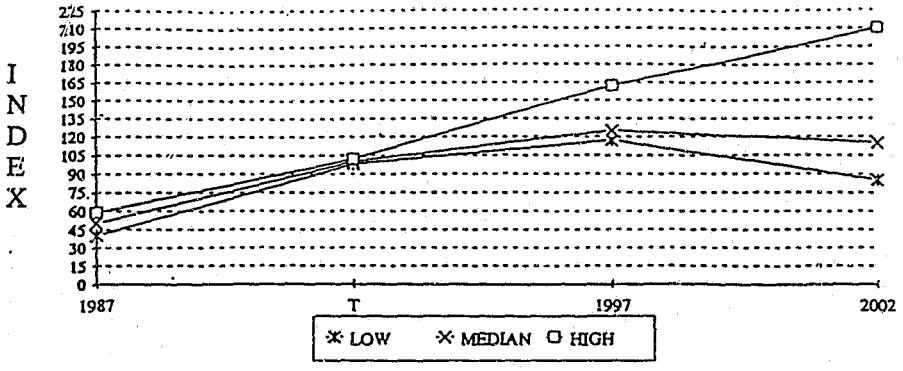
While pursuit training in 1987 was being addressed, the panel believes that due to the sophistication and application of technology this training will be trend driven and the level of mandated pursuit training will continue to increase.

FIGURE 8 (T6): LEVEL OF GOVERNMENT FUNDING OF TECHNOLOGY



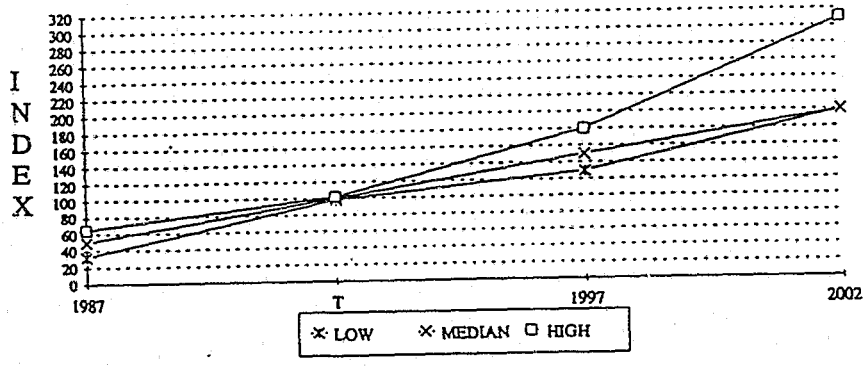
The panel identified a drop in the level of government funding during the past 5 years. It is also the consensus of the group that this level of funding will remain the same or continue to drop slightly over the next 10 years. The high deviation is representative of 4 panel members who feel the level of government funding for technology will increase dramatically over the next 5 years and then begin to decline.

FIGURE 9: (T7): NUMBER OF POLICE PURSUITS RESULTING FROM CRIMINAL ACTIVITY



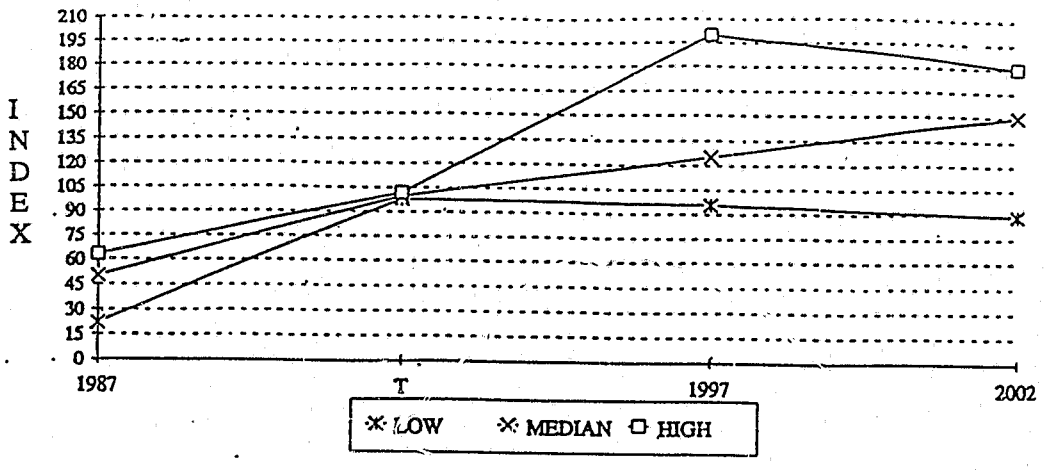
A clear belief that there has been an increase in pursuits as a result of criminal activity during the past 5 years is represented by the narrow clustering from high to low. The panel also projects that there will continue to be an increase in this trend through 1997. Between 1997 and 2002 the panel begins to separate. Some believe that technology will reduce this trend to about or just below the 1992 levels, while other group members project that there will be a continued increase due to more third world people coupled with greater court restrictions on law enforcement's ability to deal with criminals effectively.

FIGURE 10 (T8): AVAILABILITY OF INFORMATION SYSTEMS TO LAW ENFORCEMENT



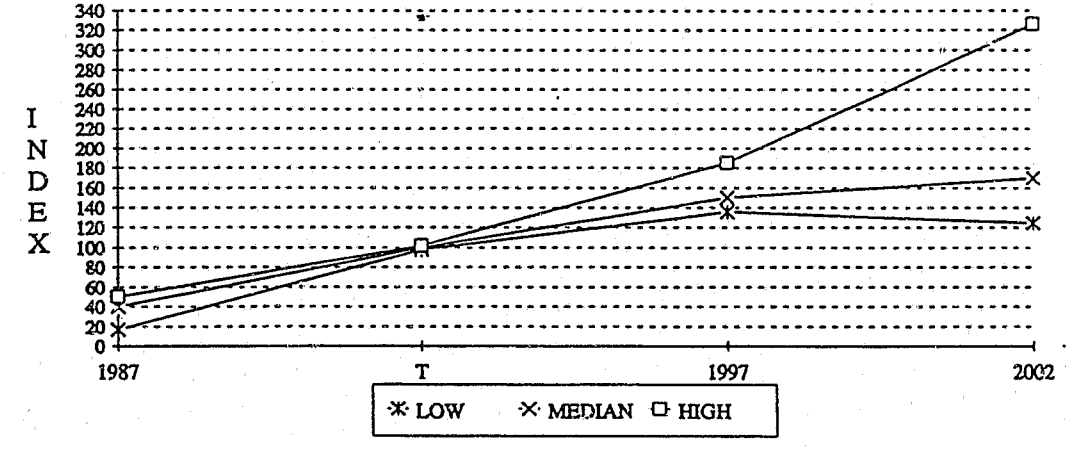
The panel's reflection over the past 5 years is represented by a narrow group opinion that the availability of information systems has increased since 1987 and will continue to escalate. Some panel members believe that between 1997 and the year 2002 this trend will be driven by affordability and application.

FIGURE 11 (T9): LEVEL OF PUNITIVE DAMAGE AWARDS AGAINST POLICE OFFICERS



Between 1987 and 1992 the group agrees that there has been an increase in punitive damage awards against officers. The majority of the panel projects that this trend will continue over the next 5 years and then begin to fall slightly between 1997 and 2002, while others believe that this trend will continue to gradually increase. Generally, there is consensus that the increase will be due to a demand for more officer accountability as technology is available and perhaps not used. The declining trend segments are supported by those who project that litigation will be reduced as a result of increased training and use of technology.

FIGURE 12 (T10): NUMBER OF PRIVATE INDUSTRY SEARCHING FOR NEW TECHNOLOGY MARKETS



The panel agrees that this trend has increased during the past 5 years and will continue climbing over the next 5 years. The majority of the panel project that private industry will recognize and search out new markets. They felt this was due to a "need-driven" trend coupled with the de-militarization of the defense industry and the privatization of traditional public policing responsibilities. This deviation is reflective of the panel members from private industry. Those that projected a slight downturn between 1997 and 2002 felt that the enabling legislation would not be present.

Events

Following the completion of the trend forecasting, the NGT panel was asked to identify and select events applying the same process used in the trend selection. The process began by the panel being advised that events:

- must be occurrences that a future historian could determine did or did not occur.
- must be comprehensive and relevant to the issue and sub-issues.
- must impact the issue if they occurred.
- must be worth forecasting.

The panel generated the following 25 candidate events:

- *Major defense liability award against city/officer.*
- *Locate devices required by law which allow police control of fleeting vehicle.*
- *Names of people causing pursuits printed by media.*
- *City declares bankruptcy as result of police vehicle pursuit liability.*
- *Supreme Court rules officers are not liable for pursuits.*
- *State legislature repeals municipality "pursuit immunity" statute.*
- *Satellite technology made available to law enforcement.*
- *Law enacted requiring forfeiture of vehicle and license for causing pursuit.*
- *Government stops funding of technology.*
- *Supreme Court bans pursuits/rules pursuits as a use of deadly force.*
- *Sudden decrease in pursuits.*
- *Media coverage of a catastrophic pursuit.*
- *Private citizen groups work with law enforcement impacting pursuits.*

- *Supreme Court rules technology is a violation of civil rights..*
- *Criminal prosecution of officers involved in pursuits.*
- *Law requiring mandatory sentencing for causing pursuit.*
- *Law restricting police officer conduct in pursuit.*
- *Formation of a federal law enforcement consortium.*
- *Development of cost-effective technology.*
- *Voluntary integration of vehicle identifier into new vehicles.*
- *Availability of high-energy technology.*
- *Fatality resulting from failure of technology.*
- *Public's failure to support financially.*
- *Pursuits investigated as Federal civil rights violations.*
- *POST given authority to suspend peace officer power resulting from negligent performance.*

This number was further reduced to 10 events selected based on the likelihood of occurrence and their impact on the issue and sub-issues. The events selected and ranked are:

1. *Locator devices required by law which allow police to control fleeing vehicles.*
2. *City declares bankruptcy as a result of police vehicle pursuit liability.*
3. *State legislature repeals municipality "pursuit immunity" statute.*
4. *Law enacted requiring forfeiture of vehicle and license for causing pursuit.*
5. *Supreme Court bans pursuits - rules it is a use of deadly force.*

6. *Media coverage of a catastrophic pursuit.*

7. *Supreme Court rules technology is a violation of civil rights.*

8. *Law requiring mandatory sentencing for causing pursuit.*

9. *Law restricting police officer conduct in pursuit.*

10. *Voluntary integration of vehicle identifier into new vehicles.*

At the conclusion of the NGT the panel members were asked to forecast the selected events. The forecast included the number of years until the probability of each event exceeded zero and the probability of occurrence by the years 1997 and 2002. The probability scale was zero (Event will not happen within the time limit.) to 100 (Event will occur by the established time.). The panel members were also asked to evaluate the impact of the event on the issue, positive and/or negative, using a zero-to-ten scale. The panel's forecasts were then calculated the same as with the trend forecasts and returned to the members for discussion and an opportunity to revote. The panel's average forecasts are charted and analyzed in Table #2.

TABLE 2

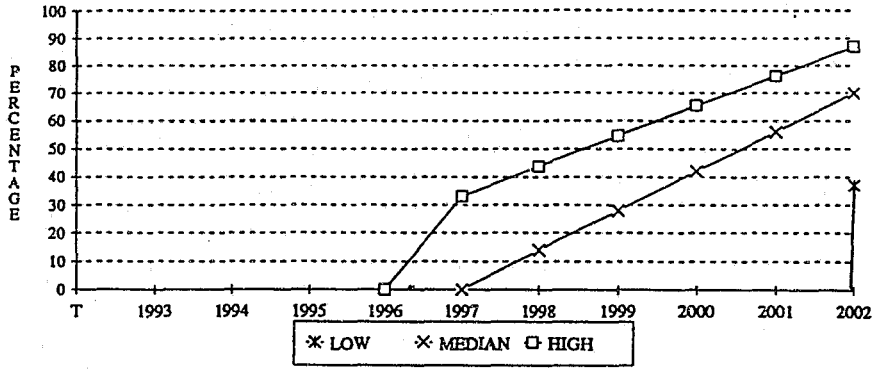
EVENT EVALUATION FORM

EVENT STATEMENT	YEARS UNTIL PROBABILITY FIRST EXCEEDS ZERO	PROBABILITY*		IMPACT ON THE ISSUE AREA IF THE EVENT OCCURRED	
		FIVE YEARS FROM NOW (0-100)	TEN YEARS FROM NOW (0-100)	POSITIVE (0-10)	NEGATIVE (0-10)
	Median	Median	Median	Median	Median
LOCATOR DEVICES REQUIRED BY LAW WHICH ALLOW POLICE TO CONTROL FLEEING VEHICLES	5	0	70	10	0
CITY DECLARES BANKRUPTCY AS A RESULT OF POLICE VEHICLE PURSUIT LIABILITY	1	10	20	2	5
STATE LEGISLATURE REPEALS MUNICIPALITY "PURSUIT IMMUNITY" STATUTE	5	10	25	0	7
LAW ENACTED REQUIRING FORFEITURE OF VEHICLE AND LICENSE FOR CAUSING PURSUIT	4	55	75	8	0
SUPREME COURT BANS PURSUITS - RULES IT IS A USE OF DEADLY FORCE	2	0	10	0	8
MEDIA COVERAGE OF A CATASTROPHIC PURSUIT	0	100	100	3	8
SUPREME COURT RULES TECHNOLOGY IS A VIOLATION OF CIVIL RIGHTS	6	0	50	2	8
LAW REQUIRING MANDATORY SENTENCING FOR CAUSING PURSUIT	3	60	75	9	0
LAW RESTRICTING POLICE OFFICER CONDUCT IN PURSUIT	2	50	50	5	5
VOLUNTARY INTEGRATION OF VEHICLE IDENTIFIER INTO NEW VEHICLES	5	10	80	10	0

*Panel Medians N = 11

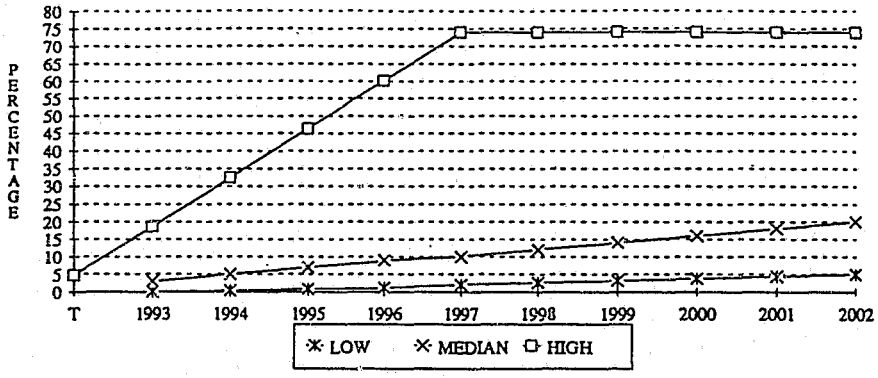
Graphs for each event, and a discussion of the meaning for each forecast, are found in Figures 13-22. (The use of upper and lower mean deviations from the median softens the possibility of a single individual or small group of individuals from skewing the data. This was used on all graphs even though there may have been a close consensus on the issue.)

FIGURE 13 (E1): LOCATOR DEVICES REQUIRED BY LAW WHICH ALLOW POLICE TO CONTROL FLEEING VEHICLES



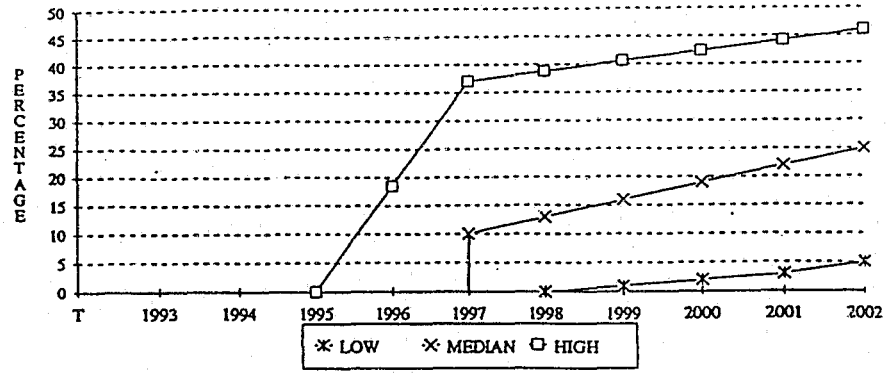
The panel projected that this event will not occur for about 5 years and then the probability of occurrence will increase dramatically through 2002 as pressure by the public forces lawmakers to pass enabling legislation.

FIGURE 14 (E2): CITY DECLARES BANKRUPTCY AS A RESULT OF POLICE VEHICLE PURSUIT LIABILITY



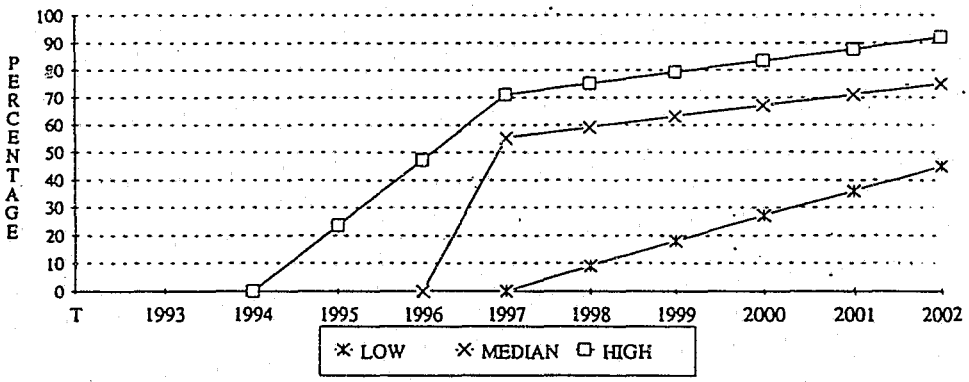
The consensus of the panel is the probability of this event exceeding zero won't occur until 1993 and will probably occur within 5 years. While most panel members believe that this event could occur, there is a difference of opinion as to the degree of probability. While the median and low deviations are narrow in range, there were some group members who projected a higher probability of this event occurring within the next 5 years. This opinion was generated based on large punitive and general damage awards as a result of pursuits.

FIGURE 15 (E3): STATE LEGISLATURE REPEALS MUNICIPALITY "PURSUIT IMMUNITY" STATUTE



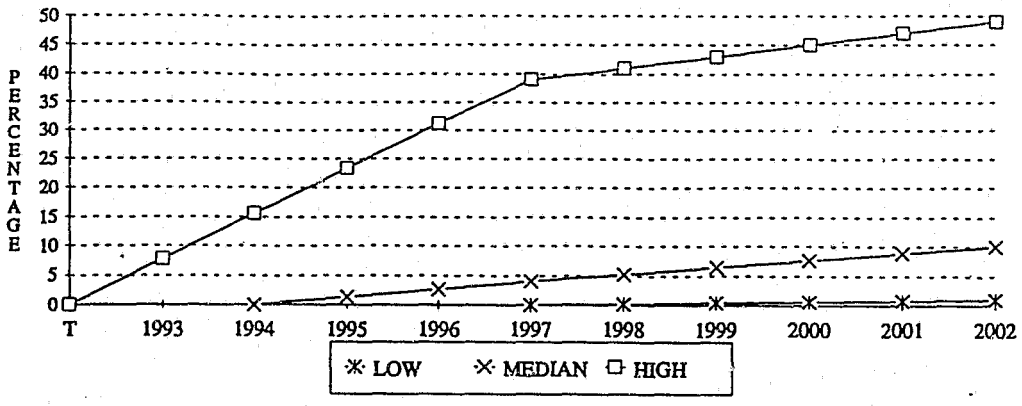
The majority of the panel projects this event won't first exceed zero probability until 1997. The low deviation is the result of a few members' belief that this event is unlikely to occur during the next 5 years and then only a slight increase in probability between 1997 and 2002. The majority of the group projects a "whittling" away of this immunity statute based on an attempt to pass such legislation in 1991. The high deviation is reflective of the opinions of the legal experts and public administrators on the panel.

FIGURE 16 (E4): LAW ENACTED REQUIRING FORFEITURE OF VEHICLE AND LICENSE FOR CAUSING PURSUIT



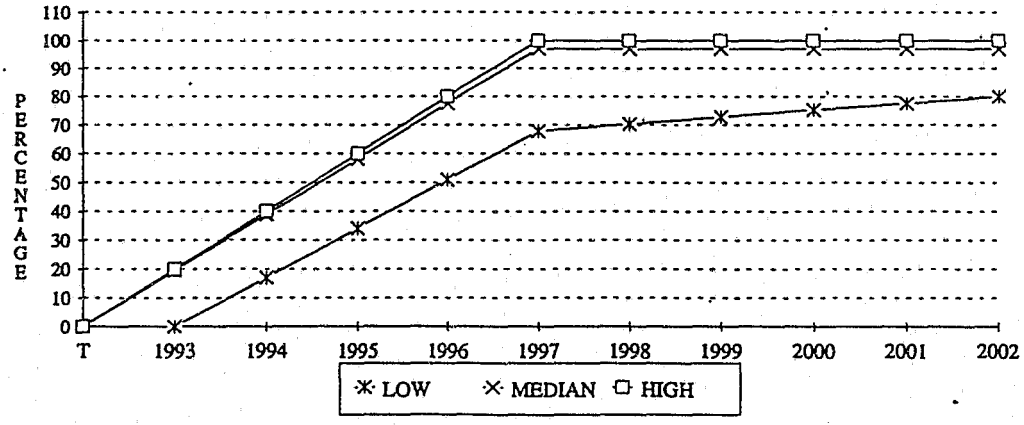
The panel felt that legislation penalizing the person who causes a pursuit would not first exceed zero for about 4 years and that the probability would then increase sharply within a period of one year. While subjective values of the individual members are reflected in the range between the high and low deviations, all members felt the probability of such an event occurring would be driven by the public's demand that responsibility and accountability extend to the criminal.

FIGURE 17 (E5): SUPREME COURT BANS PURSUITS-RULES IT IS A USE OF DEADLY FORCE



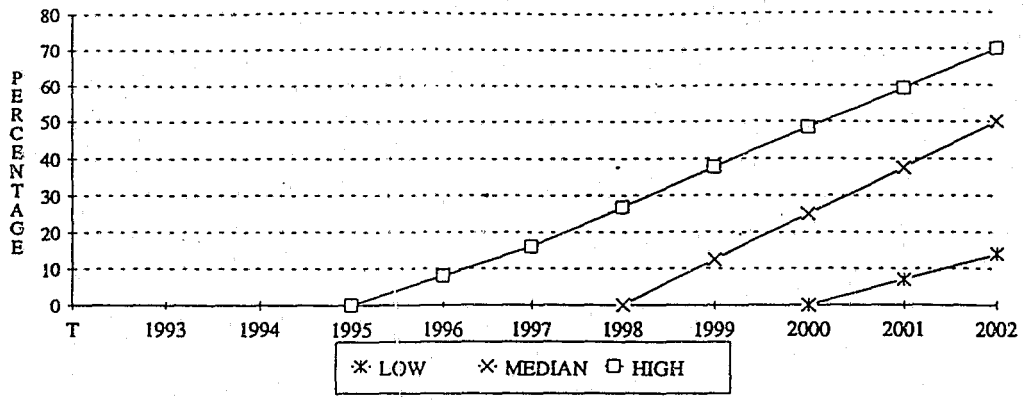
The interesting picture painted by this graph is the intensity of probability reflected between the high deviation and the median and low deviation indicating an opposite viewpoint. The forecasting of the high is reflective of panel members representative of law enforcement and the legal system. However, the wide range of the panel was due to their belief that other events with higher probability of occurrence would take place prior to a ban. There was also discussion among panel members that a "ban" on pursuits would be viewed by the public as a loss of credibility of law enforcement.

FIGURE 18 (E6): MEDIA COVERAGE OF A CATASTROPHIC PURSUIT



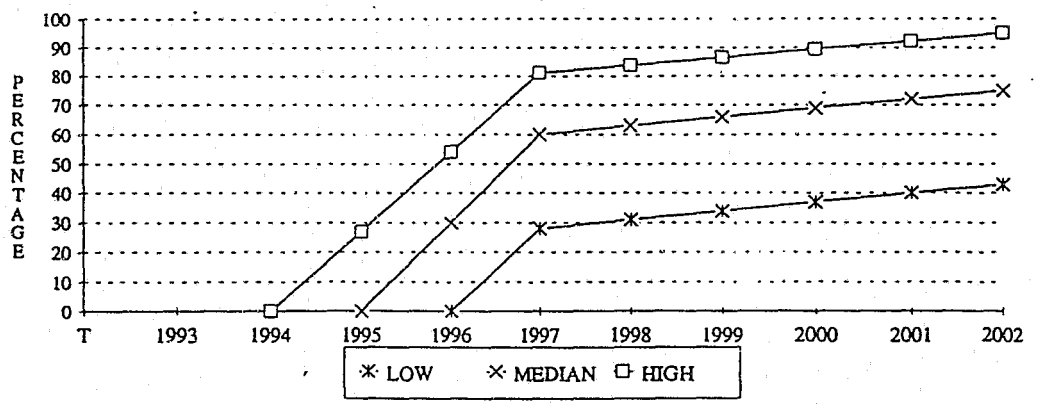
The panel agreed that this was a significant event relative to the issue. The probability of first occurrence exceeding zero is immediate to only 1 year away and the likelihood increases dramatically with the next 5 years as pursuits increase in number and severity. The group felt that between 1997 and 2002 the probability would peak and stay level or only increase slightly.

FIGURE 19 (E7): SUPREME COURT RULES TECHNOLOGY IS A VIOLATION OF CIVIL RIGHTS



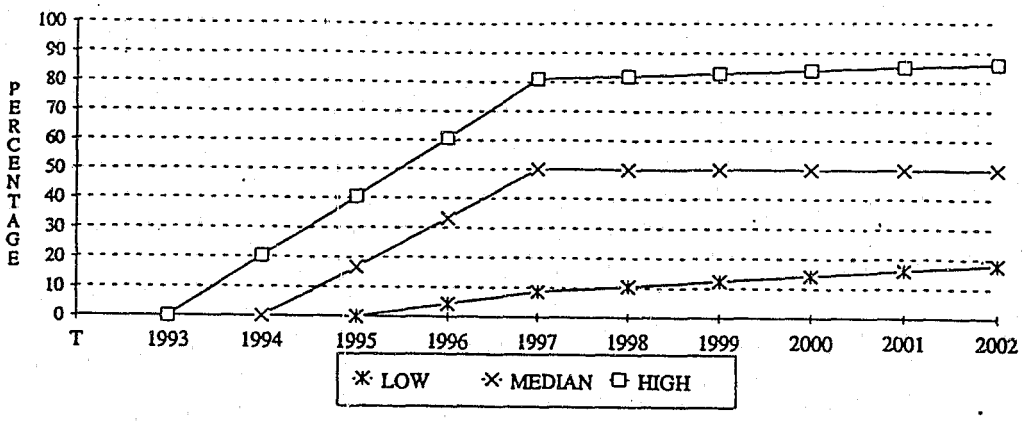
The probability of this event first exceeding zero is projected to occur between 1998 and 2002. The probability of occurrence increases with each succeeding year. The panel felt that it would take at least 5 years for the Supreme Court to rule on such a case and that as technology applications increase so will these challenges.

FIGURE 20 (E8): LAW REQUIRING MANDATORY SENTENCING FOR CAUSING PURSUIT



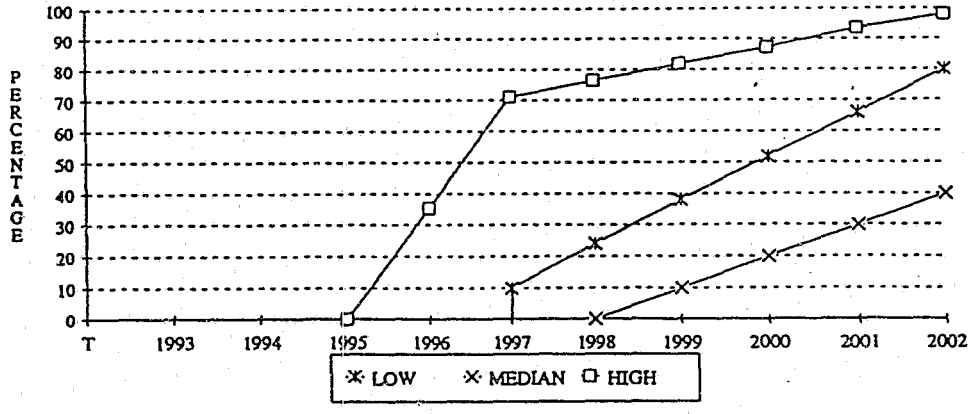
The panel projected this event's probability of occurrence first exceeding zero will not occur for 3 years. However, subsequent to 1995 the probability of this event occurring would increase during subsequent years without decline. The panel projected that, as with Event 4, the public will demand criminal accountability.

FIGURE 21 (E9): LAW RESTRICTING POLICE OFFICER CONDUCT IN PURSUIT



This event is not projected to occur until 1994 and then to increase dramatically in probability until 1997 where it then begins to level off and remains relatively level into the year 2002. The panel felt that given the increasing number of pursuits (T-7) coupled with the increased media coverage (E-6) that new policy will be created by law enforcement prior to new legislation.

FIGURE 22 (E10): VOLUNTARY INTEGRATION OF VEHICLE IDENTIFIER INTO NEW VEHICLES



The core group of the panel felt that the probability of this event occurring would be at least 5 years as manufacturers will be reluctant to install this technology pending legal challenges. The group agreed that the probability of occurrence will increase in 1997 and continue to climb during the subsequent 5 years.

Cross-Impact Analysis

The purpose of the cross-impact analysis is to assess how each of the forecasted events would impact the other events and trends. This analysis is important in identifying trends and events used to create future scenarios. For cross-impact analysis, the impact of an event is recorded as a percentage of change - including positive or negative - and represents the maximum impact on that event or trend. Analysis of these impacts allows for judgments as to the future impact one event might have on another event or trend should it occur first. From this analysis alternative futures developed which change the direction of the most likely future.

This complex analysis was completed by 3 individuals familiar with the cross-impact process. The 3 people were: Police Chief Ted J. Mertens, Police Captain Michael Skogh, and the researcher. Each person individually completed 2 cross-impact matrices - one for events and one for trends. The event-to-event matrix lists the 10 events vertically as well as horizontally. The event-to-trend matrix lists the 10 events vertically and the 10 trends horizontally. (Refer to Tables 3 and 4 on Page 29.) The 3 people then met, the results compared, and a consensus reached. A percentage, plus or minus, in a matrix cell was considered an "impact" on the trend or event. A zero in a cell indicates no impact.

TABLE 3

EVENT-TO-EVENT CROSS-IMPACT MATRIX
(CONSENSUS PANEL N = 3)

	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	"IMPACT" TOTALS
E1	x	-25	-50	+25	+20	0	-40	+20	+25	+10	8
E2	0	x	-25	+10	0	+50	0	+20	+75	0	6
E3	+25	+90	x	+10	+10	+70	0	+20	+80	0	7
E4	+10	0	-20	x	-5	+40	-10	+40	+10	+5	8
E5	+75	+40	+80	-25	x	+100	-30	0	+60	+40	8
E6	+50	+70	+50	+40	+40	x	-20	+50	+70	+5	9
E7	-90	0	-10	+10	+10	+15	x	+20	+35	-80	8
E8	+10	-20	-25	+50	-25	+40	-25	x	+10	+20	9
E9	+40	+50	-30	+25	-5	-20	0	+40	x	+5	8
E10	+10	0	0	+15	0	-5	+20	+10	+10	x	6
"IMPACTED" TOTALS	8	6	8	9	7	8	6	8	9	7	

Legend

E1 Locate devices
E2 City bankrupt
E3 State repeals pursuit statue
E4 Law passes re: forfeiture
E5 Supreme Court bans pursuits
E6 Media coverage
E7 Supreme Court rules civil rights violation
E8 Law requiring mandatory sentencing
E9 Law restricting police officer conduct
E10 Voluntary integration

TABLE 4

EVENT-TO-TREND CROSS-IMPACT MATRIX

	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	"IMPACT" TOTALS
E1	-25	+90	+100	+80	+70	+40	-50	+60	-50	+100	10
E2	+100	+5	+50	+15	+80	+20	-40	0	+50	+10	9
E3	+60	+70	+20	+40	+95	+50	-50	+40	+90	+50	10
E4	+20	+40	+30	0	+40	+15	+25	+50	-10	+10	9
E5	+90	+50	+40	+75	+50	+70	-80	+75	+70	+60	10
E6	+60	+90	+50	+70	+100	+10	+30	+15	+50	+30	10
E7	+75	+50	-70	-100	+60	-50	-25	-40	+25	-80	10
E8	-40	+80	+20	+50	+40	+40	+50	+10	0	0	8
E9	+25	+30	0	+50	+25	+10	-50	+75	+50	+20	9
E10	-10	+25	+60	+15	+20	+10	-20	+70	0	+50	9
"IMPACTED" TOTALS	10	10	9	9	10	10	10	9	8	9	

Legend

E1 Vehicle locate devices required
E2 City declares bankruptcy
E3 Cities' pursuit immunity repealed
E4 Forfeiture of vehicle law passed
E5 Supreme Court bans pursuits
E6 Media covers catastrophic pursuit
E7 Technology ruled violation of civil rights
E8 Mandatory sentencing required
E9 Police Officers' conduct restricted
E10Voluntary use of vehicle identifier
T1 Concern of financial impact re: civil litigation
T2 Public's demand for personal security
T3 Level of public's acceptance of technology
T4 Availability of vehicle disabling technology
T5 Requirement for police officer pursuit training
T6 Level of government funding of technology
T7 Number of police pursuits resulting from criminal activity
T8 Availability of information systems
T9 Level of punitive damage awards
T10Number of private industry searching for new technology markets

There were 4 events which had the most impact on other events and trends which were used in the selection of the most likely scenario. The 4 events were:

Event #1 - ***Locate devices required by law which allow police to control fleeing vehicles (18 impacts)***. This Event had an impact on 8 events and 10 trends. Vehicle locating devices, as defined by the panel, is technology which will allow law enforcement the ability to locate, identify, and monitor a fleeing vehicle. This technology would have a dramatic impact on law enforcement's pursuit management capabilities. This technology would decrease the probability of Event #2 (city declares bankruptcy) and Trend #1 (concern of financial impacts to cities) as a result of decreased liability through control. Event #3 (repeal of pursuit immunity) as well as punitive damage awards against police officers (Trend #9) would also probably decrease.

The application of locating technology would increase the probability of a vehicle forfeiture law (Event #4) and also the restriction of pursuit conduct (Event #9). Since technology would be available to control pursuits, it is expected that penalties for misconduct would increase for the criminal as well as stricter guidelines for law enforcement. Trends #2 and #3 (public's demand for personal security and the level of the public's acceptance of technology) would also be positively impacted. The probability of private industry's search for new markets (Trend #10) would also increase.

Event #5 - *Supreme Court bans pursuits - rules it is a use of deadly force (18 impacts)*. If this Event were to occur, it would have an impact on 8 events and 10 trends. The impact of the Supreme Court banning pursuits would increase the probability of a city declaring bankruptcy (Event #2) and Trend #1 (concern of financial impact to cities). Additionally, this Event would positively impact Event #9 (restricting officer conduct) and the availability of vehicle disabling technology (Trend #4). With the banning of pursuits comes increased liability for an agency's failing to comply and the basis for increased litigation. This Event would decrease the probability of pursuits resulting from criminal activity (Trend #7) as it would reduce the frequency of pursuits.

Event #6 - *Media coverage of a catastrophic pursuit (19 impacts)*. This Event, were it to occur, would impact 9 events and 10 trends. This Event would increase the probability of the public's demand for personal security from pursuits (Trend #2), Event #9 (restriction of officer pursuit training), as well as Trend #5 (police officer pursuit training). Correspondingly, this Event would increase the probability of a city declaring bankruptcy (Event #2) as a result of "front page" liability. Should Event #5 (Supreme Court bans pursuits) also occur, the impact on Event #2 would increase dramatically.

Event #7 - *Supreme Court rules technology is a violation of civil rights (18 impacts*). Were this Event to occur, it would have an impact on 8 events and 10 trends.

Event #7 would decrease the probability of Event #1 (locate technology) and Trend #10 (industry searching for new markets) occurring. Event #10 (integration of vehicle identifier) as well as the availability of vehicle disabling technology (Trend #4) would also be negatively impacted.

Correspondingly, the occurrence of Event #7 would drive up the concern of financial impact to communities (Trend #1) and the public's demand for personal security (Trend #2).

Scenarios

Scenarios are tools designed to present a view of tomorrow through the eyes of the historian who is truly writing a history of the future. Using the data collected from the NGT group, forecasted, and cross impacted, 3 scenarios were developed which provide different views of the future relative to the pursuit/technology issue.

Written from the perspective of the historian in the year 2002, three scenarios are presented, not as a prediction of the future, but rather an aid for evaluation by future policy makers.

Scenario Number One: This scenario presents a future which, the forecasts from the futures panel suggest, is most likely to occur.

December 31, 2002 - 2345 hours:

Chief Shivers was sitting in the police communication center surrounded only by a massive display of the latest technological advancements available to a modern law enforcement agency. As the Chief ran her fingers across the controls of the console-mounted, laser-radar, vehicle identification, locate-tracking and disabling, satellite-imaging, targeting surveillance system, she reminisced over the events of the last 10 years wondering what she could have done to change what was possibly about to happen. In just 15 minutes with the dawn of a new year, all this technology (finally available and affordable to law enforcement) may no longer be a tool used by California police agencies in their fight against the 21st Century criminal. In just a matter of hours, a Supreme Court decision is expected as to the legality of law enforcement's continued use of vehicle identification and tracking technology. The outcome of this decision to possibly ban the use of pursuit intervention technology as a violation of a person's civil rights is a matter of debate among legal scholars throughout California.

What possibly went wrong? What occurred that caused this issue to be decided by the Supreme Court? Why did this happen? Could it have been prevented? As these and other questions raced through the Chief's head, she remembered a discussion she had in 1994 with Captain Cashion, a Command College graduate. She remembered Captain Cashion's enthusiasm about something called futures forecasting. It seemed so long ago. But then she asked herself, what if...?

As Chief Shivers focused on the decade past, she began to identify events which, at the time seemed individually unimportant but (in retrospect) coupled with other events and trends, are now brought into focus with clear recognition.

In the summer of 1992, there was a dramatic increase in police vehicle pursuits in southern California within a 14-day period. While 5 of these chases ended in fatal injury to the occupants of uninvolved, innocent motorists, the singular most-catastrophic incident which drew world-wide media attention occurred in the City of Cold Water, a medium-sized community some 200 miles north of Los Angeles. A police pursuit had occurred which resulted in the death of 17 pre-school children ranging in ages from 3 to 5 years. Also killed were a pregnant mother of two and a 97-year-old great grandmother visiting from Norway.

While several peripheral questions were never satisfactorily answered, the cause of the horrific carnage was laid right at the feet of the City of Cold Water. Just the thought of 4 police officers chasing a suspected car thief through residential neighborhoods at noontime reaching speeds in excess of 90 mph outraged the nation. Exactly what happened just before the suspect lost control of his truck remains a mystery. What is known is that the out-of-control, stolen vehicle (with police vehicles pursuing) smashed through the front doors of the Cold Water Pre-School where the children had just finished eating their lunches. The subsequent

explosion and fire from the ruptured natural gas line engulfed the school and occupants, killing everyone inside including the 16-year-old suspected car thief.

There was an immediate demand by the public for controlling the conduct of police officers involved in vehicle pursuits. The Cold Water City Council in special session deadlocked on the issue of banning police pursuits altogether. However, the public's demand for personal security dramatically increased over the next 5 years with a call for the courts to ban police pursuits in California. In 1997 the Supreme Court declined to ban pursuits by a narrow margin of 5 to 4. This decision sent a message to law enforcement officials to closely manage pursuit involvement.

The Chief reflected on the 100 million dollars in damages awarded to the victims' families in 1998, driving the City of Cold Water into near financial ruin, and drastically impacting services to the community. This judgment created concern by city administrators up and down the state over financial solvency resulting from pursuit liability.

Driven by the public's demand for improved statewide pursuit management capabilities, the state lawmakers enacted legislation in 1998 requiring all law enforcement emergency vehicles to be equipped with electronic-vehicle, locating and tracking devices. Known as the Cold Water Decision, the use of this

technology increased by 75 percent during the next 4 years. Likewise, officer training in the use of this technology and its application continued to increase. As a result cities who conducted pursuits "within statute" experienced a decline in liability subsequent to 1998 as a result of "caps" placed on general damage awards resulting from pursuits. However, damage awards against law enforcement officers increased by 25 percent the same period, due to the public's demand for officer accountability.

In 1996 private industry, responding to the demilitarization of the economy, had forecast the enabling state legislation enacted 2 years later and identified this now privatized, profit-driven, goal-oriented market. Between 1998 and 2002, the availability of these technological advancements was made accessible to law enforcement driven by economic need and public acceptance.

One of these available advancements was vehicle disabler technology. Now with the ability to locate, track and disable a violator's vehicle, law enforcement was finally experiencing a positive upturn in apprehending the mobile criminal while protecting innocent bystanders.

With all this success at hand, who could have predicted that the ACLU and NAACP, as well as other liberal special interest groups, would have challenged the use of this technology as a violation of an individual's civil rights.

Chief Shivers, now reclining in her chair, gazed at the clock on the wall as it struck 2400 hours. As she watched the sweeping second hand slowly moving forward, past midnight, and continue on its trip into the future, the year 2003 was born. "Happy New Year!" she said, reflectively.

Alternative Futures

A computer program was used to develop alternative futures based upon the originally generated trends and events (10 each) from the NGT. The following data was entered to provide the tables from which to develop alternative futures:

- Event-to-event cross-impact matrix results
- Event-to-trend cross-impact matrix results
- Cumulative event probability for 10 events
- Median forecasts of 10 trends.

The program compiled and correlated the sets of input data and generated 100 iterations or alternative futures. Two iterations were then selected from the 100 to be developed into scenarios to complement the "most likely" scenario developed in the NGT. The 2 scenarios were selected for their unique and interesting futures.[27]

Scenario Number Two: This scenario presents a hypothetically turbulent future. A future in which chaotic events occur. (Refer to Table No. 5, Iteration No. 85, on Page No. 38.)

TABLE 5

"Trend values for Iteration No. 85"

	1/1/93	12/31/93	1994	1995	1996	1997	1998	1999	2000	2001	2002
Trend 1	100.0	110.0	103.8	115.4	114.9	188.1	168.9	87.7	65.2	103.5	188.8
Trend 2	100.0	110.0	90.1	102.4	43.0	115.2	108.7	203.8	157.0	312.6	333.4
Trend 3	100.0	105.0	95.6	81.9	63.4	111.3	102.8	126.4	98.6	108.4	127.5
Trend 4	100.0	110.0	95.8	140.6	92.9	133.1	134.3	227.4	219.1	180.9	284.1
Trend 5	100.0	105.0	81.3	76.0	30.0	112.8	105.9	134.6	97.3	223.8	246.2
Trend 6	100.0	100.0	97.8	102.6	86.9	80.4	72.2	108.7	97.7	76.8	133.4
Trend 7	100.0	105.0	102.0	51.4	43.2	87.6	92.1	156.8	175.8	108.6	36.1
Trend 8	100.0	110.0	114.8	213.5	196.2	214.7	204.6	213.9	189.1	193.7	278.7
Trend 9	100.0	105.0	95.6	134.4	113.1	178.8	179.8	173.1	181.7	160.9	82.5
Trend 10	100.0	110.0	110.2	132.5	128.0	155.4	145.9	148.8	120.6	120.0	174.2

LEGEND
T1 Concern of financial impact re: civil litigation
T2 Public's demand for personal security
T3 Level of public's acceptance of technology
T4 Availability of vehicle disabling technology
T5 Requirement for police officer pursuit training
T6 Level of government funding of technology
T7 Number of police pursuits resulting from criminal activity
T8 Availability of information systems
T9 Level of punitive damage awards
T10 Number of private industry searching for new technology markets

"Occurrences in Iteration No. 85"

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Event 1	0	0	0	0	0	0	0	0	1	0
Event 2	0	0	0	0	0	0	0	0	0	0
Event 3	0	0	0	0	0	0	0	0	0	0
Event 4	0	0	0	0	1	0	0	0	0	0
Event 5	0	0	0	0	0	0	0	0	0	1
Event 6	0	0	0	0	1	0	0	0	0	0
Event 7	0	0	0	0	0	0	0	0	1	0
Event 8	0	0	0	0	0	0	1	0	0	0
Event 9	0	0	1	0	0	0	0	0	0	0
Event 10	0	0	0	0	0	0	0	0	0	0

LEGEND
E1 Vehicle locate devices required
E2 City declares bankruptcy
E3 Cities' pursuit immunity repealed
E4 Forfeiture of vehicle law passed
E5 Supreme Court bans pursuits
E6 Media covers catastrophic pursuit
E7 Technology ruled violation of civil rights
E8 Mandatory sentencing required
E9 Police Officers' conduct restricted
E10 Voluntary use of vehicle identifier

November 12, 2002:

Chief Ryan picked up the morning newspaper. Glancing at the headlines, he wished he could turn the clock back 10 years. "Things could have been different!" he thought. The headlines read, "Supreme Court Bans Police Pursuits: Rules Pursuits a Use of Deadly Force."

As he drove to work, Ryan prepared what he was going to say to the city council. The mayor had called a special session to discuss the chief's continued employment. The case before the Supreme Court which resulted in the ban on pursuits followed from a chase involving his department. Ryan pulled into the city parking lot and parked his car. As he walked into the council chamber, he realized he was the first to arrive. He turned on the lights, sat down, and began to reflect.

Like a bright light, illuminating a darkened room, Chief Ryan flashed on the Supreme Court's ruling, just one year prior: The use of vehicle disabling technology by law enforcement was a violation of civil rights. Chief Ryan, in retrospect, realized he had failed to recognize the probability toward the banning of this technology driven by other trends.

There were other occurrences earlier in the decade of the '90s in which he also did not pay appropriate attention. He recalled in 1992 there was concern

expressed by the public over their personal safety resulting from a perceived increase in police pursuits. With the enactment of legislation restricting police officer conduct in police chases in 1995, driven by the public's concern, this trend began to fall slightly. There seemed to be a general public attitude of "wait and see." Chief Ryan admitted that during the next 7 years he, and perhaps other law enforcement officials, had ignored the dramatic increase in the public's safety issue which increased dramatically by 290 percent between 1996 and 2002. He had failed to recognize that police pursuits had become a public safety emergency.

While additional enabling legislation was enacted in 1997, allowing law enforcement to seize and forfeit the vehicle and driver's license of an individual causing a pursuit, the public's dramatic reaction to several pursuits ending in death and serious injury over shadowed any long-term effect.

The event-driven trend of pursuit resulting from criminal activity, which had decreased between 1993 and 1996 by 62 percent, began an upward turn in 1997 and increased 88 percent in the year 2000, the highest level in a decade. In retrospect,

Chief Ryan identified an overall failure by law enforcement to formulate, implement, follow and enforce policies designed to effectively manage officers' vehicle pursuit involvement and behavior.

The extensive media coverage of several chases ending in death during the last 6 months of 1997 was the genesis for the 1999 enactment of legislation requiring mandatory sentencing for causing a police pursuit.

Chief Ryan thought, "If only more funding had been available!" He recalled the statewide economic recession that showed no recovery until 1996, leaving local and state agencies strapped financially. This in turn retarded the private sector's interest in developing "police technology." The level of government funding for technology decreased by 20 percent between 1992 and 1997. Then in 1999, there was an increased interest of about 30 percent which history suggests, was the delayed reaction from the 1997 media coverage of several pursuits which, in turn, drove up the public's demand by the end of 1999 for their security and safety. It was this public cry which led to legislation requiring the installation of a locating device in new automobiles by the year 2001.

However, with the court's ruling against law enforcement's use of vehicle pursuit technology during 2001, the level of funding decreased by 21 percent. But with the Supreme Court's ban on police pursuits the next year, funding for alternative technology increased dramatically by 57 percent.

Chief Ryan thought to himself that all the indicators were there. All anyone had to do was just recognize their impacts! Ryan was awakened from his reflective

thought as the mayor and city council arrived for the meeting. Prior to the Mayor calling the meeting to order, Chief Ryan handed the Mayor an envelope containing his resignation.

Scenario Number Three: This scenario describes the desired future - the future in which a positive effect is attained through implementation of policies that impact the issue. (Refer to Table No. 6, Iteration No. 20.)

TABLE 6

"Trend values for Iteration No. 20"

	1/1/93	12/31/93	1994	1995	1996	1997	1998	1999	2000	2001	2002
Trend 1	100.0	110.0	174.2	185.8	135.7	208.9	189.7	146.4	123.9	162.2	141.9
Trend 2	100.0	110.0	220.1	232.4	288.6	331.9	325.4	341.0	294.2	449.8	398.4
Trend 3	100.0	105.0	158.1	144.4	150.9	161.3	152.8	226.4	198.6	208.4	177.5
Trend 4	100.0	110.0	200.9	245.6	272.9	268.0	269.3	309.9	301.6	263.4	254.1
Trend 5	100.0	105.0	206.3	201.0	205.0	281.5	274.6	278.3	241.0	367.5	327.4
Trend 6	100.0	100.0	107.5	112.3	135.5	167.9	159.7	167.0	156.0	135.1	123.6
Trend 7	100.0	105.0	136.6	86.0	135.5	87.6	92.1	76.0	95.0	27.8	47.7
Trend 8	100.0	110.0	137.3	236.0	233.7	289.7	279.6	379.0	354.1	358.7	331.2
Trend 9	100.0	105.0	158.1	196.9	175.6	291.3	292.3	285.6	294.2	273.4	282.5
Trend 10	100.0	110.0	152.7	175.0	170.5	226.3	216.8	290.6	262.4	261.8	230.9

LEGEND
T1 Concern of financial impact re: civil litigation
T2 Public's demand for personal security
T3 Level of public's acceptance of technology
T4 Availability of vehicle disabling technology
T5 Requirement for police officer pursuit training
T6 Level of government funding of technology
T7 Number of police pursuits resulting from criminal activity
T8 Availability of information systems
T9 Level of punitive damage awards
T10 Number of private industry searching for new technology markets

"Occurrences in Iteration No. 20"

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Event 1	0	0	0	0	0	0	0	0	1	0
Event 2	0	0	0	0	0	0	0	0	0	0
Event 3	0	0	0	0	0	0	0	0	0	0
Event 4	0	0	0	0	1	0	0	0	0	0
Event 5	0	0	0	0	0	0	0	0	0	0
Event 6	0	1	0	0	0	0	0	0	0	0
Event 7	0	0	0	0	0	0	0	0	0	0
Event 8	0	0	0	1	0	0	0	0	0	0
Event 9	0	0	1	0	0	0	0	0	0	0
Event 10	0	0	0	0	0	0	1	0	0	0

LEGEND
E1 Vehicle locate devices required
E2 City declares bankruptcy
E3 Cities' pursuit immunity repealed
E4 Forfeiture of vehicle law passed
E5 Supreme Court bans pursuits
E6 Media covers catastrophic pursuit
E7 Technology ruled violation of civil rights
E8 Mandatory sentencing required
E9 Police Officers' conduct restricted
E10 Voluntary use of vehicle identifier

October 2, 2002:

Police Commissioner Whiteside walked tall and proud as he entered the ballroom at the Los Angeles Bonaventure Hotel. He was being honored by the League of California Cities; California Police Chiefs' Association; the California Bar Association; and the California Judiciary Association, co-sponsored by the American Civil Liberties Union and the National Association for the Advancement of Colored People: A partnership created at the turn of the 21st Century.

Commissioner Whiteside was being recognized for his outstanding service to law enforcement and the people of the state of California during the last decade. He was receiving the Humanitarian Award for Public Safety for his leadership in the management of police vehicle pursuits. Commissioner Whiteside had the honor of being the second recipient of this prestigious award since the turn of the 21st Century and the first law enforcement official. As the evening began, presenter after presenter walked to the podium. It was clear to anyone who did not know Whiteside that he was an important man.

As Whiteside sat at his place of honor - with his wife, children and grandchildren proudly sitting beside him - listening to the kind words being said about him, he began to recall how it all started that warm, clear Tuesday afternoon in the summer of 1993. He was a captain then for a medium-sized police agency in Los

Angeles County. His partner, also a captain was away at Command College attending Workshop 8. He remembered it just like it was yesterday....

Whiteside stood helplessly as the events unfolded with live TV coverage of another police pursuit. The media helicopters swarmed the pursuit path like bees on honey as the co-anchors' bantered recaps of past pursuits and their all-too-often tragic endings. Then, before the eyes of Whiteside and hundreds of thousands of other viewers, the co-anchors' time-filling chatter proved horribly prophetic. Final account: 1 suspect in custody, 2 innocent pedestrians dead.. Whiteside knew there had to be a better way. Recognizing the public's concern for their safety resulting from police pursuits, Whiteside was convinced that this kind of tragedy was preventable, not inevitable. He knew the effective way to maintain the public's confidence was to strategically address the issue. He knew the answer: Technology! Whiteside also recognized that policy, training, supervision, and availability of the technology were keys as well.

Whiteside had identified the event-driven trends over concern of financial impact to cities, which increased by 64 percent between 1993 and 1994. He had also recognized the public's demand for personal security from pursuits, which jumped 110 percent during the same period and increased 449 percent by 2001. With this information, Whiteside had little difficulty convincing his superiors that failure to act would most probably result in court restrictions, mandated legislative controls, and potential bankruptcy.

As a warning of events to come, should law enforcement fail to react responsibly, state lawmakers, on the eve of re-election in 1994, enacted legislation placing restrictions of officer conduct on police vehicle pursuit involvement.

Having identified a relationship between technology, training, and policy, a commitment was made to create a partnership with private industry and foster interest with other law enforcement professionals. As a result, pursuit simulator technology became available in 1995. Likewise, statewide standardization of pursuit policy became reality - the result of which was renewed confidence and credibility by the public in police pursuit practices.

In the summer of 1995, the 9th Circuit Court of Appeals ruled in favor of law enforcement's use of vehicle identifier, locate and tracking as well as vehicle disabling technology. The court said that as a result of implemented policy and self-imposed mandates, including training, law enforcement's use of this technology was not a violation of a citizen's Constitutional rights. Further, the court said that law enforcement had used this technology reasonably and responsibly.

Following the court's favorable ruling in 1995, enactment of legislation occurred in 1996, which required mandatory sentencing for causing a pursuit. Immediately following in 1997, a second statute requiring the forfeiture of vehicle and driver's licenses for pursuit involvement was passed. Both laws gained widespread acceptance and support by law enforcement and the public.

The level of the public's acceptance of technology giving police more control of pursuits increased 121 percent between 1992 and 1999. With increased public confidence in technology coupled with the 9th Circuit Court's ruling 3 years earlier, vehicle manufacturers voluntarily began integrating vehicle identifiers in new vehicles in 1998. Two years later, at the turn of the 21st Century, enabling legislation was enacted requiring vehicle locate, identifying, and tracking devices in all motor vehicles.

Commissioner Whiteside smiled proudly as he heard his name called to accept his award. As he stood and walked to the podium to deliver his acceptance address, he knew how different these last 10 years could have been but for the wisdom of so many who had done what was necessary to make this award a reality.

Policy Considerations

Through scenario development, a diverse perspective of 3 possible futures involving police pursuits has been created. In order to mitigate the most likely and turbulent futures and achieve the desired future, the following potential policy considerations have been identified.

- Technology Development - Law enforcement agencies must develop a policy which will allow for the exploration of public and private technological resource providers.

- Exploration of Funding Sources - Sources, both public and private, which provide for funding of pursuit intervention technologies should be examined. Partnerships between the public and private sector industry should also be explored.
- Public Acceptance - Implement and promote a public awareness policy designed to inform, enhance and promote the acceptance of pursuit intervention technologies.
- Political Action - Law enforcement leaders gain support of local and state officials and become active to influence funding of pursuit intervention technology through court-ordered sanctions for pursuit involvement.

STRATEGIC MANAGEMENT

"The greatest thing in this world is not so much where we are, but in what direction we are moving."
O.W. Holmes

In the preceding chapter the issue question was identified along with trends and events likely to impact the issue and sub-issues analyzed, and scenarios developed. As a result, it was determined that the desired future of vehicle pursuit technology is dependent on how well the creators of the future are prepared.

What follows is a strategic management plan in which law enforcement administrators have the ability to become an architect for the future; the ability to assess and influence the trends and events analyzed in Chapter 1 to insure that they will or will not occur in their quest to attain the desired future; and the effective use and management of vehicle pursuit technology.

The purpose of this strategic plan is to alter the "most likely" future by anticipating events and modifying trends in an effort to direct law enforcement managers to the "desired" future. Scenario three identifying the "desired" future state has been selected for development within this strategic plan.

The Manhattan Beach Police Department is the identified subject agency for the Strategic Management Plan. However, the Plan may be modified to suit the needs and directives of any law enforcement agency regardless of size or makeup of the population it serves.

The Manhattan Beach Police Department is a full-service, law enforcement agency which serves a population of approximately 32,000 people with an approximate population mix of 91 percent White, 4 percent Asian, 4 percent Hispanic, and 1 percent African-American and others. The City of Manhattan Beach has a tax base which is primarily residential with a solid mix of commercial and light industrial. Located just 3 miles south of the Los Angeles International Airport, Manhattan Beach has a geographic area of approximately 4 square miles with immediate access to the San Diego Freeway located less than one mile from its eastern border.

The demographic makeup of the Manhattan Beach Police Department, sworn and civilian, is representative of the community it serves and 13 percent of the sworn ranks are staffed by female personnel.

Mission Statement

An important ingredient of this strategic plan is the development of a Mission Statement which will provide the men and women of the Manhattan Beach Police

Department with direction in the deliverance of their general and specific law enforcement responsibilities.

The Mission Statement consists of two parts: macro and micro. The macro is a general or overall Mission Statement while the micro is issue specific and provides agency guidance for strategic planning to attain the desired future.

The Manhattan Beach Police Department currently has a macro Mission Statement, which has been in existence for several years. The macro Mission Statement is: *"The maintenance of social order within strict ethical and Constitutional guidelines and the deliverance of police services that are responsive to the needs and desires of the community."*

The micro Mission Statement was developed as a part of this research by a panel of selected command staff representing a cross section of the Department. The micro Mission Statement is: *"To provide all residents and visitors within the City the perception of relative safety from the tragedy of injury or death caused by police pursuits. To ensure the ultimate identification and apprehension of violators through the effective use of advanced pursuit technology."*

Situational Analysis:

This process assesses the external environment in which the issue question will occur. Examination of the external environment involves identifying existing

opportunities and threats the Manhattan Beach Police Department must consider and analyze to effectively reach the desired future state.

The researcher selected members of the Police Department's command staff to form a Strategic Planning Committee. They were provided with the issue question and sub-issues, identified trends and events from Chapter 1, as well as environmental scanning material from the researcher's future file. The Strategic Planning Committee used the WOTS-UP (Weaknesses, Opportunities, Threats, Strengths and Underlying Planning) Methodology. In a brainstorming session, the panel identified external opportunities and threats. A discussion of the panel's findings follows:

Opportunities:

The Manhattan Beach Police Department enjoys strong support from the citizens it serves as well as neighboring communities. This support is exampled by an extensive list of volunteer-supported, community-outreach programs based within and orchestrated by the Police Department, as well as a high level of satisfaction as expressed through citizen surveys. Whether the issue is a grass roots campaign, a crucial vote at the local or county level, or the political process in general, the recognition of this support is important as it relates to the future acceptance, support, and potential funding of pursuit technology.

Correspondingly, the Police Chief is recognized as a progressive, influential law enforcement leader who actively addresses the need for continued pursuit policy review by the Los Angeles County Chiefs' and South Bay Chiefs' Associations.

With an abundance of aerospace and defense corporations located within the City and neighboring communities, a fertile knowledge-based technology market exists for developing new, as well as converting existing, technologies for civilian and law enforcement application. This conversion from military to civilian technology will promote the continued growth of the private sector by stimulating the local economony partially through Federal incentive programs.

Additionally, joint venture partnerships between the public and private sector will be stimulated through attempts to balance the federal budget by reduced military spending.

According to the Strategic Planning Commission, politicians are considering statutes that will impact pursuit involvement through enhanced penalties against violators which could be used to offset the cost of funding pursuit technology. These include: vehicle confiscation/forfeiture, increased fines and court costs, mandatory sentencing for pursuit involvement, and enhancement of the penalty from a misdemeanor to felony.

Threats:

Financial impacts to state agencies, local government and private industry continue to threaten law enforcement's ability to finance new programs. The result of decreasing military spending has impacted California aerospace and defense industries resulting in the loss of more than 154,000 jobs statewide since 1988.[28] Of this number, more than 63,000 jobs were lost from local aerospace and defense industries.[29] California, with only 12 percent of the country's population, depends on 20 percent of all domestic military spending. The very existence of the defense and aerospace employee has been affected because of a dramatic shift from the defense industry. The trickle-down effect has impacted every profession including the long-established sacred cow, civil service. The result has been unemployment, increased poverty, and decreasing real estate values.

California, once a magnet attracting new business ventures, has experienced a mass exodus of both large and small commercial business because of the ever-increasing costs of doing business in the "Golden State."

In response to this economic downturn, a reduced police budget is reality and its funding sources threatened. A concern follows that the application of pursuit technology will not be addressed by managers attempting to prioritize minimal or perhaps inadequate resources. Examination of the traditional organization structure must occur with an emphasis on balancing the costs of personnel versus

capital items and projects. Managers need to consider the option of right-sizing or flattening out the organization to allow for the funding of programs and development including that of pursuit technology.

Correspondingly, the public's demand for increased security from police pursuits mounts in the wake of concern driven in part by the media's tendency to shift towards real-time entertainment resulting in sensationalizing events instead of reporting the news.

The judicial system is paying close attention to officer conduct in vehicle pursuits. Tighter controls are being dictated, and immunity protection questioned. Statutes restricting police officer conduct and the banning of pursuits are being considered.[30]

Organization Capability Analysis:

This process assesses the internal environment in which the issue question will occur. Examination of the internal environment involves identifying and analyzing existing strengths and weaknesses of the Manhattan Beach Police Department using the same dynamics considered during examination of the external environment. The process involved the same panel of command staff and mirrored the brainstorming session previously discussed. What follows is a discussion of the identified strengths and weaknesses.

Strengths: The Manhattan Beach Police Department is served by a Chief of Police who is futures oriented and promotes strategic change. The Chief is supported by a relatively new, yet progressive, City Manager who along with the Department's command staff supports, through philosophy and policy, this direction of 21st Century planning.

Existing internal programs, as well as those being developed, are also indicative of the Department's desire not to remain satisfied with the status quo. Organizationally, the Department is reaching out to create partnerships internally and externally in order to build additional support within the community and neighboring cities. Technologically, the Department has enjoyed state-of-the-art equipment resulting in fertile ground and receptive attitudes for change at the rank of lieutenant and above.

Weaknesses: The Department is in transition. Within the last few years, the Department has experienced an increase in vacancies resulting in the hiring of a large number of new officers. This impact has resulted in 45 percent of the police officer ranks having less than 4 years' experience. There is potential for an additional 18 percent turnover rate, as a result of retirements, throughout all ranks during the next 2 years, resulting in the possible loss of focus and continuity toward any planned change.

While the Department's upper and mid-management structure is more than adequate to seek change, some weakness exists at the sergeants' ranks. Their flexibility in facilitating change is inadequate demonstrated by limited self-development and a continued alliance with line personnel. This weakness in first-line supervision will severely impact the implementation of any progressive pursuit intervention through technology. Emphasis will be needed on supervisory leadership, responsibility, and accountability. This becomes more difficult given the organizational culture which discourages risk taking.

Stakeholder Analysis: Stakeholders are individuals or groups who impact an issue, are impacted by that issue, and/or concerned about the issue. Their positions can be supportive, opposed, indifferent, or unknown. Unanticipated stakeholders, or those who appear to be unimportant to an issue if not planned for, can radically impact a proposed issue strategy. These stakeholders are called "snaildarters."

The panel made listings of stakeholder candidates and then evaluated the list. The goal was to identify those stakeholders with consideration given to their assumptions and position relative to the issue. It was important to identify stakeholders who would most likely influence the issue or be influenced by it.

A discussion of the most significant stakeholders (internal and external) and their assumptions about the issue follows: (s = snaildarter potential)

1. DOJ - DEPARTMENT OF JUSTICE
2. Insurance Industry
3. Automakers
4. Private Developers of Technology
5. ACLU - American Civil Liberties Union
6. Military (s)
7. Media
8. State Legislature
9. Courts
10. Motoring Public
11. City Council (s)
12. Police Union
13. California Police Chiefs' Association
14. Police Supervisors

Stakeholder Assumptions: After identifying the stakeholders, the panel identified certain assumptions about each group. These assumptions were made based on the projected concerns that each stakeholder would have concerning the issue. It should be noted that each assumption is identified by an alphabetic identifier; i.e., (a), (b), (c), and (d). This identifier is provided for use as a

reference point when viewing the Stakeholder Assumption Map illustrated in Figure 23, Page 63.

(DOJ) DEPARTMENT OF JUSTICE

Recognized throughout the state as a leader in the delivery and evaluation of law enforcement training through POST, DOJ is always looking for programs to professionalize law enforcement. (a) DOJ will recognize the importance of pursuit technology and support its use in the apprehension of the criminal offender. (b) Strong support will be evidenced through its leadership role at the state level.

Insurance Industry

(a) The insurance industry will support the application of pursuit intervention technology as long as it reduces its liability exposure. (b) However, strong resistance is anticipated if the costs negatively impact their profit margin. The support of the insurance industry is important to the question of subsequent civil litigation resulting from pursuit involvement. Technological advances which avert property loss will be supported.

Automakers

(a) Traditionally the automobile manufacturing industry has been a strong supporter of automotive, technological advancements which promote public safety.

(b) Seen as a strategic player to the issue, they will tend to apply pursuit technology only if its impact on product and sales is positive. (c) In the alternative, the automobile industry will oppose this technology application if public acceptance is low resulting in costs that reduce the profit margin.

Private Developers of Technology

(a) The private sector will recognize the commercial application of military and defense technology and (b) will play a vital role in the shift of pursuit-technology application from military to commercial use. (c) Private developers will view this as an opportunity to seize a potentially fertile market given that the public sector has limited capability for research and development. (d) This support will be important to the issue of technology availability and funding as the private sector will traditionally support any profit-making venture.

ACLU (American Civil Liberties Union)

(a) An advocate of civil rights issues, the ACLU may view the use of technology by law enforcement with suspicion and aggressively challenge its application to pursuit intervention. (b) Any action taken or used by law enforcement which is viewed as infringing on citizen's rights will be opposed. (c) This will be exemplified through their efforts to closely monitor the use of this technology, with emphasis on any misuse, (d) as well as actively directing their resources in an attempt to persuade the judiciary to decide issues consistent with their values.

Military

(a) The military is currently right-sizing and will view themselves as a primary source of technology. (b) While they may be somewhat reluctant to reveal technology intelligence, their involvement will be viewed as a win-win situation in their effort to create a partnership with the private and public sector by assisting in applying technical information relevant to the users' needs. Technology, once classified, is now available for conversion to civilian use.

Media

(a) The media is the public's primary source of information which results

(b) in a significant influence on the public's perception of law enforcement.

(c) There is significant competition among all media sources for readership, sponsorship and attention which drives some of them to sensationalize events and skew reports toward the negative elements of a story. (d) Interested in reporting on technology, the media through its use will tend to become a part of the events in the process of reporting them. This involvement could affect the active involvement of other stakeholders.

State Legislature

(a) Pressure from special interest groups, such as the California Police Chiefs' Association and others, may directly affect their responsiveness to act. (b) Legislators will tend to act carefully as they will view the use of pursuit technology

as a possible privacy issue and therefore shy away from direct involvement.

(c) While increasing state government's involvement to monitor use of pursuit technology, lawmakers may (d) defer responsibility of control to local legislative authorities or to a ballot initiative.

Courts

(a) The courts are closely scrutinizing pursuit involvement and tend to rule in favor of tighter controls on an officer's conduct when involved in a pursuit.

(b) While law enforcement cannot predict how the courts will rule in future cases, subsequent rulings on the application of technologies may invalidate their use of pursuit intervention.

The Motoring Public

(a) Concerned about their safety, the motoring public will support the application of pursuit intervention technology which preserves life and prevents or reduces property damage. (b) While this group of concerned citizens is supportive of more effective delivery of law enforcement service, (c) they will tend to oppose any new tax revenue required to fund its application.

City Council

(a) The reality of the political process suggests that the local body of policy makers will be supportive of the welfare of their constituents. (b) While

supporting any lead role that is taken by state lawmakers in the issue of pursuit resolution, (c) The city council will be reluctant to support subsequent, increased legal costs and judgments which result from police pursuits. (d) Concern is heightened in that the council has the final control of budget appropriations used to fund lawsuits and jury awards resulting from pursuits. (a) Concerned about officer safety, (b) the police union will want to be actively involved in the decision process relating to pursuit technology. (c) Taking the position of supporting those technological programs which are viewed by their membership as positive and which enhance their skills, (d) The union will oppose such technology if it is viewed as threatening to wages, working conditions, staffing levels or has a negative impact on officer liability.

California Police Chiefs' Association

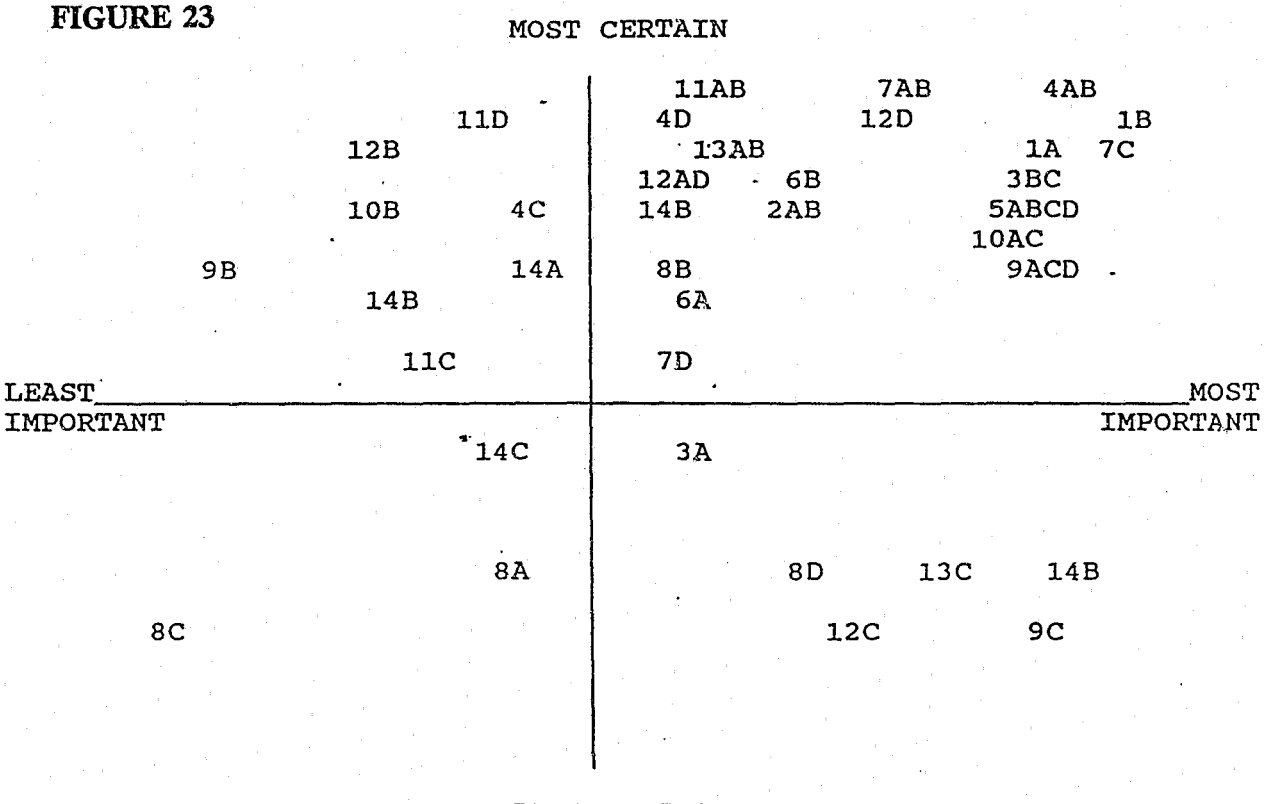
(a) An organization of politically active law enforcement leaders, this group will take a proactive role at the state level. The support of this organization is important to the pursuit technology issue given their powerful and influential potential. (b) Concerned about the increase in civil liability resulting from police pursuits along with the negative image of the law enforcement profession, (c) support of the increased use of pursuit intervention technology will be generated.

Police Supervisors

(a) Concerned about the issue of liability and officer safety, (b) supervisors will support pursuit technology if they are convinced of its effectiveness. (c) They will tend to view the management of this additional responsibility as threatening to working conditions and (d) will need to be involved in the decision-making process.

FIGURE 23

STAKEHOLDER ASSUMPTION MAPPING*



STAKEHOLDERS

1 DEPARTMENT OF JUSTICE	8 STATE LEGISLATURE
2 INSURANCE INDUSTRY	9 COURTS
3 AUTOMAKERS	10 THE MOTORING PUBLIC
4 PRIVATE DEVELOPERS OF TECHNOLOGY	11 CITY COUNCIL
5 ACLU	12 POLICE UNION
6 MILITARY	13 CALIF. POLICE CHIEFS' ASSOC.
7 MEDIA	14 POLICE SUPERVISORS

*Each stakeholder's assumption in relationship to the issue was mapped in relation to: (1) How important the stakeholder is to the issues and level of certainty that each assumption is actually correct.

Alternative Strategies:

Having completed the stakeholder analysis process, the next step for the Strategic Planning Panel was to develop alternative strategies for the Manhattan Beach Police Department. A discussion of the selected strategies, the advantages and disadvantages of each, and stakeholder perceptions follows. The criteria used by the panel members for evaluation in the formulation of these alternative strategies were: (1) the desirability of the strategy in the short term; (2) the strategies' overall feasibility; (3) the cost associated with the strategy; (4) the desirability of the strategy in the long term; and (5) stakeholder support of the strategy.

Strategy 1. **Create a partnership between law enforcement and private industry for the development of pursuit technology.**

This would involve a group of select law enforcement officials, representative of the state, county, and municipal levels working with private developers of technologies as sort of a technological council. Their responsibility would involve the identification of the technological needs of law enforcement relating to pursuit intervention as well as their subsequent feasibility and desirability.

Advantages:

This plan would stimulate technology research and development within the aerospace and defense industry while correspondingly energizing lagging employment within the private sector. This will result in the creation of a new

technological partnership between the public and the private sector through increased networking. In turn, the identification and delivery of future pursuit technological needs for law enforcement will improve, as well as the effectiveness in the application of this technology. This will create a win-win solution for public and private statekholders.

Disadvantages:

It will be difficult to overcome the bureaucracy within the public and private sector. Compromise will be important as stakeholders may have opposing viewpoints, and the shift in responsibility may be interpreted by some stakeholders as a loss of control and therefore threatening to their existence.

Research and development of any technology is not a short-term solution to an ongoing problem and carries with it a high cost factor magnified by a lack of public funding.

Stakeholder Perceptions:

Private industry will support and welcome the opportunity to expand technology markets. Recognizing the potential long-term benefits resulting from a joint venture with the public sector, private industry will maintain a sharp fiscal eye on their profit and loss ratio. POST will aggressively support the advantages derived from the shared cost, coupled with the availability of the needed technical

expertise and support resources. However, some resistance resulting from a perceived loss of control by automakers must not be underestimated although interested automakers may take a cautious, "What's in it for me?" attitude.

Strategy 2. **Alternative funding of pursuit technology through increased, mandated sanctions for causing pursuit.**

This would involve law enforcement agencies working with advocates, such as Peace Officer Standards and Training (POST), California Peace Officers' Association (CPOA), Peace Officers' Research Association of California (PORAC), and the California Chiefs' Association, lobbying state legislators for additional, mandated penalties resulting from pursuit causation. Increased sanctions would include court-ordered forfeiture of a felony violator's vehicle, with zero tolerance, coupled with increased court fines and penalty assessments for funding of pursuit technology. Additionally, funding would be realized through mandated, court-ordered installation/use of pursuit intervention technology in a convicted violator's vehicle - the cost of which to be paid by the violator.

Advantages:

This plan would receive broad-base public support and increase the public's perception of safety. Viewed as a deterrent to the violator, a reduction in pursuits, as well as fatalities and injuries from pursuits, would result.

Additional funding for pursuit technology and training would be created while waste of law enforcement resources would be reduced. This would equate to a cost savings to the community.

Disadvantages:

Increased pressure by lobbyists could result in lawmakers resisting this plan. Resistance from the ACLU may also occur because of being viewed as an erosion of the individual's civil liberties. The courts and penal system would also have an increased burden placed on them, and the plan may not achieve the desired effect of being a worthwhile deterrent. Also, possible abuse of asset forfeiture rules by officers at the street level may occur.

Stakeholders' Perceptions:

This strategy will be supported by the general motoring public who recognizes the hazards of vehicle pursuits and looks toward government for mitigation and protection. The public will support placing responsibility and accountability with the violator. Caution must be taken, however, as support could deteriorate if the public perceives government's actions as excessive or too costly.

Support would also appear evident from those agencies selected to provide advocacy. However, opposition from these agencies could surface as the result of current political forces, economic influence, and bureaucratic turmoil. Opposition

would correspondingly be generated from the liberal protectors of civil liberties, such as the ACLU, who would view this as government's continuing efforts to control, through big brother, the American public.

Strategy 3. **Implementation of identified pursuit technology.**

In conjunction with Strategy 1, establish a process to insure implementation of future safety and pursuit technologies. The support of POST, California Chiefs', other law enforcement advocates, and recognized state leaders is key to the successful implementation of vehicle pursuit intervention technology such as the vehicle disabler.

Advantages:

This plan increases the probability that law enforcement will receive pursuit intervention technology. Support will be garnered by the general public, law enforcement advocates, POST, and developers of technology while fostering partnerships between law enforcement and state leaders. Morale of law enforcement officers will also increase. Public safety awareness will be positively impacted while a major reduction in crime, such as auto theft, and subsequent use in related crimes, such as robbery, will be realized. There will also be a reduction in fatalities, injuries, and property damage resulting from pursuits.

Disadvantages:

There may be resistance from automakers because of the cost of technology which may result in enabling legislation being required to ensure compliance. Opposition may also be voiced from the ACLU over civil rights' issues, as well as resistance from law enforcement officers who fear change. Bureaucracy could also result in resistance from the politicians.

Stakeholder Perceptions:

This strategy will be viewed by the insurance industry, automakers, law enforcement advocates, POST, and lawmakers with support garnered if perceived as politically correct. Viewed from a public safety perspective, significant support will be expressed from state, county, and municipal governments through reduced liability exposure from death, injury, and property damage claims. Private developers of technology will be supportive depending on the "bottom line." In general, this strategy will be viewed as a potential win-win situation for all, exampled by a reduction in overall liability for government, increased profit for private industry, and safer streets for the American public.

Strategy Selection and Implementation:

The Strategic Planning Panel selected a synthesis of the 3 identified alternative strategies for implementation. This identified strategy includes: The creation of a partnership between law enforcement and private industry for the development of

pursuit technology; the development of a broader-based funding source; and the implementation of identified pursuit technology. Assessment by the Strategic Planning Panel indicates this is the most feasible and desirable approach in order to maintain stakeholder support and strategy integrity. The panel identified DOJ as the natural lead stakeholder and primary state agency whose core involvement is important for overall strategy success.

This strategy, while complex, can be viewed as a win-win situation if effective negotiation by key stakeholders occurs. It will be necessary to garner the commitment and support of other law enforcement stakeholders, such as the California Police Chiefs' Association, in order to convince DOJ that this concept is viable and that their active participation is required. Under DOJ control, it will be necessary to establish a Pursuit Technology Bureau armed with policy-making authority and control responsibility. The result will be a central source of pursuit technology recommendation, the ability of smaller agencies to access the information, and a continual evaluation and review process.

A positive response to this strategy by DOJ will occur if they are convinced that there is wide-based, stakeholder support, legislative authority and available funding.

Implementation will occur in 5 phases over a 60-month period with program evaluation and assessment continuing beyond indefinitely. Within the time frame reference for implementation, today indicates a future date identified to begin implementation.

Phase One: Today + 24 months

- Create a Pursuit Technology Bureau under DOJ control. This Bureau would be charged with policy authority and responsibility under which a technology council would be formed.

Phase Two: Today + 30 months

- Formation of a technology council representing both public and private sectors. This group's objective will be to identify technology from military, defense, and private sectors which can be shifted to law enforcement for use in vehicle pursuit intervention.

- Identify additional, participating key agencies representing law enforcement and private industry.

Phase Three: Today + 36 months

- Develop an alternative, broader-based funding source through lobbying the State Legislature for increased fees, fines, penalty assessments, and forfeiture authority.

- Development of a strategic plan by the technology council to insure focus on the identification and development of existing and future pursuit intervention technologies.

Phase Four: Today + 48 months

- Enhance and promote stakeholder awareness and acceptance of pursuit intervention technologies through the support of special interest groups, private technology providers, as well as state, county, and local lobbyists.

- Insure availability and implementation of identified pursuit technologies through development of co-sponsored funding sources evolving from the partnerships created between government and private sectors.

Phase Five: 60 months + ongoing

- Establish a technology standards and review task force committee charged with the responsibility of ongoing evaluation of the effectiveness, desirability, and use of pursuit technologies in accordance with changing stakeholders' needs and future trends and events.

TRANSITION MANAGEMENT

"If you don't know where you are going, every road will get you nowhere."
Henry Kissinger

Introduction:

As Richard Beckhard and Reuben Harris point out in their book, "Organizational Transitions - Managing Complex Change," the effective management of this transition phase is a process that assists in the implementation of strategies. A process that will allow law enforcement to effectively manage the future implications of pursuit technology.[31]

In the preceding chapters, the issue question: "What impact will technology have on police pursuits by the year 2002?" was analyzed; the desired future identified; and a strategic plan developed.

Implementation of the selected strategy, to occur over a 60-month period and beyond, involved 5 phases: Phase One calls for the creation of a Pursuit Technology Bureau which would be charged with policy authority under which a technology council would be formed. Phase Two requires the formation of a technology council representing both public and private sectors, as well as the ongoing identification of additional, key agencies representing law enforcement and private industry.

Phase Three calls for the development of alternative funding sources for pursuit technology through the lobbying of the State Legislature for increased fines, penalty assessments and forfeiture authority. Additionally, the newly created technology council must develop a strategic plan to insure continued focus on the identification and development of existing and future pursuit intervention technologies.

Phase Four involves the need to enhance and promote the stakeholders' awareness and acceptance of pursuit intervention technologies. Co-sponsored funding sources between government and the private sector are also required to insure availability and implementation of identified pursuit technologies.

Finally, Phase Five calls for technology standards and a review task force committee to be established. This committee will be charged with the ongoing evaluation of pursuit technology, with specific attention given to the technology's effectiveness and desirability.

What follows is a plan which will allow the organization a smooth transition to a desired future created by the new policy direction identified through the strategic planning segment.

Several approaches will be involved within the Transition Management Plan. Critical mass stakeholders, viewed as the most critical to the issue, will be analyzed and their commitment evaluated. A management structure will be developed to assist in motivating the change process, and assignment of responsibilities for support and implementation of the transition plan will be identified. Finally, implementation planning will be addressed.

The goal of this chapter is to provide a path by which change can occur, within an orderly and logical process, from where law enforcement is today to where law enforcement wants to be in the future.

Critical Mass:

Critical mass is defined as those people or groups who, if they actively support or resist a proposed change, will ensure that the change will occur or fail.

The first step of this Transition Management Plan is the development of a commitment strategy. From the group of identified stakeholders, it is necessary to further identify the critical mass - the minimum number of people or groups most important to the issue who, if they support the change, it is likely to be successful and who, if they resist or are against the change, it is likely to fail - as well as their "current" and "desired" level of commitment.

During a brainstorming session, involving the Strategic Planning Panel of the Manhattan Beach Police Department, stakeholders that are considered to be the critical mass, based on their relationship to this issue and ability to influence stakeholder support, were identified. These critical mass actors are:

- DOJ - Executive Director or designee
- CALIFORNIA POLICE CHIEFS' ASSOCIATION - President
- ACLU - Executive Director or designee
- AUTOMAKERS - Chairperson, Research and Development, Segment Planning and Engineering Division - General Motors/Toyota
- STATE LEGISLATURE - Chairperson, Assembly Committee on Public Safety
- MEDIA - Executive Editor of printed/electronic source such as the Los Angeles Times/Cable Network New (CNN)

Readiness Capability Charting:

Within the critical mass, not all actors are necessarily ready for the transition required for change. Some may not have the capability to change as easily as others and some may be neither capable nor ready for change to occur. Each actor in the critical mass needs to be evaluated so that a designed approach can be designed to address the specific needs of all the stakeholders.

Readiness Capability Charting is a method used to visually depict the readiness/capability of each member of the critical mass in relation to their participation in the strategic planning process. This evaluation also helps to identify those actors best prepared to lead specific change efforts identified within the strategic plan.

Table 7 below represents the researcher's assumptions about each of the actor's readiness and capability as it relates to the proposed change developed within the strategic management plan.

TABLE 7 Readiness Capability

Actors in the Critical Mass	Readiness Level HI	MED	LO	Capability Level HI	MED	LO
DEPARTMENT OF JUSTICE (DOJ) Executive Director or designee			X			X
CALIFORNIA POLICE CHIEFS' ASSOCIATION - President		X			X	
AMERICAN CIVIL LIBERTIES UNION (ACLU) - Executive Director or designee			X		X	
AUTOMAKERS - Chairperson, Research and Development Segment Planning and Engineering Division General Motors/Toyota			X		X	
State Legislature - Chairperson Assembly Committee on Public Safety			X		X	
Media, Executive Editor of printed/electronic source such as LA Times/Cable Network News (CNN)			X		X	

Commitment Planning:

Having identified the actors in the critical mass, the next task for the members of the executive staff committee was the identification of each actor's current level of commitment to the proposed change. The final step for the committee was to identify any shift in the current level of commitment that is required to implement successful change.

The level of desired shift is attained through negotiation as well as other intervention strategies which can be used to create the conditions for commitment. These intervention strategies are: Problem Solving, Educational Intervention, Resistance Management, Role Modeling, Changing Reward Systems, and Formal Collaboration.[32]

The level of commitment, and degree of shift in that commitment, does not have to be the same for all members of the critical mass. However, when the charting is complete and the "desired state" of the critical mass determined, there should be a minimum of one member in the "make change happen" category and ideally no members in the "block change" category.

Displayed in Table 8 on Page 79 are the desired levels of commitment for the critical mass actors for successful implementation of the strategic plan.

TABLE 8

Commitment Planning

Critical Mass	Block Change	Let Change Happen	Help Change Happen	Make Change Happen
DEPARTMENT OF JUSTICE (DOJ) Executive Director or Designee		X----------O		
CALIFORNIA POLICE CHIEF'S ASSOCIATION - President			X----------O	
AMERICAN CIVIL LIBERTIES UNION (ACLU) - Executive Director or designee	X---------O			
AUTOMAKERS - Chairperson, Research and Development Segment Planning and Engineering Division General Motors/Toyota			XO	
State Legislature - Chairperson Assembly Committee on Public Safety		X----------O		
Media, Executive Editor of printed/electronic source such as LA Times/Cable Network News (CNN)		X----------O		

Department of Justice (DOJ) Executive Director or Designee DOJ has a proven track record in the area of research and use of technology and will continue to play a significant leadership role within the California law enforcement community. DOJ is a primary agency whose core involvement is important to the ultimate strategy success. DOJ's commitment level will need to be moved from the "let change happen" category to the level of "help change happen." This can occur though the creation of a technology bureau under DOJ

control, armed with policy-making authority and control responsibility, resulting in a central source of pursuit technology recommendation.

(California Police Chiefs' Association) -President Operational at the local and state level, the synergy generated from the collective membership of this organization has a powerful and influential potential. While generally supportive of the increased use of technology, it is necessary to move their level of commitment from the "help change happen" to the "make change happen" category. This can be accomplished through enhancement of their leadership role and becoming proactive, as it relates to technology and its uses in the pursuit issue, at the city, county, and state level. Enhancement of CPCA's leadership role and proactive posture could occur through the creation of a partnership with the executive director of the California Peace Officers' Association's technology committee.

American Civil Liberties Union (ACLU) - Executive Director or Designee Opposition is strong as it relates to any technology which is perceived as infringing on citizen rights. This opposition is founded on the denial of freedom of movement andlack of due process. The ACLU is currently seen at the level of "block change" and will need to be moved to the "let change happen" level. This can be accomplished through the creation of a working relationship between the ACLU and law enforcement officials, at the executive committee

level, through the establishment of strong policies to prevent abuse, a clear mission statement, and an ongoing review process.

Automakers - Chairperson, Research and Development Segment Planning and Engineering Division, General Motors/Toyota The automobile manufacturing industry is currently in a position to "help change happen" and needs to stay in that strategic position. Assumptions attributed to this group indicate that they are strong supporters of automotive technological advancements and automotive pursuit technology systems which promote public safety. Technologies that are perceived profitable will be supported. Those that are not, won't. Their continued support can be garnered by bringing the Automakers on board in a partnership role during the initial stages and involving them during the planning process and problem-finding stages.

State Legislature - Chairperson, Assembly Committee on Public Safety Their current commitment level, a result of pressure from special interest groups, is seen as "blocking change" and will need to be shifted to the level of "help change happen." This "shift" can be accomplished through the combined efforts of the public and private sector through heightened education, lobbying, and negotiation to increase their interest, awareness, and involvement with a focus on program funding.

Media, Esecutive Editor of Printed/Electronic Sources such as LA TimesCable Network News (CNN) The current perception by the media of police pursuits must be shifted if change is to be successful. They must be moved from the "block change" category to the "let change happen" level. The power of the media is a reality as evidenced by the control they have over the public's negative perception of police pursuits through the orchestrated use of images and words. This necessary shift can be accomplished through a unified effort by law enforcement's leadership through education, problem solving, and in some instances forced collaboration. The unbiased reporting of pursuit technology will do much to promote its effectiveness in the eyes of other stakeholder.

Transition Management Structure:

The impact of change can have an adverse affect if not properly planned for and orchestrated. Therefore, the selection of a management structure, to be used during the transition phase, must be carefully selected. This transition management structure must possess flexibility, patience, and assertiveness coupled with the desire and ability to make the change happen.

Backhard and Harris write, while there are several management structures to choose from, the emphasis on selection should be a structure which creates the

least tension with the ongoing system and the most opportunity to facilitate and develop the new system.[33]

Upon consideration of these needs, as well as the elaborate scope of the proposed strategies, a synthesis of management structures, representatives of constituencies and a project manager have been selected.

The considerable power base from which each of the members of the critical mass rules, both vertically and horizontally, dictates the need for an executive committee. Selected from the members of the critical mass, the formation of this committee would assist in facilitating the equal distribution of formal power which would, in turn, assist in negotiations and group consensus.

As indicated in the previous chapter, the recommended alternative strategies are sophisticated in nature whose implementation demands more than just a casual commitment from interested stakeholders. Rather, a motivated and committed project manager (with the ability, responsibility, and authority to facilitate change) is required.

The project manager for each phase of the strategic plan would be selected by, and accountable to, the executive committee. The project manager will assume overall responsibility for his or her change program and would chair a task force

element formed from a cross section of the agencies and groups which the strategies serve. The project manager would be selected on the following attributes.[34]

- The clout to mobilize the resources necessary to keep the change moving; in a change situation, one is often competing for resources with others who have ongoing work to do.
- The respect of the existing operating leadership and the change advocates; a great deal of wisdom, objectivity, and linkage may be needed in order to make balancing decisions, such as how many resources to put into the new activity and at what pace.
- Effective interpersonal skills; a large part of leadership at these times requires persuasion rather than force or formal power.

Supporting Technologies and Implementation Methodology: The transition state differs from the present and future state. It has a specific time duration and is characterized by certain organizational dynamics. Specific and tangible technologies and techniques need to be used during this period which will help to dispel the anxieties and fears that accompany any change.

The following technologies have been selected for inclusion in the transition management plan:

Responsibility Charting - The executive committee and project manager should work together to further clarify the roles of the critical mass. Charting the responsibilities for all the critical mass actors involves analyzing each member's

actions and decisions which affect the change process. Charting these responsibilities provides role clarification through visual identification of each member of the critical mass, or actor's involvement, in either having Responsibility (R) for a task; Approval (A) or right to veto; Support (S) a resource role; or Inform (I) those who need to be consulted. Table No. 9 below is an example of Responsibility Charting completed by members of the executive staff of the Manhattan Beach Police Department.

TABLE 9

RESPONSIBILITY CHARTING

	ACTORS*							
DECISION/ACTION	1	2	3	4	5	6	7	8
Develop Mission Statement	A	R	S	S	I	I	I	I
Develop Goals and Objectives	A	R	S	S	I	S	I	I
Establish Pursuit Technology Council	R	I	A	S	I	S	S	I
Develop Program Strategy	A	R	S	S	I	S	I	I
Develop Timelines	A	R	S	S	I	S	I	I
Gain Support of Governor	R	S	S	S	S	S	S	S
Gain Support of Legislature	R	S	S	S	S	S	-	S
Program Coordination	A	R	S	S	-	-	-	-
Establish Public Awareness Program	S	S	S	R	S	S	S	S
Arrange Team Building Workshop	S	R	S	S	I	I	-	I
Negotiate Compromise	R	I	S	S	S	S	A	S
Prepare Budget	A	R	S	S	-	-	A	-
Seek Funding	S	I	S	R	-	S	S	I
Ongoing Review/Evaluation Process	A	R	A	A	S	S	S	S

*Actors

1 - Executive Committee
2 - Project Manager
3 - POST - Executive Director
4 - California Chiefs' - President
5 - ACLU - Executive Director
6 - Automaker - Chairperson Research and Development
7 - Legislature - Chairperson Assembly Commitee on Public Safety
8 - Media - Executive Director of Printed and Electronic Source

Legend:

R = Responsibility (Not necessarily authority)
A = Approval (Right to veto)
S = Support (Commit resources toward)
I = Inform (To be consulted)

Team Building - An effective tool, this technique can be used by the executive committee to identify problems and find solutions among team members which are associated with the implementation phase. Team building can be used for the basis of conflict resolution, as well as a foundation for enhancing communications.

Goals and Objectives - The executive committee needs to establish direction and provide clear goals for each project manager. During the transition state, anxiety runs high. By providing this direction team members will relax, thus being able to better focus on the objectives.

Communication - The project manager must remain active in his/her role of communicating a clear vision. This includes providing details, plans, and subsequent progress to stakeholders. An ongoing process, this serves to keep people informed, motivated, and their minds focused on the identified goal. Methods of communication which the project manager may employ include: formal and informal meetings, newsletters, and management by walking around.

Celebrations - Using employee recognition programs such as employee of the month awards, newsletters, commendations, and the press, the project manager and executive committee should identify special events and formally recognize these achievements. This will serve to keep stakeholders informed, motivate those involved, and enhance positive public perception.

Assessment and Feedback - A system of evaluating the progress of program implementation should be developed by the executive committee and project manager. This ongoing assessment and feedback through the use of surveys, evaluation assessment forms, and independent inspection teams will serve as a check and balance system to determine what areas of the implementation plan are working. And perhaps as important, what areas need re-evaluating. Equally as important, this process will instill heightened stakeholder confidence, reduce their anxiety, and foster cooperation.

SUMMARY AND CONCLUSION

"...Police agencies throughout the world are entering an era in which high technology is not only desirable, but necessary in order to combat crime effectively."[35]

The subject of police pursuits has long been a topic of discussion among law enforcement officers and the public they serve. The images of death and devastation resulting from an unsuccessful pursuit are occurring with increased regularity. This issue is both comprehensive and complex with far-reaching implications and no simple solutions.

The public, who at one time were accepting of the police pursuit, are no longer remaining silent on the issue. The mystique of a black and white speeding through a busy intersection with siren wailing and red lights flashing has diminished. The public are demanding that law enforcement address and effectively control this tool which is fast approaching a public safety emergency.

During the last 10 years, law enforcement has been impacted by mandatory rules, imposed restrictions, and regulations involving the use of deadly force and domestic violence. This trend will continue unless police pursuits are strategically managed.

It is this writer's belief that technology not yet identified, and its application to law enforcement, is a strategic part of that solution. Significant technological changes will become a reality within the coming decade. With these developments, however, will come opposition and resistance which police leaders must anticipate and through planning minimize.

The purpose and focus of this study have been to provide the Manhattan Beach Police Department and, in a larger sense, law enforcement in general with a planning tool for the identification, development, and implementation of state-of-the-art pursuit intervention technologies by the turn of the 21st Century.

The methodology used in the development of this planning document was to identify and forecast trends and events as they relate to the future question: *What impact will technology have on police vehicle pursuits by the year 2002?* Sub-issues were developed which further defined the issue question by asking: *What affect will funding sources, public and private, have on law enforcement obtaining pursuit technology? To what extent will public support affect the use and acceptance of this technology? To what extent will technology affect statewide, civil litigation generated from parties involved in police pursuits?*

These forecasts were then examined and analyzed to develop a series of futures with focus given to the development of the desired future scenario presented in

the futures forecasting and analysis chapter. Additionally, the Manhattan Beach Police Department was analyzed from assessment of its external environment's opportunities and threats, as well as the organization's internal strengths and weaknesses. Key stakeholders were identified accompanied by their assumptions and perceptions of the issue. Policy strategies were also selected for implementation if successful management of pursuit intervention technologies by law enforcement leaders is an expected reality. The following discussion and conclusions of this narrowly defined study are offered for the reader's consideration.

Significant change and advancement is waiting on the horizon within the application of satellite, laser and radar technologies - technologies which can be used by law enforcement for the intervention of vehicle pursuits; technologies which will allow law enforcement to systematically and safely locate, control and stop a fleeing vehicle.

The availability and effective application of this pursuit intervention technology is dependent upon funding and public acceptance. Partnerships between government and private industry at the local, state, and federal level which facilitate policy development to allow technology exploration are a necessity. However, opposition from the automobile manufacturers and civil rights organizations cannot be ignored. Through careful planning and a combined,

orchestrated effort of strategic management by the public and private sector, this resistance can be overcome.

Likewise, the public's acceptance of these technologies will be favorable if law enforcement's management and control through public policy is consistent with public opinion and perceived by society as beneficial. If in the alternative, the public view pursuit intervention technology as threatening to their welfare, law enforcement's ability to effectively apply these crime fighting tools will be negatively impacted.

Law enforcement officers may experience future increased, punitive damage awards because of a demand for officer accountability as pursuit technology becomes available and not used. However, the question of how civil litigation of those involved in pursuits might be affected by technology was not adequately answered in this research and should be considered for inclusion in future studies.

William Tafoya, a noted futurist, suggests that by 1997 state-of-the-art technology will be routinely used by the law enforcement community in crime reduction.[36] With a focused vision on the future, a clear memory of the past, and applying the concepts of futures forecasting, ***the responsible law enforcement leaders of the 21st Century will be prepared to greet the future with confidence, not surprise, by understanding, not ignorance.*** He or she will be prepared to have a positive influence on the future of police pursuits.

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