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**THE IMPACT OF THE AIR QUALITY MANAGEMENT
PLAN ON LAW ENFORCEMENT IN THE SOUTH COAST
AIR BASIN BY THE YEAR 1995 - A PRESCRIPTION
FOR THE CALIFORNIA HIGHWAY PATROL**

An Independent Study

by

**David R. Helsel
Command College Class 11
Police Officer Standards and Training
Sacramento, California
1991**

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

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

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

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

Part One - A Futures Study

What will be the Impact of the Air Quality Management Plan on Law Enforcement in the South Coast Air Basin by the Year 1995, and in particular, the California Highway Patrol?

Part Two - Strategic Management

The Development and Implementation of a Strategic Plan for the Highway Patrol to successfully Impact and Enforce the Air Quality Management Plan.

Part Three - Transition Management Plan

A Description of the Critical Mass and Transition Management Structure for Implementation of the Plan to Enforce and Implement the Air Quality Management Plan in the South Coast Air Basin.

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Abstract

A futures study of the impact of the Air Quality Management Plan on California law enforcement in the South Coast Air Basin by the year 1995, and in particular, on the California Highway Patrol. The study is divided into three parts: a futures study with possible future scenarios; a strategic management plan for the state highway patrol agency; a transition management plan detailing elements of how to achieve a desired future state. Eight trends and eight events that will have significant impact on the issue are identified. Policy recommendations emphasize development of a traffic management plan in response to the Air Quality Management Plan, development of a traffic congestion reduction plan, public education plan, and CHP membership and involvement with the Air Quality Management Board. Survey data, and non-extrapolative forecasting results, graphics in text, with additional data, and instruments in the appendixes; references and bibliography.

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Executive Summary

SECTION ONE - A FUTURES STUDY

This research paper explored the impact of the Air Quality Management Plan on law enforcement in the South Coast Air Basin and in particular, the California Highway Patrol, by the year 1995. In 1989, the Air Quality Management District adopted a policy calling for the attainment of all federal and state air health standards by the year 2007 with other air quality mandates by 1997 and 1998. The South Coast Air Basin has the most serious air quality problem in the United States. Air pollution comes from nearly all human activities. The large industrial sources of air pollution have been controlled to a great extent. Although new automobiles produce far less pollution today than they did in years past, mobile sources represent 70 percent of today's pollution emissions.

In 1990, vehicle miles traveled in California exceeded 300 billion miles. Seventy percent of those miles were traveled on freeways and roadways under the jurisdiction of the California

Highway Patrol. The South Coast Air Basin contains 46 percent (13.5 million) of the states population, 45 percent (9.6 million) of the state's motor vehicles, and 46 percent (8.9 million) of the state's licensed drivers. All this in an area of 6,600 square miles containing 29 percent (41,278 miles) of the roadways in California. Included in this is 1,345 freeway miles. Any attempt to reduce motor vehicle pollution will require a reduction in motor vehicle usage and travel.

Research included a literature review and selected personal interviews. The process revealed that there are no other areas in the United States that have as severe an air quality problem as that which exists in the South Coast Air Basin. Additionally, no other entity or government body in the nation has undertaken a project as extensive as the Air Quality Management Plan to improve the quality of air in the South Coast Air Basin.

Based upon the data developed through the nominal group technique and research, the 12 members of the NGT projected eight trends: 1) legislated environmental law enforcement; 2) population of the South Coast Air Basin; 3) traffic congestion in the South Coast Air Basin; 4) enforcement duties of the California Highway Patrol officer; 5) vehicle travel regulations in the South Coast Air Basin; 6) vehicle registration rate in the South Coast Air Basin; 7) fuel availability; 8) truck travel regulations in the South Coast Air Basin. The NGT panel also identified eight events: 1) odd/even license plate vehicle travel/usage restrictions; 2) prohibition of single occupant vehicles on freeways; 3) truck travel/usage restrictions; 4) vehicle

registration reaches 14 million in South Coast Air Basin; 5) state motor vehicle account unable to fund entire California Highway Patrol budget; 6) peak hour vehicle operating fee; 7) population of South Coast Air Basin reaches 20 million; 8) truck accidents increase 25 per cent in the South Coast Air Basin.

Three scenarios were developed from the forecast data, A normative, exploratory, and hypothetical.

Section Two - Strategic Management

A strategic management plan was then developed using the California Highway Patrol (CHP) as the model. A situational analysis was conducted of the environmental threats and opportunities and the internal strengths and weaknesses of the CHP. A list of stakeholders was developed also. A policy delphi was conducted to identify policies which could bring about the desired future.

Section Three - Transition Management Plan

A transition management plan was prepared which addressed the change management from the present state to the future state. The plan identified the critical mass and their commitment level to the plan.

A transition management structure consisting of a transition management team, directed by a high ranking member of the CHP, and

representatives of the plan's stakeholders was recommended. The plan includes examples of implementation technologies, responsibility charting, communication of the vision, and milestone recognition were also offered as instruments to assist manage the change process.

The study concluded that in order to improve air quality in the South Coast Air Basin, motor vehicle travel must be reduced and/or restricted. This is because 70 percent of air pollution is attributable to motor vehicle emissions. The study identified 18 trends and 39 events, some of which will have a direct impact on allied law enforcement agencies, as well as the CHP. Allied law enforcement agencies should examine these trends and events to determine the potential impact on their individual agencies.

Subjects for future study might include the impact of the Air Quality Management Plan upon local law enforcement, the impact upon law enforcement personnel in their work environment and personal lives, and the impact on the individual law enforcement agencies ability to perform their regular mission.

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INTRODUCTION

The South Coast Air Basin (SCAB) covers the most populous region in California. Los Angeles, Orange, the non-desert portions of Riverside and San Bernardino Counties comprise the South Coast Air Basin. This is an area of 6,600 square miles with a population of more than 13.5 million people. By the year 2010, the population in the South Coast Air Basin (SCAB) is projected to reach 20.3 million, adding an additional 7.8 million vehicles to an already over-burdened transportation system with 9.7 million vehicles.

The South Coast Air Basin has the most serious air quality problem in the nation. Ozone and carbon monoxide levels reach maximums nearly three times the national standard set to protect public health. Fine particulate matter (PM10) reaches levels of nearly twice the national health-based standards. This Basin is the only area in the nation still failing to meet the nitrogen dioxide health standards.

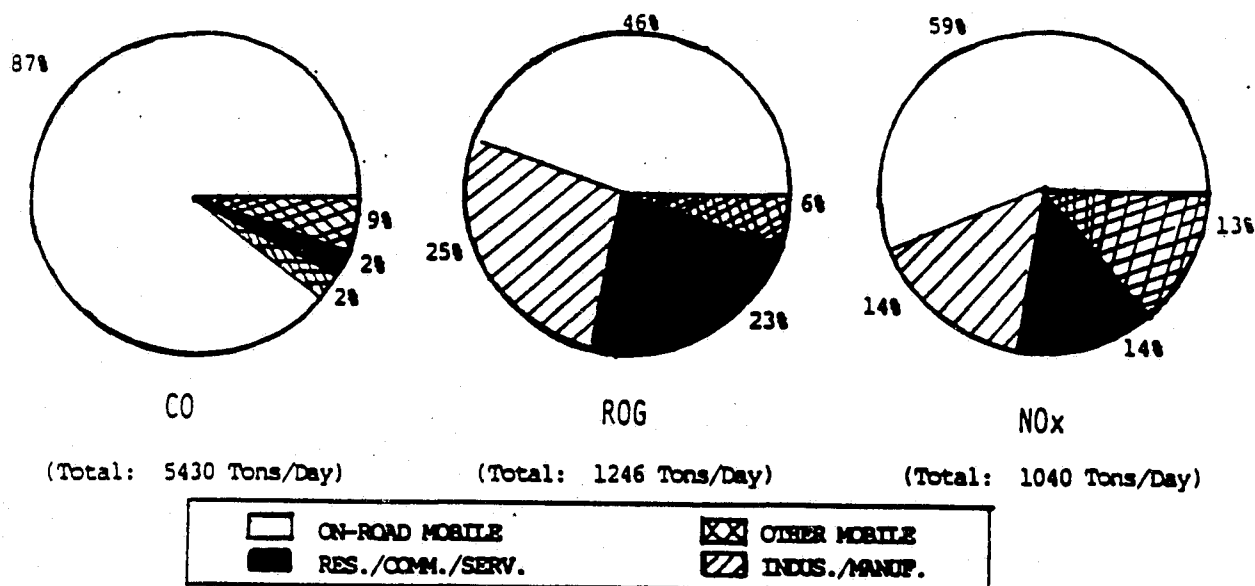
The Los Angeles Times reported in a September 1989 series on air quality and pollution in the South Coast Air Basin that studies by health researchers at the University of California at Los Angeles, and the University of Southern California indicated that residents of the more polluted areas of the Basin experience decreases in lung function when compared to residents of less polluted areas. Other studies suggest that symptoms of chronic obstructive pulmonary disease may be related to repeated exposures to ozone concentrations above the current health standards. The

Air Quality Management District (AQMD) estimates that air pollution is responsible for billions of dollars in damage to health, agriculture, materials, and visibility.

Why do these problems still exist despite 40 years of local regulatory effort? Put simply, too many pollutants are being emitted into a geographical setting which long ago exceeded its carrying capacity. During summer, an inversion layer hangs over the Basin, concentrating pollutants under a lid of hot air. During the daytime, sea breezes off the ocean move air masses polluted with primary contaminants including reactive organic gases (ROG), and oxides of nitrogen (NOx) inland across the Basin. Sunshine then triggers the photochemical reactions that produce the highest ozone concentrations in the country. In winter, inversion layers are frequently based at ground level during night and early morning hours, leading to increased concentrations of pollutants such as carbon monoxide and oxides of nitrogen.

Emissions come from nearly all human activities. "Large industrial sources have been controlled to a great extent, and many traditional "smoke-stack" industries have left the Basin."1 Unfortunately, remaining combustion processes and activities still produce emissions which result in unacceptable levels of pollution. Although new automobiles produce far less pollution than they did in years past, mobile sources represent roughly 70 percent of today's emissions (see figure 1).

Figure 1
Relative Contribution By Stationary
And Mobile Sources to 1985 Emissions



In 1989, the South Coast Air Quality Management District (AQMD) and the Southern California Association of Governments (SCAG) adopted a policy calling for attainment of all the federal and state air health standards at the earliest practicable date, but no later than:

December 31, 1996 for nitrogen dioxide.

December 31, 1997 for carbon monoxide.

December 31, 2007 for ozone and PM10.

The 1989 Air Quality Management Plan (AQMP), is the regional plan for attaining the federal air quality standards in this Basin by the year 2007. The AQMP consists of 5,500 pages in 45 separate documents which, if stacked up, stand nearly three feet high.

As is generally the case, law enforcement is charged with the responsibility to enforce the law, maintain social order and handle many other ills of society. The student riots and demonstrations during the Vietnam War are a classic example. The 1990 decade has pro-choice and anti-abortion factions, and various environmentalist groups demonstrating throughout California and the nation. The California Highway Patrol has historically been involved in preserving the peace and maintaining public safety during these trying periods and events.

The major burden for enforcing portions of the Air Quality Management Plan (AQMP) related to vehicular travel and usage will be placed with the California Highway Patrol (CHP). Seventy percent of the 300 billion vehicle miles traveled in California during 1990 were on freeways and roadways under the jurisdiction of the CHP.

PAST ENVIRONMENTAL ENFORCEMENT RELATED TO VEHICLES

In 1969, the California Highway Patrol initiated roadside inspections of passenger vehicles and pick-up trucks throughout the state. The inspections originally dealt with a vehicle's safety equipment and smog devices. The program was later expanded to measuring tail-pipe emissions. The program was discontinued in 1975 as it was deemed to be not cost effective by the CHP.

In 1989, the CHP was asked by the Air Quality Management District (AQMD) to undertake a vehicle emission enforcement program in the South East Air Basin (SEAB). Discussions led to the

beginning of a \$750,000 annual reimbursable services contract. The CHP provides 12 officers and one sergeant, who administers and supervises the program. The officers were assigned to particular areas within the SCAB and frequently work to gather as a team. As a result of the favorable reaction from the public, politicians, and the enforcement efforts of the CHP officer's assigned to the program, the contract is still in effect.

PURPOSE AND FOCUS OF THE STUDY

The objective of this study is to identify the effect of the Air Quality Management Plan (AQMP) on the delivery of CHP law enforcement services and operations, and their personnel in the South Coast Air Basin (SCAB). The study will address the Highway Patrol's role in enforcing air quality environmental laws involving vehicle restrictions related to quality of life issues. Since 70 percent of the pollution in the SCAB is attributable to motor vehicles, the focus of this study will be directed towards the reduction of motor vehicle travel, means to reduce traffic congestion, and how to accomplish that with minimal disruption to normal/usual CHP enforcement services.

LITERATURE REVIEW AND INTERVIEWS

A review of the United States General Accounting Office environmental protection bibliographies reveals a smattering of research documents related to motor vehicle pollution, none of

which directly address the topic of vehicle travel and/or usage restrictions.

An interview with Mr. Don Zinger, Office of Mobil Sources, Environmental Protection Agency, Washington D.C., was conducted. Mr. Zinger related that there are no programs or efforts in the United States to reduce air pollution through the restriction of motor vehicle travel and/or usage. He related that there are a few voluntary programs to reduce motor vehicle travel. Those programs are designed to reduce traffic congestion related to motor vehicle travel. These programs involve High Occupancy Vehicle (HOV) lanes and car pooling efforts.

Mr. Kent Milton of the National Highway Transportation Agency in Washington D.C., supported Mr. Zinger's comments and added that in his interactions with the other states in the nation and Washington's other bureaucracies dealing with environmental issues, none have a plan as encompassing and grandiose as the Air Quality Management Plan.

The Air Quality Management Plan has approximately 167 control issues designed to improve air quality. Control measures to reduce vehicle use, improve traffic flow, improve public transit and manage growth, are a small part of the overall plan.

The Air Quality Management Plan will have a profound impact on the California Highway Patrol and add responsibilities beyond it's current mission.

The operations of the CHP are divided into four major programs. The largest is "Traffic Management", which has over \$509

million budgeted for operations. The objectives of the program are to minimize deaths, injuries, and property losses due to traffic accidents; to minimize traffic delays to the motoring public; and to provide protection and assistance to the motoring public.

The remaining three programs include regulation and inspection, vehicle ownership security, and administration. The 61.4 million dollars budgeted in support of these program elements provides specific support for the conduct of commercial vehicle enforcement and inspection activities, vehicle theft prevention and recovery, and administrative support to assure the overall success of the various departmental programs.

The CHP has established the management and regulation of traffic to achieve safe, lawful and efficient use of the highway transportation system as it's primary mission.

A secondary mission is:

The Department in it's role as a major statewide law enforcement agency, supports local law enforcement and stands ready to assist in emergencies exceeding local capabilities. Additionally, as a public service agency, the Department provides disaster and lifesaving assistance.

The objectives of the Highway Patrol are:

- o Accident Prevention - to minimize the loss of life, personal injury and property damage resulting from traffic accidents.
- o Emergency Incident/Traffic Management - to minimize exposure of the public to unsafe conditions

resulting from emergency incidents, impediments and congestion.

- o Law Enforcement - to minimize crime.
- o Assistance - to assist other public agencies.
- o Services - to maximize service to the public in need of aid or information.

Environmental law enforcement pertaining to quality of life issues looms on the horizon for the CHP and local law enforcement agencies. This will cause a change in the mission of the CHP, as well as the other law enforcement agencies in the South Coast Air Basin.

PART ONE

DEFINING THE FUTURE

The purpose of this project is to conduct a futures study of the impact of the Air Quality Management Plan (AQMP) on law enforcement in the South Coast Air Basin (SCAB) by the year 1995 and in particular on the California Highway Patrol.

As with any futures study, the environment of today must be scanned to assist in the planning for the future. While one cannot predict tomorrow with certainty, one can project a possible future by scanning and a review in each of the Social, Technological, Environmental, Economic, and Political (STEEP) typologies. Through the use of forecasting techniques, glimpses of the future can be defined upon which planning can begin. The scenarios are based upon forecast of trends and events which impact the issue being studied. Decisions and/or recommendations can be made from the scenarios to bring about the desired future and to avoid the negative future.

To provide focus to the issue question, "The Impact of the Air Quality Management Plan on Law Enforcement in the South Coast Air Basin by the year 1995, and in particular, on the California Highway Patrol", the study was defined by the use of the following sub-issues:

- o Impact of the Air Quality Management Plan upon the ability of the CHP to perform their normal mission.

- o Impact of the Air Quality Management Plan upon the resources (Personnel/Financial) of the CHP.
- o Impact of legislative directed environmental enforcement duties on the CHP.

THE SCANNING PROCESS

The first step in this objective was the scanning and review of existing literature related to the subject matter. A bibliography of the literature reviewed is contained in Appendix A. Interviews were conducted with select individuals with expertise related to the project topic. A list of those interviewed is contained in Appendix B. The scanning, review of literature, and interviews generated relevant trends and events. During the next phase of the scanning process, a Nominal Group Technique (NGT) was conducted.

The make-up of the NGT group was comprised of law enforcement administrators, chiefs of police, highway patrol commanders, representatives of the South Coast Air Quality Management District and Southern California Association of Governments. The membership of the NGT group is listed in Appendix C. The group evaluated the identified trends and events and eventually selected a list of eight trends and eight events that they felt had relevance to the issue being studied.

TREND SELECTION

The nominal group developed a list of 18 trends. They selected the following eight trends that they felt will have the greatest impact on the issue. A complete list of the trends is provided under Appendix D. The trends selected by the NGT panel are listed below:

1. Legislated Environmental Law Enforcement.
2. Population of South Coast Air Basin.
3. Traffic Congestion in South Coast Air Basin.
4. Enforcement Duties of CHP Officer.
5. Vehicle Travel Regulations in South Coast Air Basin.
6. Vehicle Registration Rate in South Coast Air Basin.
7. Fuel Availability.
8. Truck Travel Regulations in South Coast Air Basin.

TRENDS DEFINITIONS

The trend levels were assigned a present day value of 100. The NGT group was asked to identify the trend level five years ago. They also projected the trend level five to ten years from present day. The NGT group also identified where the trend would be and should be five and 10 years from today. Table 1 depicts the results of the Panel's trend forecasting. The median value established by the NGT group for each trend level is reflected on the figures that follow.

Table 1
Trend Evaluation

Trend #	TREND STATEMENT (Abbreviated)	LEVEL OF THE TREND** (today = 100)			
		5 Years Ago	Today	*5 Years From Now	*10 Years From Now
1	Legislated Environmental Law Enforcement	70	100	130 140	150 195
2	Population of South Coast Air Basin (SCAB)	80	100	120 100	135 115
3	Traffic Congestion in South Coast Air Basin (SCAB)	85	100	150 100	175 100
4	Enforcement Duties	90	100	115 110	125 130
5	Vehicle Travel Regulations in SCAB	85	100	120 115	140 125
6	Vehicle Registration Rate in SCAB	85	100	120 100	140 115
7	Fuel Availability	100	100	100 105	100 120
8	Truck Travel Regulations in SCAB	90	100	120 130	150 135

** Panel Medians

*Five years from now
"will be"

"should be"

*Ten years from now
"will be"

"should be"

Trend 1: Legislated Environmental Law Enforcement.
This trend was identified as the legislature mandating and directing emphasis/enforcement on environmental quality of life issues. The enforcement of these regulations/laws would not

generally be thought of as the perceived role of the CHP or local law enforcement. This trend would redirect resources/personnel away from the "sacred cow" issues that the public expects such as: enforcement, accident investigation, services, and crime suppression. Any additional responsibilities without attendant resources and/or funds will certainly detract from the patrols basic mission and cause public dissatisfaction and affect employee morale adversely.

Trend 2: Population of South Coast Air Basin.

The group identified this trend as the increasing population within the South Coast Air Basin. This area is currently the most populous region in California. Thirteen point five million (13.5) people reside in an area of 6,600 square miles. By the year 2010, 20.3 million people are projected to reside in the South Coast Air Basin. This trend has a severe negative impact on the issue. More people equal additional motor vehicles which equates to more vehicle miles travelled within the basin and more air pollution.

Trend 3: Traffic Congestion in the South Coast Air Basin.

The group consensus was that traffic congestion will increase and become more severe. According to "Vision: California 2010", today's average freeway commute speed of 35 miles per hour will be reduced to 19 miles per hour by 2010. Today's average commute time of 45 minutes will increase to more than two hours. Any increase in congestion compounds the air pollution in the South Coast Air

Basin. That in turn has a negative impact on the quality of life. This trend has immense repercussions on the ability of the Department (CHP) to provide its expected level of services to the motoring public. Demands for services will climb in correspondence with congestion and timely delivery of services will be delayed.

Trend 4: Enforcement Duties of CHP Officers.

This trend addresses the perceived change in the current mission of the CHP officer to one of enforcing environmental regulations relating to quality of life issues. The panelist felt that any additional duties imposed upon the Department (CHP) without attendant resources will certainly detract from the Department's basic mission, thus creating public dissatisfaction and adversely affecting employee morale. The NGT panel perceived that this trend would raise some additional issues. Will new or additional training requirements will be necessary for the officers to deal with the new and additional duties? Will additional funding be necessary to provide the essential levels of service to deal with the Air Quality Management Plan? Should the CHP create a non-sworn/civilian position to provide motorist services, such as, accident investigation, thus freeing officers to focus on enforcement? Will teams of officers specializing in and dedicated to the enforcement of the air quality Management Plan on a full-time basis be necessary?

Trend 5: Vehicle Travel Regulations in the South Coast Air Basin.

The panel consensus was that in order to reduce air pollution, travel regulations and vehicle usage restrictions would have to be imposed. Seventy percent (70%) of the air pollution and 87 percent of the carbon monoxide in the South Coast Air Basin is attributed to motor vehicle emissions. The panel felt that this trend adversely impacts the Department (CHP). Any travel and/or vehicle usage restrictions would tax the resources and personnel of the Highway Patrol. Without an attendant increase in financial and personnel, the Department (CHP) would be strained to deal with the travel/vehicle usage restrictions and still provide for its basic mission.

Trend 6: Vehicle Registration Rate in the South Coast Air Basin.

This trend was identified by the Panel as the increasing motor vehicle registration rate in the South Coast Air Basin. Currently the South Coast Air Basin contains 45 percent (9,671,406) of the State's motor vehicles. By the year 2010, motor vehicle registrations in the South Coast Air Basin are expected to increase another 7.8 million vehicles. As discussed under trend five, the implications for increased air pollution will have a major impact on the quality of life for residents in the South Coast Air Basin.

Trend 7: Fuel Availability.

The panelist felt that the limited availability of motor vehicle fuel would create regulations effecting fuel sales and vehicle usage and travel restrictions. This would have a negative impact on the Highway Patrol. Regulations restricting vehicle usage/travel would require enforcement. Without attendant resources, the patrol would be hard pressed to provide adequate enforcement to bring about public compliance.

The positive side of this is that travel and vehicle usage restrictions would result in fewer vehicle miles driven, thus reducing pollution emitted from motor vehicles. On the other hand, the panel felt that fuel availability would not be a problem now or in the foreseeable future. If this is the case, then without any travel/vehicle usage restrictions, air pollution will continue to be a major problem in the South Coast Air Basin.

Trend 8: Truck Travel Regulations in the South Coast Air Basin.

This trend was identified by the NGT Panel as restriction of truck delivery schedules by days of the week, hours of the day, and routes. This would entail restriction of truck deliveries to non-commute times and off peak hours (2000 - 0600 hours). It would also, at the same time, restrict trucks from traveling on certain highways/freeways and into central business districts. The panel felt that this trend had positive, as well as negative implications. On the plus side of the trend, restricting trucks

from the freeways during the commute hours (0700-0900/1500-1900) would reduce traffic congestion. Accidents involving trucks, which cause lengthy travel delays, during the commute hours, would be eliminated. Higher highway travel speeds also means lower pollution emissions from motor vehicles.

There is a negative impact to the Highway Patrol in attempting to provide the personnel necessary to enforce these truck usage and travel restrictions. The panel felt that this was inconsequential when the trend was viewed as to its far reaching impact on the business, employees, and public that would be affected by this trend. Any change in delivery schedules not only affects the trucking company and its employees, it also impacts the businesses and their employees that depend on truck deliveries for their livelihood. Employee unions will be opposed to this trend. Any cost associated with the implementation of this trend will certainly be passed on to the customer.

EVENT SELECTION

From the research and scanning process, a preliminary list of events was prepared and provided to the NGT participants. The group brainstormed additional events that they felt had merit and worth exploring. From a list of 39 events, the group reached consensus on eight events they felt had the most value to the futures scenario process. The forecast included the number of years until the probability of each event first exceeds zero, the probability of each occurrence for each event 5 years and 10 years

from now. The probability scale was zero (event will not happen by the established time limit) to 100 (event will happen by the established time limit). The panel also evaluated the impact on the issue both positive and negative, on a zero to 10 scale. Table 2 depicts the results using the panel medians, of the events forecasted. A complete list of the events is provided under Appendix E.

Table 2

Event #	EVENT STATEMENT	*Years Until Probability Exceeds Zero	*Probability		Impact on the Issue Area If the Event Occurred	
			Five Years From Now (0-100%)	Ten Years From Now (0-100%)	*Positive (0-10)	*Negative (0-10)
1	Odd/Even License Plate Vehicle Travel/Usage Restrictions	4	40	50	5	5
2	Prohibition of Single Occupant Vehicles on Freeways	5	25	50	5	6
3	Truck Travel/Usage Restrictions	2	60	90	5	6
4	Vehicle Registration Reaches 14 Million in SCAB	5	40	70		8
5	Motor Vehicle Account Unable to Fund Entire CHP Budget	3	40	65		8
6	Peak Hour Vehicle Operating Fee	4	35	70	4	6
7	Population Reaches 20 Million in SCAB	5	35	70		8
8	Truck Accidents Increase 25 Percent in SCAB	3	50	90		7

* Panel Medians

The following is an analysis of selected events:

Event One: Odd/Even License Plate Vehicle Travel Usage Restrictions. The panel described this event as the operation of motor vehicles being restricted to predetermined days of the week by the last number of the vehicle license plate. The group felt that the probability of this event first exceeding zero was in four years with a 40 percent chance of occurring in five years, and fifty percent in ten years. This event had a positive impact of five. The panel felt the positive issues were a reduction in motor vehicle travel, congestion and fuel consumption which in turn would reduce air pollution. Additionally, an enactment of this regulation might cause the legislature to provide additional funds to the Highway Patrol to allocate additional resources to the enforcement of this event. The panel felt that this event had a negative impact of five on the issue also. Any restrictions to motor vehicle usage could adversely effect motor vehicles sales. If motor vehicle sales slump, revenue into the motor vehicle fund declines accordingly. Enforcement of this event, without attendant resources, will stretch the Highway Patrol capabilities. The panel felt that overall, this event had a negative impact on the Highway Patrol.

Event Two: Prohibition of Single Occupant Vehicles on the Freeways. This was described as the restriction of all single occupant passenger vehicles (except motorcycles), from the freeways in the South Coast Air Basin. The panelist felt that this could be limited to hours of the days, and/or days of the week. They

expressed the opinion the probability of this event first exceeding zero was in five years, with a 25 percent chance of occurring, and 50 percent in ten years. The event had a positive impact of five. This is due to the perceived reduction of vehicle miles traveled, less congestion, decreased fuel consumption, and less vehicles being operated. This has a positive impact on improving air quality and reducing pollution.

The negative rating of six is due to the adverse impact of this event on the CHP. Endeavors to enforce this restriction will require additional personnel and funding. With 9.7 million vehicles in the South Coast Air Basin and only 1,400 CHP officers currently deployed, enforcement alone to gain public compliance would be difficult. This too, could adversely impact car sales in the South Coast Air Basin as in event one.

Event Three: Truck Travel/Usage Restrictions. This event will lead to a reduction and/or restriction of truck usage/travel during peak (commute) hours on freeways in the South Coast Air Basin. The panelist felt that probability of this event first exceeding zero, was in two years. The groups opinion was that this event had a 60 percent chance of probability in five years, and 90 percent in 10 years. This is probably due to the public perception that trucks are responsible for the majority of traffic congestion. In all likelihood, the public would support this event. The event received a positive impact of five. This was due to the favorable condition it would create by reducing truck accidents during the

hours of commute, favorable effect on reducing traffic congestion, thus reducing fuel consumption and improving air quality. The negative impact of six reflects the additional enforcement responsibilities for the Highway Patrol.

Event Four: Vehicle Registration Reaches 14 Million in the South Coast Air Basin. This event will add to an already overburdened transportation system. It will create more traffic congestion, increased motor vehicle fuel consumption and create more motor vehicle pollution, thus adversely affecting the air quality. The panel estimated that the probability of this event first exceeding zero was in five years with a 40 percent chance of occurrence, and 70 percent in 10 years. This event is viewed as having a negative impact of eight. In addition to the previously mentioned concerns, this event will cause additional demands on the Highway Patrols resources. More vehicles create additional levels of service. Traffic accidents increase, as do the demands for motorist services in direct correlation to the burgeoning vehicle registration rate.

Event Five: Motor Vehicle Account Unable to Fund Entire CHP Budget. The State of California Motor Vehicle Fund provides the operating budgets of the Highway Patrol and Department of Motor Vehicles. The funds are derived from motor vehicle registrations. Declines in new vehicle sales and unregistered vehicles have a negative impact on the Motor Vehicle Fund. As a motor vehicle

ages, the license fees drop and scofflaws who operate their vehicles unregistered, cause revenue to dip. The motor vehicle fund does not have a formula for an automatic revenue enhancement. Any increase in motor vehicle fees must be enacted by the legislature. The panelist indicated that the probability of this event exceeding zero was in three years. The group felt this event had a 40 percent probability of occurring in five years and 65 percent probability in 10 years.

This event is viewed as having a negative impact of eight. The detrimental impacts of this event on the Highway Patrol would be numerous. Mainly, it would not allow the Department to deploy adequate resources for its basic mission much less for enforcement of the Air Quality Management Plan regulations.

Event Six: Peak Hour Operating Fee. The panelist described this event as a vehicle surcharge fee imposed upon vehicles that would be operated during the peak highway usage hours. This event should lead to a reduction of vehicles being operated during the peak commute hours. This could also lead business and government to adjust their employees work hours and days of work to compensate for this events travel restrictions. The group projected the probability of this event exceeding zero was in four years. The group felt that this event had a 35 percent chance of occurring in five years, and 70 percent in 10 years. This event is viewed as having a positive impact of four. The panel felt that this event would reduce motor vehicle travel during the peak hours of commute,

thus improving traffic flow, reducing congestion, and favorably influencing air quality.

This event received a negative rating of eight. The Panel perceived numerous problems for law enforcement and the CHP in attempting to enforce this motor vehicle usage restriction. The panel felt that without additional personnel to mount a major enforcement effort directed towards violators of this restriction, voluntary compliance would be minimal. To accomplish compliance without additional staffing will surely detract from the CHP's other duties.

Event Seven: Population Reaches 20 Million in the South Coast Air Basin. The group forecasted that this event would have a tremendous adverse effect on the issue, thus a negative impact of eight was assigned to this event. The South Coast Air Basin currently contains 13.5 million people (46 percent of the states population). The Basin has 8.9 million licensed drivers (46 percent of the states licensed drivers), and 9.6 million motor vehicles (45 percent of the states registered vehicles). All this in 6,600 square miles containing 41,278 miles (29 percent) of all California roadways which includes 1,345 miles of freeways. It is easily assumable that as the population grows, motor vehicle registrations and licensed drivers will increase at a comparable rate. The adverse impact on air quality is apparent. The group projected that this event has a 35 percent chance of occurring in five years and 70 percent in ten years. This event will further

stretch the resources and capabilities of the CHP in their endeavor to manage the highway transportation system in the South Coast Air Basin.

Event Eight: Truck Accidents Increase 25 Percent in the South Coast Air Basin. The group estimated the probability of this event first occurring was in three years with a 50 percent chance of occurrence in five years and 90 percent in ten years. This event received a negative impact of seven. The advent of this event will have profound reverberations on the population of the South Coast Air Basin and the Highway Patrol. For every one minute of freeway travel delay, it takes five minutes for the traffic to resume it's normal flow. Increased travel delays, congestion, fuel consumption, and pollutants will result from this event occurring. The detrimental impingement on the Highway Patrol will necessitate an increase in resources (financial and personnel) and a detailed enforcement plan to combat this event.

Cross-Impact Analysis

A cross-impact analysis estimates the impact of one event occurring with another event or one event transpiring with a trend. The impact on an event can be an increase or decrease in the probability of another event occurring, or have no impact at all. Correspondingly, the impact of an event on a trend can affect the direction or impact of that trend. The cross-impact analysis matrix (Table 3) was used to identify the inter-relationships of

the selected events with themselves and with the trends. The question posed for each analysis of impact upon events was this: "If this event actually occurred, what would the new resulting probability be for the other events?" When comparing the impact of an event upon each target trend, the following question was asked: "If this event actually occurred, what impact would it have upon each trend, in terms of percent, increase or decrease?"

TABLE 3

CROSS-IMPACT ANALYSIS

MATRIX (Panel Means*)										Maximum Impact % change ± Years to Maximum								"IMPACT TOTALS"
**	E1	E2	E3	E4	E5	E6	E7	E8	T1	T2	T3	T4	T5	T6	T7	T8		
E1	X	Q	Q	Q	-10	Q	Q	+20	+15	Q	+15	-10	Q	-5	+15	+20	E1 8	
E2	Q	X	Q	+15	-10	Q	Q	+20	+15	Q	+15	-10	Q	-5	+15	+20	E2 2	
E3	Q	Q	X	Q	-10	Q	Q	+5	+15	Q	+15	-10	Q	-5	+15	Q	E3 7	
E4	-15	Q	Q	X	+10	+5	Q	-20	-25	Q	-25	-15	Q	Q	-5	-10	E4 2	
E5	-25	-25	-25	Q	X	-15	Q	-25	+10	Q	Q	-15	Q	Q	Q	Q	E5 7	
E6	Q	Q	Q	Q	-5	X	Q	+20	+15	Q	+15	-10	Q	-5	+15	+20	E6 8	
E7	Q	Q	Q	Q	Q	Q	X	Q	Q	Q	-25	-15	Q	Q	-5	-10	E7 4	
E8	Q	Q	-20	Q	-10	Q	Q	X	Q	Q	-20	-20	Q	Q	-5	Q	E8 5	
"IMPACTED" TOTALS																		
E1	E2	E3	E4	E5	E6	E7	E8	T1	T2	T3	T4	T5	T6	T7	T8			
2	1	2	1	6	2	Q	6	6	Q	7	8	Q	4	7	5			

* Means are rounded off to the nearest five percent

E1 (All/Over License Plate Vehicle Travel/Usage Restrictions)
E2 Prohibition of Single Occupant Vehicles on Freeways
E3 Truck Travel/Usage Restrictions
E4 Vehicle Registration Reaches 14 Million in SCAB

E5 Motor Vehicle Accident Unable to Fund CIP Budget
E6 Peak Hour Vehicle Operating Fee
E7 Population Reaches 20 Million in SCAB
E8 Truck Accidents Increase 25 Percent in SCAB

T1 Legislated Environmental Law Enforcement
T2 Population of South Coast Air Basin (SCAB)
T3 Traffic Congestion in SCAB
T4 Enforcement Deterioration

T5 Vehicle Travel Regulation in SCAB
T6 Vehicle Registration Rate in SCAB
T7 Fuel Availability
T8 Truck Travel Regulations in SCAB

Actor Events

Actor events were identified by tabulating the rows that had the most number of impacts or affect on other events or trends. Events with the higher totals are called "Actor" events. They are and should be the primary focus of policy action. The following is a conspectus of the events in descending order.

Event Two: Prohibition of Single Occupant Vehicles on Freeways (9 hits). The positive impacts of this event are:

1. Reduces the number of vehicles using the freeways by approximately 50 percent.
2. Less vehicles being operated thus reducing the amount of pollutants attributable to motor vehicles.
3. Improves traffic flow, reduces congestion, less fuel consumption.
4. May cause vehicle registrations (sales) to remain flat or not increase in proportion to the population as motorist seek alternate transportation or ride-sharing.
5. May cause the Legislature to provide additional funds to the Highway Patrol for enforcement programs.

The negative impacts of this event are:

1. Motorist voluntary compliance will probably be 50 percent or less. This will cause a redirection of Patrol resources to enforce this event. The Patrol will need additional personnel and/or funding to alleviate a reduction of service levels from its basic mission.
2. Motor vehicles sales will drop, as motorists need for additional transportation vehicles decline as they move to alternate sources of transportation. This will result in a loss of revenue into the Motor Vehicle Account.
3. May cause the redirection of cargo transported by trucks to other modes of transportation (RAIL). This would eventually effect the Motor Vehicle Fund through a reduction in truck registrations (fee's).

Event Four: Vehicle Registration reaches 14 million in South Coast Air Basin (9 hits). The positive effect of this event is:

1. Increased vehicle registrations realize additional funds from registration fees for the Motor Vehicle Account.

The negative impacts of this event are:

1. Additional vehicles create more congestion, increase in the vehicle miles traveled, increased fuel consumption, and add more motor vehicle pollutants into the atmosphere.

2. Will create a greater demand upon the Highway Patrol for services.
3. May cause the legislature to direct the Highway Patrol to provide a particular level of enforcement regarding quality of life issues relating to motor vehicle usage/travel restrictions without attendant resources.

Event One: Odd/Even License Plate Vehicle Travel/Usage Restrictions (8 hits). The positive aspects of this event are:

1. Reduces the amount of vehicles on the highways by approximately 50 percent, improves traffic flow, reduces traffic congestion, motor vehicle pollutants and vehicle miles traveled.
2. Any reduction in the number of vehicles using the streets, highways, and freeways diminishes the possibility of traffic accidents.

The negative implications are:

1. May cause a redirection of Highway Patrol resources to enforce the provisions of this event.
2. May contribute to a decline in car sales as motorists seek alternative modes of transportation. Any drop in car sales causes a reduction of registration fees into the Motor Vehicle Fund.

Event Six: Peak Hour Vehicle Operating Fee (9 hits). The positive aspects of this event are:

1. Reduces the number of motor vehicles on the roadways during the peak hours of commute.
2. Improves traffic flow thereby reducing motor vehicle pollutants and fuel usage.
3. Additional source of revenue to entity that authorizes/licenses the vehicles for peak hour operation.

The negative implications of this event are:

1. Any efforts to enforce the licensing requirements will cause a redirection of Highway Patrol resources.
2. Cause the number of vehicles purchased in the South Coast Air Basin to languish reducing revenue into the Motor Vehicle Fund.

Event Three: Truck Travel/Usage Restrictions (7 hits). The positive impacts of this event are:

1. Restricts trucks from freeways and city streets during commute hours and prohibits movement of trucks in certain geographical areas.
2. Delimits truck deliveries to prescribed times of day and days of the week.
3. Items one and two will cause an improved traffic flow, reduced traffic congestion, lessen motor vehicle pollutants, and truck related traffic accidents during peak hours.

The negative connotations of this event are:

1. Cause a redirection of Highway Patrol resources to provide enforcement of this restriction.
2. May cause shippers to seek alternative modes of transportation (rail/small trucks) thereby reducing the number of large trucks paying license fees into the Motor Vehicle Fund.
3. Create some public dissatisfaction due to increased noise levels while conducting deliveries during the average persons sleep time, thus increasing demands for police service to respond to noise complaints.

Event Five: Motor Vehicle Fund Unable to Fund Entire CHP Budget (7 hits). The positive impacts of this event are:

1. May cause the Legislature to provide adequate funding for the Highway Patrol to perform it's basic mission and for the additional responsibilities imposed by the Air Quality Management Plan.
2. May provoke legislation that automatically increases the Highway Patrol budget each year based upon a formula adopted by the Legislature.

The negative implications of this trend are:

1. The Highway Patrol is unable to adequately fund it's budget to provide the personnel and resources necessary to perform it's mission and enforcement of the Air Quality Management Plan.

Event Eight: Truck Accidents Increase 25- Percent in the South Coast Air Basin (5 hits). The positive aspects of this event are:

1. Cause the legislature to enact more stringent laws related to the operation of large trucks.
2. Legislature may provide additional funding to the Highway Patrol to develop additional truck scale facilities and obtain additional officers dedicated to the on-highway inspection of large trucks.

The negative impacts of this event are:

1. May cause a redirection of personnel to focus enforcement on large trucks.
2. May cause travel/usage time restrictions to expand creating a larger window of enforcement time.
3. Creates increased traffic delays adding to congestion and increased motor vehicle pollutants.
4. Creates additional time consuming duties for Highway Patrol Officers reducing their availability for proactive patrol and ability to provide proper public services.

Event Seven: Population Reaches 20 Million in South Coast Air Basin. The negative overtones of this event are:

1. A burgeoning population means increased vehicle miles traveled, motor vehicle fuel consumed, greater traffic congestion associated with more motorists, and

prodigious amounts of air pollution from the additional vehicles and travel.

The panelist did not identify a positive event as a result of the increased population as it relates to the issue question.

Reactor events and trends were those impacted by the events. There were seven significant reactors that are worthy of discussion. They are listed in descending order with a review of the number of impacted events and the perceived direction of their impact.

- o Trend Four: Enforcement Duties of the CHP Officer (8 hits).
 - Negatively impacted by: All eight events.
- o Trend Three: Traffic Congestion in the South Coast Air Basin (7 hits).
 - Negatively impacted by:
 - Event Seven - Population hits 20 million in SCAB.
 - Event Eight - Truck Accidents increase 25 percent.
 - Event Four - Vehicle registration hits 14 million in SCAB.
 - Positively impacted by:
 - Event One - Odd/even license plate usage restriction.
 - Event Two - Prohibition of single occupant vehicles on freeways.
 - Event Three - Truck travel/usage restrictions.
 - Event Six - Peak hour vehicle operating fee.
- o Trend Seven: Fuel Availability (7 hits).
 - Negatively Impacted by:

Event Seven - Population hits 20 million in SCAB.

Event Eight - Truck accidents increase 25 percent in SCAB.

Event Four - Vehicle registration reaches 14 million in SCAB.

- Positively Impacted by:

Event One - Odd/even license plate travel restrictions.

Event Two - Single occupant vehicle registration.

Event Three - Truck travel/usage restrictions.

Event Six - Peak hour operating fee.

o Trend One: Legislative Environmental Law Enforcement (6 hits).

- Negatively Impacted by:

Event Four - Vehicle registration reaches 14 million in SCAB.

Event Two - Single occupant vehicle registration.

Event Three - Truck travel/usage restrictions.

Event Five - Motor Vehicle Fund unable to fund CHP budget.

Event Six - Peak hour vehicle operating fee.

o Event Five: Motor Vehicle Fund Unable to Fund Entire CHP Budget (6 hits).

- Negatively Impacted by:

Event One - Odd/even license plate vehicle usage.

Event Two - Single occupant vehicle restriction.

Event Three - Truck travel/usage restrictions.

Event Six - Peak hour vehicle operating fee.

- Event Eight - Truck accidents increase 25 percent.
- Positively Impacted by:
 - Event Four - Motor Vehicle registration hits 14 million in SCAB.
- o Event Eight: Truck Accidents Increase 25 Percent (6 hits).
 - Negatively Impacted by:
 - Event Four - Vehicle registration hits 14 million in SCAB.
 - Event Five - Motor Vehicle Account unable to fund CHP budget.
 - Positively Impacted by:
 - Event One - Odd/even license plate vehicle usage.
 - Event Two - Single occupant vehicle restriction.
 - Event Three - Truck travel/usage restrictions.
 - Event Six - Peak hour vehicle operating fee.
- o Trend Eight: Truck Travel/Usage Restrictions (5 hits).
 - Negatively Impacted by:
 - Event Four - Vehicle registration reaches 14 million in SCAB.
 - Event Seven - Population reaches 20 million in SCAB.
 - Positively Impacted by:
 - Event One - Odd/even license plate vehicle usage.
 - Event Two - Single occupant vehicle restriction.
 - Event Six - Peak hour vehicle operating fee.

Futures Scenarios

From the previous material, three futures scenarios have been developed. The three scenarios explore a "Most Likely", a "Worst Case", and a "Desired and Attainable Future." The scenarios are not predictions, rather they are forecasts of the future based upon projections of trends and events. The purpose of the scenarios is to provide planners and policy makers with some vision of what the future holds in store.

Exploratory Scenario

"Most Likely"

"Good morning commuters. It's 6:15 a.m. on a busy Monday morning, July 14, 2000. This is Bill Keene, KNX Newsradio, with a good traffic report. For those of you on the northbound Santa Ana Freeway leaving Orange County, your 17 mile drive into Los Angeles will only take a little over an hour. Traffic is flowing at a great speed of 15 MPH. Over on the Golden State Freeway at Stadium Way, we have two overturned semi-trucks blocking the entire freeway in both directions. The San Diego freeway southbound at Roscoe is still closed from the hazardous material spill that occurred this morning at 4:30 a.m. Average speeds on our freeway system are 12-15 MPH except on the Golden State and San Diego Freeways. For all you moms at home getting the kids ready for school today, the Air Quality Management District is predicting a stage VI smog alert

today. Breathing apparatus's will be required for all children today whenever they are outside. Hold on a minute, I've just been handed this sigalert from the CHP. The entire San Diego Freeway is closed between the I-605 and I-710 in both directions. Folks, that's over 12 miles. It seems that there has been a serious series of truck accidents and this has trapped well over 100,000 motorists on the freeway. The Highway Patrol asks you to sit and wait until they can free up some of their environmental units from their smoke enforcement teams to respond to the San Diego freeway. Well Harry, it's another Monday morning out there on the freeways, back to you."

Chief Jeanne Fisher, Division Commander of the CHP's Los Angeles County Division, gets in her unmarked unit heading for downtown Los Angeles. She's thinking about her Command College Project, when suddenly traffic stops. She reaches for the volume knob on her car radio as Bill Keene states, "The Air Quality Management District has declared today to be a Stage VII alert day now. All motorists are advised that they must turn around and go home unless there are two or more occupants in each vehicle. The CHP is setting up road blocks on the freeways to prevent single occupant vehicles from entering downtown Los Angeles. All schools in the South Coast Air Basin are closed. Parents, turn to your local television cable channels for your kid's school lessons today." Chief Fisher thinks to herself, why didn't we plan for these turn of events better. We don't have enough officers to handle the normal workload, much less these environmental

regulations. The motor vehicle account hasn't been able to adequately fund the patrol's budget for the last five years. She recalls reading a Command College project in her research that was written in 1991 that predicted many of these current events. She looks at her watch. It's 7 a.m. and she's traveled eight miles in the last 45 minutes. A red idiot light starts flashing on the car's dash. She reads the message. Time to change the car's carbon fresh air filters. She hopes she can get to work before the car's air purification system goes out and she has to open the car window and don her breathing device. She looks in her rearview mirror to see a CHP motorcycle officer approaching rapidly. She sees that he has his self-contained breathing device on. As he passes, she notes that the motorcycle's rear emergency lights are flashing. She reaches down and turns the volume of her CHP radio up and hears the dispatcher, "All beat 50-60-72 and 22 units respond to the northbound Santa Ana at Lakewood and set-up the road blocks. Only let vehicles with two or more occupants pass." Chief Fisher realizes that all of the units from the patrol's Downey office will be on road block duty now. That means four major freeways will be left unattended during the morning commute by the patrol. Why didn't we plan better for this, she laments to herself as she approaches the officers at the road block.

Hypothetical Scenario

"Worst Case"

September 13, 1995. Two weeks of Stage VI smog alerts have enveloped the South Coast Air Basin. Medical authorities have reported over 250 deaths the last two weeks that are attributed to the unhealthy air quality. The CHP reported 15 shooting incidents on the freeways yesterday in the Basin as the temperature and tempers increased in the heavy congested freeway travel. Fortunately, only one serious injury was reported in the 15 shootings. All schools have been closed since the beginning of the Stage VI Alerts. The CHP reported eight sigalerts as a result of truck accidents on six different freeways last night. The CHP reported that the normal three hour 30 mile commute extended to six hours. Just enough time for the motoring public to get home and grab four hours of sleep before the morning drive to work.

CHP Captain Ray Smith's eyes glanced at the clock on his desk and placed the morning Los Angeles Times down. It was 10:00 a.m. Captain Smith dreaded the moment. He had to go into a meeting with 21 other CHP Captain's from the Highway Patrol offices in the South Coast Air Basin. The Air Quality Management District imposed over 50 regulations restricting vehicle travel and usage yesterday. These regulations took effect immediately. Captain Smith, the Senior Commander of the group, was given the task of developing the CHP's plan to implement the AQMD regulations.

Captain Smith walked into the room and said, "Gentlemen, we have a crisis on our hands and what are we going to do, much less,

how are we going to do it? As you're all aware, the Motor Vehicle Fund could not fund the Department's entire budget this fiscal year. The personnel reductions we've made have left us with 1400 officers in the South Coast Air Basin. We've got over 1345 freeway miles we're responsible for. There's over 14 million vehicles and 13 million drivers in the Basin. That's one officer per 100,000 vehicles and 1.1 officers per 100,000 drivers. I don't have an answer. The AQMD even wants us to look for people using liquid lighter fluid on their bar-b-ques in our spare time, as if we had any."

The group sat somberly staring at each other. The youngest captain in the room speaks up. "Fellows, we got caught with our pants down. The AQMD prepared a plan in 1989 to bring the South Coast Air Basin into compliance with all federal and state air quality standards. It wasn't as if we didn't know this was coming. Someone should have had the foresight back in 1990 to determine how this was going to impact law enforcement. What did we do? Nothing. We sat here on our keisters with a hands-off attitude that it wasn't our problem. It was a local issue. We didn't investigate the ramifications of the plan, much less convey the vast implications of it to the Governor and Legislature. So when money got tight, we cut back operations and said to ourselves, it's beyond our control. Did we once ever talk to the Governor and Legislature to tell them about the potential impact of the AQMD plan on the Department? Tell them we would need more money, people, and resources to carry out the AQMD plan back in 1990, when

we first learned about it. No! What did we do? We set up Christmas toy collection centers. Gentlemen, I submit to you that if we had taken the time to study the implications of the AQMD plan in 1990, we wouldn't be sitting here today trying to develop a plan for regulations that took effect yesterday. And furthermore, we would have identified what our needs would have been, financially and personnel wise."

The next morning Bill Keene, KNX Radio Traffic Reporter starts his broadcast with these words, "The CHP would appreciate all the help you can give them. It seems they don't have enough officers to enforce the AQMD regulations, so please be Chips helpers and obey the AQMD travel restrictions. Now for the traffic and weather. All schools will remain closed through the rest of the month due to the unhealthy air quality."

The entire Hollywood Freeway is closed in both directions due to a truck accident involving hazardous material that has created a large gas cloud. The dangerous gas is drifting south towards Wilshire Boulevard. LAPD is evacuating the entire area bounded by Western Avenue on the west and Figueroa Street on the east. Well Harry, that's not too bad for our first traffic report of the day, back to you for now." Captain Smith turns down the volume on the radio as he hears the words of the young captain from yesterdays meeting, "We sat on our keisters.".

Normative Scenario

"Desired and Attainable"

The Governor, recently elected to his second term, looks at his appointment schedule for the day. He notices that he has a two hour luncheon appointment with the CHP Commissioner. The Governor recalls it's to talk about the progress of the first 60 days of the implementation of the Air Quality Management Plan in Southern California. He recalls that in 1991, the Commissioner met with him to discuss the impact of the plan on CHP operations. As the Governor glances out the window of his office, he realizes how beautiful and blue the sky over Sacramento has become in the last few years. His mind fades back to the 1991 meeting with the Commissioner. He recalls the Commissioner advising him that 70 percent of the air pollution in the South Coast Air Basin was a result of motor vehicle emissions. That fact alone caused the Commissioner to realize that the only way to reduce those pollutants was to reduce vehicle travel and restrict usage through a series of programs. The Governor remembers their discussion centered around the restriction of vehicle travel through the prohibition of single occupant vehicles on the freeways and odd/even license plate vehicle usage as the two major methods to reduce vehicle usage and travel. The discussion also included travel and time of day restrictions for large trucks. That would

eliminate accidents during peak traffic hours and improve the flow of traffic thus reducing motor vehicle pollutants. The Governor remembers the Commissioner's words, "Governor, we can make the Air Quality Management Plan work. We need your support to make it more thorough." The Governor recalls his words, "What's your plan?" The recollection of the meeting drifts to the Commissioner's comments. The Commissioner presented the Department's plan in concise detail. They needed funds to hire civilian employees to patrol the freeways in tow trucks to provide service to disabled motorists. The civilian employees would also respond to traffic accidents to clear the lanes and remove the vehicles off the freeway, thus allowing freeway speeds to pick-up as soon as possible. This would also free the officers for enforcement needs.

They wanted funds to prepare a public service program explaining the Air Quality Management Plan through a series of videos for television stations, tapes for radio stations, and stories for the print media. Their early discussions to find a long term and stable source of income for the Motor Vehicle Account led to meetings with Legislative leaders. Once the party leaders became aware of the Patrol's plan and resource requirements, they wrote and passed the Legislation in record time. The Governor recalls that he wished all of his financial requests were handled as expeditiously as the Patrol's. His thoughts are interrupted by his intercom. "Governor, the Commissioner is here to see you." The Governor tells his secretary to bring him in. As the two men exchange greetings and sit down, the Governor asks the Commissioner

how things are going in the South Coast Air Basin. The Commissioner states, "Governor, thanks to you and the support of the legislature, the plan is going perfect and as we discussed. I want you to know that without your support, we would be in a real quagmire. The civilian employees are doing an outstanding job. In fact, we've trained them to investigate minor traffic accidents too. That has provided us with additional officer hours for our enforcement efforts."

Later that evening, the Governor, while reading the Los Angeles Times, glances at an article which indicated air quality has improved dramatically in the first 30 days of the travel restrictions. Freeway speeds have increased from an average of 35 mph to 60 mph with the implementation of the vehicle travel restrictions. Only one sigalert occurred during the last 30 days. That was a result of a cattle truck overturning at 2:00 a.m. It took authorities until 6:00 a.m. to capture the loose animals.

The Governor smiles to himself and silently compliments the California Highway Patrol for their futuristic vision in 1991.

PART TWO

Strategic Management

This portion of the study is to develop a strategic management and management process that will include decision-making, planning, and policy considerations. The policies selected must be capable of impacting the issue, addressing the environment, and be strategic in time and convergence. The design will be to articulate a strategic plan that will take the Highway Patrol from the present to the normative, "desire and attainable future."

Methodology: Strategic Planning

A situation analysis of the current environment is a necessity before proceeding. The situational analysis that will be used consists of WOTS-UP Analysis (Weakness, Opportunity, Threats, and Strengths Underlying Planning) model and a Strategic Assumption Surfacing Technique (SAST). The WOTS-UP capability analysis has been used to measure the strengths and weaknesses of the Highway Patrol and assist in determining whether the Department is able to interact with the environment. Next, the Highway Patrol's strengths and weaknesses are examined. This is to identify the competencies of the Department that will be used to draw from the opportunities and avoid or minimize the threats.

A Strategic Assumption Surfacing Technique (SAST) is an integral portion of the situational analysis. Through the use of

the SAST shareholders are identified. Shareholders positions, as they relate to the issue, are identified. A plan to identify their position and where they should be for the success of the plan is developed through the use of a model.

WOTS-UP ANALYSIS

The California Highway Patrol has, since 1975, been viewed by the State Legislature and Governors to be the best operated and managed department in state government. That is exemplified by the additional roles the CHP has undertaken at the behest of the various governors and the legislature. The CHP has 8,911 employees. Of those, 6,213 are uniformed members. The Department's budget for fiscal year 90/91 is \$569,976,000. The CHP has 106 offices statewide and a fleet of 2,200 vehicles and 350 motorcycles. The field operations are divided into eight field divisions. The South Coast Air Basin covers one entire Division, Los Angeles County which is referred to as Southern Division. Portions of the CHP's Border Division containing the three Orange County offices and the San Bernardino, Riverside and Ontario offices of Inland Division are located in the South Coast Air Basin also. Each Division is a separate command structure reporting to the Assistant Commissioner of Field Operations in Sacramento.

Currently the 18 CHP offices in the South Coast Air Basin have approximately 1,400 offices assigned to road patrol duties. The 18 officers range in size from 23 officers (Malibu) to 140 officers (Santa Ana). The CHP is responsible for all of the states 4,956

miles of freeways and 96,389 miles of unincorporated (county) streets and highways. Within the South Coast Air Basin, there are 1,345 miles of freeways and thousands of miles of county roads. Currently, the South Coast Air Basin contains 45 percent of the states motor vehicles (9.7 million), 46 percent of California's licensed drivers (8.9 million), and 29 percent of California's streets, highways, and freeways in a geographical area of 6,600 square miles.

Trend Analysis

Eight trends were identified by the NGT Panel in the first part of this study as those most likely to effect the California Highway Patrol's ability to respond to the Air Quality Management Plan. The opportunities and threats they present are analyzed and discussed.

Trend One: Legislated Environmental Law Enforcement. This is viewed as a threat. The legislature, feeling the need to respond to public pressure to eliminate and/or reduce pollution to improve the quality of law, may regulate and/or direct Highway Patrol functions. Any legislative direction restricts the flexibility of the patrol to respond and redirect resource as necessary. An opportunity does exist however. Legislative direction could also contain additional funding for the personnel and resources necessary to enforce the AQMP regulations. The legislative direction could be advisory and non-binding. The Highway Patrol has always endeavored to respond to "Legislative intent" (Intentions).

Trend Two: Population of South Coast Air Basin. This trend has a negative implication on the issue. It is doubtful that the Highway Patrol can have any impact on this trend. The Department should follow this trend and attempt to increase personnel according to the percentage increase in the population. Additional people will increase demands for service. Without increasing employee strength to provide service, public dissatisfaction with the CHP will grow.

Trend Three: Traffic Congestion in the South Coast Air Basin. As the population increases, so will motor vehicles and licensed drivers. That leads to greater traffic congestion which causes more motor vehicle pollutants to be emitted into the atmosphere. While this in itself is a negative trend, it does present opportunities. The implementation of travel restrictions and vehicle usage regulations will have a positive effect on reducing congestion, increasing freeway speeds, and cause air pollution to recede.

The Highway Patrol will be faced with a herculean task in attempting to enforce any motor vehicle travel restriction without attendant resources. This is a catch 22 situation. One could view this as an opportunity while another, a threat. It must be viewed as an opportunity and reacted to accordingly in the WOTS-UP analysis.

Trend Four: Enforcement Duties of CHP Officer. The issue question raises a challenge to the perceived role of the CHP officer. Are the officers duties going to be redirected to that of

an environmental enforcement officer enforcing quality of life issues? This is an opportunity to re-examine the role and responsibilities of the CHP officer. An opening exist to expand the opportunities within the Department by developing a new civilian classification to perform some of the public service duties of the officer. This would free officers for additional enforcement duties. This is one way of increasing public service at a reduced price through civilian employment instead of the higher public safety employee cost outlay.

Trend Five: Vehicle Travel Regulations in South Coast Air Basin. The imposition of motor vehicle travel restrictions and vehicle usage will enhance the quality of life in the South Coast Air Basin. The reduction in vehicle usage and travel will reduce traffic congestion, increase freeway speeds, and decrease air pollution. As mentioned in trend three, unless the CHP is provided with the resources necessary to enforce travel regulations, there will be minimal public compliance. This should be viewed as an opportunity, regardless of how it is viewed. The regulations will improve the air quality and travel. The CHP has an opportunity to manage these regulations effectively and successfully.

Trend Six: Vehicle Registration Rate in South Coast Air Basin. This, like the population, is beyond the control of the CHP. Years of experience have shown the motor vehicle registration increases in direct proportion to the population. The implementation of vehicle travel and usage restrictions could slow

this trend. While this is viewed as a negative trend, additional monies will be generated for the Motor Vehicle Account.

Trend Seven: Fuel Availability. The projection for fuel availability in the future is for an abundant supply. While this is a positive trend for the United States and economy, it does have some implications for the issue questions. Without motor vehicle travel regulations in the SCAB, an abundant supply of fuel will mean motorists will continue to drive at record breaking rates adding more motor vehicle pollutants into the air we breathe.

Trend Eight: Truck Travel Regulations in the South Coast Air Basin. This when viewed in light of decreasing traffic congestion and reducing motor vehicle pollutants, presents a positive opportunity. It also advances an opening for the CHP to expand it's commercial vehicle operations devoted to the reduction of truck involved traffic accidents. The public, by large, views trucks as behemoths, responsible for more accidents and traffic congestion than they really are. Any movement to restrict truck movement will receive tremendous public support. The resources the patrol will need to expand it's current program of truck regulation will be made available through the strong public support.

Event Analysis

For the ease of the reader and discussion odd/even license plate vehicle travel usage restrictions, prohibition of single occupant vehicles on freeways, truck travel/usage restrictions, and peak hour vehicle operating fee, Events One, Two, Three and Six

will be addressed together, due to their similarity in discussion. All four events will favorably impact air quality in the South Coast Air Basin. Removing vehicles from the freeways and increasing vehicle occupancy from its current 1.2 passengers to 1.4 passengers per vehicle alone would increase today's 35 mph freeway commute speed to 60 mph. Attaching a surcharge to motor vehicle usage during commute hours would reduce vehicle travel during commute hours. This event could also cause employers to alter work hours to off commute time to accommodate their employees. The monies raised from the peak hour vehicle operating permit could be directed for enforcement associated with the Air Quality Management Plan.

The draw back to these events will be the impact on the CHP in their attempts to enforce these regulations. By today's standards, the CHP has one officer for every 68,156 vehicles in the SCAB. The chance of that ratio improving by 1995 is slim, if at all. As mentioned earlier, the CHP will have to re-examine it's role and establish priorities while seeking additional capabilities.

Event Four: Vehicle Registration Reaches 14 Million in South Coast Air Basin. Little discussion is needed to determine that this is a negative event and has severe implications for the CHP. The enactment of the previously discussed events may serve to hold vehicle registrations flat. If people realize their travel is regulated and vehicle usage restricted, they may not purchase additional vehicles they can't use. The Legislature, in an endeavor to discourage vehicle purchase and usage, could enact

legislation to add an exorbitant motor vehicle sales tax and/or registration fees for vehicles purchased, owned and operated in the SCAB. The implementation of the previously discussed vehicle travel regulations could offset the pollution that would be expected from the increase in the motor vehicle population.

Event Five: Motor Vehicle Account Unable to Fund Entire CHP Budget. The negative implications of this event would be disastrous. The Highway Patrol and Department of Motor Vehicles are funded by the motor vehicle account. Any drop of revenue in the account will cause operational problems. Seventy-eight percent of the CHP budget is allocated for personnel cost. To compensate for any revenue losses, personnel services will be adversely impacted. An additional source or method of revenue must be located to maintain adequate funding for the CHP to continue performing their normal services and duties and addressing the Air Quality Management Plan.

Event Seven: Population Reaches 20 Million in South Coast Air Basin. The negative issues of this event are apparent on first glance. Additional people mean extra motor vehicles, more travel, increased congestion, supernumerary motor vehicle pollutants rising from the freeways into the atmosphere. This will also create additional demands on the CHP for service as the increased population travels on the freeways in the SCAB.

Event Eight: Truck Accidents Increase 25 Percent in South Coast Air Basin. The ramifications of this event are detrimental to the CHP and the public. A single truck accident takes up to ten

times longer to clear from the freeway as a car accident. For each one minute of delay, a five minute que (delay) in traffic occurs. Truck accidents exacerbate congestion, travel delays, and air quality. It generally takes two to four officers to handle a truck involved accident and sometimes more. This takes the officers away from proactive patrol duties. An increase in truck accidents will create public dissatisfaction with the CHP.

Internal Capability Analysis

A representative group of CHP managers were asked to rate the strengths and weaknesses of the Department anonymously and separate from each other. A capability rating analysis process was used (Appendix F). An evaluation of the survey participants findings are as follows:

Strengths of the Highway Patrol

1. Management Skills - The Management personnel of the Department are seen to be well trained, innovative and resourceful.
2. Supervisory Skills - The sergeants of the Department are viewed as responsible and well versed in their roles. Their flexibility in handling a variety of complex and routine issues, despite their overwhelming workload is a major asset to the Department.
3. Officer Skills - The officers are the strength of the Department. Their exceptional training and versatility to perform

a variety of tasks under arduous conditions is a stabilizing factor in the Department's ability to take on additional roles without the attendant resources.

4. Training - The personnel of the CHP are viewed to be well trained. Their training is ongoing and covers a vast variety of topics that a CHP officer will be involved in.

5. Image - The Department enjoys an excellent reputation with the Governor, Legislature, and public. The Department is recognized nationwide as a premier law enforcement agency that's innovative and the leader in traffic management.

6. Morale - the morale of the Department is viewed to be above average. This is reflected in the excellent job the officers perform, despite their increased workload.

7. Legislature Support - The California Legislature has always been a strong supporter of the CHP. Seldom has the Department not received their support for an issue. Conversely, the Department has always accepted additional programs from the Legislature when requested.

8. Executive Management Support - The Executive Management of the Department is viewed, as a group, to be cohesive and adaptable to change. Additional responsibilities for the Department are sometimes resisted due to the lack of attendant resources to go along with the new task. Nevertheless, they respond to the charge and adapt.

9. Growth Potential - Yearly, the Governor and/or the Legislature place new and additional responsibilities of the CHP. The

potential for additional growth is ever present. The Air Quality Management Plan is another example of growth potential.

10. Management Flexibility - The managers of the Department are viewed to be very flexible. Most change is external and beyond the control of the Department's managers. They have always adapted, persevered, and attained the desired results. Flexibility is recognized as a virtue and stress reducer.

11. Pay and Benefits - The uniformed personnel of the Department are well paid. Outside of the major metropolitan areas of the State, a CHP officer is generally the highest paid officer in the county and quite often receives a higher salary than the local law enforcement administrators.

12. Turnover - The Department uniformed turn-over rate is rather minimal given it's size. Few leave to go to other agencies. The Department loses more officers to disability retirements than to service.

13. Community Support - the CHP does not have a community per se as do local police departments. The CHP's community is the general population of the State. There is a great deal of support from that community. The CHP is held in high esteem and often rated at the top of any poll they are listed on.

The weaknesses were identified as follows:

1. Personnel Adequacy - There has been a shortage of personnel, uniformed and civilian, for years. A recently developed staffing formula indicates the Department needs 2,000 more officers. This

is cause for immediate action for a variety of reasons, especially in light of the Air Quality Management Plan.

2. Technology and Equipment - These resources do not represent state-of-the-art. The Department is endeavoring to improve this. It is a financial nightmare for the Department. As an example, to equip over 2,200 black and white vehicles with mobile digital terminals (MDT's) would take several years. Given the rapid change of technology, the MDT's could be outdated before they are all installed. Unless the State's fiscal situation does a dramatic turn-around, state-of-the-art technology will be slow reaching the field.

3. Funding - Adequate funding just to maintain existing programs is difficult at best. At this writing, the Department is endeavoring to find 15 million dollars within it's existing budget to cover unbudgeted costs. The recent fuel cost increase, as an example, was an unexpected expenditure. A one cent increase in gasoline cost the CHP an additional \$100,000. The Department's Top Management must address the issue now and seek a solution that will provide for a long term and reliable source of revenue.

In addition to the previously discussed trends and events, some additional external environmental threats surfaced:

1. Tax Payer Revolt. The public's mood is opposed to increasing taxes, even given the potential State and local government's budget deficits. The possibility of a voter's initiative exists, similar to Proposition 13 being passed and enacted limiting and or reducing taxes should the

politician's incur the wrath of the voter's. If this occurs, tax dollars to fund the CHP could decline. This could limit CHP services and hamper the CHP in it's ability to perform it's mission.

2. Recession. A recession would lead to a drastic drop of income for government coffers. Any loss of income adversely affects governmental entities. The CHP is no exception. Seventy-eight per cent of the CHP budget goes to personnel benefits and salaries. A long and/or deep recession could cause the CHP to institute lay-offs.

3. Reduction of Funds for the CHP Budget. A reduction of funds has the potential to create a variety of problems. As an example, the CHP could eliminate paid overtime for it's officers and sergeants, to save money. This would be challenged by the California Association of Highway Patrolmen, the officer's labor representative. This would lead to legal proceedings. Additionally, the loss of overtime would create financial, as well as morale problems, for the employee's.

4. Assignment of responsibilities for Air Quality Management Plan enforcement to another Agency. It is not written in stone that the CHP would have absolute authority and/or responsibility for enforcement of the Air Quality Management Plan. One might assume that the Plan goes hand-in-glove with the CHP mission. However, there is nothing to preclude the assignment for the responsibility of enforcing

the Plan to the State Environmental Protection Agency (EPA). The EPA could, through legislation, establish civilian enforcement officers at a far greater salary cost savings, to enforce the provisions of the Air Quality Management Plan.

5. Loss of confidence in CHP Management. A failure by CHP management, either at the local or State level, to perform their duties as expected as a result of a calamity or highly publicized adverse incident, could lead to a loss of confidence amongst the Governor, Legislature, or local governments. This loss of trust would weigh heavily in any decision to assign additional responsibilities to the CHP, such as the Air Quality Management Plan.

6. Diversion of funds from the Motor Vehicle Account. The State's Motor Vehicle Account provides operating funds for CHP. The Motor Vehicle Account, quite often, has a surplus from one budget year to another. A recession and/or drop in State income could cause the Governor to transfer surplus funds from the Motor Vehicle Account into the General Fund. This could limit and reduce funds for the CHP, thus limiting operational flexibility and delivery of services.

7. Ecology Law Enforcement Officer's. The creation of a new law enforcement classification of civilian employees. They would have limited peace officer powers to enforce environmental laws. Since they would be civilian employees, their salary and benefit costs would be substantially below

that of a CHP officer. This could lead to a loss of uniformed positions.

8. Privatization of Air Quality Management Plan enforcement duties. The State government, when faced with increasing budget deficits, could abdicate responsibility for providing the services of the CHP, or any other State agency, to enforce the Air Quality Management Plan. Another scenario envisions the CHP's inability to adequately provide the resources necessary to carry out the Air Quality Management Plan due to budgetary constraints. Either one of these could lead the Air Quality Management District, through legislation, to contract with a private entity to provide enforcement responsibilities for the Air Quality Management Plan.

Strategic Assumption Surfacing Technique (SAST)

The SAST compliments the WOTS-UP analysis and identifies shareholders and assumptions that they hold related to the issue. Shareholders are organizations, individuals, or groups who maybe impacted by issue, who are able to impact the issue, or have an interest in the issue. They maybe external to the organization and affected by any action taken or policy development. Each stakeholder has a stake in the issue question. Unexpected viewpoints can submarine your strategy, these "snaildarters" must be identified early on. Their viewpoints can drastically impact your strategy if they are not part of the planning process.

After identification of the shareholders occurs, their positions must be examined and a course of action plotted to bring about the desired results. A list of stakeholders, including snaildarters, was compiled by the analysis panel (Appendix H).

Assumptions are made as to the position of each stakeholder relative to the issue question. Assumptions are defined as "a basic, deep rooted, often unstated values, and beliefs that individual groups have about the world."2 "A successful change strategy must be based upon assumptions about shareholders and their relationships."3

The following is a list of the key shareholders and the assumptions that were produced for each. Appendix G is a SAST plot chart which depicts the importance of the shareholders as they relate to the issue question and their level of projected certainty in the assumptions assigned to the shareholders.

1. Office of the Commissioner. The Commissioner is viewed as being supportive of the issue question. He will use the prominence of his office to lobby for support of the plan and the resources necessary to implement the strategy. He is one of the key players in the critical mass.

2. Management of the Department. They are viewed as being supportive of the issue and accepting the additional responsibilities. There is a reluctance at the middle management positions (Lieutenants/Captains) to take on additional charges without the attendant resources.

3. Supervisors of the Department. The sergeants will be hesitant to accept the additional responsibilities, as the managers, without the necessary personnel to perform the task. As the managers, they will accept the charge whether or not additional personnel are forthcoming.
4. Officers of the Department. They will be adverse to accepting the additional responsibilities without an increase in personnel. Notwithstanding, they will rise to the occasion and perform to their utmost ability.
5. California Association of Highway Patrolmen. The officers labor representatives may be opposed to the additional job responsibilities without the attendant resources to perform the task. They will seek additional compensation and work concessions for their members. They are viewed as a snaildarter.
6. Legislature. Would be supportive of the issue and Department. Regardless of their personal feelings and that of some of their constituency, they cannot oppose the effort to improve air quality. This issue has far greater implications. The economic survival of an entire region is at stake. The legislature could enact legislation mandating minimum high cost fines for violations of travel restrictions. The higher the fine, the motorist compliance rate improves.
7. South Coast Air Quality Management District (AQMD). Their bureaucratic title alone intones a position of support. They are the agency charged with the responsibility for bringing the SCAB into compliance with federal air quality standards.

8. Southern California Association of Governments (SCAG). Theirs is a position of support. As the representative body of the local governments in the South Coast Air Basin, their interest is in preserving the areas economy and growth.

9. Governor's Office. The Governors office is a strong position of support. Approximately forty-six percent of California's potential voters reside in the South Coast Air Basin. The Governor's position is based upon the quality of life issue and potential adverse impact on the economy in the SCAB if air quality standards are not improved. Resolving the air quality issue in the SCAB may assist in resolving the air quality issues facing other areas in the State before draconian measures are imposed elsewhere.

10. Trucking Industry. Theirs is a position of opposition. Any regulations that restrict the movement of their vehicles will increase their operational and employee cost. The restrictions will adversely impact their employees working conditions and work hours. The trucking industry has tremendous influence with the legislature and has successfully lobbied against legislation they viewed to be detrimental to their interest, in the past.

11. Chambers of Commerce. The largest of the chambers is the greater Los Angeles Chambers Area of Commerce. This group alone, welds vast influence and power. The major financial institutions and businesses of California are located in downtown Los Angeles. Their political influence is unmistakable. Theirs is a position of support. The other local Chambers of Commerce, while not as powerful or influential as Los Angeles, are important. Their views

must be represented also. They also have similar vested interests, as Los Angeles. They will support the issue.

12. Labor Unions. As representatives of a multitude of employee organizations, they will probably oppose any restrictions that adversely impact the employees terms and conditions of employment. Concessions will have to be granted to employees in the area of wages and work hours to reduce opposition to the issue.

13. Highway User Groups/Representatives. Organizations such as the Automobile Club of Southern California, as an example, support the theory that motorists should be able to use their vehicles without governmental intervention. There are a variety of groups that currently oppose government efforts to reduce travel and preferential high occupancy vehicle lane construction. While the Automobile Club of Southern California supports voluntary efforts to reduce travel, most groups do not. While some groups will probably be supportive, other group positions are not clear. Consequently, these associations/groups are viewed as snaildarters.

14. Allied Law Enforcement Agencies. Their position on the issue is unclear. Any additional law enforcement responsibilities placed on local agencies would be unwelcome. The law enforcement departments in the South Coast Air Basin are already overloaded with work. As a rule they feel they are not providing an adequate level of service to their constituency now. Any freeway travel restrictions may overflow onto the streets within their jurisdiction. Their influence with the political elements is formidable. They are viewed as snaildarters.

15. News Media. Their position on the issue is viewed as being mixed. Their support is vital to a successful implementation of any travel restrictions. The television news media is the most influential mode of communication for news. Over 70 percent of the population watches television news and 46 percent receive their only news via television. Radio and print news media are important also. Care must be taken to develop the news media into a support position. They have the ability to help your plan succeed or languish.

16. Judiciary. This includes the judges, district attorneys, and city prosecutors. Theirs is a mixed position. They realize there will be an increased workload for the already overloaded judicial system. Court trials will increase as people wish to express their opinions, seek lower fines, and/or request traffic school to escape a ticket on their driving record to avoid an increase in their vehicle insurance rates.

17. Local Elected Officials. Theirs is a mixed position. They will echo their constituencies views of opposition to car travel restriction. By and large, they will realize the necessity for the plan and its overall benefit to society. Their local influence on the issue is minimal. However, as a large body of politicians, their influence can be felt in Sacramento.

Four snaildarters surfaced in the group of shareholders: The California Association of Highway Patrolmen, Labor Unions, Highway User Groups, and Allied Law Enforcement. Even though assumptions were assigned to them, one or more of the snaildarters could create

unforeseen consequences to the plan. Most of the assumptions assigned to them fell into the least certain category.

Policy Delphi

"The principle objective for using the Policy Delphi is to ensure that a variety of alternative strategies, designed to address the strategic issue, are identified and explored."4 A policy panel consisting of eight individuals, was brought together to generate, analyze, and select strategic policy alternatives to mitigate or prevent the negative future described in the hypothetical scenario. The panel members contained five law enforcement managers, a representative of the Air Quality Management District, a principal planner from the Southern California Association of Governments, and a public non-governmental representative.

Prior to the Delphi Panel gathering a copy of the hypothetical scenario was provided each panelist. The panel members were asked to prepare a policy alternative in advance of the meeting to ensure independence of thought. When the Panelist met, they were divided into two groups. Each group was asked to generate a policy/strategy statement to deal with the future environment. After reuniting as one group, the panel members were asked to discuss the pros and cons of their policy suggestions. They were then asked to rate each policy in terms of feasibility and desirability (Appendix I). Scores from 0 to 3 were fixed for the desirability and feasibility. This allowed for a total possible

score of six. The policy delphi panel process resulted in the selection of the following policy alternatives. They are listed in order of priority.

1. CHP Leadership Role

The CHP should take a leadership role with Law Enforcement Agencies in the South Coast Air Basin in developing a strategic plan for traffic management by the year 2000 for the South Coast Air Basin. The plan should result in legislative recommendations.

PROS:

- Development of plan will identify resource requirements and allows adequate time to budget for and obtain personnel and equipment to perform mission.
- Legislative recommendations could result in implementation of Air Quality Management Plan in a more amenable and less rancorous manor for the public and law enforcement.
- Consultation with other agencies will create buy-in of the plan and avoid conflicts by resolving differences in the early stages.
- Sends a strong message to governmental officials and the public that the CHP is committed to enforcement of the air Quality Management Plan.

CONS:

- Possible alienation of smaller agencies through development of plan that they don't buy-in to. The big brother syndrome.
- Can be used against Department if plan doesn't progress as developed.
- Committee approach slows planning process.

2. Traffic Congestion Plan

The CHP should adopt a five and ten year plan to deal with increased traffic congestion.

PROS:

- Identification of long term needs, both personnel and financial.
- Requires Department to look into future and plan for it. Become proactive instead of reactive.
- Provides Governor and Legislature with plan for Departments future budgetary needs.
- Sends strong message to the public that the Department is concerned about future traffic congestion and is trying to stem the obvious.
- Draws public attention to problem of traffic congestion and resultant pollution.

CON:

- Plan can be held against Department should problems arise or not go as developed.

Panel policy recommendations two and five have been combined into one policy statement due to their similarity.

3. Education Program

The CHP should take a leadership role in public announcements and educational TV and radio spots regarding the requirements of the Air Quality Management Plan, particularly as it applies to vehicle use. In addition, the Department should implement an education and training program for law enforcement regarding the implications of the Air Quality Management Plan on enforcement responsibility.

PROS:

- Public education efforts may cause greater voluntary compliance with travel regulations.
- A more informed public creates better understanding and goodwill for CHP.
- Education efforts directed towards law enforcement creates an awareness of the necessity for the air Quality Management Plan and their responsibilities.

CONS:

- Very costly to prepare and conduct publicity campaign.
- If Departments actions differ from publicized version that can create ill-will, misunderstanding, and lead to non-compliance.

- Training program for allied agencies will be time consuming and a strain on CHP personnel resources.

Panel policy recommendations one and four have been combined into one policy statement due to their correspondence in details.

4. CHP Membership on Air Quality Management District Board

The CHP should lobby for an advisory position on the Air Quality Management Board and participate in regulation implementation planning with AQMD.

PROS:

- Allows for CHP participation in the planning process of travel regulations that will mainly fall upon the CHP to enforce.
- Provides a different view of the proposed regulations from a law enforcement perspective.
- Gives the CHP a voice in decisions that will impact the Department.

CONS:

- If the proper CHP representative is not selected he/she could alienate relations and decisions, not in the best interest of the Department, could be made by the Board.

Recommended Policies

The focus of the policy recommendations are to provide direction for the CHP to present the hypothetical scenario and bring about the desired future. The desired future is attainable

bring about the desired future. The desired future is attainable and nearer than thought. Some travel regulations were forecasted by the NGT panel as early as two years from now. The recommended strategy includes the following policies:

1. Development of Traffic Management Plan

The CHP, in consultation with allied law enforcement, should develop a traffic management plan for the South Coast Air Basin in response to the Air Quality Management Plan.

2. Traffic Congestion Plan

The CHP should develop a five and ten year plan to impact the increase in traffic congestion in the South Coast Air Basin. While this may compliment and be part of the aforementioned traffic management plan, addressing congestion causing problems and favorably impacting them may alleviate the necessity of travel restrictions and vehicle usage at a later date.

3. Public Education Program

The CHP, along with the Southern California Air Quality District, should develop an educational program declaring the health hazards of motor vehicle pollution. The educational program should include the CHP's and law enforcement's role in the regulation of traffic to improve the air quality and quality of life in the South Coast Air Basin. An educational/training program should be developed for allied law enforcement and the judiciary to explain their role and garner their support.

4. CHP Membership on the Air Quality Management Board

The CHP should become a voting member of the Air Quality Management Board, either by invitation or legislation, if necessary. The public deserves, as well as the Department, to have representation from the lead enforcement agency in any discussion/plans to regulate and/or restrict vehicle travel/usage in the South Coast Air Basin. Participative planning can avoid pitfalls and public anger with ill prepared plans. The CHP and law enforcement should have a voice in any committee and decisions that will impact them.

Action Steps and Timeline Projections

Action steps and timeline projections must be established for the plan's success. Responsibilities must be assigned and designated to give direction and focus for accomplishment of the plan.

1. Development of Traffic Management Plan. The Commissioner should direct the initiation of the plan. The responsibility for completion of it, rest with the project manager. This phase should be undertaken no later than July, 1992. Resources and personnel needs must be determined before the next budget cycle begins. Lobbying efforts must start with the Governor and Legislature once the financial impact on the Department is determined. The plan and budgetary requirements should be decided no later

than November, 1993 so as to be included in the 94/95 fiscal year budget request.

2. Traffic Congestion Plan. Planning should begin by July, 1991. The plan must address the additional equipment and personnel required to address the congestion problem. Additionally, innovative procedures and methods to accomplish the plan should be explored, such as civilianization and the use of private enterprise. This plan should be completed and submitted by March, 1992 for the 92/93 fiscal year budget. The responsibility for this plan can be delegated by the Commissioner to the three Division Commanders whose offices are within the South Coast Air Basin. The plan's manager (overall responsibility) will be the Assistant Commissioner, Field Services.
3. Public Education Plan. Development of the education plan will be delegated by the Commissioner to the Public Affairs Office, supervised by the Deputy Commissioner. The Public Affairs Office will work in concert with the Air Quality Management District and the plans transition manager to develop a public education and law enforcement training program. Development of the education plan should begin by January, 1991 and be concluded by December 1991 for implementation by July, 1992.
4. Membership on the air Quality Management Board. The Commissioner should undertake this by July, 1991. Should his efforts be denied by the AQMD, he should take his case

to the Governor. If necessary, legislation should be enacted to give the Department a voice and vote on the Board by July, 1992. The Commissioner should designate the transition manager as his representative on the board.

Part Three

Transition Management

Transition management consists of the movement of an organization from its present state to its desired state. Or, as Reuben T. Harris and Richard Beckhard define, "Getting from here to there" in their book, Organizational Transitions as, "a transition state: the period during which the actual changes take place."⁵ The management of the transition state is most critical to the success of the change process. This is the phase that the commitment plan is developed, action steps are prepared and implemented, and a management structure to direct the change is identified. The transition management plan is unique to the environment of the organization. No one plan is transferable to another organization.

Commitment Strategy

Even the best defined and development plans will not accomplish the desired change unless all the parties essential to the execution of the plan are committed to seeing it successfully implemented. The creators of the plan must determine who the critical players are for carrying the plan out. A commitment plan provides for that. A commitment plan is a strategy involving a series of action steps desired to secure the support of those

subsystems which are vital to the change effort. The steps involved in developing a commitment plan includes:

1. Identify the target individuals or groups whose commitments are required to ensure that the desired change is realized.
2. Define the critical mass needed to ensure the effectiveness of the change.
3. Develop a plan for getting the commitment of the critical mass.
4. Create a monitoring system to assess the program.⁶

Critical Mass

The first step is to identify the "critical mass of individuals or groups whose active commitment is necessary to provide the energy for change to occur."⁷ The purpose for identifying the stakeholder's is to determine those likely to support the policy strategy as well as those who may oppose implementation of the policy. Using that definition, the following individuals and groups were identified who commitment is essential to the success of the proposed course of action:

- o Office of the Commissioner
- o Legislature
- o Governors Office
- o Trucking Industry
- o Labor Unions
- o News Media
- o Judiciary
- o South Coast Air Quality Management District

- o Allied Law Enforcement
- o Highway Users Groups/Representatives

The next step is to assign assumptions to the players in terms of their current level of commitment toward the proposed change. Table Four, a commitment analysis chart, indicates the present position (x) of each stakeholder and the minimum commitment (0) necessary for change to occur. The arrow designates the direction of movement necessary for commitment. Table Four is followed by a short summary of each actor and the possible intervention strategies which can be used to gain the commitment necessary for the success of the plan. The summaries are based upon assumptions from the SAST process and an assessment of the critical mass members' readiness and capability to participate in the planning process (Appendix J).

TABLE FOUR

Critical Mass Commitment Chart

Actors in Critical Mass	Block Change	Let Change Happen	Help Change Happen	Make Change Happen
Office of the Commissioner			X-----	-> 0
Legislature		X-----	----> 0	
Governor's Office			X-----	-> 0
Trucking Industry	X----	-----	----> 0	
Labor Unions	X----	-----	----> 0	
News Media		X-----	----> 0	
Judiciary		X-----	----> 0	
Air Quality Mgmt. District			X-----	-> 0
Allied Law Enforcement*		X-----	----> 0	
Highway Users* Groups/Representatives	X----	-----	----> 0	

*Snaildarter

Office of the Commissioner. The Commissioner supports the plan. He is willing to do whatever is necessary to make the plan work. His present level of commitment is to help things happen. It is necessary for him to make things happen. He must be very proactive in communicating the Department's needs to the Governor and Legislature. He has considerable influence with them and he is vital to the success of the plan. His amicable working relationship and rapport with the California Association of Highway Patrolmen will, through negotiations, gain their support to the plan. The Commissioner must serve as a champion and spokesperson for the plan. He will have to exert his influence and the prestige of his office to convince the trucking industry, highway users groups, and allied law enforcement of the necessity for their support of the plan.

Legislature - The State Legislature has tremendous influence over the success or failure of the plan. The fiscal control they exert alone can determine the plan's success. The influence they have with local governments and politicians can be beneficial to reducing local opposition to the plan. The leadership of the legislature must be convinced of the plan's importance to the health and economy of the South Coast Air Basin. Given the current State fiscal dilemma, the legislature leadership will have to identify an additional source of revenue to provide the Highway Patrol with the financial support necessary for the plan's implementation. They will have to enact legislation that imposes severe fines and/or loss of drivers license for scofflaws of the

travel restrictions in the SCAB. High fines tend to increase motorist compliance rates. The legislature must be in a position to help change happen. The Commissioner and Governor are in strong positions to influence the Legislature.

Governor's Office - The Governor realizes that the health and economy of an entire region and state are at risk. California is projected to become the world's fourth greatest economic power by 2010, after Japan, the Soviet Union, and the United States. This is subject to change as the environment becomes more unhealthy and business leaves California. The Governor must be in a position of make change happen. His influence reaches every corner of the State and every politician. He can take the leadership role in the state, championing the plan, obtaining the finances for the plan's implementation, and serving as one of the plan's spokespersons. The Governor's support of the plan cannot be understated. He can exert influence over those groups opposing the plan.

Trucking Industry - The trucking industry opposes the plan. Any restrictions that effect their delivery schedules, routes of travel, and highway usage prohibitions will have an adverse economic impact on their industry. Narrowing their window of delivery times could cause them to acquire more trucks and hire additional drivers to meet their delivery schedules. Any change in their current employees terms and conditions of employment would require discussion with the employees unions. Labor contracts would have to renegotiated. The trucking industry is currently viewed by most motorists as a necessary evil and a major cause of

traffic congestion. The leadership of the trucking industry must be convinced by the Governor, Legislature, and Commissioner that they need to help change happen. They must be shown that they can take a leadership position on an issue that will have positive benefits for the State and SCAB. This is an opportunity for the industry to change the public's negative perception. The trucking industry, by helping change happen, can positively influence the labor unions too.

Labor Unions - The labor unions oppose the plan and are in a position to block change. Labor unions are representatives of their membership. Employees by and large, will be opposed to any changes that effect the hours they work, unless of course, it's to their benefit. Negotiations between employees and the unions will be necessary. Business will have to make concessions in terms of pay and working conditions to gain employee/union support. The labor unions must be moved to a position of help change happen. The Governor and Legislature can strongly influence that position because they can be influential in assisting labor unions in obtaining and preserving benefits for their members at the State level.

News Media - The news media is in a position of let change happen. They must be moved to a position of help change happen. Their ability to influence the public and deliver the important theme of the plan is vital to the success of the plan. Care should be taken to develop a public information media plan. Prominent champions (spokespersons) from a variety of backgrounds and expertise should

be identified to serve as the message bearers of the plan. Spokespersons must be available whenever requested and their responses forthright to gain the trust of the news media. The support of the news media is one of the most critical to the success of the plan. The news media will recognize their important role in this plan as they do other issues of public significance.

Judiciary - The judiciary, including the district attorneys, and city prosecutors staffs, are in a position of let change happen. Their support is important to the plan's success. They must be moved to a position of help change happen. Without the support of the judiciary in prosecuting cases and meting out fines public compliance with the plan will be minimal. The Governor and Legislature weld a great deal of influence over the judiciary through funding, legislation, and appointments. The Commissioner through his local Commanders, must meet with the judiciary to elicit their support to help change happen.

Air Quality Management District - Their position of help change happen must be redirected to make change happen. They are the body that is empowered to promulgate the Air Quality Management Plan. They will have to develop a public information media campaign the likes of a wall street advertising firm. The Governor and Legislature can influence them through funding and/or Legislation, to take a stronger role in the plan.

Allied Law Enforcement - They are in a position of let change happen and need to become more supportive in a help change happen role. Local law enforcement could be a snaildarter in the plan.

Any travel restrictions/regulations will surely have an adverse impact on them. They may ask for concessions such as additional funding from the State. The Governor, through his affiliation with the Chiefs of Police and Sheriffs Associations, can influence their positions. The Commissioner can also impact the local law enforcement as the Governor, and through his local Commanders. Steps have to be taken to address local law enforcement's concerns and negotiations undertaken to allow their input into the plan.

Highway User Groups/Representatives - There is a position of opposition. They must be moved to a position of help change happen. Any attempt to restrict individual use of vehicles will be unwelcome. These groups are important to the success of the plan. Negotiations must begin to address their concerns and allow their participation in the development of the plan. Through conciliation, areas of disagreement can be identified early and negotiations reached for an amicable settlement. The Governor and Legislature can influence these groups as they are frequently looking for governmental support of their endeavors.

Transition Management Structure

It is extremely difficult, if not impossible for an organization to use its existing structures to change itself. The management structure chosen during the transition phase must be singularly suited to the role. It should be temporary, and focus specifically on the transition process.

As the critical mass analysis points out, the Commissioner will need to be very involved in the change process. However, the

demands and responsibilities of his position will not allow him to devote the necessary time to manage it himself. He will have to appoint a high ranking officer to lead the working transition management team. The transition team manager will possess the authority to make decisions and cross organizational barriers. The individual chosen must have outstanding interpersonal skills, and the respect of the internal and external stakeholders. The team manager will, in essence, take on the "executive" role, and will report to the Commissioner. He will also serve as his representative on the Air Quality Management Plan Advisory Group Committee.

Implementation Technologies

Responsibility charting is an effective technique, "to assess alternative behaviors in each party for a series of actions bringing about change".⁸ It also assists in reducing ambiguity, saves energy, and reduces interpersonal reactions of people involved in the change process. Appendix K is a responsibility chart that outlines some of the action steps that will need to be taken. Based upon the factors identified on the responsibility chart, the Commissioner will be responsible for: Preparing a traffic management plan, in consultation with local law enforcement in the South Coast Air Basin, to implement the travel and vehicle usage restrictions; developing a five and ten year plan to alleviate/reduce traffic congestion in the South Coast Air Basin; preparing a budget for the Department's plan; developing a public education plan in concert with the Air Quality Management District

to address the health hazards of vehicle pollution, addressing law enforcement's role and responsibilities in the regulation of traffic, and an educational/training program for the judiciary and allied law enforcement; obtaining a membership position on the Air Quality Management board for the CHP and law enforcement; developing a transition management team. The legislature will be responsible for identifying a long term and stable source of revenue for the Highway Patrol in addition to the Motor Vehicle Account. The Governor has approval rights of the budget, source of funding, and the public information plan. He will also be a source of support for the transition management team, if necessary. The use of the responsibility chart clearly delineates roles and responsibilities, thus avoiding misunderstanding.

Communication of the Vision

For change to occur successfully, people must know what the change is about and the necessity for the change. "To maintain or steer the organization, the executive manager must provide a clear destination or vision."9 The Commissioner will be the impetus for communicating the vision. Because of his prominent position and visibility, the Commissioner can establish the atmosphere for change in the Department. By making the plan a major topic at his meetings, visits to CHP offices, through the use of the "Commissioners Tape" (video), discussions with the media, legislature, and governor, he will bring the plan to the attention and forefront of the Department. Once the plan is in place and operational, he will need to provide updates and progress reports

to the governor, Legislature, news media, and most importantly, Departmental employees. This will need to be an ongoing program that serves to keep the vision in everyone's minds.

Milestone Recognition

Major events in the transition plan, such as the implementation date and significant accomplishments, will be received prominent recognition and be commemorated. Prior to the implementation of the plan, a press conference will be held in the Governor's office with the Governor, Commissioner, Transition Manager, and the leadership of the Legislature. Subsequent milestones will be announced and celebrated. This will provide for feedback to the employees and public as to the status and progress of the plan. With the passing of keystone events, as with the passing of time, some change will have occurred. The acknowledgement of that change will allow the employees to leave the past and prepare for the future.

Conclusions

The conclusions will be divided into three sections: First to answer the issue question and sub-issues, an overview of why the study was conducted, and subjects for further study.

Issue Question

The theme of this paper was: The Impact of the Air Quality Management Plan on Law Enforcement in the South Coast Air Basin: A prescription for the California Highway Patrol. To provide focus to the subject, the study was defined by the use of the following sub-issues:

- o Impact of the Air Quality Management Plan upon the ability of CHP to perform their normal mission.
- o Impact of the Air Quality Management Plan upon the resources (personal/financial) of the CHP.
- o Impact of legislative directed environmental enforcement duties on the CHP.

The study identified two trends that will drastically impact the ability of the Highway Patrol to perform it's basic mission in the South Coast Air Basin. Motor vehicle and truck travel usage restrictions and regulations will require the California Highway Patrol to redirect personnel and resources from proactive patrol and public service duties, to enforcement of environmental vehicle emissions concerns relating to air quality and quality of life issues. Enforcement of these environmental laws will adversely impact and detract from the traditional duties of the CHP Officer. Should the CHP not adequately address the Air Quality Management Plan, the Legislature and/or Governor could provide direction to the Department. This would constrain Departmental operations and take away a degree of management latitude and flexibility.

The plan very clearly identifies the trends that will impact the Department within the next 10 years. The negative implications and ramifications of each trend are discussed in a detail that vividly paints a picture of the Department's future needs to address the Air Quality Management plan.

The events studied clearly indicate that vehicle travel and usage restrictions are the best and most feasible way to reduce air

pollution. In order to improve the air quality in the South Coast Air Basin to attain federal standards, travel and vehicle usage restrictions/regulations will have to be implemented. Since the majority of all travel is on the freeways, the CHP will be faced with a lions share of the enforcement effort.

Additional personnel will be required to allow the Department to continue it's basic mission and to address the enforcement levels necessary to effect travel regulations and vehicle usage restrictions. Whether these additional personnel will be civilians or officers will be decided by the Department's top management. The study identified civilians performing public service duties as a way of increasing officer availability.

Funding for the additional responsibilities and future role of the Department was identified in the plan as a problem. No doubt the additional responsibilities imposed upon the Department will have a price tag attached.

A secure and perdurable source of funding must be sought out for the Department to successfully implement and carry this plan out.

The California Highway Patrol should implement a traffic management plan for the South Coast Air Basin. The CHP must confer with local law enforcement to develop a comprehensive plan in response to the Air Quality Management Plan. The development of a five and ten year plan, also by the CHP, to alleviate/reduce traffic congestion, could compliment the traffic management plan and may delay the implementation of vehicle travel/usage

restrictions. In order to gain public support and understanding, the CHP and the Air Quality Management District should develop a public education plan. This plan should address the reasons for travel usage/restrictions, health problems attributed to motor vehicle emissions and law enforcement's role in the regulation of traffic to improve the quality of life/environment. An educational/training program should be developed for local law enforcement and the judiciary. This program should address their respective roles and responsibilities in support of the Air Quality Management Plan. Hopefully, through the use of the media to convey the message of the plan, public support will be gained and non-compliance with vehicle travel/usage restrictions will be minimal. One of the most important elements to the success of this study is the inclusion of a CHP representative on the Air Quality Management Board. Law enforcement should have a voice in those decisions that are going to impact them. Since the preponderance of any travel regulations/restrictions are going to fall to the CHP, they are the likely law enforcement candidate to serve on the Board. By starting today addressing those issues raised in this study, the transition will be smooth and attainable.

Why The Study Was Conducted

It was the opinion of the author of this study that any effort to improve air quality in the South Coast Air Basin would have a detrimental impact on the Highway Patrol. Seventy percent of the air pollution is attributed to motor vehicles. In order to impact that, private motor vehicle usage must be reduced. Since 70

percent of all motor vehicle travel in California occurs on the freeways, it is only natural to assume the operations of the California Highway Patrol will be impacted by the Air Quality Management Plan.

The study identified concerns/issues that needed to be addressed to bring about the desired future. A primary goal of the study was to alert allied law enforcement and the highway Patrol to the possible future and to make it a satisfactory transition.

Subjects for Future Study

The Air Quality Management Plan will have a profound impact on law enforcement in the South Coast Air Basin. Some subjects for future study might include:

- o Alternative work schedule for law enforcement employees to reduce employee commute and it's impact on the delivery of police services and associated cost.
- o Government subsidized home loans/allowances to allow employees to live in the community they work, thus reducing commute.
- o Personal and financial impact of Air Quality Management Plan on law enforcement employees.
- o Impact of Air Quality Management Plan on local law enforcement's ability to perform their law enforcement mission.
- o How will local law enforcement provide law enforcement services and staffing when the majority of it's employees have an excessive and timely commute to work

and are required to comply with the Plan's vehicle travel/usage restrictions.

- o The implementation of the Air Quality Management Plan will increase employee turn-over as employees seek employment closer to their residence.
- o Will the Air Quality Management Plan's implementation lead to higher crime rates as law enforcement resources are redirected to enforce the Plan.

Appendix E lists 39 possible events, some of which will directly impact local law enforcement operations and their ability to deliver services to their constituency. The law enforcement agencies in the South Coast Air Basin should investigate the potential impact of the Air Quality Management Plan on their individual departments.

APPENDIX A

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APPENDIX B

INTERVIEWS

Mr. Don Zinger	-	Office of Mobil Sources, Environmental Protection Agency, Washington D.C.
Mr. Kent Milton	-	Office of Public Affairs, National Highway Transportation Agency, Washington D.C.
Mr. Arun Naik	-	Southern California Association of Governments.
Ms. Patricia Nemeth	-	Southern California Air Quality Management District.

APPENDIX C

Chief of Police	-	Medium Size Department City Population 65,000
Chief of Police	-	Medium Size Department City Population 82,000
Chief of Police	-	Large Department City Population 145,000
CHP Commander	-	Large Metropolitan Area
CHP Commander	-	Large Metropolitan Area
CHP Commander	-	Non-Metropolitan Area
Senior Planner	-	Southern California Association of Governments
Project Manager	-	Air Quality Management District
District Manager	-	Automobile Club of Southern California
Police Captain	-	Major Metropolitan City
Police Captain	-	Small Metropolitan City
Police Lieutenant	-	Large Metropolitan City

APPENDIX D

- Trend 1 Vehicle Registration Rate in South Coast Air Basin (SCAB)
Defined as the number of motor vehicle registrations in the SCAB.
- Trend 2 Fuel Price
Defined as the cost of motor vehicle fuel.
- Trend 3 Fuel Availability
Defined as the availability of motor vehicle fuel for consumption by the general public.
- Trend 4 Legislated Environmental Law Enforcement
Defined as mandated enforcement of laws related to the environment and quality of life issues.
- Trend 5 Stage two smog alerts
Defined as vehicular travel restrictions and closure of nonessential governmental offices, and private business and schools.
- Trend 6 Enforcement Duties of CHP Officer
Defined as the role of the CHP officer in light of environmental laws vs basic mission/role of CHP officers.
- Trend 7 Vehicle Inspection Program
Defined as legislated inspection of all motor vehicles through random on highway inspections by CHP enforcement teams in SCAB.
- Trend 8 Vehicle Pollution Laws
Defined enactment of more as more stringent vehicle emissions regulations.
- Trend 9 Truck Travel Regulations in South Coast Air Basin (SCAB)
Defined as regulations restricting truck travel and usage by time of day, route, and highway.
- Trend 10 Vehicle Travel Regulations in South Coast Air Basin (SCAB)
Defined as travel/usage restrictions of cars.
- Trend 11 Officer Availability
Defined as the availability of officers (CHP) to respond to incidents requiring the presence of CHP officer to mitigate situation.

- Trend 12 Mass Transit
Defined as a viable public transportation system.
- Trend 13 Population of South Coast Air Basin (SCAB)
Defined as the human population living in the SCAB.
- Trend 14 Toll Roads
Defined as highways built by private funds with fees (tolls) charged for travel/use.
- Trend 15 Alternative Fuels
Defined as synthetic man-made fuels from sources other than oil.
- Trend 16 Traffic congestion in South Coast Air Basin
Defined as impediments to free flowing traffic (the number of vehicles, traffic, construction, traffic accidents).
- Trend 17 Truck Accidents in South Coast Air Basin
Defined as traffic accidents involving large trucks (which create traffic congestion/delays).
- Trend 18 Home to Work Distance
Defined as to the number of miles workers travel from their residences to places of employment in SCAB.

TREND RANKINGS

HITS

4	10
13	10
16	10
6	9
10	9
1	9
3	8
9	8
8	7
11	7
2	6
7	6
5	5
17	4
18	4
14	3
12	2
15	2

APPENDIX E

- Event 1 Prohibition of Single Occupant Vehicles on Freeways
Defined as legislation restricting vehicle travel on the freeways by single occupant vehicles.
- Event 2 Odd/Even License Plate Vehicle Travel/Usage Restrictions
Defined as prohibited vehicle travel/usage based upon day of month and license plate number.
- Event 3 Truck Travel/Usage Restrictions
Defined as legislation prohibiting truck travel to time of day, streets, freeways, and or day of week.
- Event 4 Fuel Purchase Limitations
Defined as legislation restricting motor vehicle fuel purchases by day of month by vehicle license plate number.
- Event 5 Limitation on Motor Vehicle Fuel Purchases
Defined as limit on amount (gallons) of motor vehicle fuel that can be purchases at one time.
- Event 6 Vehicle Free Zones
Defined as Areas in downtown metropolitan areas restricted to vehicles.
- Event 7 Cap on Vehicles per Household
Defined as limitations of vehicle ownership per homeowner.
- Event 8 Increased Vehicle Registration Fee's
Defined as surcharges on registration fees to vehicle owners in SCAB (to discourage vehicle ownership and impacts vehicle registration compliance).
- Event 9 Closure of all Governmental Operations During Stage One Alert Days
Defined as closure of all nonessential Governmental operation on days of Stage One (Smog) alert days.
- Event 10 Alternate Workweek/Flexitime
Defined as legislative mandated workweek/flexitime scheduling for all employers with 25 or more employees.
- Event 11 Telecommuting•
Defined as legislative mandated telecommuting work plan for all employers with 25 or more employees to reduce employee commute by 10 percent of the work force.

- Event 12 Increase in Parking meter Fees
Defined as increase of on street parking fees to discourage vehicle usage.
- Event 13 Peak Hour Vehicle Operating Fee
Defined as surcharge/permit to operate motor vehicle during commute hours.
- Event 14 CHP Develops Truck Accident Reduction Teams on all Freeways in SCAB
Defined as special enforcement teams of officers assigned to truck enforcement duties only.
- Event 15 Law Enforcement Employee Turnover
Defined as turnover of employees seeking jobs closer to home due to travel restrictions.
- Event 16 Quality of employee worklife
Defined as impact on employees psyche due to job duties and impact of travel/vehicle restrictions.
- Event 17 Time of Day, Seasonal, and Place Controls
Defined as travel restrictions/vehicle usage by time of day, season, and locations.
- Event 18 Highway Users Fees
Defined as motor vehicle surcharges for highway usage. Designed to reduce vehicle travel.
- Event 19 CHP Initiates Roving Freeway Services/Tow Patrols
Defined as roving tow/service vehicles on freeways to remove traffic impediments before officers receives call and responds.
- Event 20 Governmental Subsidized House Allowance
Defined as governmental entities providing housing allowances/reduced home loan cost for employees to reside in city/local of employment. (Will reduce employee commute).
- Event 21 Residential Parking Restrictions Adjacent to Commercial/Business Centers
Defined as parking permit program for residential areas
- Event 22 Workday Starting at Predawn or Noon
Defined as legislative mandated restrictions for travel to work by hour of day. Designed to reduce air pollution

- Event 23 Population Reaches to 20 Million in SCAB
Defined as population reaching 20 million in SCAB
- Event 24 Vehicle Registration Reaches 14 million in SCAB
Defined as the number of motor vehicles registered
and operated in the SCAB
- Event 25 Environmental Officers (CHP)
Defined as officers assigned to enforcing
environmental laws as they related to vehicle
usage/restrictions/regulations
- Event 26 Legislative Support for Environmental Issues Decline
Defined as lack of monetary and legislative support
for environmental issues related to vehicular usage
traffic
- Event 27 Legislative Direction of Environmental Enforcement
Defined as legislative direction and funding support
requiring levels of enforcement.
- Event 28 Civilianizations of CHP Law Enforcement Duties
Defined as enforcement of environmental
regulations/laws by new corp of nonsworn employee
- Event 29 War In Mideast
Defined as warfare in Mideast oil region
- Event 30 Expansion of Metered On-ramps to Entire SCAB
Defined as increasing the number of metered freeway
on-ramps another 600 ramps to 1400
- Event 31 High Occupancy Vehicle (HOV) Lane Expansion
Defined as expanding the HOV lanes another 1480 miles
- Event 32 Truck Accidents Increase 25 Percent in SCAB
Defined as the increase in truck accidents adversely
impacting traffic congestion and air pollution.
(Slower speeds/congestion produce higher levels of
pollution emissions)
- Event 33 Electric Vehicles
Defined as the usage of electric vehicles in place of
combustion engine vehicles.
- Event 34 Freeway construction/Enhancements
Defined as the traffic congestion and accidents
caused by freeway construction projects in the SCAB.

- Event 35 Highway Electrification and Automation
Defined as use of smart vehicles.
- Event 36 Motor Vehicle Account Unable to Fund Entire CHP
Budget
Defined as a shortfall in the States motor vehicle
account. (CHP is entirely funded from motor vehicle
account)
- Event 37 Vehicle Smoke Enforcement
Defined as CHP directed enforcement program to remove
smoking vehicles from operation.
- Event 38 Fleet Vehicle Operators Restricted to Alternative
Fuels
Defined as all vehicle fleet operators restricted to
purchasing and operating vehicles that operate on
alternate fuels only. (includes law enforcement)
- Event 39 CHP Reassigns Personnel
Defined as temporarily reassigning officer strength
to SCAB during months of high pollution.

EVENT RANKING

HITS

2	11
1	10
3	9
24	8
36	8
13	8
23	7
32	7
10	6
17	6
25	6
28	6
22	6
8	5
30	5
31	5
37	5
39	5
4	4
19	4
34	4
35	4
5	3
6	3
7	3
14	3
18	3
34	3
38	3

EVENT RANKING**HITS**

20	2
26	2
29	2
9	1
11	1
16	1
21	1
12	0
15	0
27	0

APPENDIX F

CAPABILITY ANALYSIS

Strategic Need Area:

Highway Patrol Organizational Capabilities
with Emphasis on Vehicle Travel/Usage Regulations
and Restrictions for Environmental/Quality of Life Issues.

Each item was evaluated on the basis of the following criteria:

- I Superior. Better than anyone else. Beyond present need.
- II Better than average. Suitable performance. No problems.
- III Average. Acceptable. Equal to competition. Not good, not bad.
- IV Problems here. Not as good as it should be. Deteriorating. Must be improved.
- V Real cause for concern. Situation bad. Crisis. Must take action.

Category:	I	II	III	IV	V
Personnel Adequacy				X	
Technology				X	
Equipment				X	
Facility			X		
Funding				X	
Calls for Service			X		
Supplies			X		
Management Skills		X			
Officer Skills		X			
Supervisory Skills		X			
Training		X			
Attitudes			X		
Image		X			
Morale		X			
Legislative Support		X			
Exec. Mgt. Support		X			
Growth Potential		X			
Mgt. Flexibility		X			
Sworn/Non-Sworn Ratio				X	
Pay Scale		X			
Benefits		X			
Turnover		X			
Community Support		X			
Complaints Rec'd.			X		
Enforcement Index		X			

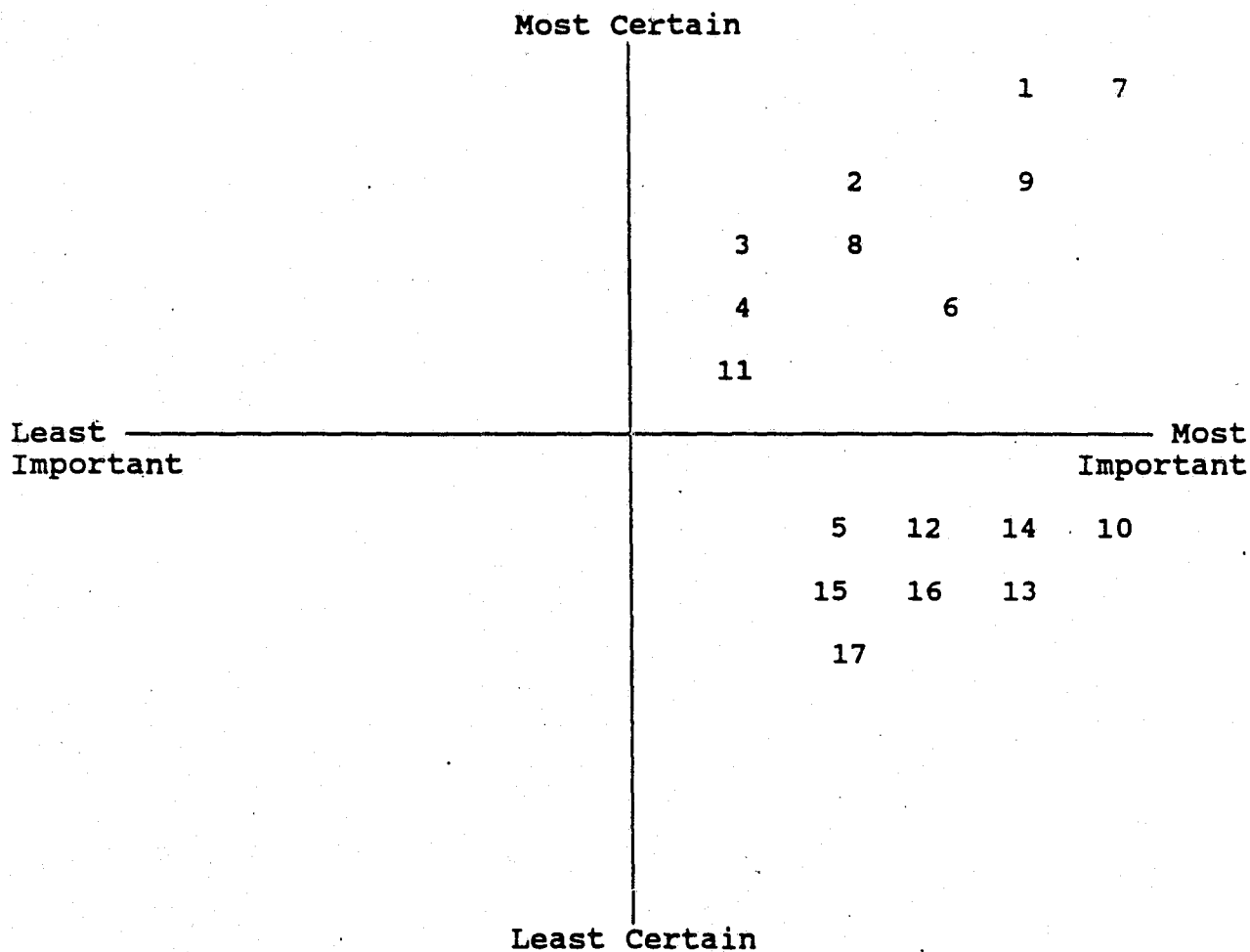
APPENDIX G

STAKEHOLDER IDENTIFICATION

Los Angeles County Board of Supervisors
Orange County Board of Supervisors
San Bernardino County Board of Supervisors
Riverside County Board of Supervisors
Southern California Rapid Transit District
CHP Commissioner
Allied Law Enforcement Agencies
Mayor of Los Angeles
City Council of Los Angeles
CHP Managers
CHP Supervisors
CHP Officers
Trucking Industry
State Legislature
Labor Unions
California Association of Highway Patrolmen (CAHP)
South Coast Air Quality Management District (AQMD)
Southern California Association of Governments (SCAG)
Chambers of Commerce
Governor
Highway User Groups/Representatives
News Media
Judiciary
Local Elected Officials
ACLU
District Attorney Los Angeles County
District Attorney Orange County
District Attorney San Bernardino County
District Attorney Riverside County
City Prosecutors (all four counties)
Department of Motor Vehicles
California Department of Transportation (CALTRANS)
Southern California Grocers Association
Aggregate Industry (rock/sand/gravel haulers)

APPENDIX H

STRATEGIC ASSUMPTION SURFACING MAP



SHAREHOLDERS

- | | |
|--|-------------------------------------|
| 1. Office of the Commissioner | 9. Governors Office |
| 2. Management of the Department | 10. Trucking Industry |
| 3. Supervisors of the Department | 11. Chambers of Commerce |
| 4. Officers of the Department | 12. Labor Unions |
| 5. California Association of Highway Patrolmen | 13. Highway User Groups |
| 6. Legislature | 14. Allied Law Enforcement Agencies |
| 7. South Coast Air Quality Management District | 15. News Media |
| 8. Southern California Association & Governments | 16. Judiciary |
| | 17. Local Elected Officials |

APPENDIX I

1. The CHP should participate in regulation implementation planning with Air Quality Management personnel.
2. The CHP should implement an education and training program for law enforcement regarding the implications of the air Quality Management Plan on enforcement responsibility.
3. The CHP should take a leadership role with other Southern California law enforcement agencies in developing a strategic plan for traffic management in the year 2000 for the South Coast Air Basin. This study could result in legislative recommendations.
4. The CHP should lobby for an advisory position on California's Quality Management Board.
5. The CHP should take a leadership role in public announcements and educational TV and radio spots regarding the requirements of the Air Quality Management Plan, particularly as it applies to vehicle use.
6. The CHP should endorse an ongoing committee concept comprised of local Southern California Law Enforcement agencies and the South Coast Air Quality Management District to keep abreast of Air Quality trends and impacts.
7. The CHP should seek legislation to increase DMV fees to fund CHP Air Quality enforcement efforts.
8. The CHP should adopt a 5 and 10 year plan to deal with increased traffic congestion.
9. The CHP should support legislation to decrease traffic congestion by regulating truck freeway times.
10. The CHP should adopt a training program enhancing efforts toward air quality enforcement.
11. State legislature creates regional Traffic Advisory Boards that have the authority to develop regional strategies to mitigate traffic congestion and pollution.
12. The state legislature enacts legislation identifying critically congested regional areas and through Cal Trans, implements mitigation efforts, such as:
 - Carpooling lanes on all freeways involving minimum of two lanes;

- Commercial truck traffic over 6,000 gross lbs. to utilize freeways only during specified hours, similar to the 1984 Olympics.
- 13. State legislature enacts increased licensing fees on older motor vehicles, thereby taxing them out of existence.
- 14. Gasoline tax increased to provide funding for an enhanced subway system for Los Angeles and Orange counties.
- 15. Gasoline tax increased to provide public and private education in K-12 school system, as well as TV commercials, to further expound the benefits from carpooling and rapid transit, and to dissuade public opinion regarding single vehicle operation.
- 16. Legislation that enhances the development and production of solar and battery powered vehicles through tax incentives.
- 17. The state legislation requires that all public agencies institute immediate carpooling and using public transportation programs.
- 18. All public agencies and private companies publicly financed or involved in public contracts be required to purchase battery or solar-type vehicles, if and when they are developed.
- 19. CHP patrol forces shall maintain a ration of one officer for every 25,000 licensed drivers or licensed vehicles in each district.
- 20. Pollution tests for vehicles will be taken over by the DMV. Owners will be charged an amount sufficient to cover the test costs and compliance enforcement.
- 21. Unregistered vehicles located on California highways will be impounded and "taxed" an amount equivalent to their market value.
- 22. Non-polluting vehicles will be licensed at a flat rate of \$25.00 per year for the life of the vehicle.
- 23. The CHP will deploy 80% of its enforcement officers on motorcycles in the South Coast Air Basin.
- 24. Restrict truck traffic to non-peak hours.
- 25. Eliminate diesel fuel engines.
- 26. Mandatory carpool regulations for freeway use.

27. Fund CHP with Motor Vehicle dollars and fines levied for pollution violations.
28. Reassign pollution enforcement to other than CHP. A special enforcement entity.
29. Seek local agency support for freeway pollution enforcement tasks.

APPENDIX J

READINESS/CAPABILITY CHART

	READINESS			CAPABILITY		
	High	Med.	Low	High	Med.	Low
Commissioner	X			X		
Legislature		X		X		
Governor	X			X		
Trucking Industry			X		X	
Labor Unions			X		X	
News Media		X		X		
AQMD	X			X		
Judiciary			X		X	
Allied Law Enforcement			X		X	
Highway User Groups			X		X	

APPENDIX K

RESPONSIBILITY CHART

R = Responsibility (not necessarily authority)
 A = Approval (right to veto)
 S = Support (put resources toward)
 I = Inform (to be consulted)
 - = Irrelevant to this item

DECISION	ACTORS								
	A	B	C	D	E	F	G	H	I
Prepare Plan	R	I	I	I	I	I	S	I	I
Develop Budget	R	S	A	-	-	-	-	-	-
Identify Funding	S	R	A	-	-	-	-	-	-
Progress Reports	S	I	I	I	I	I	I	I	I
Public Info. Plan	R	S	A	I	I	I	S	I	I
Develop Transition Management Team	R	I	S	I	-	I	I	I	I
Schedule Press Conferences	R	I	I	I	I	I	I	I	I
Personnel Training	R	S	S	I	-	I	S	I	I

Legend: A - Commissioner
 B - Legislature
 C - Governor
 D - Trucking Industry
 E - Labor Unions
 F - News Media
 G - AQMD
 H - Allied Law Enforcement
 I - Highway User Groups

Trend Evaluation Ranges

Trend #	TREND STATEMENT (Abbreviated)	LEVEL OF THE TREND** (today = 100)			
		5 Years Ago	Today	*5 Years From Now	*10 Years From Now
1	Legislated Environmental Law Enforcement	50-80	100	100-150 100-175	125-200 100-200
2	Population of South Coast Air Basin (SCAB)	70-90	100	110-140 80-150	125-150 80-150
3	Traffic Congestion in South Coast Air Basin (SCAB)	60-90	100	110-160 80-120	115-250 60-150
4	Enforcement Duties of CHP officers	70-100	100	100-130 100-140	110-170 100-200
5	Vehicle Travel Regulations in SCAB	0-100	100	104-130 100-150	105-150 100-200
6	Vehicle Registration Rate in SCAB	50-90	100	100-130 90-125	100-175 75-175
7	Fuel Availability	90-105	100	90-125 100-130	70-175 100-150
8	Truck Travel Regulations in SCAB	25-98	100	100-140 90-150	100-175 100-200

** Modified Delphi Forecast (Low-High)

*Five years from now
"will be"

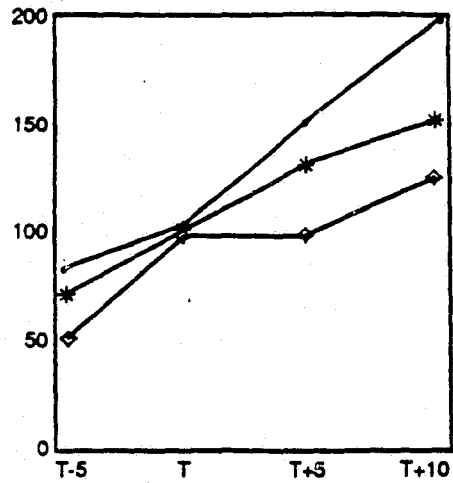
"should be"

*Ten years from now
"will be"

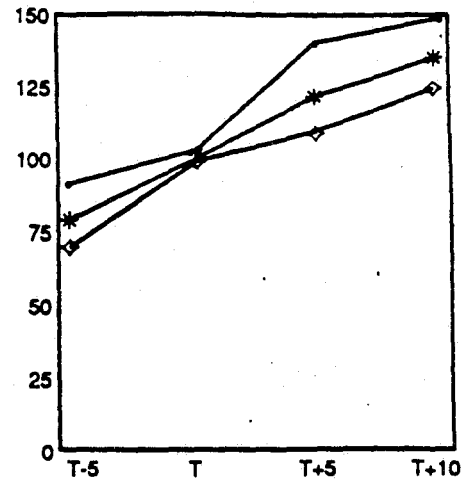
"should be"

APPENDIX M

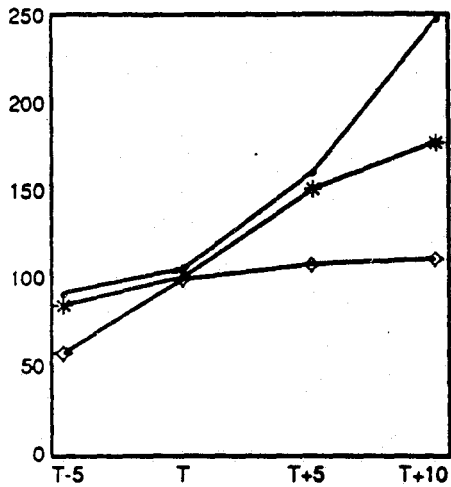
TREND EVALUATION GRAPHS



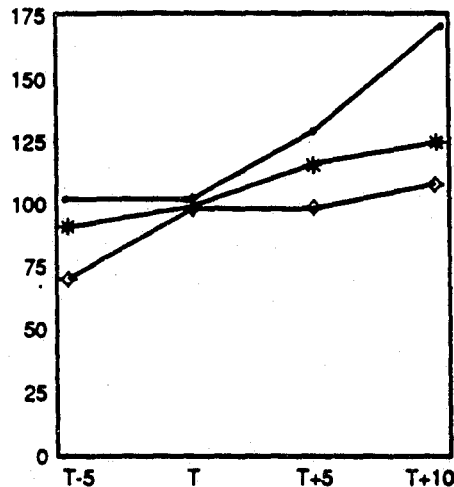
T1 LEGISLATED ENVIRONMENTAL



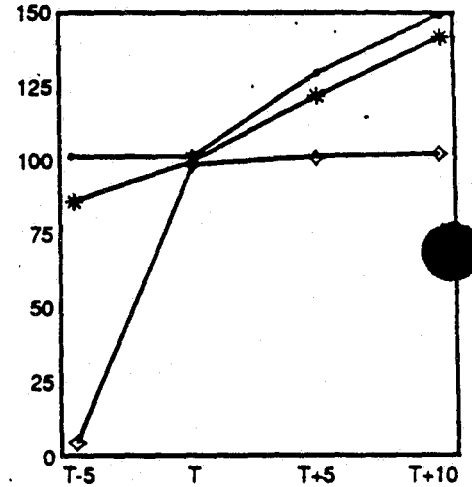
T2 POPULATION OF SOUTH COAST AIR BASIN



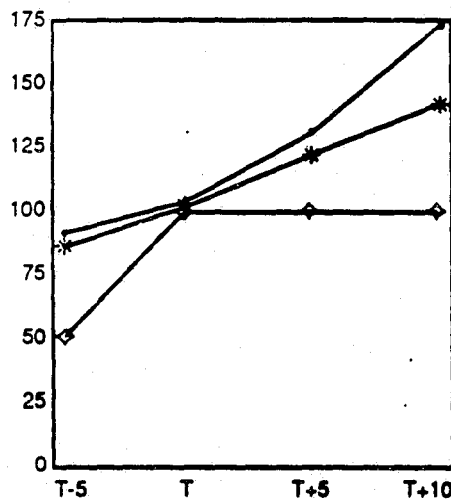
T3 TRAFFIC CONGESTION



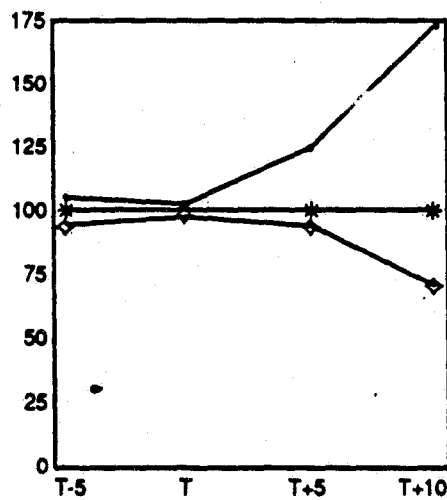
T4 ENFORCEMENT DUTIES OF CHP OFFICERS



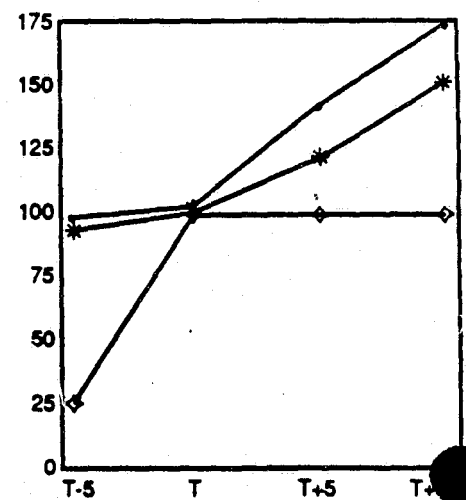
T5 VEHICLE TRAVEL REGULATIONS IN SCAB



T6 VEHICLE REGISTRATION



T7 FUEL AVAILABILITY



T8 TRUCK TRAVEL REGULATIONS

HIGH ———

MEDIAN * * *

LOW ◇ ◇ ◇

END NOTES

1. Air Quality Management Plan - South Coast Air Basin. (South Coast Air Quality Management District, March 1989), p. 2.
2. Thomas Esenstein, POST Command College p. 59.
3. Ibid., p. 59.
4. Dr. Dorothy Harris, POST Command College p. 64.
5. Richard Beckhard, Reuben Harris, Organizational Transitions. 2nd ed., (New York: Additon-Wesley Publishers, 1987), p. 73.
6. Ibid., p. 74.
7. Ibid., p. 74.
8. Ibid., p. 82.
9. Ibid., p. 83.