

HOW WILL POLICE AGENCIES PROVIDE QUALITY POLICE PATROL VEHICLES BY THE YEAR 2000?

An Independent Study

by

ROSS S. SUTTON

Lieutenant, Walnut Creek Police Department

California Command College

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This Independent Study Project presents an analysis of a future issue facing law enforcement. The goal of this project is not to predict the future. This project examines trends and events which may shape our future, and then proposes a strategic plan for attaining that future which we desire.

We must scan ahead and manage our future in order to maximize our chances of success and not let the future manage us after it becomes the present.

Acknowledgments

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EXECUTIVE SUMMARY

HOW WILL POLICE AGENCIES PROVIDE QUALITY POLICE PATROL VEHICLES BY THE YEAR 2000?

This study examines past, present, and future issues involving the acquisition of quality police vehicles for metropolitan police agencies. A brief history of the American automobile is presented prior to researching the future.

Futures research is presented in Chapter Two. A questionnaire was developed from both personal interviews and literature research. Ford Motor Company and Chevrolet Motor Division engineers were visited in Detroit, and an analysis of a police vehicle in the year 2000 was developed.

Future trends and events were then identified and analyzed through a Modified Delphi Technique. Five significant trends and events were selected and cross-impacted to assist in the development of three future scenarios relating to police vehicles in the year 2000.

Strategic planning to provide quality police vehicles was developed in Chapter Three. Policy alternatives were examined and stakeholders in the police vehicle issue were identified. A Mission Statement was developed to focus planning. A Modified Delphi Group was used to formulate six recommended strategies. These strategies included:

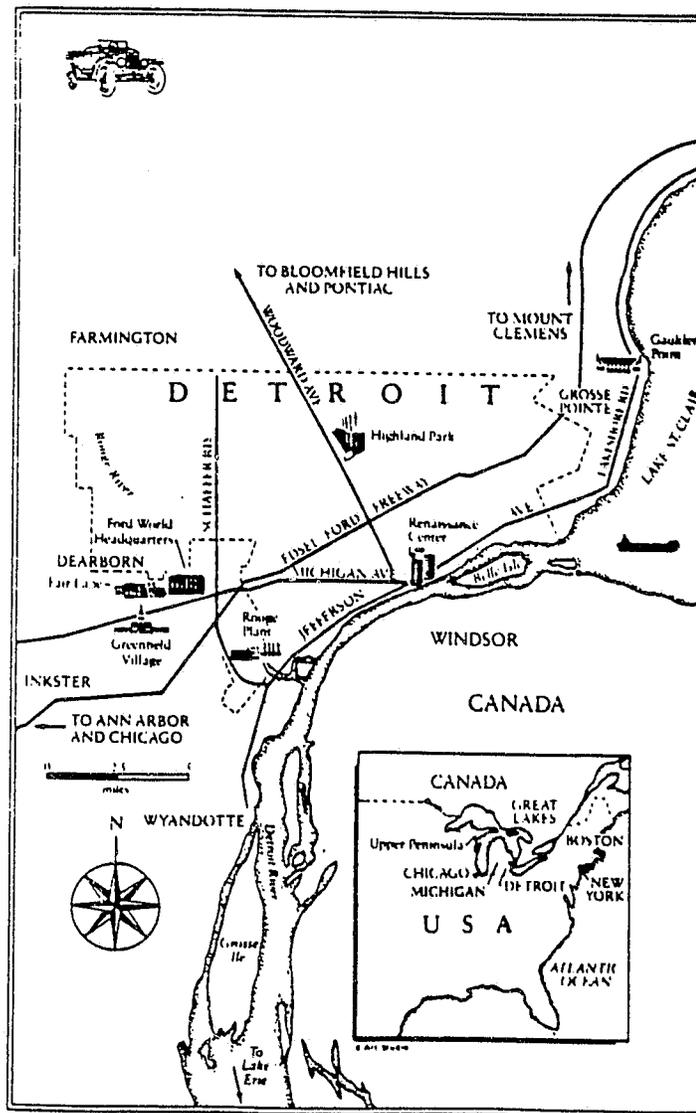
1. The formation of a Police Vehicle Task Force comprised of manufacturer representatives, fleet-maintenance personnel, municipal police representatives, and California Highway Patrol personnel.
2. Expansion of group purchasing programs.
3. Limitations on police package options by manufacturers.
4. A method to provide officer input for issues involving police vehicles.
5. The identification and development of innovative plans to acquire vehicles by police agencies.
6. The development of vehicle maintenance planning by police agencies.

The readiness and capability of individuals and groups critical to implementing the recommended strategic plans were analyzed in Chapter Four. A Transition Management Plan was developed to manage future change. This plan included:

1. The scheduling of a one-day conference for municipal police agencies throughout the state to discuss future police vehicle needs and acquisition. Manufacturer representatives and fleet-maintenance personnel should attend, and the conference should be managed by the Motor Transport Division of the California Highway Patrol.
2. The development of a Steering Committee to begin initial planning for a Police Vehicle Task Force.
3. The formation of a California Police Vehicle Task Force. Membership should include individuals representing municipal police agencies, manufacturers, fleet-maintenance, city finance, and the California Highway Patrol. The function of the Vehicle Task Force is to provide future police vehicle planning and acquisition.
4. The development of individual police agency quality circles. These groups should be comprised of critical mass personnel within individual municipalities and should meet regularly to discuss individual agency needs. This information should be forward to the Task Force.

CHAPTER ONE - PROBLEM STATEMENT

INTRODUCTION AND HISTORY



HOW WILL POLICE AGENCIES PROVIDE QUALITY POLICE PATROL
VEHICLES BY THE YEAR 2000?

CHAPTER ONE -- PROBLEM STATEMENT

Introduction and History:

Since the early 1800s, a method of transportation for American law enforcement, other than walking, has been necessary. This was especially true in rural areas of America. Prior to 1900 the horse served as the main mode of transportation for the public in general and law enforcement in particular.

The American public has been fascinated with the automobile since its advent in the 1890's. Originally developed as an invention or experiment, the automobile was soon refined, and in the early 1900's it was the preferred means of transportation for the American public. Between 1900-1908, no less than 502 American automobile companies were formed to manufacture automobiles (Lacy, 1986). The horse soon disappeared from American streets and roadways, and train popularity began its decrease. Larger automobiles were soon developed to accommodate families, and trucks were soon produced to deliver goods.

In the "teens and twenties" the visionary in American automobile production was Henry Ford. The Ford automobile was produced by Henry as a family transportation vehicle that the general public could afford and depend on. Henry Ford was the first to automate automobile production by using an assembly line

process. Model "T's" and Model "A's" were produced quickly and inexpensively. These vehicles were not fancy, but were reliable and affordable. They were produced by the Ford Motor Company "in any color you wanted, as long as it's black" (Lacy, 1986).

Police of this era began to use production vehicles for transportation. Other than exterior markings, police cars were unmodified American production cars. The "walking beat" was still the major patrol tactic for metropolitan and municipal police agencies (Rubinstein, 1973).

In the 1930's the American automobile became more comfortable and stylish. Larger V-8 engines were developed, as were electric starters and other mechanical improvements. Yearly body-style changes were made by manufacturers because the purchasing public demanded frequent change. Style, comfort and performance became the public need. An interesting letter is currently displayed in the Henry Ford Museum in Dearborn, Michigan. This letter was written by Clyde Barrows to Henry Ford. In the letter, Clyde praises the Ford automobile, and states he "steals Fords regularly because they are fast and dependable." Bonnie and Clyde died in a Ford during a police ambush a few months after the letter was written.

Early police radio systems were introduced by a few innovative police agencies during the 1930's; however, the basic standard production automobile was retained for police duty (Rubinstein, 1973).

In the early 1940's the entire focus of American manufacturing shifted to the war effort. Europe was involved in

World War II, and America soon entered the war. From 1940 through 1948 the war effort halted development in automobiles by the "big three auto makers." Ford, General Motors and Chrysler did not begin producing new and improved vehicles again until 1949.

In the 1950's the American public "rekindled its love affair" with the automobile. The war was over, and prosperity had arrived. Style and comfort were still highly desired, and models changed every September. In the "50's" a new emphasis was placed on speed and sporty styling. Overhead valve V-8 engines were developed and performance became the measure of success between manufacturers. "Super Stock" models were produced in the late 1950's by all three major American automobile manufacturers. The younger generation purchased these performance cars, and so did police agencies (Key and Thacker, 1987).

In the 1950's, police special equipment options (SEO's) were developed for police cars by manufacturers. These "police packages" included high-performance engines and transmissions, heavy-duty suspension and brakes, and other safety and performance options. These police packages, or SEO models, were first made available to police agencies (and only police agencies) during the 1950's (Churchill, 1988).

The 1960's and early 1970's brought continued expectations from the public for yearly design changes, comfort and performance in the American automobile. By the early 1970's foreign car manufacturers significantly increased sales in the United States. Foreign car sales in America escalated rapidly as the American public realized that the dependability and

craftsmanship of foreign automobile products were superior to American automobiles.

In the mid-1970's the fuel crisis hit America, and then not only did the American public demand quality, but it demanded economy. American automobile manufacturers were slow to respond, and foreign manufacturers increased their share of automobile sales in America. By the late-1970's, American automobile manufacturers were concentrating more on product quality and less on yearly style changes (Fleet Management Seminar, 1985).

During the 1970's Police agencies in America were purchasing SEO vehicles from General Motors, Ford and Chrysler. The majority of police vehicles during this era were Plymouth and Ford sedans. These four-door sedans were necessary for transportation duties, and comfort was not a primary concern. Items such as police radio systems, roll bars, push bumpers, post-mounted spot lights, shotguns, and roof-mounted emergency lights were all added police equipment. Many items such as AM/FM radios, air conditioning, individually adjustable front seats, and other "creature comforts" were not ordered or available in most SEO vehicles (Churchill, 1988).

During the 1980's the American automobile manufacturers made infrequent body style changes. Manufacturers concentrated efforts on improved quality, dependability and economy. Different automobile products produced by the same manufacturer used like body parts and power trains. Styling changes were minor between model years, and body designs seemed to copy those of foreign manufacturers. Five-speed manual transmissions were

popular in smaller vehicles, as were smaller engines with power boosting items such as turbo-charging and electronic fuel-injection systems. The fuel crisis seemed to be over, but it wasn't forgotten by the public or the manufacturers. Air quality became a Federal and State issue, and mandated fuel economy restrictions and pollution requirements were monitored. Many extras such as power steering, power brakes, disc brakes, automatic transmissions, and even air conditioning became standard equipment on most mid-sized and full-sized American automobiles (Jorgensen; Beal, 1989).

Many California police agencies suffered financial restrictions during the late 1970's and early 1980's due to reduced tax revenue. Since police vehicles are a major item in a police agency's equipment budget, many agencies experimented with cost-saving programs. Some agencies purchased Chrysler front-wheel-drive "K Cars," while other agencies refurbished their cars for continued service (Trombley, 1986). Take-home car programs were established to improve crime prevention and vehicle maintenance (Vostler, 1983; Record Searchlight, 1985), and some agencies experimented with vehicle leasing plans (Blair, 1980; Leffert, 1988). By the late 1980's Chrysler had announced that they were getting out of the police car (SEO) business, at least for a two-year period. This left Chevrolet and Ford as the remaining SEO producers of American automobiles. It was also unclear as to whether Chevrolet would continue its Caprice model as a rear-wheel-drive product, and the same was true for Ford and its Crown Victoria (Hapiak, Fleet Management Seminar, 1987).

These two models were the only SEO-equipped American sedans available for general police use.

The Present:

In 1989 the future of the SEO American automobile is unclear. Both the Ford Crown Victoria and Chevrolet Caprice remain the only police package SEO American sedans on the market (Ford Motor Company, 1989; Chevrolet Motor Division, 1989). Both are V-8 powered, rear-wheel-drive four-door sedans that are produced for a target consumer age of 57-60 years old (Jorgensen, 1989). During production, vehicles destined for police duty have SEO equipment items installed, which results in a police package automobile. Chrysler is out of the SEO business, and their return is questionable. The basic body style of the Chevrolet Caprice has remained unchanged since the 1977 model year, and the Ford Crown Victoria is also basically unchanged since the mid-70s.

The Chevrolet Caprice will experience a major design change in the 1991 model (Jorgensen, 1989), and the Ford Crown Victoria will also significantly change in 1992 (Beal, 1989). What these changes will bring is unclear, and is understandably a closely guarded secret of the respective manufacturers. Given the lengthy time span between major modifications of both products, it is reasonable to assume that the scheduled model changes in both products may significantly impact the police automobile of the year 2000.

The entrance into the automobile market by the Ford Taurus

and Mercury Sable series was a significant event. Instead of playing catch-up or copying styles of foreign models, Ford introduced a dynamic new automobile design. The Ford Taurus is a production model of a futures concept vehicle. This front-wheel-drive, smooth and aerodynamic vehicle may be a look into the automotive future to the year 2000 (Motor Trend Magazine, 1988).

Defining the Future:

The initial goal of this study is to identify the characteristics of a generic future American production sedan, and compare this vehicle to the future needs of police. This will be accomplished through a process of futures forecasting. Through futures forecasting and strategic planning, both police consumers and automobile manufacturers might work together to improve the future vehicle product. If, through future forecasting, it is determined that an American automobile product that meets the needs of law enforcement will not be available by the year 2000, then vehicle alternatives must be identified. Police agencies must be proactive rather than reactive, as effective management practices require planning for the future instead of reacting to it.

Project Scope:

The first goal of this project was to determine if American automobile manufacturers plan to produce models comparable to the current Caprice and Crown Victoria vehicles in SEO packages. If models are planned that will adequately address the needs of law

enforcement in the future, what will these vehicles be like? The designs of American automobiles change due to trends and events that impact manufacturers. Police needs also change due to social, technological, economical, environmental and political (STEEP) influences on police agencies.

This study will not address foreign-manufactured vehicles for police use. Some agencies have experimented with foreign made vehicles; however, the acceptance from citizens for police agencies purchasing foreign vehicles has been low as long as serviceable American made vehicles are available. It is felt that the purchase of foreign-manufactured vehicles by police agencies may be viable should larger American sedan SEO vehicle production be discontinued.

This study will also not examine alternative vehicles, such as mini-vans, motorcycles, bicycles or other non-sedan vehicles. Some police agencies are experimenting with vans (San Francisco Chronicle, 1987), and some highway patrol agencies use non-sedan police vehicles, such as the Ford Mustang, for traffic enforcement (Halloran, 1988; Ford Motor Company, 1989; State of Michigan, 1989). It is felt that these vehicles are purchased for specialized police uses, and the scope of this study will concentrate on providing quality police patrol vehicles that service metropolitan police agencies in the year 2000.

Methodology:

Past, present and future issues impacting future police vehicles will be identified through environmental scanning, and

a Futures Tree will be developed to analyze issues graphically.

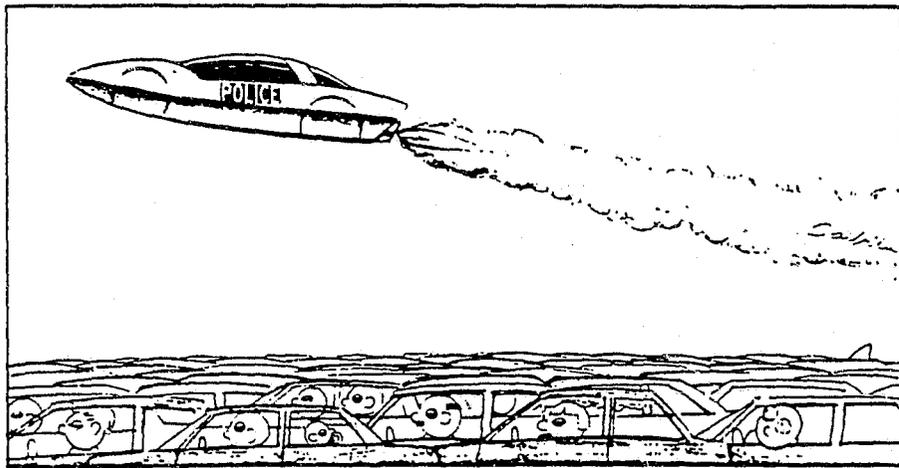
Literature research will be conducted to determine both current and future trends in automotive design, options and equipment. A questionnaire for identifying and evaluating vehicle concepts and equipment will be distributed.

Representatives from Ford Motor Company in Detroit Michigan and Chevrolet Motor Division in Warren Michigan will be visited and interviewed. A "Motor Trend" style vehicle analysis will be developed that reflects the characteristics of a police car in the year 2000.

A listing of Trends and Events that may impact future automotive designs and characteristics will then be developed through both literature research and personal interviews, and these Trends and Events will be reduced and evaluated through a Modified Delphi process. A Cross-Impact Analysis of Trends and Events will be completed from data collected from the Modified Delphi process. Future Scenarios will be constructed that depict the police environment and police patrol vehicles in the year 2000.

CHAPTER TWO - FUTURES FORECASTING

OBJECTIVE ONE - RESEARCH



JOE GOEBEL

CHAPTER TWO -- FUTURES FORECASTING

Statement:

The first objective of this project was to define and study the general issue of future police vehicles by using futures research methodologies. The topic question of this project is: How will police agencies provide quality police patrol vehicles by the year 2000? Five related issues from the past were identified. These are:

1. Has the modification of American production vehicles provided a satisfactory product for police patrol use?
2. Have other product options been attempted, and what was the success or failure of these?
3. What acquisition methods have been used to provide an effective fleet of police vehicles?
4. What programs have been identified or attempted by police agencies to decrease vehicle costs?
5. How have variables such as maintenance and care impacted or extended police vehicle life?

Present day emerging issues were then identified through discussions with vehicle fleet personnel and police administrators, through and review of related literature. Six issues were identified as being related to and having impact upon police vehicles. These six emerging issues were:

1. What economic issues today are impacting the ability of police agencies to supply quality vehicles?
2. Do present American SEO vehicles adequately fulfill the needs for police patrol vehicles?
3. What demographic or social issues of today are impacting the use of police patrol vehicles?
4. What legal or technological developments are affecting police vehicle use?
5. How do agencies fund for or purchase police vehicles? What are some of the current purchasing programs?
6. What communication links exist between police and manufacturers? Are these effective, and does an improved product result?

Future issues impacting police vehicles that may emerge by the year 2000 were identified. These issues were selected by environmental scanning and interviews with both police administrators and professionals in the automotive industry. These future issues were judged to be relevant based on their potential impact on the future, or future scenarios. Seven identified future issues were:

1. What future economic influences on local government may impact vehicle acquisition? Some local governments in California have, or are now experiencing, financial difficulty. Will this situation increase or decrease in the future?

2. Will the American sedan of the future meet the future needs of law enforcement?
3. What will the sedan of the year 2000 be like? Will SEO vehicles be produced? Chrysler is out of the police car business effective in 1989. Will Ford and Chevrolet do the same?
4. What is the future of American automobile manufacturers? Chrysler experienced financial difficulties that required federal loans. Will the "Big Three" survive in the future?
5. What innovative programs could be used to enhance the acquisition of quality police cars in the future? How can police agencies enhance this future product?
6. What future demographic and technological changes may impact the use of police patrol vehicles? Will problems, such as traffic gridlock, restrict the use of automobiles in the future? How will future technological advances in automobiles and police equipment interface?
7. What future political issues could impact vehicle production or police vehicle use?

Methods Identification:

The following research methodologies were used to develop information and evaluate the relevance of that information to the project issue:

- Environmental Scanning
- STEEP Typology
- Structured Questionnaires
- Personal Interviews
- Future Vehicle Analysis
- Relevance Tree Development
- Modified Delphi Technique
- Cross Impact Analysis
- Futures Scenarios
- Policy Considerations

These techniques were used to identify what automotive products will be available in the year 2000, and how those products will meet the future needs of law enforcement.

Environmental Scanning:

The concept of the police vehicle of the future was refined through review of related literature, professional journal articles, automotive trade publications, magazines, and newspaper articles. Literature scanning was conducted at the Peace Officers Standards and Training (POST) library in Sacramento. Through this process, numerous relevant professional and journal articles, as well as automotive testing studies were located. A request for relevant literature was forwarded to Motor Trend Magazine. They responded with articles and data, all of which were reviewed.

STEEP Typology:

Articles were also collected from newspapers and magazines, and additional materials were supplied by Command College classmates and others who were contacted regarding this project. This information was collected beginning January of 1988 through February of 1989. Articles and materials were assessed for trends and patterns. They were then categorized by their Social, Technological, Environmental, Economic, or Political issues (STEEP Typology).

Structured Questionnaires:

A questionnaire was developed using accumulated research data. This questionnaire categorized vehicle data into the major areas of Appearance, Roadability, and Performance. Subareas were identified in each group, and a Technical Data section was also included. Design trends identified by the research were included in each related section of the questionnaire (Appendix A).

Personal Interviews:

Arrangements were made to travel to Michigan and meet with Design and Engineering personnel at Ford Motor Company in Detroit and Chevrolet Motor Division in Warren.

In February 1989, one-day meetings were held in Michigan with both Ford and Chevrolet SEO engineers (Jorgensen; Beal, 1989). The scope and goal of this project was thoroughly outlined, and representatives from both manufacturers were told

that specific details regarding planned or future vehicles would not be discussed in this project. While visiting the Chevrolet Headquarters, the Platform, or design area, for the 1991 model Caprice was toured. During the two days of meetings, both Ford and Chevrolet engineers completed questionnaires. This finalized the data necessary to complete a "Motor Trend" vehicle analysis of a "generic" year-2000 police car (Figure 1-A). During the visit in the Detroit area, the Henry Ford Museum in Dearborn was toured. This museum provided information on past and future automotive design and manufacturing techniques.

Further interviews were conducted with professionals in the areas of vehicle fleet maintenance, automotive design and production, and police vehicle purchasing. Data on the history, present state, and future of the American automobile were collected in order to develop a basis for forecasting what a possible police vehicle might be like in the year 2000.

Future Vehicle Analysis:

The Automotive Design Department of California State University, Sacramento was visited. An interview on the future American-made sedan was conducted, and a concept drawing of the year-2000 police car was requested (Banta, 1989). A Future Vehicle Analysis summary was completed from research data. This summary includes a discussion of vehicle equipment and specifications, and a concept sketch (Figure 1A). Also included is a descriptive summary of vehicle appearance, comfort, roadability, performance and equipment (Figure 1B).



POLICE CAR 2000

GENERAL

Body type.....5-pass., 4 door
 Drive system.....front engine,
 computerized 4wd
 Base price.....\$25,500

ENGINE

Type.....V-8, liq. cooled,
 cast iron block,
 alloy heads
 Displacement.....300 cu. in.
 Induction system...multi-port
 computerized FI
 Valvetrain.....SOHC, 4 valves/
 cylinder
 Max. power
 (SAE net).....235 hp @ 4000 rpm
 Max. torque
 (SAE net).....2800 lb-ft
 Emission control...computer adjusted
 EGR/air induction/
 catalyst
 Recommended fuel...unleaded regular,
 Methanol/gasoline
 blend (M-80)

DRIVETRAIN

Transmission.....electronic 6 speed
 automatic

CAPACITIES

Crankcase.....6 qt.
 Fuel tank.....24 gal.
 Range.....520 mi.

SUSPENSION

Front/Rear.....coil springs, anti-sway bars, hydraulic
 double-action shocks, computer adjusted suspension,
 computer adjusted anti-slip/traction control

STEERING

Type.....4 wheel, ind.
 suspension
 Turning circle...30 ft.

BRAKES

Front.....individual
 computer adj.
 anti-lock
 Rear.....individual
 computer adj.
 anti-lock

WHEELS/TIRES

Wheel size.....15 in.
 Wheel type.....cast steel
 Tire size/
 construction.....P225/70HR15
 steel radial

DIMENSIONS

Curb weight.....3,800 lbs.
 Wheelbase.....114 in.
 Overall length...211 in.
 Overall width...75 in.
 Overall height...53 in.

SPECIFICATIONS

lbs./hp ratio....16/1
 EPA (city/hwy)...18/27

PERFORMANCE

Quarter mile
 Time.....15.5 sec.
 Speed.....91 mph
 Top speed.....130 mph

APPEARANCE: Rounded, wide and smooth sums it up. Body design is evolutionary from that introduced by Ford in its Taurus model in the late 1980's. The seamless body and fitted glass provide an aerodynamic design with a low coefficient of friction (2.0). Body panels are made of steel, with plastics used for bumpers, trim, fuel systems, and some remove/replace body panels. The frame and floor panels are aluminum alloy, and are attached to the sub-frame by a bonding process. Flush fit window glass reflects ambient light for safety and comfort. Flat paint finishes, such as flat-black, are available for easy maintenance and repair.

COMFORT: Improved seat design has increased comfort, and added width and headroom improves ergonomics. A "heads-up" display which projects vehicle functions onto the windshield is available. Analog gauges and an engine hour meter are standard, as are power windows and seats. A programmed ignition key locks the vehicle computer systems when removed from the ignition.

ROADABILITY: Individual computer monitored anti-lock brakes are standard equipment, as is a related anti-slip traction sensing system. The computerized "smart suspension system" adjusts vehicle suspension to road and driving conditions. Independent 4-wheel suspension with 4-wheel steering permits improved maneuvering and handling.

PERFORMANCE: The SEO 300 CID V-8 produces 235 bhp and increased performance. This modular-designed engine has four valves per cylinder, and the electronic multi-port injection system allow the use of unleaded gas or the new M-80 methanol blends. The belt-driven assists have been replaced with electronic units for increased performance and reliability. SEO police packages may be programmed for varied performance and top speeds through computer chip replacement. The new 6-speed electronically monitored transmission provides quick smooth acceleration with improved gas mileage.

EQUIPMENT: This model is truly a "rolling office." The on-board police computer is linked to other law enforcement computers through the police radio, and report writing via computer results in a near paperless environment through digital data transmission to a mainframe computer.

New roof-mounted spot lights have replaced the older post-mounted units, which do not mount to new vehicles. These lights are electrically adjusted by "joy-sticks," and face down when not in use.

Figure 1B

This Vehicle Analysis Summary is presented in a format which is used by Motor Trend Magazine to evaluate vehicles for their readers.

Relevance Tree:

A Relevance Tree was constructed to graphically analyze the police vehicle topic. The police vehicle topic issue was placed within the major trunk portion of the tree, and from this point related major issues were identified as branches to the trunk. Each major issue was then branched into less directly related sub-issues. Depending on the scope of the issues and the depth of analysis, this process can be continued through several levels to form a graphic issue analysis resembling a tree.

Three major issues and several sub-issues related to police vehicles were identified and plotted. The Relevance Tree provides both the researcher and the reader a visual map of the major issue and its related sub-issues (Figure 2).

1. Future Police Needs:
 - A. Budget Concerns
 - B. Equipment
 - C. Office on Wheels
 - D. Repair and maintenance

2. Manufacturer Issues:
 - A. Competition
 - B. State/Federal Requirements
 - C. Costs; SEO Limited Production

3. Other Unknowns:
 - A. Social
 - B. Technological
 - C. Environmental
 - D. Economic
 - E. Political

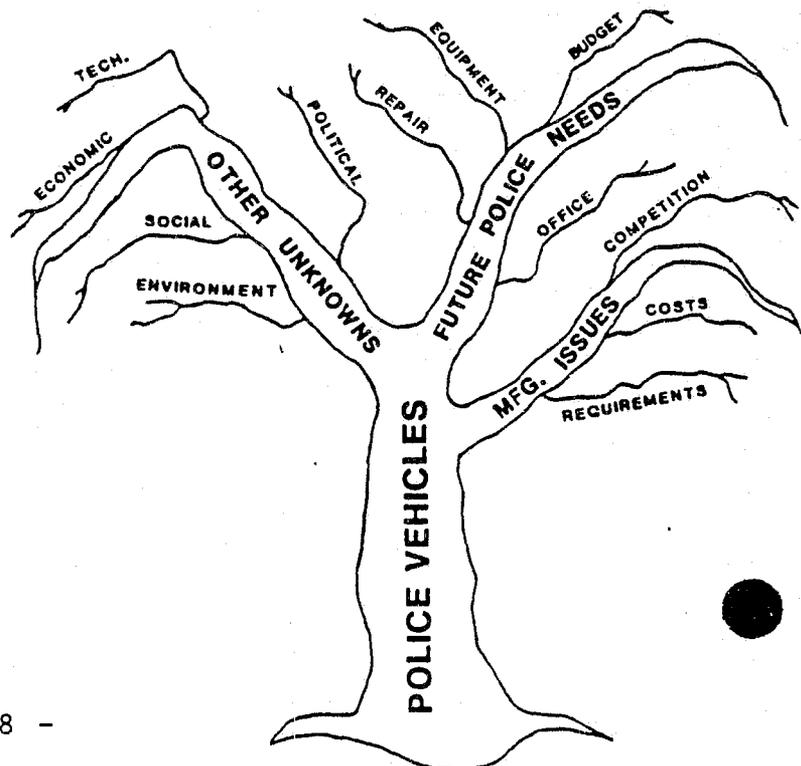


Figure 2

Modified Delphi:

The Modified Delphi process is used in futures research to provide a structured format for the evaluation of ideas on the selected topic. This process was used in this study to evaluate trends and events that might impact American automobile production between now and the year 2000. Prior environmental scanning produced an analysis of the police vehicle in the year 2000. The Modified Delphi process was then used to identify and evaluate trend and event impacts on that future product.

Prior to the Modified Delphi process, listings of proposed trends and events were developed. These lists were compiled from data developed during futures and environmental scanning, research, and interviews. A total of twelve trends and eighteen events were identified (Appendix B). These identified trends and events were reduced to seven significant trends and eight significant events for the Modified Delphi first round. Each trend and event was then expanded into trend and event statements that would be descriptive, clear and measurable. These statements are:

- Trends:
1. Fuel costs will increase.
 2. Traffic congestion in metropolitan areas will increase.
 3. Government taxing on fuel will significantly increase.
 4. Deterioration of roadways and freeways will continue.

5. Joint ventures between U.S. and foreign automobile manufacturers will increase.
6. Automobile insurance costs will continue to increase significantly.
7. Automobiles will last longer and be kept longer by owners.

Events:

1. An alternative fuel for gasoline will be developed.
2. The Stock Market will crash, or severe Depression will occur in the U.S.
3. Government-mandated limits on the use of private vehicles will occur.
4. A substantial Import Tax on foreign automobiles will be passed.
5. Foreign investors will obtain ownership of a major U.S. automobile manufacturer.
6. Bankruptcy of a major U.S. automobile manufacturer will occur.
7. Government maintained free public transportation will occur.
8. The Mid-East will halt oil shipments to the U.S.

Ten individuals were selected to participate in a Modified Delphi process. The basis for their selection was their expertise in automotive design, manufacturing, automotive fleet management, and automobile distribution (Appendix C). Participants were briefed on the scope of the project and the

goal of the Modified Delphi process. One purpose of the Delphi process was the evaluation of significant trends and events and the reduction of these to a workable quantity. A second purpose was the evaluation of selected trends and events in order to complete a Cross-Impact Analysis.

Participants in this process were mailed trend and event screening forms with instructions. This screening process was the basis for the first Delphi round of evaluation. The screening forms were designed to rate the value of long-range forecasting of trends or events. Participants were asked to examine candidate trends and events and their relationship to the topic of police vehicles. The candidate trends and events were rated on a scale which had a value range from "priceless" to "worthless." There was a final round of five trends and five events established through this screening process (Appendix D-1, D-2). Finally, in a second round of the Modified Delphi, evaluation forms were forwarded to participants for evaluation of the final five trends and events (Appendix E).

Trends:

Trends, which were defined as "shifts over a period of time resulting in change," were selected and evaluated. Five trends were selected as those most significant to the topic issue of this report. They were:

1. Fuel costs will increase.
2. Traffic congestion in metropolitan areas will increase.

3. Deterioration of roadways and freeways will continue.
4. Joint ventures between U.S. and foreign automobile manufacturers will increase.
5. Automobiles will last longer or be kept longer by owners.

Modified Delphi participants completed Trend Evaluation Forms. These forms requested the following estimations:

- Participants were first asked to estimate a point value of the trend five years ago (in 1984) based on a present-day (1989) value of 100.
- Participants then estimated the point level of each trend five years from today (1994). Two point estimations were asked of participants for this section. They were first asked where they felt the trend point level will be (Nominal Forecast), and they were then asked where they felt the trend point level should be (Normative Forecast). These value estimations were again based on a 1989 value of 100 for each trend. In general, assigned values could range from 0 to any score above 100.
- The second process was then repeated for ten years from today (1999).

The median scores for each of the evaluated trends were then calculated (Figure 3-A). The results were then individually charted, and an analysis for each trend in this process was developed:

TREND EVALUATION

TREND STATEMENT		LEVEL OF THE TREND (Ratio: Today = 100)			
		5 Years Ago	Today	* 5 Years From Now	* 10 Years From Now
FUEL COSTS WILL INCREASE DRAMATICALLY.	T-1	86	100	115 118	144 132
TRAFFIC CONGESTION WILL CREATE GRIDLOCK IN MANY METROPOLITAN AREAS.	T-2	80	100	135 123	170 144
DETERIORATION OF ROADWAYS AND FREEWAYS WILL CONTINUE.	T-3	68	100	113 111	132 124
JOINT VENTURES BETWEEN U.S. AND FOREIGN AUTOMOBILE MANUFACTURERS WILL INCREASE.	T-4	56	100	128 123	146 132
AUTOMOBILES WILL LAST LONGER OR BE KEPT LONGER.	T-5	99	100	108 110	113 108

Figure 3-A

* Top figure indicates value of will be.

Bottom figure indicates value of should be.

Trend Statement 1:

Fuel costs in the U.S. have increased and will continue to increase at a steady rate of approximately 15% per five-year period. This is expected to continue until after 1994. This rate of increase will double to a 30% increase in the five-year period between 1994-1999.

Trend Statistics:

1984 = 86%
1989 = 100%
1994 = 115% (Will Be)
 = 118% (Should Be)
1999 = 144% (Will Be)
 = 132% (Should Be)

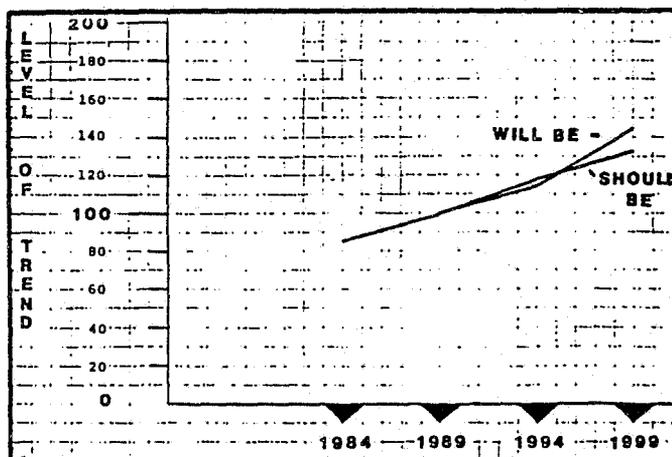


Figure 4

Analysis:

The rate of increase of 5% per five-year period was felt to be correct; however, the doubling of cost increases from 1994-1999 is twice the previous rate of increase. The Modified Delphi participants felt that some event, such as a fuel or oil crisis, might occur after 1994. This event could result in a doubling of the increase rate in fuel costs from 1994-1999.

Trend Statement 2:

Traffic congestion has increased 20% over the past five years in many metropolitan areas. This rate of increase will jump to 35% over the next five-year period (1989-1994), and continue at a 35% increase for each 5-year period through 1999.

Trend Statistics:

1984 = 80%
1989 = 100%
1994 = 135% (Will Be)
 = 123% (Should Be)
1999 = 170% (Will Be)
 = 144% (Should Be)

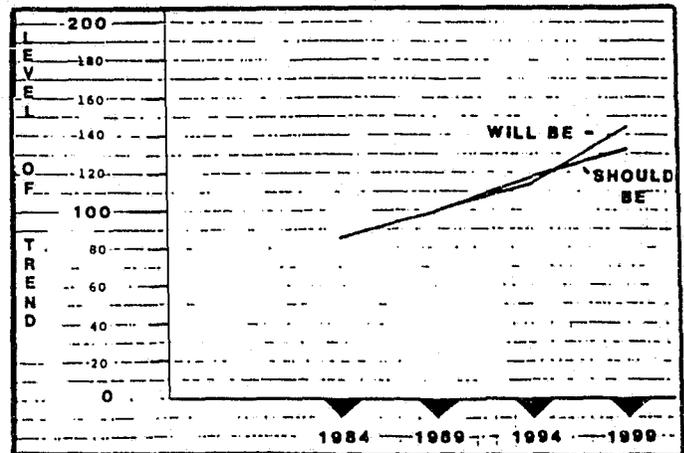


Figure 5

Analysis:

Traffic congestion has increased in metropolitan areas over the past five years at a 20% rate. The consensus was that this increase, given demographics and infrastructure, should be expected. Participants in the Modified Delphi felt that traffic congestion will increase 35% within the next five years, and an additional 35% between 1994-1999. This increase may be due to demographic or other variables. The participants believe that the traffic congestion and resulting gridlock issue will become worse, and there is little likelihood of decreasing or reversing this trend.

Trend Statement 3:

Roadways and freeways have deteriorated at a 32% rate from 1984-1989. This deterioration rate will decrease to 13% between 1989-1994, and 19% from 1994-1999.

Trend Statistics:

1984 = 68%
1989 = 100%
1994 = 113% (Will Be)
= 111% (Should Be)
1999 = 132% (Will Be)
= 124% (Should Be)

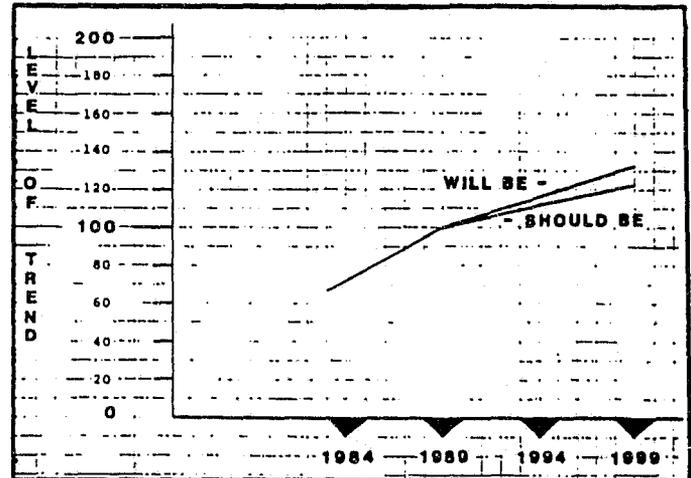


Figure 6

Analysis:

The condition of roadways and freeways has become significantly worse over the past five years. This situation is an important public issue, and it is reasonable to assume that Federal, State or Local government will make an effort to improve roadway conditions during the next five-year period. Several significant repair projects are currently planned in California. Consequently participants feel that the rate of deterioration will decrease to 13% during the next five years. An additional 19% decrease is anticipated between 1994-1999. Most importantly the participants noted that the overall condition of roadways and freeways will continue to deteriorate, in the future, although this rate of deterioration will decrease.

Trend Statement 4:

Joint ventures between American and foreign automobile manufacturers have increased 44% over the past five years. Continued increases of 28% in the next five years, and 18% between 1994-1999 will occur.

Trend Statistics:

1984 = 56%
1989 = 100%
1994 = 128% (Will Be)
 = 123% (Should Be)
1999 = 146% (Will Be)
 = 133% (Should Be)

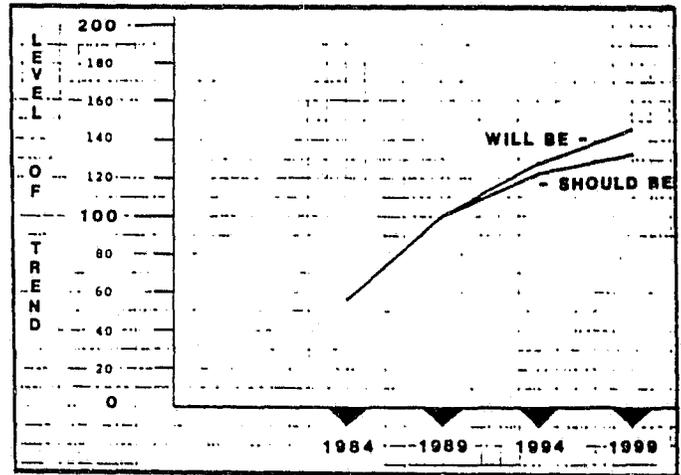


Figure 7

Analysis:

Joint ventures between American and foreign automobile manufacturers is a fairly recent and popular trend. Chrysler purchases a majority of their engines and other drivetrain parts from Mitsubishi Motor Corporation, and several of their models are made by Mitsubishi. Ford has a joint venture program with Mazda in the Ford Probe. The Chevrolet Geo series is made by Suzuki, and prior joint venture autos were manufactured with Toyota in the U.S.

Modified Delphi participants feel that the joint venture trend will continue at a fairly steady rate for the next ten years; however, participants concluded the increase rate may be slightly higher than it should be.

Trend Statement 5:

Automobiles are lasting the same amount of time and are being kept by consumers the same length of time today as they were five years ago (about 5 years). This trend rate will increase very slightly during the next ten years.

Trend Statistics:

1984 = 99%
1989 = 100%
1994 = 108% (Will Be)
= 110% (Should Be)
1999 = 113% (Will Be)
= 108% (Should Be)

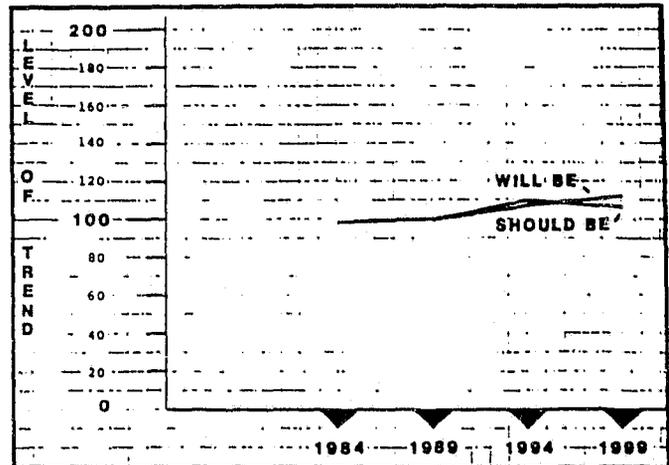


Figure 8

Analysis:

The trend of cars lasting or being kept longer by consumers may increase slightly; however, the participants feel that this trend is normal and will probably not be influenced by other trends or events. This trend will vary slightly with time and is fairly predictable.

Events:

Events were defined as "a one-time happening that brings about change." The original eighteen identified events were reduced to eight, and then further reduced to a final five through the event screening process. Events can impact single or multiple issues dramatically (Appendix D-2).

These final five events were then evaluated by the Modified Delphi participants:

1. An alternative fuel for gasoline will be developed.
2. The Stock Market will crash, or severe Depression will occur in U.S.
3. Government mandated limits on the use of private vehicles will occur.
4. A substantial Import Tax on foreign automobiles will be passed.
5. Bankruptcy of a major U.S. automobile manufacturer will occur.

Modified Delphi participants were mailed Event Evaluation forms, and participants were asked to provide the following estimations:

- Estimate the first year in which each event's chance of occurring exceeded zero (the first year the event could occur).
- Estimate what the possibility was (in a percentage) of each event occurring within five years (by 1994), and also within ten years (by 1999).
- Estimate the impact of each event on the topic issue of future police cars if the event occurred. This impact was rated on either a positive 0-10 or negative 0-10 scale, depending on whether the event would cause a positive or negative impact.

Evaluation results were then averaged and charted (Figure 3-B).

EVENT EVALUATION

	EVENT STATEMENT	PROBABILITY			IMPACT ON THE ISSUE AREA IF THE EVENT OCCURRED	
		Year that Probability First Exceeds Zero	Five Years From Now (0-100)	Ten Years From Now (0-100)	Positive (0-10)	Negative (0-10)
E-1	AN ALTERNATIVE FUEL FOR GASOLINE WILL BE DEVELOPED.	1993	11	63	+1.7	-1.6
E-2	THE STOCK MARKET WILL CRASH, OR SEVERE DEPRESSION WILL RESULT IN U.S.	1992	19	40		-6.6
E-3	GOVERNMENT MANDATED LIMITS ON THE USE OF PRIVATE VEHICLES WILL OCCUR.	2004	9	30	+1	-3
E-4	A SUBSTANTIAL IMPORT TAX ON FOREIGN AUTOMOBILES WILL BE PASSED.	1993	40	58	+4.7	
E-5	BANKRUPTCY OF A MAJOR U.S. AUTOMOBILE MANUFACTURER WILL OCCUR.	1997	27	37		-3.3

Figure 3-B

Event Statement 1:

Modified Delphi participants felt that the first year an alternative fuel for gasoline could be developed is 1993. In five years (1994) the chances of alternative fuel development are 11%; however, this probability increases to 63% in ten years (1999). There was a split in opinion as to the impact of alternative fuel development on the issue of American automobiles (+1.7/-1.6).

Analysis:

The differing opinions as to the positive or negative impact of the development of an alternative fuel on American automobile production may be due to conflicting impacts. One conclusion may be that the development of a fuel other

than gasoline may ease environmental problems or decrease America's dependence on foreign oil. It is also possible that the development of an alternative fuel could negatively impact America's economy through decreased gasoline production, or result in a less efficient or desirable automobile.

It is interesting to compare this event with Trend Statement 1. The trend evaluation of fuel costs indicates a belief that significant increases in fuel costs will occur between 1994-1999. This may result in increased operating costs for police agencies. The belief that an alternative fuel will be developed by 1999 compares favorably with the belief that gasoline costs will increase during the same time period. Research supports the probability that the American production automobile in the year 2000 will have a plastic fuel system and should be equipped with an electronic fuel-injection system enabling automobile engines to burn fuels other than gasoline. If alternative fuels are developed, those cities which provide their own fuel pumps may experience additional costs in converting fuel pumps to these fuels. Decreased costs for alternative fuels may result in decreased operating costs for police vehicles. Automobile manufacturers are planning today for an alternative future fuel.

Event Statement 2:

Modified Delphi participants felt that the first year

the Stock Market could crash or a serious Depression could occur is 1992, and the odds of this event happening prior to 1994 are 19%. These odds increased to 40% by 1999. The results from a severe depression or economic disaster by the year 2000 could impact the financial ability of police agencies to purchase quality equipment such as police patrol cars. Tax revenues for cities would surely decrease during economic hardship. The negative impact of this event on American automobile production would be significant (-66%). There were no positive impact votes cast by participants for this event.

Analysis:

Participants concluded there is a 20% chance of a Stock Market crash or serious Depression occurring within five years and a 40% chance of occurrence within ten years. Through analysis of Event 5, participants also estimate that a 37% possibility exists that one of the three major American automobile manufacturers will go bankrupt by 1999. Difficult economic times for American automobile manufacturers could impact American produced SEO police package vehicles. These vehicles are produced in minimal numbers and require excess assembly-line time due to special equipment installation. There are only two American automobile manufacturers who presently produce police package automobiles. Chrysler is out of the police package market. Should Ford or Chevrolet stop police package vehicle production due to financial difficulties, only one

vehicle manufacturer would remain. Police agencies would not have a product choice, and police vehicle prices, equipment and quality could be controlled by one manufacturer.

Event Statement 3:

Modified Delphi participants do not believe that government mandated limits on the use of private vehicles will occur until after 2000, even though roadways and freeways will continue to deteriorate (Trend Statement 3) and traffic congestion will increase significantly within the next ten years (Trend Statement 2). There is a 30% possibility that government limitations on private vehicles will occur by 1999. An event of government limitations on vehicles using public roadways will have a negative impact on American automobile production.

Analysis:

The passing of legislation limiting vehicle use would not be popular with the public. Such legislation would not be supported by voters or legislators unless traffic and ecology situations were critical, and no other reasonable alternatives were available. Development and use of an alternative fuel, such as a blend of 80% methanol and 20% gasoline (M-80) could ease air-quality problems, but traffic congestion will probably not improve in the future (Contra Costa Times, 1989). Increasing traffic congestion would result in decreased police response time to calls, and may

result in an increasing number of violent crimes. Poor police response times and increasing numbers of violent crimes traditionally result in citizen dissatisfaction and decreased citizen support for local police agencies.

Event Statement 4:

Modified Delphi participants concluded that passing a substantial Import Tax on foreign automobiles could occur by 1993, and there is a 40% chance that it will occur by 1994. The probability of this increases to 58% by 1999. This event was viewed as having a significant positive impact on the American automobile industry (+47%) if it did occur.

Analysis:

A substantial Import Tax on foreign automobiles could result in an increase in joint ventures between American and foreign automobile manufacturers (Trend Statement 4), and could also improve the financial stability of American automobile manufacturers (Event Statement 5). The establishment of an Import Tax on foreign automobiles could result in increased vehicle sales in the U.S. by American manufacturers. The cost of new Import Taxes would be passed on to American consumers who purchase foreign vehicles. Foreign automobile costs would increase, while American automobile costs would remain unchanged or would possibly decrease. This event may result in decreased vehicle costs and improved police vehicles for police agencies.

Although participants were limited to applying events

and trends to the topic issue, this event could have a significant impact on other issues, such as the National Debt and Foreign Trade.

Event Statement 5:

Modified Delphi participants felt that bankruptcy of a major American automobile manufacturer would not occur before 1997. There is a 27% chance of bankruptcy occurring by 1994, with an increase to 37% by 1999. This event was evaluated as having a definite negative impact on American automobile manufacturers (-33%) if it did occur.

Analysis:

This event relates to other trends and events such as joint ventures with foreign automobile manufacturers (Trend Statement 4), a Stock Market crash or serious Depression (Event Statement 2), or an Import Tax on foreign automobiles (Event Statement 4). The bankruptcy of a major American automobile manufacturer relates to police vehicles by increasing vehicle purchase costs, reducing product choice, and increasing vehicle maintenance costs.

Cross-Impact Analysis:

Relationships between Trends and Events are examined through a Cross-Impact Analysis. Some of these relationships were discussed in the previous section. The Cross-Impact Analysis Matrix graphically shows interrelationships, and estimates what impact each event would have on other events and trends should it

occur first (Figure 9).

EVENTS ▼	EVENTS					TRENDS					
	PROBABILITY →					44	70	32	48	13	
	1	2	3	4	5	1	2	3	4	5	
1	63	X	45	20	58	25	40	75	32	48	13
2	40	25	X	10	30	80	55	40	25	30	35
3	30	75	50	X	40	50	55	45	20	30	25
4	58	63	25	30	X	20	44	70	32	55	13
5	37	63	50	30	70	X	44	70	32	60	13

Figure 9

Assume an event in the left column of the Cross-Impact Matrix did occur. An increase or decrease of probability of other events or trends occurring (noted across the top of the Matrix) can be estimated. This is accomplished by locating an event in the left column of the Matrix, and either an event or trend in the top column. Locate the figure in the box which horizontally and vertically intersects the event and event/trend compared. By comparing the figure in this intersecting box to the original probability assigned the trend or event in the top column, an increase or decrease in probability can be estimated. An example would be:

Should the Stock Market crash or severe

Depression occur in the U.S. (Event 2), the probability of traffic congestion creating gridlock in many metropolitan areas (Trend 2) will decrease from its originally forecasted probability of occurrence of 70% to a probability of 40%. This could be due to fewer commuters driving to work daily, and less money available to operate automobiles.

It is apparent that the economic stability and industrial health of the American automobile industry fluctuates with the economic and environmental health of citizens and communities. The ability to maintain a healthy economic condition in the U.S. will enhance stability in the American automobile industry, while a decline in the economic condition of American automobile manufacturers will negatively impact the economic condition of the U.S.

Future Scenarios:

Scenarios are designed to present various forecasts of the future in an organized format. A scenario is written in narrative form, and presents an historical perspective from a writer in the future. The scenario is not a prediction of the future, but rather a gathering of related data in a "short-story" format. It is designed to present a basis for alternative choices in strategic planning.

Three future scenarios were developed from research and

trend and event data. These scenarios depict metropolitan law enforcement in the year 2000, with emphasis on police patrol vehicles and related equipment. Three different styles of scenarios are presented.

Nominal Future Scenario:

The first scenario, a Nominal Future Scenario, presents a perspective from a future which data suggest is the most likely to occur. In this scenario, none of the predicted events have occurred, and current or past trends have transited into the future in a natural or expected progression.

October, 2000:

Ford, Chevrolet and Chrysler models for 2001 were released last month. The new Chevrolet Caprice and Ford Crown Victoria models reveal few exterior design changes over last year's models; however, improvements in computer monitoring and mechanical functions continue to result in reliable and dependable American made automobiles. Major exterior design changes in Ford and Chevrolet have not occurred since the early 1990s; however, both manufacturers have announced that models with dynamic new exterior designs will be released within the next 3 years.

Chryslers Elegante was first released in 1996, and this joint-venture Mitsubishi Motor Corporation American-made automobile has been accepted well by American consumers. The full-sized four-door sedan was first produced in an SEO police package in 1997, in an effort by Chrysler to recapture a share of

the police and taxi market, which Chrysler abandoned in the late 1980s.

Most metropolitan police agencies in California continue to purchase police package vehicles through cooperative purchasing agreements with the California Highway Patrol (CHP). All three major American automobile manufacturers continue to participate in a yearly bidding process with the CHP, and the specifications for SEO police vehicles are established by the State. Agencies desiring modifications of state-contracted police package vehicles may special order these modifications through the CHP Motor Vehicle Acquisition Department in Sacramento. The waiting period between ordering vehicles through the state and receiving ordered vehicles has increased over the past several years, and currently averages ten months. Most municipal agencies order police package vehicles with V6 engine options. This is due to decreased vehicle costs with this option, and the limited need for quick acceleration and high-speed driving due to daytime congestion and gridlock in most metropolitan areas. The passage of police non-pursuit legislation two years ago has also reduced the need for added police vehicle performance.

Growing personnel shortages in municipal police agencies and severe traffic congestion have required police vehicles to become "rolling offices." Officers must work out of their cars. Going off-the-air at the station during a shift is not permitted. Officers are required to stay on their beats during their shifts. Increasing traffic congestion and officer shortages require these actions to control increasing police response times to details.

These actions have decreased the morale of officers. Police radio traffic has been controlled somewhat by manufacturer-installed cellular telephones in most police package vehicles. Police response times to dispatched details continues to worsen, and some larger cities have experienced lawsuits as a result of the inability of police to respond to emergency calls.

Dwindling city revenues and decreasing budgets for many metropolitan police agencies have resulted in police agencies keeping their patrol vehicles in service far beyond their normal life-expectancy. This situation promotes police vehicle breakdowns which often contribute to acute traffic congestion and poor response times. Much of the reason for increasing vehicle down-time and poor maintenance is that vehicle repair costs have become an expense nightmare for many agencies. This is because electronic and computer assists can no longer be repaired by traditional automobile mechanics, and there is an increasing need for specially trained Factory Diagnostic Specialists to troubleshoot problems. Repair costs and vehicle down-time continues to increase, while officer morale decreases.

Turbulent Future Scenario:

The second scenario presented is a Hypothetical System Change Scenario with a Turbulent Future. This scenario provides a perspective from a future where events identified through the Modified Delphi Process which have a 30% or greater probability have occurred. All events identified by the Modified Delphi participants in this study are presented in this scenario.

1999; Sacramento, CA.

Expenditures for the purchase of 50 newly refurbished CHP patrol cars were passed by Council last night. The average mileage on vehicles in this fleet is 60,000; however, they will be serviced and repainted prior to delivery to the city. The current cost of \$25,500 per unit is reasonable, considering that these are SEO police package automobiles. Ford quit producing police package vehicles in 1995, and General Motors has not produced a police package model since eliminating the Caprice in 1994. The second and final bankruptcy of Chrysler last year eliminated that product from the market. These vehicles will be a welcome addition to the deteriorating fleet of city police cars.

The severe decline in the American Stock Market, and the following Depression of 1994 dealt a death-blow to Chrysler, and crippled both Ford and General Motors. The legislated Import Tax on foreign automobiles has kept both Ford and G.M. operating, but the impact on U.S. foreign trade and foreign oil prices has been disastrous for the U.S. economy. The Ford Escort, which was the number one imported car in the world from 1989-1993, has now been priced out of the foreign market by other countries. Ford is struggling to avoid collapse.

The methanol-blend fuels that were introduced in early 1993 due to increased costs of foreign oil and skyrocketing gasoline costs have made some positive ecological contributions. The federally legislated Clean-Air Act of 1993, which required the development of methanol fuels, has resulted in much-improved air quality in Sacramento and other metropolitan areas.

Public roadways in Sacramento, and most other areas of California, continue to deteriorate. Funds for roadway repairs are limited. The traffic congestion and gridlock experienced in downtown areas during the early and mid-90s has been eliminated by the depressed economy, and the homeless situation is becoming a critical problem for the city. Escalating crime rates create public outcry for police action; however, minimal funding and reduced city revenues continue to reduce police personnel and equipment replacement.

Slice-of-Time Scenario:

The last scenario presented is a Slice-Of-Time Scenario. This scenario jumps ahead to a future time and describes how stakeholders think, feel, and behave in this future environment.
Friday, 1 May, 1999:

Officers Wiltz and Jake walked across the police parking garage to the waiting patrol car. Jake checked the exterior of the car for damage, while Wiltz opened the driver's door of the new Chevrolet and slid in. The engine was started, and a quick check of the heads-up display on the windshield indicated all systems and levels were "go." Jake entered and sat in the passenger seat.

Wiltz turned on the police computer system and inputted both of their identification numbers. While the car warmed up, they checked the computer screen for cases that had occurred in their sector while they were off duty, hot sheet information, their computer mail, and weekly calendar entries.

These new cars were something! They were fast and smooth, while serving as a rolling computer and dispatch center. The computer was data-linked by radio to the Main-Frame System at City Hall. All reports were processed on the car computer and electronically transmitted to police records. The car itself was as impressive as the electronics. There were lots of head and interior space in the 4-door sedan. It cornered like a cat with the electronic suspension system and 4-wheel steering. The fuel injected V-8 was quick and responsive, and the increased power from the M-80 fuel was superior to outlawed gasoline. Visibility was vastly improved with the new structural glass, and the electronic 8-speed transmission provided optimum power and economy.

Traffic congestion was heavy when they left the lot and headed west on Main Street. The new fuels had really helped the air quality, and the decreased costs over gasoline had provided a windfall of tax revenue to improve roadways and fund mass transportation projects. BART in northern California, and LART in Los Angeles were due to link by high-speed train along the I-5 route within 18 months.

Jake suggested an outing to the beach on Sunday. Both officers agreed to check with their husbands and make final plans after lunch.

Policy Considerations:

The following is a discussion of policy alternatives, selection criteria, and policy impacts on the relevant trends and

events presented in the Nominal (most likely) Scenario. It is necessary to clarify how policies, if implemented, would assist in bringing about a desired future or decrease the probability of an undesirable one occurring. The goal of this section is to identify targets for strategic planning.

Policy Alternatives:

The following policy alternatives were selected from data presented in the Nominal Scenario. These alternatives identify possible policy topics which address those trends and events discussed in the scenario:

1. Acceptable American-made SEO police package vehicles will continue to be manufactured in the future. A vehicle task force which represents municipal police agencies should be formed to communicate future police needs with automobile manufacturers.
2. Police vehicles will become more difficult and costly to maintain. Training, planning and maintenance alternatives must be developed.
3. Individualized agency ordering and vehicle purchasing is not cost-effective. An effective group purchasing plan should be developed.
4. Future vehicles equipped for police use will increase in expense. Police agencies must plan now for innovative purchasing plans to provide quality police vehicles in the future.
5. Future police vehicles may be impacted by legislation, demographics, legal actions and law enforcement trends. These "impactors" should be identified by law enforcement and examined

by manufacturers.

Selection Criteria:

Criteria which should be examined in the selection of policy topics for strategic planning should include:

1. Are the policy costs affordable? Can these costs be identified, funded and managed?
2. Is the policy politically feasible? Can it be structured and managed?
3. Will the policy be effective and timely?
4. Does the policy address identified trends and events?
5. Who are the stakeholders? What support is required?
6. Who will benefit? Are there winners and losers? Will the public benefit from and support the policy?

Policy Impacts:

The selected policy alternatives all favorably address the identified policy criteria, and their impact is expanded in the following discussion:

1. Police Vehicle Task Force:

American made SEO police package automobiles will continue to be manufactured in the future by at least Ford and Chevrolet. These vehicles will be improved in design and mechanics, and basic exteriors will not undergo a major design change until sometime after the year 2000.

Police and American automobile manufacturers need a forum to communicate needs. This communication should provide an improved

automobile product while reducing costs for both manufacturers and police. The California Highway Patrol should continue SEO police package automobile testing; however, this agency should operationalize a police vehicle task force to include representatives from varied metropolitan police agencies in the state. The task force should include SEO Engineers from those manufacturers which do or will participate in the police vehicle bidding process. This group should include Chrysler. Municipal representation is necessary as Highway Patrol vehicle needs differ from those of municipal police agencies.

2. Vehicle Maintenance:

Police package vehicles will become more difficult and expensive to maintain due to increased electronics and computerization in both the manufactured vehicle and police equipment added by law enforcement. Those agencies who provide their own vehicle maintenance must train and equip mechanics for these vehicles of the future, and those agencies who contract with outside vendors for maintenance must insure the competency of those vendors. Both maintenance costs and down-time of vehicles will increase without proper planning.

3. Group Purchasing:

Purchasing of municipal police vehicles should be arranged through the California Highway Patrol Motor Transportation Section. Manufacturer bids for vehicles which meet set standards should be published for municipal police agencies, and these agencies should be able to purchase from any bidding manufacturer which best conforms to individual agency needs.

To reduce both manufacturing and purchasing costs, manufacturers should limit special ordering of SEO police package vehicles. Vehicles should conform to the specifications set forth by a state vehicle task force for municipal police vehicles; however, they should then be limited in ordering to set packages. Special orders cause delays in production and delivery, and cost manufacturers money in increased assembly-line time. Manufacturers should offer police SEO vehicles which are limited to equipment packages of no more than 3 classifications (A, B and C packages, which contain different package options). This would enable manufacturers to plan production, and would result in some conformance between ordering agencies.

4. Future Costs:

Future police package vehicles will increase in cost because several option items will become standard equipment in the future. Computerization and electronics will add to cost, as will the increases in added police communications and computer equipment. Agencies must now develop innovative plans to purchase and maintain future police vehicles. Leasing programs or revolving accounts should be explored.

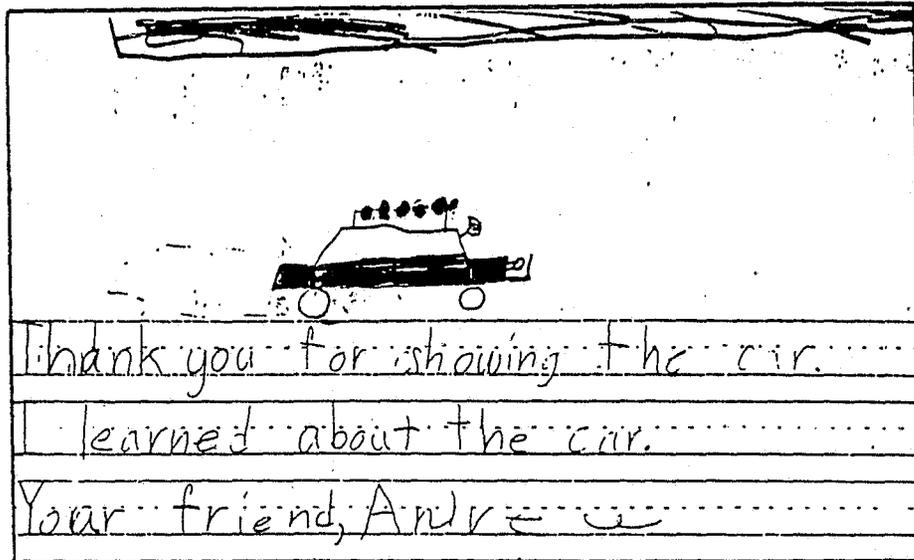
5. Police Variables Impacting Future Vehicles:

Municipal police agencies need to review items such as speed-performance standards for municipal police package vehicles. Litigation and traffic congestion will limit police high-speed driving in municipalities. Quick acceleration and handling will be needed; however, the need for top-speed performance will be decreased.

Driver comfort and room will become increasingly important as officers are required to spend more time in their vehicles. This is due to directed patrol activity and expanded electronic communication capability from the vehicle. Police needs should be discussed with manufacturers, as current trends in law enforcement will impact future police vehicle needs. These trends are currently not communicated to manufacturers, and thus limit their ability to design quality police package vehicles for the future.

Police personnel must also discuss future trends and needs concerning police vehicles. Officers should have input regarding police vehicle needs, equipment and safety. The use of quality circles may improve communication and planning for the police vehicle of the future, and insure input from all levels within police organizations.

CHAPTER THREE - STRATEGIC PLANNING



CHAPTER THREE -- STRATEGIC PLANNING

Statement:

The second objective of this study is to establish a method for metropolitan police agencies to provide quality police patrol vehicles by the year 2000. This is accomplished through strategic planning. Quality patrol vehicles are defined as:

1. **Vehicles which are comfortable and roomy.** The patrol car of the future will be the officers "rolling office." It will contain communications and computer equipment which will enable officers to complete work without returning to a police station. Traffic congestion, called-for services, and directed patrol activities will require officers to remain on their beat or sector during their work shift. The effect of this will be that officers will be spending extended periods of time in their patrol cars.
2. **Vehicles with quick acceleration and good handling.** Future police cars in metropolitan areas will require improved maneuverability and handling characteristics. Top speed performance will not be as important as acceleration. This is due to traffic congestion and possible restrictions on police high-speed driving.
3. **A four-door sedan vehicle.** Necessary for prisoner transportation, and the added room is required for

equipment and comfort. Two-officer patrol-team tactics are used today in many metropolitan areas, and this tactic may increase due to officer safety issues.

Violent crimes against police in metropolitan areas may continue to increase in the future.

4. **Police patrol vehicle safety.** Officer safety will continue to be an issue within police agencies. Patrol cars which are kept in-service long after they should be retired may develop into an equipment safety issue for police unions (Kerr, 1989). If not addressed, this issue could result in legal actions and poor agency morale. Safety items such as driver-side air bags are required by 1990; however, the significant safety issues of the future may well be vehicle condition and maintenance.

Vehicles which are kept in-service beyond their projected replacement date often experience increased down-time for repairs and increased repair cost. Chances of officer injury due to accidents may increase, which may increase agency liability and decrease service levels and response times due to vehicle and manpower shortages.

Replacement costs for police package patrol cars in the year 2000 are estimated to be in excess of \$25,000 (in future dollars). This is assuming that SEO police package vehicles are still produced. Maintenance costs on these new vehicles will be high due to complicated

electronics and other added police equipment.

5. **Vehicles must be adaptable to new equipment.**

Costs are increasing for complex electronic systems designed into new vehicles and electronic support equipment added to vehicles by police agencies.

Communication between vehicle manufacturers, equipment manufacturers, vehicle maintenance personnel, and police users is necessary to insure that vehicles and equipment support each other.

Potential future police vehicle problems should be noted.

These problem areas have been discussed previously; however, they should be identified or anticipated for future planning. These future problems include:

Increased maintenance costs. Future police vehicles are more complicated to diagnose and repair, and training for repair personnel is costly.

Purchasing. The police vehicle of the future will be expensive to purchase.

Reduced choice of vehicles. Chrysler is out of the police vehicle market. If predicted hard economic times impact other American automobile manufacturers, police package American vehicles may not be available.

Vehicle acquisition. Delivery time between ordering and receiving new police vehicles is increasing. Vehicles purchased by metropolitan police agencies through cooperative purchasing with the California Highway Patrol have established cut-off dates for ordering. Vehicles ordered through a bidding process with independent local dealers may be higher in price, and delivery times are extended due to line down-time for production. A possibility also exists that local dealers would object if they were removed from the purchasing cycle for police package vehicles by a state-wide acquisition program with the California Highway Patrol.

Methods Identification:

The following methods were used to develop information for strategic planning:

- Interviews
- Sample Model Police Agency Identification
- WOTS Up Analysis
- Current Capability Analysis Model
- Assumption Analysis
- Modified Policy Delphi
- Stakeholder Identification and Analysis
- Mission Statement Development
- Policy Statements and Strategy Development
- Evaluation Planning

Interviews:

Personal interviews were conducted with manufacturer representatives, fleet-maintenance personnel, vehicle-acquisition personnel, and metropolitan police department representatives. The results of these interviews are categorized and summarized below:

Manufacturers: There is a sincere desire to communicate with police officers regarding vehicles and equipment. Chevrolet and Ford get police trend "feedback" through vehicle testing and standards set by The Michigan State Police and the California Highway Patrol. Both of these agencies conduct extensive vehicle testing; however, their vehicle needs differ from metropolitan police agencies because their main functions are traffic enforcement and accident investigation on highways and freeways. Engineers from both manufacturers were interested in metropolitan police trends which might impact their products.

Manufacturers would like to decrease ordering and manufacturing difficulties. SEO police package vehicles require design and testing time by manufacturers due mainly to additional wiring for added police equipment. Standard sedans which are designed for a consumer target age group of 57-60 years old must be modified for heavy-duty use by police and cab companies. The elimination of special ordering numerous options by various police agencies, and the agreement to produce limited levels of police package vehicles is worthy of discussion. These ideas may reduce ordering time and ease production problems and costs for manufacturers. The manufacturers are planning ahead for

future production vehicles and new fuels. They spend large amounts of money on research and development; however, communications with metropolitan police agency customers is minimal.

Fleet Maintenance: Police fleet maintenance people do communicate with manufacturers and each other through professional groups and seminars. Smaller police agencies normally contract for vehicle maintenance with local automobile dealers, while larger cities staff their own maintenance and repair facilities. Communication with police officers, manufacturers, and state testing and purchasing personnel could be improved. Vehicle technology is changing rapidly, and schooling in new techniques is time consuming and expensive. New repair and testing equipment is also expensive. Many problems are electrical instead of mechanical, and electrical malfunctions will continue to grow with computerization of vehicles and more sophisticated police equipment.

Vehicle Acquisition: Local automobile dealers may not be supportive of state-operated purchasing of police package vehicles; however, very few dealerships are involved in providing police package vehicles to police agencies. The majority of current municipal police package vehicle purchases results from purchasing agreements with the California Highway Patrol. The possibility of state organized purchasing of police package vehicles for metropolitan police agencies now exists, and the expansion of this program is worthy of discussion. The limiting of options to specific vehicle packages was suggested as an option by Jay Emery, Motor Transport Section Manager of the California Highway Patrol. The organization of a task force involving municipal police representatives, manufacturer representatives, and State Motor Transport personnel is a viable planning option.

Police Personnel: Police management and labor representatives were interviewed regarding the future of police vehicles and future planning strategies. Officers would like to see quality police vehicles provided for future police duties. Officers currently spend a majority of work time in their vehicles, and feel this trend will continue to increase in the future. They desire safe, comfortable, reliable, state-of-the-art equipment. The issues of comfort and safety could result in legal actions against police and city administrators if these conditions deteriorated and corrective action was not taken (Kerr, 1989). Line-officers would like to be involved in vehicle selection and equipment.

Police budget managers report that approximately 15% of a police department's budget dollars are spent on things. The remaining 85% is spent on people. Police vehicle maintenance and replacement is a major expense item with the

15% supply and equipment portion of a police budget. During difficult economic times, police agencies and cities may "target" programs and equipment (the 15% supply and equipment area) for reductions. It is more difficult and less popular to reduce employee wages or numbers of personnel (the 85% personnel area). Difficult economic times for cities could result in a deterioration of police vehicles. This could be in conflict with desires of line or labor personnel, which may lead to legal conflict. Police budget managers would be interested in innovative ways to acquire future quality police vehicles.

Small task forces or quality circles were viewed a positive way to involve line-officers in decision making and improve internal communications. Quality circles are defined as scheduled meetings attended by workers who discuss their work environment and recommend improvements or problem solutions to management which improve products, methods or work environment. Quality circles are an American management principle which has been effectively used by Japanese companies. The key to the success of quality circles is the support of management. Without management support and action on recommendations of workers, Tom Peters suggests that the quality circle concept will deteriorate into "another way for management to jerk labor's chain" (Peters and Austin, 1985; van Gigch, 1978).

Summary of Interviews, Research and Issues:

Past, present and future issues identified at in the beginning of Chapter Two of this study (Futures Forecasting) were compared to accumulated research and interview data. These areas are evaluated as to their impact on the topic issue of future police patrol vehicles. The following is an analysis of this comparison:

Past issues:

1. **Has the modification of American production vehicles provided a satisfactory product for police patrol use? Yes.** A quality police package vehicle has been available in the past. These vehicles have met testing and equipment requirements set by both the Michigan State Police and California Highway Patrol. (Michigan State Police, 1986, 1988; Lacy, 1986; Parker, 1982).
2. **Have other products been attempted, and what was the success or failure of these? Very few other products have been attempted for replacement of**

American police patrol vehicles. A few agencies have placed foreign made vehicles in service; however, public response was not positive. Some agencies in the early 1970's purchased Checker automobiles; however, these were not well accepted by officers, and were also an American-manufactured vehicle. Some police agencies have used mini-vans for metropolitan police patrol (San Francisco Chronicle, 1987).

3. What acquisition methods have been used to provide an effective fleet of police vehicles?

- Group purchasing through the California Highway Patrol (Emery, 1989).
- Vehicle leasing programs (Blair, 1980)
- Vehicle lease purchase agreements (Leffert, 1988).
- Revolving budget items for purchasing and maintenance (Churchill, 1988).

4. What programs have been identified or attempted by police agencies to decrease vehicle costs?

- Walking beats in downtown areas.
- Alternative transportation means such as motorcycles and bicycles (Sutton, 1984).
- Take-home police car programs (Hanley, 1978; Record Searchlight, 1985).
- Vehicle refurbishment programs (Sutton and Cameron, 1982; Trombley, 1986).
- Preventative vehicle maintenance programs (Churchill, 1988).

5. How have variables such as maintenance and care impacted or extended police vehicle life?

Take-home police car programs have had a positive impact on car care and vehicle life. Vehicle refurbishment programs have resulted in life extension of some metropolitan police patrol vehicles of 10 years and 180,000 miles of service (Sutton and Cameron, 1982; Churchill, 1988). Preventative maintenance programs have also resulted in maintenance cost savings, reduction of vehicle down-time, and extended vehicle life (Churchill, 1988).

Present Issues:

1. What economic issues of today are impacting the ability of police agencies to supply quality vehicles?

Decreasing revenue for some cities is reducing their budgets. Often, a "first target" for budget cuts in police agencies may be equipment, and police vehicles are a major item in this category. Increased vehicle costs, support equipment costs, and maintenance costs are also contributing economic issues.

2. Do present American SEO police package vehicles adequately fulfill the needs for police patrol vehicles? Yes. Both Ford and Chevrolet vehicles meet standards set by testing agencies (Michigan State Police, 1989; Emery, 1989; Halloran, 1988; Stokes, 1989).

3. What demographic or social issues of today are impacting the use of police patrol vehicles?

Increasing traffic congestion in metropolitan areas contributes to decreasing police response times and other social issues. Traffic congestion was identified as the number one problem in the San Francisco Bay Area according to a 1988 survey conducted by the Bay Area Economic Forum (Refer to Appendix F). Deteriorating infrastructure also creates vehicular congestion and frustration. Legal actions against police agencies for vehicle operation have increased in both numbers and liability costs.

4. What legal or technological developments are affecting police vehicle use? Some driving techniques of police are under public scrutiny. The use of police roadblocks and high-speed vehicle pursuits have resulted in citizens becoming injured or killed by both fleeing criminals and pursuing police vehicles. These accidents have resulted in legal actions against agencies and officers. Officers involved in these interventions also increase their risk of injury or death. More California police officers were killed in 1987 due to automobile accidents than were killed by weapons (Department of Justice, 1988). Some agencies have adopted non-pursuit policies, and most agencies conduct periodic driver-training programs which are supported by California Peace Officers Standards and Training (POST).

Technological improvements in electronics and communication equipment has resulted in a need for more vehicle interior room. These improvements take space and increase police package vehicle costs due to wiring and other pre-installation manufacturing processes. (Jorgensen, 1989; Beal, 1989).

5. How do agencies fund for of purchase police vehicles? What are some of the current purchasing programs? Refer to previous section (Past Issues, 3).

6. What communication links exist between police and manufacturers? Are these effective, and does an improved product result? Maintenance personnel do have established communication links with manufacturers through fleet management seminars and other meetings. The California Highway Patrol maintains contact with manufacturers through their vehicle testing and

purchasing programs. Municipal police agencies have little or no contact with manufacturers. There is limited information passed between these entities. Both police and manufacturers need to establish a feedback and communication network. This network will result in an improved vehicle product.

Future Issues:

1. **What future economic influences on local government may impact vehicle acquisition?** Local government may tend to mirror the economic condition of citizens. If a Depression occurs in the 1990's, revenue for police budgets will probably decrease. This could result in decreased budgets for equipment. Legislative limitations such as the Gann Initiative of the 1970's could also limit revenue. Civil action against cities and police agencies also often results in large settlements ("deep-pocket actions"), and these can reduce city treasuries. Many cities participate in some type of self-insurance programs to avoid insurance costs.

2. **Will the American sedan of the future meet the future needs of law enforcement?** Yes. Research indicates that the patrol vehicle in the year 2000 will be an improved product compared to the police vehicle package of today. This vehicle should adequately meet the future needs of metropolitan law enforcement.

3. **What will the sedan of the future be like? Will police package vehicles be produced?** The future police package vehicle is outlined in Figure 1A and 1B of this report. All indication are that, pending some unforeseen event, both Ford and Chevrolet will manufacture SEO police package vehicles in the year 2000 (Jorgensen, 1989; Beal, 1989). Chrysler could enter the market for these vehicles in the future.

4. **What is the future of American automobile producers?** Difficult economic times in the U.S. could negatively impact American automobile manufacturers. An Import Tax on foreign made automobiles could also increase sales of American automobiles in the U.S. Manufacturers are actively planning for the future. If current trends continue, all three major American automobile manufacturers should still be producing automobiles in the year 2000.

5. **What innovative programs could be used to enhance acquisition and quality of future police cars?**

- Lease/Purchase packages.
- Vehicle Leasing.
- Group purchasing with the California Highway Patrol.

- Revolving Budget Accounts.
- Limitations on vehicle packages and options.

6. What future demographic and technological changes may impact the use of police patrol cars?

- Traffic congestion in metropolitan areas.
- Deteriorating infrastructure.
- Increase in public transportation facilities.
- Alternative fuel development.

7. What future political issues could impact vehicle production or police vehicle use?

- Environmental Protection Agency (EPA) limitations.
- Litigation against police agencies and cities.
- Decreased tax revenue initiatives.
- Other public programs requiring funding (program competition).
- Adoption of Import Taxes on foreign automobiles.
- Government financial bail-out of American automobile manufacturers.

Sample Metropolitan Police Agency:

To assist in strategic planning, a representative metropolitan police agency was selected for comparison of data and analysis strategies. The agency selected was the Walnut Creek Police Department. City demographics and agency summary are:

The City: Walnut Creek is an incorporated city of 63,000 residents located 18 miles east of the Oakland/San Francisco Bay Area. The city is located at the intersection of two major freeway systems which join to form a main transportation route for workers who commute from Walnut Creek and cities east to the Bay Area for employment. Once a "bedroom community" for upper and middle class workers, the city has experienced large commercial growth within the past ten years. The city is now considered the major economic capital of Contra Costa County, and numerous new high-rise commercial buildings have been or are being constructed in and around the city. A "reverse commute" for workers is occurring, and the number one concerns of citizens and local government is traffic congestion. Traffic is impacted by commuters from communities outside the city.

White residents account for 93% of the city population, with Spanish, Black, Oriental, and other races making up the remaining resident population. The city is very financially stable, with a reserve of in excess of 40 million dollars.

A Bay Area Rapid Transit System (BART) intersects the downtown area, and a station is located near the financial area of the city. A regional bus system supplies additional mass transit. City government is a Council/Manager format, and government leaders are divided on growth/no growth issues (Refer to Figure 10-A, 10-B).

↑ THINGS WE LIKE	
1. Weather	31.2%
2. Convenient location	17.1%
3. Small-town atmosphere	16.6%
4. Good area	12.9%
5. Nice people	11.1%
6. Quiet	9.9%
7. Pretty	8.9%
8. Good schools	8.8%
9. Close to San Francisco	7.4%
10. Low crime	6.1%

↓ THINGS WE HATE	
1. Traffic	56.2%
2. Too crowded	17.6%
3. Growth	14.8%
4. Crime	10.5%
5. Drugs	7.0%
6. Housing costs	4.9%
7. Cost of living	4.8%
8. Bad schools	4.5%
9. Long commute	4.0%
10. Government	4.0%

Figure 10-A

WALNUT CREEK			
Size: 17.5 square miles			
Average rainfall: 19 inches			
Temperatures:			
	Minimum	Maximum	Mean
January	35	55	45
April	42	70	58
July	53	87	70
October	46	77	62
Source: Walnut Creek Chamber of Commerce community profile			
Demographics			
	1980	1988	
population	53,643	62,538	
income per capita	\$12,675	\$19,265	
households	22,522	28,200	
Ethnic breakdown:			
	1980		
White	93.72%		
Black	.75%		
Indian and other	.23%		
Asian	3.91%		
Hispanic	3.31%		
Source: Association of Bay Area Governments			
Largest employers:			
Lesher Communications Inc. 1,575 employees			
Newspaper publishing John Muir Medical Center 1,283 employees Health care			
Kaiser-Permanente Medical Center 1,265 employees Health care			
Source: Walnut Creek Chamber of Commerce			

Figure 10-B

The Police Department: The Walnut Creek Police Department consists of 73 sworn officers and 27 non-sworn support personnel for a total of 100 employees. Officers work a modified 4/10 work schedule, and the department is divided into an Operations Division and Administrative Division. Each Division is commanded by a Captain. Five patrol teams, each with a Lieutenant and Sergeant, cover shifts 24-hours daily seven days per week. A 9-officer Traffic Team assists in traffic related duties, and a 12-officer Investigations Bureau assists in investigations.

There are 18 marked black-and-white patrol cars available for service, as well as 9 motorcycles and assorted unmarked vehicles. The city maintains a corporation yard which supplies fuel and service for the police fleet. Service records are maintained on a state-of-the-art computerized maintenance records system (MAIN-STEM). Motorcycle officers to have an option to purchase their own motorcycles and lease them back to the city. Vehicle refurbishment has been done in the past with significant cost savings; however, cut-backs in mechanics at the city corporation yard ended this program two years ago.

Reserve Police Officers patrol a local parks and bike path system on bicycles on weekends and during summers. The police department and city are considered innovative in programs for service and cost savings. The city operates on a 2-year budget cycle, and vehicle purchase and maintenance costs are line-item costs in police program budgets.

WOTS Up Analysis:

A WOTS UP Analysis is conducted to identify Weaknesses, Opportunities, Threats, Strengths and Underlying Planning necessary for a situational audit. Previously identified trend and event impacts are categorized in terms of being threats to an organization or opportunities which an organization can seize and use advantageously. This process clarifies the strengths and weaknesses of an organization related to the strategic issue.

A WOTS UP Analysis was conducted to identify future threats and opportunities using the model police agency. The police agency (Walnut Creek) was assessed as to whether trends and events identified in Chapter Two of this study were viewed as threats or opportunities to that agency's ability to respond to the issue of future police vehicles. The following is a summary of this analysis:

Trends:

1. **Fuel costs will increase:** This trend would increase city costs for operating patrol vehicles, but should not impact the city's ability to obtain future quality patrol vehicles. The impact of this trend is neutral.

2. **Traffic congestion in metropolitan areas will increase:** This will increase police response times to details. Methods to ease traffic can be expensive and may divert funds from equipment. Traffic congestion may divert businesses and shoppers away from the city, and this can result in decreased tax revenues. This trend is viewed as a threat to the city.

3. **Deterioration of roadways and freeways will continue:** Repairs and improvements are expensive. Funding may divert police vehicle replacement and maintenance funds. Expenses to Federal and State government may also result in decreased revenue for the city. This trend is viewed as a threat to the city's ability to provide and maintain quality police patrol vehicles.

4. **Joint Ventures between U.S. and foreign automobile manufacturers will increase:** This could assist the financial condition of American automobile manufacturers and result in an improved product. It may also divert profits to foreign investors. Trend impact on the city is neutral.

5. **Automobiles will last longer or be kept longer by owners:** If vehicles last longer or are kept longer by the city, replacement costs decrease. As long as this decrease is not offset by increased maintenance costs, this trend is an opportunity for the city.

Events:

1. **An alternative fuel for gasoline will be developed:** The city maintains its own gas facility, which is new, and should easily convert to alternative fuels. Possible decreased costs and environmental benefits make this event an opportunity for the city.

2. **The Stock Market will crash, or severe Depression will occur in the U.S:** This is viewed as a financial threat to the city. A result could be less vehicle traffic due to less employment and a depressed economy. The ease in traffic congestion would be an opportunity; however, decreased revenue and other anticipated police problems would make this event a threat to the city's ability to provide quality police vehicles.

3. Government mandated limits on the use of private vehicles will be passed: Chances of this occurring are minimal; however, the impact on the city would be viewed as easing traffic congestion and promoting mass transportation, which are opportunities for the city. This could; however, result in increased city costs for mass transportation and decreased revenue from gasoline taxes. This is viewed as a financial threat which could divert police funding, which negatively impacts vehicle purchasing.

4. A substantial Import Tax on foreign automobiles will be passed. Increased sales of vehicles in the city equates to increased taxes for revenue. This could be a threat or opportunity depending on what the balance of auto dealerships are in the city. The impact of this event is viewed as neutral.

5. Bankruptcy of a major U.S. automobile manufacturer will occur. If Federal bail-out funds are provided, this may result in decreased revenue for the city. This would also decrease availability and choice for police package vehicles, which threatens the city's ability to provide quality police vehicles.

The city would experience threats, opportunities, and neutral responses to the selected trends and events. It is felt that the responses for the model city are typical of metropolitan cities in California.

Current Capability Analysis:

A Current Capability Matrix is used to estimate the current capability of an organization to address individual tasks or sub-issues necessary for successfully implementing a topic issue strategic plan. This matrix was used to estimate the capability of the Walnut Creek Police Department to address the police vehicle topic.

During conducted interviews, six city employees involved in the police department and city vehicle maintenance were asked to

estimate the city's current capability regarding police vehicles. Ten sub-topic areas were identified from previous research and were submitted to the group as areas to be rated. The results of this analysis are shown in Figure 11.

Please rank each item below in one of the five listed categories. Estimate the current capability of the Walnut Creek Police Department to provide quality police vehicles for police patrol:

SPECIFIC AREA:	CAPABILITY				
	ITEM	A.	B.	C.	D.
1. Financial Purchasing Ability	5	1			
2. Maintenance of Vehicles	4	1	1		
3. Communications, Police/Maintenance	2	3	1		
4. Officer Equipment Care	1	3	2		
5. Innovative Acquisition Programs	2	2	2		
6. Budget Process	2	3	1		
7. Citizen Support	4	2			
8. Administrative Staff Support	1	2	2	1	
9. Officer Input		1	3	2	
10. Communication, Police/Manufacturers			1	3	2

A. = Superior. Beyond present needs
 B. = Above Average. Suitable for present needs, no problems
 C. = Average. Meets present needs, but room for improvement
 D. = Below Average. Not as good as it should be
 E. = Poor. Cause for concern, needs improvement

Figure 11

Those participants completing the analysis felt that the city is capable of supplying quality police vehicles. The two areas which indicate needed improvement are officer involvement in vehicle selection and communications with automobile manufacturers. These areas should be addressed in strategic planning to acquire quality police vehicles in the future.

Assumptions:

Certain assumptions regarding the issue of providing quality police vehicles in the future can be made and assessed from collected data. These assumptions are:

Manufacturers:

1. Will produce quality sedan vehicles with SEO police package options in the year 2000. This product will be improved from the present models, and will cost about \$25,000 per unit (in future dollars).
2. Are planning for the future. Will design for an alternative future fuel.
3. Welcome input on police package vehicles from police users.

Police:

1. Officers will spend an increased amount of time in their cars while working.
2. Comfort and room are important.
3. Support and communication equipment will be complex and expensive; however, the vehicle and its support equipment will provide the officer with quick and accurate information.
4. More of the officer's work day will involve directed activity rather than random activity.
5. Police vehicle operation will be restricted by legal actions or policy.
6. Police and cities will experience greater liability for police actions.
7. Crime will increase, and police response times will increase due to increased traffic congestion.

Cities:

1. Will have to exercise fiscal responsibility.
2. Will have to provide vehicles and other equipment

- which are safe and in good condition or face legal action from employees.
3. Will experience increased traffic congestion.
 4. Will service a community which wants better police service, rational costs and taxes, and limited or planned city growth.

Demographics:

1. Roadways in metropolitan areas will continue to deteriorate.
2. Traffic congestion will get worse.
3. Federal and State funding for improvements will decrease. Local jurisdictions must become more financially self-sufficient.
4. Companies are now moving to where workers live. Commercial development in previously residential communities is increasing.

Vehicle Maintenance:

1. Will become more expensive as complexity of vehicle electronics increases.
2. Vehicle down-time for repairs will increase.
3. Vehicle quality will increase.
4. Increased training will be needed for personnel.
5. More sophisticated diagnostic equipment is needed.

Modified Policy Delphi:

A Modified Policy Delphi is a process used to identify policy areas for strategic planning. A selected group is asked to analyze a list of proposed policy areas identified through research and to add to this list those areas not addressed. The group is then asked to combine, modify or eliminate any policy areas and come up with a final list to target areas for strategic planning.

To accomplish the Modified Policy Delphi process, Interviews were conducted with police personnel, vehicle maintenance personnel, vehicle manufacturers, and police vehicle providers, from February - April 1989. The eight individuals interviewed

were asked to examine 13 areas for policy planning. Those areas were:

1. Formation of a vehicle task force involving stakeholders
2. Develop innovative purchasing plans
3. Regional or county-wide vehicle planning groups
4. Group purchasing plan expansion through the state
5. A conference of series of conferences on police vehicles
6. A direct manufacturer purchasing plan
7. Formalized vehicle maintenance training programs
8. Involvement of officers in local agency vehicle planning
9. Police involvement in fleet maintenance conferences
10. Meetings with manufacturers to promote improved products
11. Standardization of police package products
12. A yearly new vehicle and equipment trade show
13. A product news letter for vehicles and equipment

Those interviewed were asked to suggest general policy recommendations which would improve the future acquisition of quality patrol vehicles by municipal police agencies. As a result of this process, the following six policy areas emerged for analysis:

1. Police Vehicle Task Force: Communications between municipal police and manufacturers is poor. A Task Force should be developed to provide input for manufacturers on police needs and trends.

2. Group Purchasing: Improve group purchasing through the California Highway Patrol.

3. Limit Police Package Options: Manufacturers should limit the option packages on police vehicle orders.

4. Officer Input: Individual Agencies should develop a forum for line officers to input future vehicle equipment and purchasing.

5. Innovative Purchasing Plans: Vehicles are expensive equipment items; thus, cities should plan purchases and create innovative financing options.

6. Maintenance Planning: Cities should assess their future options in vehicle maintenance, and assess whether self maintenance or service contracting is viable. Regional maintenance may be an option.

Stakeholders:

To aid in planning and policy development, it is necessary to identify the stakeholders involved in the municipal police vehicle issue. Stakeholders are defined as any group of people who might be affected by or attempt to influence proposed policies or programs. Twenty stakeholders in the future police vehicle topic were identified, and the level of their support for suggested policy programs was assessed. The following stakeholders and support levels were identified:

1. Manufacturers (Ford, Chevrolet and Chrysler):

Would support the development of a Police Vehicle Task Force to improve communications with metropolitan police agencies and provide product feedback. Would support group purchasing through the Highway Patrol, especially if manufacturers weren't eliminated by a bidding process so only one vehicle make was available. Would support limiting vehicle options which would reduce costs and line down-time. Would support officer input into vehicle feedback, which would provide manufacturers with product information. Would support innovative financing plans and might participate with the state if competition from competitors forced it. Would support maintenance planning by cities and support programs by local dealerships to provide quality maintenance for cities (additional sales revenue). Would also continue maintenance training for city personnel.

2. Local vehicle dealerships. Would support a Vehicle Task Force. Would not support group purchasing through the California Highway Patrol unless some revenue for them from manufacturers was involved. Would forego option profit for ease of ordering and improved delivery time. Would support officer input for more product feedback. Would support innovative purchasing plans which result in more car sales. Would support maintenance planning, especially if they were doing the maintenance on police vehicles.

3. Police vehicle equipment venders: Would support a Vehicle Task Force which provided them involvement and feedback on their products. Would support group purchasing, which would reduce the numbers of orders shipped while increasing order sizes. Would be neutral on options, as venders supply after-market products. Would support officer feedback and involvement for product improvement. Would support innovative purchasing plans which would increase product sales. Would be neutral on maintenance programs.

4. Private vehicle maintenance venders: Would support a Task Force which would promote a better vehicle product. Would be neutral on group purchasing and vehicle options. Would support officer input for a better product. Would support innovative purchasing plans which improve the numbers and quality of vehicles.

Would support maintenance planning which involves them in the maintenance, but not support maintenance which excludes them.

5. **Police fleet-maintenance organizations:** These organizations will support a Task Force concept if they are involved in the process. They would support purchasing plans through the CHP, and support the limiting of ordered options by individual agencies. They would support line-officer involvement to improve future products, and would also support innovative purchasing plans for their member agencies. They would support any improvements in maintenance planning for member agencies.

6. **City vehicle maintenance personnel:** Would support and participate in a Vehicle Task Force program which improves products and maintenance. Would support group purchasing which decreases and simplifies ordering time while reducing costs and increasing product choice. Would not support limiting options as needed options would have to be installed by them. Would support officer feedback and innovative purchasing plans which reduce costs and improve product availability. Would strongly support any maintenance planning which involves them.

7. **Local Chamber of Commerce:** Would be neutral on the Task Force, options, and officer input programs. Would

not support group purchasing which removed business from local dealerships. Would not support planned maintenance programs which removed business from local repair shops or dealerships.

8. **City Manager:** Would support all proposed program areas, as they would improve products and service while reducing costs to the city. They would improve police morale while reducing personnel actions over vehicle equipment issues by police labor organizations.

9. **City Council:** Support would be the same as the City Managers.

10. **City Attorney:** Would support all programs. The programs improve products and involve more groups in planning, which may reduce future city liabilities.

11. **Local Citizens:** Would support all programs. Cost savings, innovative purchasing programs, officer morale, and planning are important to this group.

12. **Police administrators:** Would support all programs. Reducing costs, improving products and equipment, improving morale, and involvement in planning are all important.

13. **Police supervisors:** Same level of support for all programs as police administrators.

14. **Line police officers:** Would support all programs which result in improved vehicles. Would welcome the ability to input vehicle purchasing and equipment. Will support improved maintenance planning to reduce vehicle down-time and put a safer and better vehicle in service.
15. **Police Unions or Associations:** Same level of support as line police officers.
16. **Peace Officers Research Association of California:** Same level of support as line police officers.
17. **City budget and finance personnel:** Would support all programs which reduce costs and improve working conditions.
18. **California Highway Patrol Motor Transport personnel:** Would support a Vehicle Task Force concept. Would support group purchasing; however, would need to participate in the program design, and additional costs would have to be funded by municipal agencies. Would support other proposed programs.
19. **California Highway Patrol administrative personnel:** Same support level as the Motor Transport Division.
20. **State of California Finance Department:** Would support programs which improve products and reduce (or do not increase) costs to the State.

Mission Statement:

To provide California municipal law enforcement agencies with a strategic plan for providing quality police patrol vehicles by the year 2000.

This model program should involve representatives from State and local government, vehicle manufacturers, municipal police agencies and vehicle maintenance personnel. The program should contain responsibility assignments and timetables for program planning and implementation. The program should be flexible for adaptation to changing needs, trends and events. Communications between program stakeholders should be improved, and cost benefits should be maximized. The end program result should be the availability of a quality police patrol vehicle for municipal police agencies by the year 2000.

Policy Statements and Strategy Development:

Policy One - Police Vehicle Task Force: A group of knowledgeable individuals should be identified and assembled on a regularly scheduled basis to develop, modify and implement strategies involving police vehicle acquisition. This task force should include manufacturer representatives, fleet-maintenance personnel, municipal police and CHP representatives.

Communications between manufacturers, municipal police agencies, and maintenance personnel need improvement. The task force format would provide a forum to enhance

communication and information exchange. Minutes of meetings should be distributed to stakeholders, including all municipal police agencies in the state, for review.

Strategy: A California Police Vehicle Task Force should be developed. This task force should include representatives from manufacturers and vehicle maintenance personnel. It should also include representatives from the California Highway Patrol and municipal police personnel who represent small, medium, and large municipal police agencies. This task force should schedule meetings for information exchange and future planning. The California Highway Patrol should initiate this task force, and coordinate its development.

Responsibility...California Highway Patrol, Motor Transport Division.

Timetable.....Planning: 1990-1991
Operation: 1992....

Policy Two - Group Purchasing Program: Consumer costs to police agencies for the purchasing of police vehicles should be minimized. This can be accomplished through group purchasing. Group purchasing is available in California for municipal police agencies through cooperative bidding with the California Highway Patrol. The Highway Patrol bidding process eliminates all bidding manufacturers whose vehicles do not meet required specifications and testing. Vehicle purchasing bids are normally awarded annually to one vehicle manufacturer.

Any American vehicle manufacturer who participates in the bidding process and whose vehicle meets required specifications should be permitted to supply police package vehicles through the CHP to municipal police agencies for the amount established by their bid. This program would permit a choice by purchasing agencies while permitting the benefits of group purchasing.

Strategy: Through the Vehicle Task Force, the current vehicle-acquisition and group-purchasing program by the CHP should be expanded to include participation and input by municipal police agencies. Any costs for this program expansion should be examined and should be fairly distributed. This program should be reviewed and modified as required.

Responsibility...Police Vehicle Task Force

Timetable.....Planning: 1991-1992
 Operation: 1994....

Policy Three - Police Package Options: Police package options should be limited to set vehicle classifications. Agencies who order police vehicles from manufacturers order those vehicles in varied colors and equipment options. This results in assembly line down-time and excessive delivery delays. Each manufacturer should make available to police agencies police package vehicles in three categories:

A. Pursuit or freeway vehicles. These are specialized

vehicles, such as the Ford Mustang or T-Bird, and Chevrolet Camero.

- B. **Standard municipal police vehicles.** These are vehicles such as the Ford Taurus and Crown Victoria, or the Chevrolet Caprice. They would be available in a standard black-and-white color combination with standard police equipment options. Any changes from this package would be made after delivery through local dealers or maintenance facilities.
- C. **Upgraded municipal police vehicles.** Available in solid colors with upgraded carpeting and upholstery. Exact equipment options should be established.

This program should be designed by the Police Vehicle Task Force; thus, all involved in police vehicle production, acquisition, and maintenance are represented. This program should be reviewed and modified as needed.

It should be noted that adoption of this program would have impact on all police agencies who purchase patrol vehicles; thus, this impact would be national. This expands the stakeholders under this program to all police agencies in the nation. The decision whether to modify option packages is the manufacturers; thus, coordination between manufacturers is mandatory, as is the assessment of support from other police agencies throughout the nation.

Responsibility...Police Vehicle Task Force

Timetable.....Planning: 1992-1994
 Operation: 1996....

Policy Four - Officer Input: Officers will be spending more time in their patrol vehicles in the future. These officers should have some input into vehicle equipment and selection. Each police agency should promote officer input regarding equipment. This can be accomplished through the development of quality circles within cities. Maintenance and budget personnel should be included. Quality circle members should meet during work periods on a scheduled basis to brainstorm local policies and programs involving police vehicles. Information from meetings should be forwarded to agency administrators and to the State Vehicle Task Force through local representatives.

As previously stated, the success of quality circles is dependent on sincere support from management. Information produced from quality circle meetings should be reviewed and acted upon, and feedback to the group from management is required (Peters and Austin, 1985). This program will enable those officers who operate patrol vehicles to develop and forward product information to management and those who manufacture vehicles.

Responsibility...Operations Division Commanders, individual
police agencies

Timetable.....Planning: 1990-1991
Operation: 1992....

Policy Five - Innovative Purchasing Plans: With decreasing revenue for many cities comes the need for maximizing fiscal responsibility. Individual police agencies need to explore

new innovative ways to obtain equipment. The Vehicle Task Force would be a forum for information exchange. Ideas and information could be exchanged through the quality circle program discussed in Policy Four. City finance personnel and department budget managers should participate.

Responsibility...City Finance Director

Timetable.....Planning: 1990-1991
Operation: 1992....

Policy Six - Maintenance Planning: Vehicle maintenance will become more expensive as vehicles become more complex. Cities need to plan ahead to train and equip maintenance personnel. Agencies which contract for vehicle maintenance need to assure that contracting agencies provide a quality level of service in order to avoid vehicle down-time for repairs. City maintenance personnel need to communicate with manufacturers as to what future products will be like. This can be accomplished through participation in established Police Fleet Vehicle Maintenance Conferences and meetings. Police department representatives should be encouraged to attend these conferences and meetings. Maintenance personnel representation in the Police Vehicle Task Force is also necessary.

Cities and counties need to assess their future vehicle maintenance needs. Regional meetings should be conducted between police and maintenance personnel within counties to discuss options. A regional vehicle maintenance facility may be a future option to provide service at increased

efficiency and decreased cost. Agencies with existing maintenance facilities may contract with agencies who do not have facilities for vehicle service. This needs to be assessed on an individual county basis, and this assessment will take time and cooperation from all agencies involved. The responsibility for initiating this regional assessment should be assigned to the County Maintenance Superintendent.

Responsibility...County Maintenance Superintendent; Police Fleet Managers and Maintenance Administrators within counties.

Timetable.....Planning: 1990-1994
Operation: 1996....

Policy Summary:

The planning stages of suggested programs begins in 1990, and all programs would be operational by 1996. This permits a four-year period to maximize the plan prior to the year 2000. These programs should flexible and are designed to improve communications and efficiency in the future police vehicle issue. All programs are important; however, the Vehicle Task Force concept is critical to other suggested programs. The Vehicle Task Force will require careful planning and design and will require the cooperation of all individuals and groups involved to insure success.

The primary goal of all suggested programs is to improve communications between those individuals and groups involved in the issue of police vehicles. There are presently few plans or programs in place which foster

improved or expanded communications to improve the product or product acquisition. The overwhelming need which surfaced during research is the need and desire for information exchange between different individuals and groups. The recommended policy strategy is designed to address this need.

Evaluation Plan:

The final phase of strategic planning is the development of an evaluation component which insures that programs are revised and evaluated based on changing stakeholder needs, changing trends, or the occurrence of future events.

As noted in Chapter One of this project, during the 1950's American automotive manufacturers changed model designs every model year. This was done because consumers expected yearly model design changes. The changing expectations and needs of automotive consumers of today have resulted in 13 years without a major body design change in Ford Crown Victoria or Chevrolet Caprice vehicles. The consumer need for design changes has shifted to a need and expectation for quality and dependable products. Automotive designing has shifted from a one-year to a ten-year planning horizon based on changing needs and expectations of customers.

After the implementation of recommended programs, the Vehicle Task Force should review feedback from individual agencies and from regional groups. Officer satisfaction is

important feedback in this process. Information concerning officer satisfaction should result from individual agency quality circles and should be forwarded to the Vehicle Task Force for review. Suggestions from officers on product improvement should be forwarded to task force manufacturer representatives. Statistical data from maintenance personnel should be used as a basis for program evaluation. Those maintenance areas evaluated should include:

- A. Vehicle down-time
- B. Maintenance problems and costs
- C. Operation cost per mile
- D. Vehicle life

Manufacturer information on costs and program impact on production and design are important. These issues should be discussed by manufacturer representatives with task force members from other groups. The identification of problem areas and group participation in problem resolution should result in elimination of the "information isolation" which presently exists between critical-mass individuals and groups.

Evaluation Models:

The implementation or modification of programs or systems results in change (van Gigch, 1978). The identification and evaluation of program outputs is a difficult and critical aspect of program evaluation. It is necessary to evaluate and measure program feedback or output in order to compare program results with preestablished objectives. It is not possible to specify in advance by what means a proposed program should be evaluated and compared. Evaluation models should

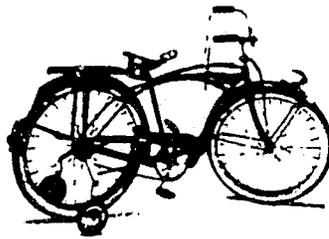
be selected based on particular programs and program output. There are several diagnostic models for program evaluation available.

It is important for program evaluation to take place in order to modify programs and attain desired results or objectives.

Evaluation Summary:

Communication and flexibility are viewed as the keys to success for the recommended strategic plan. Turbulence Factors and Predictability Factors were analyzed during the Stakeholder Analysis and Policy Statement/Strategic Analysis portion of this project. Due to this assessment, it is recommended that the strategic plan be reviewed and modified by the Police Vehicle Task Force on an annual basis and completely rewritten during the first year of the Task Force operation (1992). The number of program participants and the complexity of the recommended policy requires frequent review and assessment. This periodic planning mode is necessary to insure smooth operation of the programs and to insure that they remain relevant to the issue of providing quality police patrol vehicles by the year 2000.

CHAPTER FOUR - TRANSITION MANAGEMENT



Remember the day you
took off your training wheels?

CHAPTER FOUR -- TRANSITION MANAGEMENT

Statement:

The third objective of this project is the development of a transition management plan to implement and evaluate the six policies identified in Chapter Three. Key stakeholders from the list of 20 presented in Chapter Three will be evaluated concerning their readiness and capability to effect recommended policy. A structure to motivate change, assess political dynamics, manage change transition, and evaluate results will be examined. The goal of this section is to present a roadmap for change to reach the desired objective of providing quality police patrol vehicles for municipal police agencies by the year 2000.

Methods Identification:

The techniques or methods used for transition management of the recommended strategic plan include:

- Critical Mass Analysis
- Readiness/Capability Charting
- Commitment Planning
- Responsibility Charting
- Implementation Planning

Critical Mass Analysis:

"Critical mass" is defined as those stakeholders whose support is absolutely necessary in order to successfully implement the strategic plan. The following stakeholders comprise the critical mass involved in the police vehicle topic:

1. Vehicle manufacturers
2. Municipal government (Administrator/City Manager/Council)
3. Municipal fleet maintenance personnel
4. Municipal police management (administrators/supervisors)
5. Police Officers (line personnel)
6. California Highway Patrol Administration
7. California Highway Patrol Motor Transport Division

Readiness/Capability Charting:

A method to visually depict the readiness and capability of critical mass individuals or groups to participate in strategic planning is the use of a readiness/capability chart. The chart graphically values both the readiness and capability of each critical mass actor by assigning a hi, medimum or low value for each of the two categories.

This evaluation helps to identify those individuals or organizations best prepared to lead a specific change effort of the strategic plan. The results of the critical mass analysis for the seven critical mass actors are presented in Figure 12.

AGENCY	READINESS			CAPABILITY		
	HI	MED	LOW	HI	MED	LOW
1. Manufacturers	X			X		
2. Municipal Government			X		X	
3. Fleet Maintenance		X			X	
4. Police Management			X	X		
5. Police Officers	X				X	
6. CHP Administration		X		X		
7. CHP Motor Transport		X		X		
Figure 12						

Summary:

1. **Manufacturers:** Are eager to improve communications with municipal police agencies and would get involved in a Vehicle Task Force program. They do currently send representatives to fleet management seminars for presentations and feedback. Factory design personnel and engineers do want municipal police agency feedback on police package vehicles. They do have personnel available who are willing and eager to participate.

2. **Municipal Government:** Has not considered the Task Force Concept; however, is beginning to look at "regionalization" as an answer to local problems as far as planning. Would support better products at decreased costs. Is capable of supporting those programs recommended as long as local police and maintenance stakeholders concur. Would support their desires.

3. **Fleet Maintenance:** Those who work directly for agencies are ready to participate. They desire to improve their role and would welcome training and equipment for future vehicles. Already participate in fleet management seminars and groups. Manufacturers would insure support of dealership maintenance groups in programs, and dealerships would desire increased government business.

4. **Police Management:** Like city government, has not been involved in future vehicle planning other than budgeting. Would support and participate in the Task Force concept and assign interested representatives to participate. Would also support the Quality Circle concept, which would involve line officers in the process. This would be a "win-win" situation for police agencies.

5. **Police Officers:** Are ready to participate in programs which impact their working conditions, such as police vehicles. Would welcome the chance to impact selection and equipment. Would participate in a local Quality Circle program.

6. **CHP Administration:** Would be open to discussions on a program to improve products and would include municipal representation as long as there were no negative costs to CHP. They already have extensive vehicle testing programs operating and could expand these into the Task Force concept. This group is critical to the Task Force plan and the modification of group purchasing programs which now exist.

7. **CHP Motor Transport:** This group takes direction from the CHP Administration group. They would be ready to

participate and involve local agencies as long as there was no negative impact to their programs or budget. The support of manufacturers would assist in their support. The program organization and responsibility would rest with this group, and the success of group purchasing and the Task Force is heavily dependent on this mass.

Commitment Analysis:

A Commitment Analysis Matrix provides a visual method to rate both the current level of commitment and the level of commitment required by the critical mass to create desired change. The matrix analyzes where "change actors" are on a scale which ranges from "blocking change" to "making change happen." The present level and desired level of commitment for each critical mass group is presented in Figure 13.

ACTOR IN CHANGE	BLOCK CHANGE	LET CHANGE HAPPEN	HELP CHANGE HAPPEN	MAKE CHANGE HAPPEN
1. Manufacturers			X-----▶ 0	
2. Municipal Govt.		X-----▶ 0		
3. Fleet Maintenance		X-----▶ 0		
4. Police Management		X-----▶ 0		
5. Police Officers		X-----▶ 0		
6. CHP Administration		X-----▶ 0		
7. CHP Motor Transp.		X-----▶ 0		
X = Current State 0 = Desired State				

Figure 13

None of the critical actors in change are in the "block change" category. Most of the groups are currently in the "let change happen" category, and all need to be moved into an increased involvement mode. Police management, the two CHP groups, and manufacturers need to move into a primary role. Typically, the actor listed in the "Make Change Happen" category is the lead agency or group responsible for the program. There are four actors in this category, as active participation from these groups is necessary for program success. The CHP Motor Transport group would be the leading agency for initiating and planning the Police Vehicle Task Force program, which is the primary program in the recommended policy.

Implementation Planning:

This section is critical to the success of the recommended policy and programs. A four-step roadmap for program implementation is presented:

1. One-Day Conference:

A Conference should be scheduled which includes CHP Administrators, CHP Motor Transport management, manufacturer representatives, and selected representatives from state-wide municipal police and fleet-management agencies.

The goal of this conference is to present the Police Vehicle Task Force concept. This should be hosted by the CHP and conducted by CHP Motor Transport personnel with the support of CHP Administration. This conference should be

structured and recorded. The conference goal is to promote support for the concept and obtain feedback. A Steering Committee should be selected during the conference to begin initial Vehicle Task Force planning.

2. Steering Committee:

The goal of this committee is to begin initial planning and operation of the Police Vehicle Task Force. The committee should be organized by an administrator from CHP Motor Transport, and should include a representative from police vehicle manufacturers, fleet-maintenance personnel, and municipal police agencies.

The purpose of the committee is to produce a goal statement or purpose for the task force. The committee should also establish overall time-frames and a reporting and communications system for information exchange between critical groups and individuals. The goal of this committee is to produce the initial foundation for implementation of the Police Vehicle Task Force.

3. Formation of Police Vehicle Task Force:

The goal of the Task Force is to evaluate and initiate recommended programs. These programs include those which increase communication between critical mass groups, improve group purchasing programs, promote product expansion and improvement, and increase participation in police vehicle acquisition and maintenance programs.

The Police Vehicle Task Force should be operationalized by the Steering Committee. The Task Force should be managed by the committee, with support from all other critical-mass participants. The first Task Force meeting should include election of officers and other procedural tasks.

A team-building workshop is recommended for the second meeting. This should be accomplished with a professional facilitator. A goal of this workshop is to assist members in reviewing or modifying initial task force programs or strategies. This workshop should aid in developing a communications plan to keep the Steering Committee, critical mass, and profession informed on Task Force progress. Responsibility for planning programs should be clarified, and an action plan for the Task Force should be prepared.

The Task Force should be operational for the length of the prepared action plan and time-frame proposals. Modifications and assessment could result in an indefinite Task Force life. The Task Force should be well managed and flexible.

The Police Vehicle Task Force is the major program recommended in the strategic plan. Its success is critical to future police vehicle planning and acquisition. The Vehicle Task Force program should be supported by other recommended programs.

4. Development of Individual Agency Quality Circles:

Quality circles are usually volunteer groups of 7-10 employees in an organization who meet to discuss work environment and formulate ideas or problem solutions which are forwarded to management. They may discuss both work quality and ways to improve daily operations. Supervisors normally participate in quality circles and often lead group meetings. Quality-circle recommendations are forwarded to a management staff group for analysis. Facilitators often participate in the quality circle meetings to assist with group process, group diagnosis, communication skills, quality-control concepts and statistical tools.

Prior to actual quality-circle productivity meetings, group leaders should receive training in organizational development and group dynamics. Experts may be used to lead quality circle-groups, or supervisors may be trained to conduct meetings (French, Kast and Rosenzueig, 1985).

Quality-circle programs are necessary to involve all stakeholders in the recommended plan. Local quality circles should involve municipal agency members from police departments, city budget personnel, and fleet maintenance. These meetings should provide critical information for the Police Vehicle Task Force and should also assist with agency product identification, financing options, and future planning. The goal of quality circles is to involve agency stakeholders in local planning and provide information to

the Vehicle Task Force. The administrators of local police agencies should assign a staff officer to initiate local programs.

Summary:

The implementation plan presents a general framework for managing the activities associated with the Strategic Plan. There is a need for the Vehicle Task Force to have flexibility in determining the specific methods or techniques necessary to accomplish its mission. The plan is not presented as a detailed framework, but rather as a guide to initiate change. It is anticipated that Steering Committee and Task Force members will review the guidelines and recommendations for Strategic and Implementation Planning and then select or modify those recommendations which promote project success. Some alternative methods for managing desired change are:

1. **Defining the Present State:** The development of a statement or scenario which identifies the present state of municipal police vehicle acquisition. This should be based upon available relevant data.
2. **Defining the Future State:** The development of a statement or scenario which identifies where the committee would like the status of municipal police vehicle acquisition to be in 3-5 years.
3. **Creation of a "Doom Scenario":** A scenario based on the identified trends and events, which identifies what could occur without planning (worst case). This clarifies the need for planning and stakeholder involvement.
4. **Confrontation Meetings:** Meetings of individuals involved in change which enhance awareness, clarify present values and roles and result in further project input.

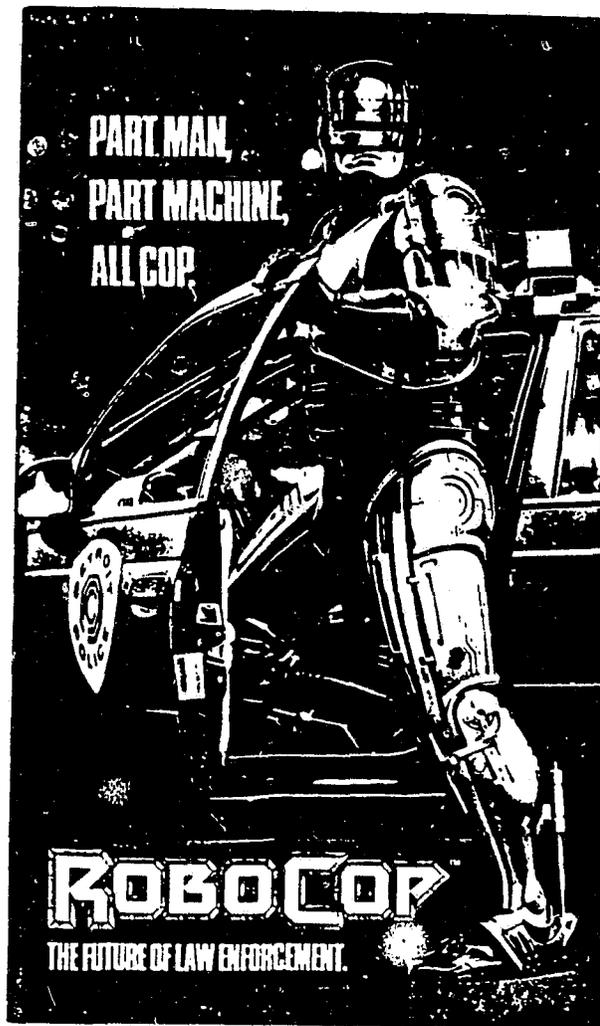
5. **Force Field Analysis:** The identification of positive forces which assist change and negative forces which hinder change. The goal is to identify tactics which accelerate positive forces and reduce negative forces. This process enhances change.

6. **Communications Planning:** This method was identified in the implementation phase; however, some type of plan is needed in early phases of planning which outlines responsibilities, presents Task Force goals in written form, and identifies the media which will be used to disseminate information.

7. **Activity Planning:** The identification of activities and incidents which must occur to move from the present to the future state. This plan should be task specific and time specific, and should be cost-effective.

As previously noted, the transition management plan presented should be viewed as a guide for change. The Steering Committee should begin the change process, and the Police Vehicle Task Force should then identify and modify those techniques which best attain the goal of this project.

CHAPTER FIVE - CONCLUSIONS



CHAPTER FIVE -- SUMMARY AND CONCLUSIONS

Project Summary:

The first two chapters of this project identified past, present and future American automotive products for metropolitan police patrol use. An American police package automobile will be available to police agencies in the year 2000, and the concept and specifications of this future vehicle have been identified through research. The future police vehicle will be a "rolling office" for patrol officers and promises to be an exciting evolution of today's production and concept vehicles.

Trends and events which will shape our automotive future were identified and analyzed. Since the initial writing of the first draft of this paper, trends in gasoline prices and a significant event (Exxon oil spill near our Alaskan coast) have focused the trend and event predictions of the Modified Delphi process.

American police package automobile producers are hungry for product information from municipal police personnel. This information can shape future police package products; however, no effective process exists for information exchange. Police package engineers have a very limited perspective of law enforcement of the future, and police personnel have little knowledge about the future police package vehicle. Communication between these two groups is poor at best.

The strategic planning process identified a plan which should result in the goal of this project, the acquisition of quality police patrol vehicles by municipal police agencies by the year 2000. The key to success is improved communications between those involved in vehicle manufacturing, testing, maintenance, purchasing, and operation.

Six specific areas were targeted for program planning, and critical mass groups were identified. Program responsibilities were established, and a timetable for transition was presented. The primary program for strategic planning is the development of a Police Vehicle Task Force. The Vehicle Task Force program should be supplemented by the formation of individual agency quality circles. These quality circle groups will insure local agency needs are addressed and effective programs are implemented.

The Police Vehicle Task Force should address the programs presented in this project and should involve those individuals or groups who impact the police vehicle issue. The Task Force format should remain flexible to permit change and modification, and a system should be designed which supports the distribution of Task Force information.

Conclusions:

Population in California is growing by thousands of people daily. A majority of the California's population live and work in metropolitan areas of the state. Both the Los Angeles and San Francisco Bay Area have experienced a "population spread"

during the past 20 years, and this spread has resulted in borders between many cities becoming indistinguishable. One jurisdiction blends into another in a mass of residential and commercial development. This continual growth creates more traffic congestion, more service expectations, and more crime for metropolitan police agencies.

Barring unforeseen events of major impact, police agencies in California will enter the 21st century facing increased challenges with a diversified work force. Police equipment, including police patrol vehicles, will be technologically improved, efficient and effective. This equipment will also be costly.

Police personnel must plan now to equip the future work force with new and improved tools. Future police products will reflect the level of communication and cooperation between manufacturers and users, and these areas need attention and improvement today.

This project has addressed the future police vehicle, which is a major equipment item for police agencies. The programs presented are a guideline to improve the future, and this guideline may be applied to other areas which require improved communications and cooperation between different groups with common goals. It is hoped that manufacturers and police administrators will view this project as a mechanism to work together towards an improved future.

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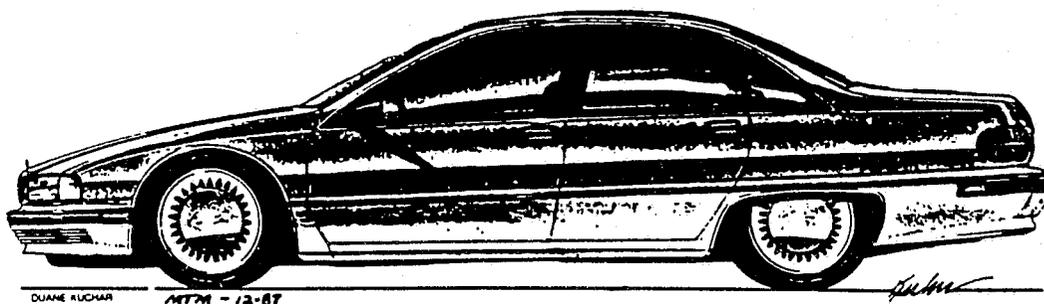
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APPENDIXES



DUANE KUCHAR

MTM - 12-87

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APPENDIXES

- A. Survey Questionnaire on Future Vehicles
- B. Trends and Events Identified
- C. Modified Delphi Participants
- D-1. Trend Screening Form
- D-2. Event Screening Form
- E. Trend and Event Evaluation Forms
- F. Bay Area Economic Forum Survey Results

APPENDIX

-A-



POLICE DEPARTMENT
P.O. BOX 8039
1666 NORTH MAIN STREET
WALNUT CREEK, CALIFORNIA 94596
415-943-5844

Dear _____:

I am compiling data for a written project sponsored by the State of California Peace Officers Research and Training Commission. This project will complete a two-year graduate level program for Police Administrators in futures research.

The success of my project depends on the quantity and quality of data which I can compile. I sincerely need your help in collecting this data. My goal is to develop a "Motor Trend" type description of the police car in the year 2000. To accomplish this, I need your professional feedback on what that product will be like. I do not want descriptions of specific future models which are planned by individual producers. I realize this information is guarded, and I have no intent to publish it. What I do need is generic information on a generic production vehicle in ten years. I need your best guess as to what that vehicle will look like, how it will be equipped, and how it will perform.

I wish to limit my future product to 4-door passenger vehicles which would normally be available for SEO duties, such as police cars. Similar vehicles of today would be the Chevrolet Impala, or Ford Taurus or Victoria.

I sincerely appreciate your time and effort in assisting me with this project.

Thank you,

Ross Sutton

(Appendix A)

I. APPEARANCE:

WINDSHIELD/HOOD/REAR WINDOW:

- IDEAS: - A MATERIAL WHICH REACTS TO AMBIENT LIGHT.
LIGHT PROTECTION FOR PASSENGERS, LIKE
SUNGLASSES (CHANGES SHADE WITH LIGHT).
- POLARIZED - PROTECTION FROM ONCOMING
LIGHTS. HEAT BARRIER.
- SOLAR CELLS FOR BATTERY CHARGING.
- HEADS-UP DISPLAY OF GAUGES.

COMMENTS:

BODY:

- IDEAS: - PLASTICS/COMPOSITE MATERIAL
- R/R BODY PARTS (LIKE FIERO)
- SEAMLESS BODY DESIGNS
- COVERED WHEEL WELLS
- COMPUTER ADJUSTED AIR DAMS/SPOILERS

COMMENTS:

II. ROADABILITY:

AERODYNAMIC DRAG:

- IDEAS: - (-0.20) CD.
COMMENTS:

STEERING:

- IDEAS: - FULL TIME/PART TIME 4WD. SELF-SENSING SELF
ACTUATING 4WD WHICH ACTIVATES WHEN ADHESION
IS POOR.
- 4 WHEEL INDEPENDENT SUSPENSION WITH INDIVIDUAL
4 WHEEL STEERING, ALLOWS EACH WHEEL TO TURN
INDEPENDENTLY. EASY TURNING IN TIGHT
SITUATIONS.
- ELECTRONICALLY ANALYZES STEERING COMMANDS FROM
THE DRIVER AND SENSES VARIABLES SUCH AS WIND
GUSTS, ROAD GRADIENT, DRIVING SPEED AND OTHER
FACTORS INFLUENCING HANDLING?

COMMENTS:

APPENDIX

-B-

IDENTIFIED TRENDS

- ** 1. Increasing Fuel Costs.
- 2. Increasing Market in U.S. for Foreign Cars.
- ** 3. Increasing Traffic Congestion and Gridlock.
- 4. Decreasing Oil Supply.
- * 5. Increased Taxing on Fuel.
- ** 6. Deterioration of Roadways and Freeways.
- ** 7. Joint Ventures in Automobiles with U.S. and Foreign Manufacturers.
- 8. Resurgence of Unionism in Automobile Manufacturing.
- * 9. Increased Automobile Insurance Costs.
- 10. Increased U.S. Automobile Export Effort in Foreign Markets.
- ** 11. Automobiles Last/are Kept Longer.
- 12. Increased Work at Home Via Computer.

IDENTIFIED EVENTS

- 1. Large Oil Deposits Located.
- ** 2. Development of an Alternative Fuel.
- ** 3. Stock Market Crashes/Depression in U.S.
- 4. High Inflation.
- 5. Mandated Mass Transportation.
- 6. Military Conflict/Shift to War Production.
- 7. Electric/Solar Powered Vehicles.
- ** 8. Government Mandated Limits on Use of Private Vehicles.
- 9. Government Restrictions on Right to Drive.
- ** 10. Substantial Import Tax on Foreign Automobiles.
- * 11. Ownership of a Major U.S. Automobile Manufacturer by Foreign Investors.
- 12. Seizure of Automobiles for no Insurance.
- ** 13. Bankruptcy of a Major U.S. Automobile Manufacturer.
- * 14. Free Public Transportation.
- 15. Mandated Air Pollution Standards Nationally.
- 16. Restricted Foreign Investment in U.S.
- 17. Loss of Tax Deduction on Auto Loan Interest.
- * 18. Mid-East oil Stoppage to U.S.

** = Selected in round one and round two of Modified Delphi process.

* = Selected in round one, but not round two of Modified Delphi Process.

Appendix B.

APPENDIX

-C-

MODIFIED DELPHI PARTICIPANTS

1. Paul C. Beal, SEO Engineer
Ford Motor Company
300 Renaissance Center
P.O. Box 43311
Detroit, Michigan 48243
(313) 446-4135
2. Jeff Karr, Feature Editor
Motor Trend Magazine
8490 Sunset Blvd.
Los Angeles, CA. 90069
(213) 854-2222
3. Erik S. Jorgensen, SEO Mgr.
B-Car Platform, Chevrolet
General Motors Corp.
30001 Van Dyke Avenue
Warren, Michigan 48090-9020
(313) 575-6030
4. Loyce D. Tucker, Fleet Mgr.
San Francisco Police Dept.
850 Bryant Street
San Francisco. CA. 94110
(415) 553-1221
5. Tom Churchill, Equipment Sup.
Corporation Yard
City of Walnut Creek
P.O. Box 8030
Walnut Creek, CA.
(415) 943-5800
6. Wayne Torkelson, Mech. III
Corporation Yard
City of Walnut Creek
P.O. Box 8030
Walnut Creek, CA. 94596
(415) 943-5800
7. S. A. Giammona, General Mgr.
Parker Robb Chevrolet
1707 North Main Street
Walnut Creek, CA. 94596
(415) 934-4481
8. Andy Banta, Assoc. Prof.
Engineering Department
California State University
6000 J Street
Sacramento, CA. 95819
(916) 278-6616
9. Jay Emery, Manager
Motor Transport Section
California Highway Patrol
2812 Meadowview Road
Sacramento, CA. 95832
(916) 421-3256
10. Joe Harralson, Professor
Mechanical Eng. Department
California State University
6000 J Street
Sacramento. CA. 95819
(916) 278-6616

APPENDIX

-D1-

TREND SCREENING FORM

CANDIDATE TREND	For purposes of top-level strategic planning, how valuable would it be to have a really good long-range forecast of the trend?				
	PRICELESS	VERY HELPFUL	HELPFUL	NOT VERY HELPFUL	WORTHLESS
FUEL COSTS WILL INCREASE.	X				
TRAFFIC CONGESTION IN METROPOLITAN AREAS WILL INCREASE.		X			
GOVERNMENT TAXING ON FUEL WILL SIGNIFICANTLY INCREASE.				X	
DETERIORATION OF ROADWAYS AND FREEWAYS WILL CONTINUE.			X		
JOINT VENTURES BETWEEN U.S. AND FOREIGN AUTOMOBILE MANUFACTURERS WILL INCREASE.		X			
AUTOMOBILE INSURANCE COSTS WILL CONTINUE TO INCREASE.				X	
AUTOMOBILES WILL LAST LONGER AND BE KEPT LONGER BY OWNERS.		X			

** RATE EACH OF THE ABOVE TRENDS ON THEIR IMPACT ON FUTURE POLICE CARS IF THE TREND CONTINUED IN THE FUTURE.



APPENDIX

-D2-

EVENT SCREENING FORM

CANDIDATE EVENT	For purposes of top-level strategic planning, how valuable would it be to have a really good long-range forecast of the EVENT?				
	PRICELESS	VERY HELPFUL	HELPFUL	NOT VERY HELPFUL	WORTHLESS
AN ALTERNATIVE FUEL FOR GASOLINE WILL BE DEVELOPED.		X			
THE STOCK MARKET WILL CRASH, OR SEVERE DEPRESSION WILL RESULT IN THE U.S.	X				
GOVERNMENT MANDATED LIMITS ON THE USE OF PRIVATE VEHICLES WILL OCCUR.			X		
A SUBSTANTIAL IMPORT TAX ON FOREIGN AUTOMOBILES WILL BE PASSED.		X			
FOREIGN INVESTORS WILL OBTAIN OWNERSHIP OF A MAJOR U.S. AUTOMOBILE MANUFACTURER.				X	
BANKRUPTCY OF A MAJOR U.S. AUTOMOBILE MANUFACTURER WILL OCCUR.		X			
GOVERNMENT MAINTAINED FREE PUBLIC TRANSPORTATION WILL OCCUR.				X	
THE MID-EAST WILL HALT OIL SHIPMENTS TO THE U.S.				X	

** RATE EACH OF THE ABOVE EVENTS ON THEIR LEVEL OF IMPACT ON FUTURE POLICE CARS IF THE EVENT DID OCCUR IN THE FUTURE.



APPENDIX

-E-



POLICE DEPARTMENT
P.O. BOX 8039
1666 NORTH MAIN STREET
WALNUT CREEK, CALIFORNIA 94596
415-943-5844

Attached are trend and event survey sheets. I would ask that you take a few minutes and complete these for me. As time is passing quickly and my project completion date is only two months away, I would also ask that you complete the forms A.S.A.P. and mail them back to me in the enclosed envelope. I appreciate your response, as trend and event forecasting is a critical part of my project on police cars of the future.....

Instructions; Event Evaluation Form:

Read each of the five events shown.

1. In the probability section (first box) please indicate in which year the event, in your opinion, could possibly first occur (when the probability of the event happening exceeds 0).
2. In the second box (5 years from now) enter what you feel is the probability (in a percentage) of the event occurring within five years from now (by 1994).
3. In the third box (10 years from now) enter what you feel is the probability (in a percentage) of the event occurring within ten years from now (by 1999).
4. In the "impact on the issue" section please choose whether the event (in your own opinion) will have a positive or negative impact on American automobile production, if in fact that event did occur. Please rank (from 0-10) the strength of impact the event evaluated will have (either positive or negative). A "0" entry is no impact, while a "10" entry is an extremely strong impact.

EXAMPLE:

EVENT STATEMENT	YEAR FIRST EXCEEDS 0	5 YEARS FROM NOW	10 YEARS FROM NOW	POSITIVE 0-10	NEGATIVE 0-10
Major Earthquake in California	1989	20%	50%		-6

Instructions; Trend Evaluation Form:

Read each of the five trends shown.

1. Each trend is assigned a random value of 100 with relationship to its impact on American automobile production today. Given this value today, for each trend assign your own value for each trend as it impacted American automobile production five years ago (in 1984). Your value may be higher or lower than the 100 value for today.
2. Again, from the value of today (100), adjust the value up or down as you feel the trend "WILL" impact American automobile manufacturers five years from now (1994). Place this value in the upper 1/2 of the split box.
3. Now, in the lower 1/2 of the split box, place a value for how you feel the trend "SHOULD" impact American automobile manufacturers five years from now (1994).
4. Now repeat process 2. and 3. for ten years from now (1999).

What is needed is your opinion, based on a given value of today (100), as to how much impact the trend had on American automobile manufacturing five years ago, and how much impact it both "will" and "should" have in both five and ten years from now.

Example:

TREND STATEMENT	5 YEARS AGO	TODAY	5 YEARS FROM NOW	10 YEARS FROM NOW
Increased market in U.S. for foreign cars	150	100	60 20	30 10

Please provide me with the following information:

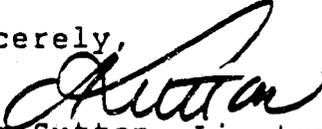
Your name: _____

Your title: _____

Your company: _____
address: _____

Again, thank you for your prompt response to this evaluation.

Sincerely,


Ross Sutton, Lieutenant
Walnut Creek Police Department

APPENDIX

-F-

ABOUT THE SURVEY

This summary highlights results of a regionwide attitude survey of local government and business leaders conducted by the Bay Area Economic Forum in September, 1988. The purpose of the survey was to document perceptions about the Bay Area's economic climate, to assess reaction to the concept of a regionally-focused economic development effort, and to gain input on possible functions of such an effort.

Conducted by mail, the survey was sent to the mayor and city managers of each of the 93 ABAG member cities; to the chair of the board of supervisors and county administrator of each of the region's nine counties; and to the chief executives or owners of a cross-section of large and small business firms within the region. Thus while not scientifically constructed, the sample was broadly representative of the region. Responses were received from 165 business leaders and 99 government leaders.

Thinking of the Bay Area as a whole, what effect do you believe the following factors have on the region's attractiveness to new business investment?

POSITIVE FACTORS: BUS. GOVT.

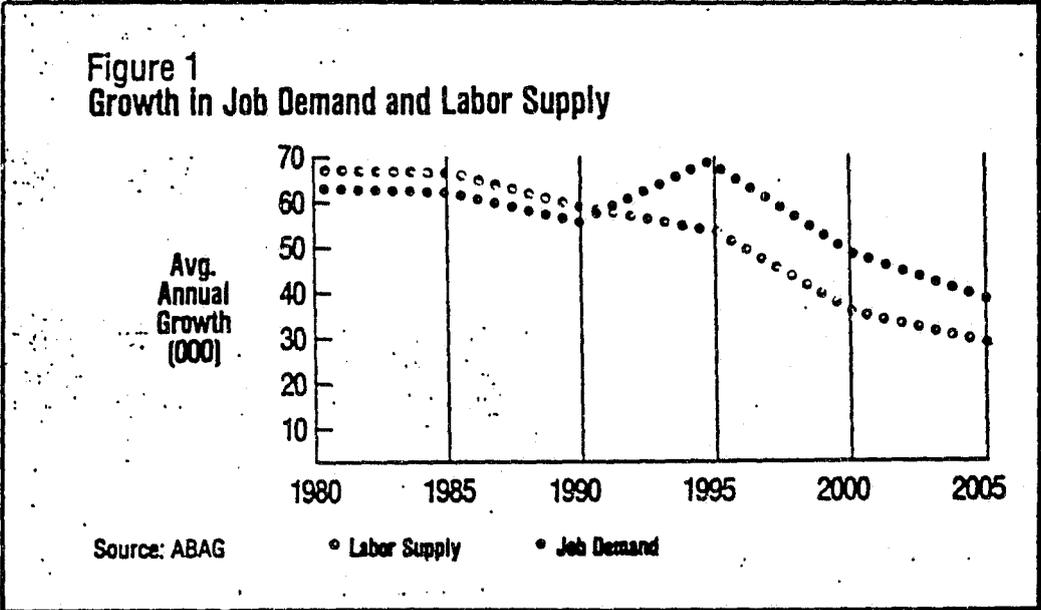
Factor	Very/somewhat positive	Very/somewhat negative
Climate/weather	99%	97%
Very/somewhat positive	99%	97%
Very/somewhat negative	N/A	N/A
Proximity to universities	96%	86%
Very/somewhat positive	96%	86%
Very/somewhat negative	1%	3%
Cultural/recreational facilities	96%	86%
Very/somewhat positive	96%	86%
Very/somewhat negative	1%	3%
Image/prestige	85%	89%
Very/somewhat positive	85%	89%
Very/somewhat negative	4%	2%
Access to customers	75%	84%
Very/somewhat positive	75%	84%
Very/somewhat negative	5%	4%
Access to suppliers	65%	79%
Very/somewhat positive	65%	79%
Very/somewhat negative	5%	5%
Quality of labor	56%	67%
Very/somewhat positive	56%	67%
Very/somewhat negative	15%	9%

NEGATIVE FACTORS:

Factor	Very/somewhat positive	Very/somewhat negative
Cost/availability of housing	1%	4%
Very/somewhat positive	1%	4%
Very/somewhat negative	98%	91%
Cost of land	1%	10%
Very/somewhat positive	1%	10%
Very/somewhat negative	93%	78%
Traffic levels	2%	8%
Very/somewhat positive	2%	8%
Very/somewhat negative	88%	85%
Local regulatory procedures (e.g., land use, business permits)	1%	15%
Very/somewhat positive	1%	15%
Very/somewhat negative	87%	59%
State & regional environmental regulations	4%	14%
Very/somewhat positive	4%	14%
Very/somewhat negative	73%	66%
Highway & road system	8%	19%
Very/somewhat positive	8%	19%
Very/somewhat negative	72%	71%

OTHER FACTORS:

Factor	Very/somewhat positive	Very/somewhat negative
Availability of labor	42%	68%
Very/somewhat positive	42%	68%
Very/somewhat negative	20%	12%
Reputation of business leadership	46%	47%
Very/somewhat positive	46%	47%
Very/somewhat negative	16%	11%
Quality of K-12 education	32%	47%
Very/somewhat positive	32%	47%
Very/somewhat negative	38%	22%
Public attitude toward business	23%	32%
Very/somewhat positive	23%	32%
Very/somewhat negative	40%	19%
Government attitude toward business	9%	44%
Very/somewhat positive	9%	44%
Very/somewhat negative	73%	21%
Public transportation	25%	24%
Very/somewhat positive	25%	24%
Very/somewhat negative	41%	52%
Local business taxes	3%	19%
Very/somewhat positive	3%	19%
Very/somewhat negative	60%	18%
Organized labor	5%	7%
Very/somewhat positive	5%	7%
Very/somewhat negative	54%	40%



SAN FRANCISCO BAY AREA - 1988

From the standpoint of encouraging economic development, how important is it to solve each of the following regional problems?

	BUS. GOVT.	
Traffic congestion	9.1	9.2
Lack of enough affordable/ accessible housing	8.6	8.7
Poor quality of K-12 education	7.8	7.5
Toxic wastes	6.4	7.0
Air & water quality problems	6.4	6.9

