

ALASKA LEGISLATURE COMMITTEE FILES, 1989-1990 8672
5745 HOUSE JUDICIARY

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3 SCOPE OF STUDY

4 On March 25, 1983 a Jonesboro School District bus was involved in a
5 traffic accident near Newport, Arkansas. The teacher-driver, four (4) other
6 teachers and four (4) students were killed. This tragedy heightened the
7 existing concern for school bus safety held by parents, interested citizens,
8 school officials and the legislators. The installation of seat belts on
9 school buses has been debated as a major increased safety factor for the past
10 few years. This Staff Report will examine the feasibility and ramifications
11 of installing seat belts on school buses. A major source of data was
12 obtained from the Los Angeles (1983) seat belt study which compiled a large
13 number of reports and articles as well as comments from various associations/
14 organizations having an interest in the seat belt study. In addition, the
15 American Transportation Corporation of Conway, Arkansas - Milt Honea,
16 President and Jerry Williams, Vice President of Marketing - provided con-
siderable input.

17 Two study proposals have been referred to the Joint Interim Committee on
18 Public Transportation for study of the school bus safety issue - Interim
19 Study Proposal 83-4 by Representative George and Interim Study Proposal 83-27
20 (House Resolution 84) by Representative Foster. Interim Study Proposal 83-4
21 by Representative Lloyd George requires the joint interim committee to study
22 "the overall safety of school buses of the type used in Arkansas for the pur-
23 pose of determining practical structural changes that could be made in school
24 buses to make them safer for passengers and operators." Interim Study
25 Proposal 83-27 by Representative Foster requests that a study be made "of the
26 feasibility of legislation requiring school buses in the State to be equipped
27 with seat belts, to provide protection to school children from death or
28 injury in cases where school buses are involved in accidents."
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30 BACKGROUND

31 Federal Requirements on Seat Belts in School Buses

32 The National Highway Traffic Administration (NHTSA) is the federal agency
33 responsible for establishing minimum federal standards for all motor vehicles.
34 Their responsibility includes the safety and crashworthiness of all motor
35 vehicles, including school buses.
36

1 The NHTSA does not require seat belts in school buses. They have been
2 petitioned to require seat belts in school buses and to require the installa-
3 tion of seat belt anchorages to simplify placement of seat belts by local
4 jurisdictions; however, they have denied the petitions stating that

5 "currently mandated occupant protections in school buses
6 provide an adequate level of safety protection and that
7 seat belts would not raise the level of protection for
8 the occupants unless states and local jurisdictions were
9 willing to take steps to ensure that the seat belts were
10 used."

11 NHTS Administration Federal Register, Vol. 48 #201, Oct., 1983.

12 The Agency noted that any jurisdiction wishing to buy and install seat belts
13 in school buses can do so.

14 Federal Standards

15 According to American Transportation (AmTran), a manufacturer of buses,
16 federal motor vehicle standards must be adhered to for all bus-type vehicles.
17 Effective April 1, 1977, however, four additional standards were added that
18 increased the safety of school buses significantly.

19 1. Standard #220 - School Bus Rollover Protection

20 This standard specifies performance requirements for the
21 structural integrity of the passenger compartment of school
22 buses when subjected to forces that can be encountered in
23 rollovers. The standard requires that upon the application
24 of vertical downward force to the bus roof equal to 1-1/2
25 times the vehicles unloaded weight, the vehicle roof shall
26 not crush more than 5-1/2 inches, and the emergency exits
27 shall be capable of being opened with the weight applied and
28 after its release. This, along with each standard is tested,
29 and if a bus chosen at random is not in compliance, all buses
30 manufactured with the model text can be recalled.

31 2. Standard No. 221 - School Bus Body Joint Strength

32 This standard addresses the problem of exposure of school bus
33 passengers to sharp metal edges when during an accident body panels
34 become separated from the structural components to which they have
35 been fastened. It seeks to reduce the likelihood of lacerations by
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1 requiring that body joints on school buses have a tensile strength
2 equal to 60 percent of the tensile strength of the weakest joined
3 body panels.

4
5 3. Standard No. 222 - School Bus Passenger Seating and Crash Protection

6 This standard specifies seating, restraining barrier, and impact
7 zone requirements for school buses. This standard relies on
8 compartmentalization between well-padded and well-constructed seats
9 to provide occupant protection on school buses.

10
11 4. Standard No. 301 - Fuel System Integrity

12 The original standard specifies requirements for the integrity and
13 security of fuel tanks, fuel tank filler pipes and fuel tank connec-
14 tions to minimize fire hazard as a result of collision in all
15 passenger cars manufactured after January 1, 1968. This standard
16 was amended to substantially upgrade the performance requirements.
17 The effective date is September 1, 1975, with additional require-
18 ments. The effective date is September 1, 1976, and September 1,
19 1977. The standard now covers all vehicles under 10,000 pounds
20 (except motorcycles) and requires preservation of fuel system
21 integrity by limiting fuel spillage incidental to severe front, rear
22 and lateral crash tests.

23 The Compartmentalization Concept (Standard 222) is considered by the De-
24 partment of Transportation members of the National Association of Pupil
25 Transportation Services and officials of AmTran to be the best solution for
26 increased pupil safety on school buses. According to a publication by AmTran,
27 entitled "The 5 most asked questions about School Buses" in 1983, comparten-
28 talization is the best solution because of the following features:

- 29 1. Compartmentalization is more manageable. The protective
30 surfaces exist in place without depending on any
31 action by the children or any extra special supervision
32 by the drivers. Seat belts require discipline and
supervision to keep them clean, unraveled and in use.
- 33 2. Compartmentalization works equally well for 1, 2 or 3
34 students per seat.

35 Today's 39" wide standard seats may contain three small
36 children or two large ones or any combination in between.

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2 Arranging seat belts to properly handle any combination
3 is difficult, if not impossible; the best known solution
4 with seat belts is to restrict each seat to two students
5 and two belts, which has the disadvantage of sharply
6 reducing the carrying capacity of bus fleets.

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12 3. Compartmentalization works whether students have fully
13 developed abdominal areas or not.

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3. Conventional seat belts, which are lap restraints only,
are not suitable for small children whose abdominal area
and bone structure are not adequately developed to take
the force of a lap belt alone. They need the help of
chest harnesses also, which adds to the complexity of a
proper seat belt solution.

4. Compartmentalization, once it has done its energy absorbing
job, leaves the student free to escape the bus. Seat belts
could leave students strapped in, upside down, perhaps
unconscious, in burning or flooding buses.

5. Compartmentalization is most affordable.
- Although not a part of the DOT reasoning, this is a factor
to be considered. In evaluating the cost of seat belts
alone, one should include the cost of retractors and chest
restraints, also, since those appear needed. Even more
important is the probability that a seat belt solution
should lead to two students per seat and greater spacing
between seats, thereby requiring more buses for the same
student load.

Seat Belt Usage by School Districts

There are two districts in the United States which have installed seat
belts on school buses - the Greenburgh Central School District #7 in New York
and the Hartland Elementary School District in Vermont.

According to data provided by the Greenburgh Central School District #7
which made a district decision to use seat belts, "No problems have arisen due
to the installation of seat belts. Salvatore Corda, the Assistant Business
Superintendent stated ". . . they have never had an instance where a child
has been struck with a seat belt." Based on statistics provided, they are
used by 80 percent of the pupils and repair costs have not been a significant
factor. Seat belts are installed on the entire fleet of 60 buses and 20
buses. The Greenburgh District is located approximately 25 miles north of
New York City, in a middle class area and serves a mixed ethnic population.
The district serves kindergarten through 12th grade pupils and transports

1 3,200 students (2,500 public and 700 private school students) approximately
2 540,000 miles per school year. However, staff contacted another source to
3 seek an unbiased opinion. According to the staff of Michael Joyce, Director
4 of Transportation from Long Beach City school who has visited the New York
5 District, use is not that high and repair problems are significant.

6 The Hartland Elementary School District in Vermont has purchased one new
7 school bus with seat belts in the 1983-84 school year.

9 The Cost of Installing Seat Belts

10 According to American Transportation, there would be no problems manufac-
11 turing school buses with seat belts; however, there would be an increase in
12 the cost of the bus. Presently, a new bus (with chassis which is purchased
13 by buyer) is \$21,000. The installation of the seat belts would add an addi-
14 tional \$2,000 - \$4,000 for a total cost of \$23,000 - \$25,000 for a new school
15 bus. The seating capacity with the installation of seat belts would be reduced
16 by 60%.

18 Review of Research Studies on Seat Belts in School Buses

19 The majority of research studies on seat belts were found to be undertaken
20 in the 1960s and 1970s. No new studies were found other than the study report
21 done by California which referred to the older studies listed. A synopsis
22 is given of each study including the conclusion and/or recommendation.

23
24 1. The National Highway Traffic Safety Administration (NHTSA) in
25 1968-1974 conducted extensive research through crash sled tests. These crash
26 tests concluded that passengers secured to bench seats in a bus by lap belts
27 suffered the most severe injuries in the event of upset or collision. This
28 was because the height and construction of the bench seats produced hazards to
29 the head and upper portions of passengers seated behind.

30 2. The American Association for Automotive Medicine in 1975 advised
31 against securing young children solely by lap belts in either passenger autos
32 or buses because the abdominal section of young children is not sufficiently
33 developed to withstand the stress caused by lap belts in event of collision.

34
35 3. The Virginia Polytechnic Institute and State in 1974, conducted addi-
36 tional studies of seat belts in school buses. Their findings questioned the

1
2 compliance of children using seat belts and the ability of drivers to enforce
3 seat belt usage. In addition, the legal and educational barriers to seat belt
4 installation were considered factors that would make seat belts impractical for
5 school buses.

6 4. The National Motor Vehicle Research Foundation in 1972 conducted
7 200 crash tests with seat belts and concluded that at least 40 inches of
8 unobstructed area must exist in front of the belted passenger in order to pro-
9 tect the passenger from frontal impact. The greatest danger to a seat belted
10 passenger is impact injury to the head. Seats in buses are typically spaced
11 22 to 28 inches apart.

12 5. The National Association of Independent Insurers in 1974 questioned
13 the legal liabilities created by buses equipped with seat belts. Their concern
14 is the enforcement in seat belt usage, and anchorages for seat belts as
15 obstructions to children walking in the bus during boarding and disembarking.
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17 6. The National School Transportation Association in 1976-77 computed the
18 cost of safety belt systems in school buses. Their conclusions were that the
19 economics of seat belts due to hazard, enforcement, vandalism and additional
20 factors were not cost effective. The net result would be loss of bus services
21 with additional children placed on the streets to find their own way to school.
22

23 7. The California Highway Patrol commissioned the Southwest Research
24 Institute in 1976 to study seat belts in school buses and concluded:

- 25 "a. The interior of an auto is not similar to that of a
26 bus in that appurtenances such as steering wheels,
27 dashboards, door handles, etc., are not present
in bus passenger compartments.
- 28 b. Should a major accident occur in an auto, it is
29 relatively easy to release seat belts and remove
30 passengers from outside the vehicle. Belted passen-
31 gers in a much larger bus could not be easily removed.
- 32 c. Bus drivers or aides would be tasked with insuring
33 that belts are fastened, as unsecured belts would
34 result in a tripping hazard for other students. Given
a bus load of 65 children, the amount of time required
to check belts at each stop would be prohibitive.
- 35 d. Factors such as vandalism to belts and the possible
36 use of belts as weapons were also cited by the

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Highway Patrol as reasons why the device should not be employed."

SUMMARY

The information provided can best be summed up in a listing of pros and cons regarding the use of seat belts in school buses. The listing includes information derived from the listed study, conversations with American Transportation officials, magazine articles, legislators and everyday citizens.

Pros

Cons

Riders are better off restrained than unrestrained if the bus rolls over, crashes into another object, or stops suddenly.

The danger of a small child being trapped by seat belts in a crashed vehicle is greater with seat belts.

Because law requires seat belts in cars, and it is a proven fact they decrease the chances of death in case of impact, children who ride in school buses should also be required to wear seat belts so they can get into the habit of buckling up and we should make every effort to decrease the death percentage.

Seat belts would be used as weapons, thus an increase in accidental injury rate.

Seat belts would require an assistant to the driver, a supervisor, thereby increasing cost.

Monitors of expensive equipment would be required to ensure that students wore belts and were properly belted.

Seat belts would be vandalized, thus a great replacement expense. There is significant cost to installing seat belts plus a 60% loss in the number of passengers each bus can carry.

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Seat belts do not provide total protection as heads, faces, necks and upper torso are permitted to rotate, thus causing possible serious injuries.

Conventional seat belts are not suitable for small children whose abdominal area and bone structure are not adequately developed to take the force of a lap belt alone.

Liability insurance for the use of seat belts due to the possible hazards of the safety devices, in itself, could be excessive.

CONCLUSION

According to data provided by the Public Safety Administration, AmTran and other various articles, school transportation is the safest form of transportation in existence. Twenty-one million children are transported 3 billion miles in the U. S. each year on approximately 380,000 buses.

In 1982, the last year for which data is available, the rate of fatalities in school bus accidents per hundred million vehicle miles was 0.29 (8 deaths). American Transportation Company, Inc., Safety Legislation Concerning School Buses, prepared for the Joint Interim Committee on Public Transportation, May, 1984.

It appears that based on the costs, the lack of data indicating a great fatality decline with the installation of seat belts, the possible dangers which could arise to the installation of the seat belts themselves, the outstanding safety records of school buses in general, the issue of seat belts in school buses could be left as a decision to be made by individual school districts and should not be mandated by the legislature.

Legislators could consider stiffer penalties to enforce the existing law that prohibits motorists from passing school buses when they are stopped.

1 Most school bus fatalities have occurred at the loading and unloading point.
2 National School Bus Report, March, 1984. In addition, a large percentage
3 of these fatalities were caused by the driver running over the child passing
4 in front of the bus because he/she could not see that the child had stopped
5 in front of the bus. Arkansas could consider a structural requirement to
6 cut down the possibilities of incidents such as this occurring. However, it is
7 probable that future Federal requirements will eliminate this problem on a
8 national level. Without a doubt, improved driver training programs, stiffer
9 driver requirements, as well as increased maintenance inspections are needed.
10 The major factor contributing to the March 25, 1983 school bus accident near
11 Newport, Arkansas was attributed to "human error."
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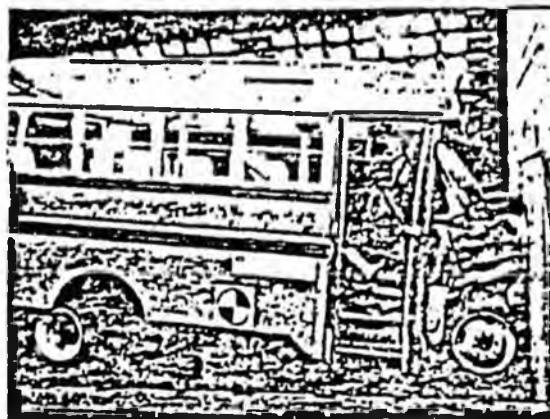
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SUMMARY OF CANADIAN RESEARCH STUDY ON
SCHOOL BUS SEATBELTS

COMPLETE TEXT ON FILE IN COMMITTEE MASTER FILE

MOTOR VEHICLE ACCIDENT RESEARCH: WHAT INCREASES SAFETY DURING FRONTAL COLLISIONS?

ATT:
MORRIS
ADAMS.



School bus during collision with barrier.



1. Belted dummy before test.
2. Belted dummy after test (note head contact with seat back).
3. Unbelted dummy before test.
4. Unbelted dummy after test.

(Photos courtesy Transport Canada)

MOTOR VEHICLE ACCIDENT RESEARCH: WHAT INCREASES SAFETY DURING FRONTAL COLLISIONS?

The next time someone asks you what makes Canadians different from Americans, you can reply that approximately 80 percent of us live in provinces that require us to wear seat belts in motor vehicles, while until very recently, nobody living in the United States has had to wear them (the State of New York has just passed legislation requiring their use). Furthermore, other measures, such as the time at which each country required padded seatbacks in their school buses, also vary.

These differences mean that Canadian safety regulations cannot automatically be based on American research into the causes and prevention of injuries sustained during motor vehicle accidents: injuries are often of a different nature in American accidents, during which unrestrained occupants are subject to very different movements and interactions than are occupants wearing seat belts in Canadian accidents. Consequently, before improvements to safety features in Canadian cars can be considered, Canadian researchers must document just how seat belts and other safety provisions in our vehicles affect the types of injuries that we are most likely to sustain.

At the federal level, it is Transport Canada that sponsors the majority of this type of research. Although some of this work is carried out by the department itself at its Motor Vehicle Test Centre in Blainville, Québec, a large portion is contracted through DSS' Scientific and Professional Services to research groups in the private sector.

The contracts tend to fall into two main types; those related to specific safety features and their effect on improving road safety, and those that survey usage patterns to see whether and how Canadians actually take advantage of the features that now exist, such as seat belts and children's car seats.

Seat belts in school buses — a good idea?

Seat belts have been in small buses (under 4500 kilograms or 10,000 pounds) in the United States since 1977. In 1978, the Canadian Government proposed requiring seat belts in small Canadian school buses as well. However, various interested groups felt further investigation was needed to measure the effect seat belts have on either increasing or decreasing injuries to school bus occupants. Consequently, in 1980, when the balance of the new safety requirements came into effect, the school bus seat belt regulations were excluded, with the proviso that the seat belt issue be re-examined.

In 1984, following the customary search by DSS to ensure that no Canadian firm could at that time supply in sufficient quantity the type of instrumentation necessary to carry out the required research, Transport Canada awarded the American firm, Arvin/Calspan, of Buffalo, New York, a \$78,660 (Canadian) contract to investigate the effects of seat belts on occupants in three sizes of school buses. The company brought its equipment to the Blainville test centre to carry out the tests.

Key components of this equipment were six fifth-percentile, female crash dummies that can be instrumented to measure acceleration forces on the head and chest. The six dummies, three with and three without seat belts, were placed in each of three buses: a large, conventional, 66-passenger bus; a medium, 22-passenger bus, and a 20-passenger converted van. Each bus was attached to a winch-driven cable that is imbedded in a runway leading to a crash barrier. To crash the bus into the barrier wall, the bus was released from the cable at the predetermined speed of 48 kilometres per hour (30 mph). The instruments implanted within the dummies then registered the forces exerted on their heads and chests. Twelve of Calspan's high-speed cameras, eight of which were inside the bus, recorded the entire crash in slow motion.

The results would have surprised most of us, although Transport Canada's safety engineers' hypothesis was verified: head injuries were greater for the dummies that were restrained with seat belts. The films revealed that, by securing the passengers to the seats, the belts caused their bodies to pivot about the hips, causing their heads to strike the backs of the seats in front of them. In the largest bus, both belted and unbelted dummies experienced forces on the head below the limit that is judged to cause serious injury or death. In both smaller buses, the heads of all the restrained dummies experienced forces that were judged to be life threatening or fatal. The heads of all unbelted dummies experienced forces below the limit that is judged to cause serious injury or death.

Transport Canada has reaffirmed that the safety features Canada has incorporated into its school buses — well-padded, high-backed, energy-absorbing seats, spaced at controlled intervals, provide a safe environment without seat belts. The Calspan tests have shown that the typical forces to which unrestrained bus occupants' heads are subjected during frontal collisions are less than would be experienced by a restrained occupant.

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U.S. Department
of Transportation
National Highway
Traffic Safety
Administration

Safety Belt Use and Automobile Insurance:

A Report To Congress 1988

Prepared in Response to the Committee Report
Accompanying the 1988 Department of Transportation
Appropriations Bill as Enacted in the
Continuing Resolution for FY 1988

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EXECUTIVE SUMMARY

This report was prepared in response to the Committee Report accompanying the 1988 Department of Transportation Appropriations Bill as enacted in the continuing resolution for FY 1988. It describes the relationship between rates of safety belt use and automobile insurance prices. Because reliable data on insurance claims costs for 1986 will not be available until 1989, the report presents a reasonably reliable, but preliminary, estimate of the impact of belt use.

The theory supporting a linkage of safety belt use to auto insurance prices involves a chain of causation. Belt use reduces injury incidence and severity. These reductions should decrease insurance claims payments, leading to lower prices for the injury-related portions of auto insurance.

Safety belt use laws now cover more than 80 percent of the population. They have raised use from about 15 percent nationally to about 48 percent in states with belt laws and about 43 percent overall. Most laws apply to front seat occupants of cars and light trucks, motorists who experience roughly 60 percent of all traffic fatalities, 70 percent of severe injuries, and 80 percent of moderate injuries.

In 1987 alone, the 25 percentage point rise in national belt use over 1984 levels saved about 1300 lives and prevented about 16,000 moderate to serious injuries. The resultant reduction in automobile insurance claims was roughly \$1 to \$2.5 billion dollars. Other public and private insurers probably saved another \$0.5 to \$1.25 billion.

A study by the Highway Loss Data Institute, conducted using claims data gathered from numerous insurers, shows that each 10 percentage point increase in belt use cuts injury claims frequency for covered occupants in New York and New Jersey by 1.7 to 3.3 percent. This finding is consistent with several studies of injury incidence, which reveal decreases of 2.5 to 3.7 percent in fatalities among covered occupants and 1.8 to 3.0, or perhaps even 4.0, percent in moderate to serious injuries. The drop in overall fatality and injury rates is roughly 1.2 to 2.4 percent.

Laws in Hawaii, Iowa, and Massachusetts required reductions in the price of auto personal injury insurance coverages, including bodily injury liability, personal injury protection or own-medical payments, and sometimes uninsured motorist liability. The Texas State Board of Insurance also reduced auto injury insurance prices in response to the Texas belt law. The reductions, which generally are supported by claims experience, range from 5 to 12 percent -- a 1.5 to 2.8 percent decrease in the price of personal injury coverage for each 10 percent rise in belt use. The average auto insurance bill in these states dropped approximately 2 to 6 percent, \$9 to \$27 per vehicle insured.

The \$1 to \$2.5 billion insurance claims reductions produced by increased belt use, if spread across all injury coverages, also would cut typical auto insurance bills by 2 to 6 percent. No direct evidence describes the effects of such insurance price reductions on belt use. However, it seems unlikely that price reductions of this size will have much effect. Between 1983 and 1986, auto claims costs per injury rose 17.5 percent per year. The rate of cost increase slowed to 9.7 percent in 1987, perhaps due in part to increased belt use. Unless the rate of cost increase slows substantially, the impacts of rising belt use probably will slow insurance price growth, but not reverse it.

Insurance prices may be more effective as an incentive for safety belt use if the consequences of belt use are stated as actual savings rather than a reduced rate of price increase. By structuring business-related incentives that make the savings explicit, some auto insurers have used their influence and their advertising budgets to promote belt use and traffic safety. Often, they have applied some of the savings resulting from rising belt use to offer a large discount on a relatively low-cost coverage or to provide a not overly costly add-on coverage for free, rather than spreading them thinly across a broad range of coverages. For example, discounts of 10 to 30 percent on injury coverage for vehicle occupants, which most insurers now offer purchasers of cars with automatic crash protection, typically reduce insurance bills by \$5 to \$20.

Transportation Secretary Jim Burnley has challenged the insurance industry "to come up with incentives to encourage car buyers to opt for air bags and other safety devices." In response, USAA, the nation's ninth largest auto insurer, offered to pay a \$300 bonus to policyholders who buy or take long-term leases on cars equipped with optional air bags in 1988, negotiated creation of, and helped finance incentive programs to encourage manufacturers and dealers to market air bags aggressively, and added other incentive coverages. Programs responding to Secretary Burnley's challenge appear to be more promising incentives for increased occupant protection than small reductions in standard injury coverage prices.

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I. INTRODUCTION

The National Highway Traffic Safety Administration (NHTSA) has prepared this report on the linkage between safety belt usage rates and automobile insurance price reductions¹ in response to a directive in the Committee Report accompanying the 1988 Department of Transportation Appropriations Bill as enacted in the continuing resolution for FY 1988. The Congress suggested that:

stronger linkage of automobile insurance rates and premiums to seat belt usage rates may provide an important seat belt usage incentive.

It directed NHTSA to:

analyze this linkage and identify ways of promoting the use of seat belt statistics for determining automobile insurance rates

Case studies were specifically requested "in states such as Texas" where insurance price reductions were mandated in the state's belt use law or were reduced in response to the belt use increases following the law's enactment.

THIS REPORT IS DIVIDED INTO FIVE CHAPTERS

The report was based primarily on preexisting research for two reasons. First, Congress indicated it should be submitted quickly and prepared under existing budget authority. Second, state data on insurance claims paid in 1986 generally will not be available until the end of 1989, so that the study results are necessarily very preliminary.

The report first considers how increased belt use can affect insurance claims and prices. This effect involves a chain of causation. Belt use reduces the probability of injury. A reduced injury probability means fewer injuries and fewer injury liability claims filed with and paid by insurers. Belt use also reduces the average severity of the injuries that do occur and, possibly to a lesser extent, the average cost per injury claim paid. Reduced claims, in turn, can lead to reduced insurance prices.

¹More formally, the charge paid for an insurance policy is called a premium. The premium amount is determined from a rate schedule that shows appropriate rates (in other words, prices) to charge classes of insurance purchasers.

Chapter II provides relevant facts about the automobile insurance industry, with emphasis on what insurance covers, the way prices are set, and the major factors other than belt use that are inducing price changes. While this background information is necessary only at the end of the chain, it is useful to keep in mind throughout.

Chapter III examines the chain's various links. It describes the trend in safety belt use and the laws promoting use. It examines how increasing belt use has reduced traffic fatalities and injuries. Finally, it discusses the aggregate and per-policy average cost savings produced by these belt use increases.

The report then discusses how these cost savings have been and could be used to encourage greater belt use. Chapter IV describes the insurance price reductions ordered in Hawaii, Iowa, Massachusetts, and Texas in response to rising belt use, as well as the analyses underlying these reductions. It summarizes relevant analyses by insurance rating bureaus and insurance claims data analysis organizations. It identifies bonus coverages that selected insurers give to belt users and price discounts for vehicles equipped with automatic restraint systems. Three case studies explore how discounts came to be offered and what makes them effective.

Chapter V concludes and summarizes the report. It also assesses effective ways to structure insurance price reductions as safety belt use incentives.

II. STRUCTURE AND OPERATION OF THE AUTO INSURANCE INDUSTRY

The insurance industry is split for regulatory purposes into three principal segments: property and casualty, life, and health. Some insurance holding companies have subsidiaries that sell policies in all three lines of business, but most restrict themselves to one or two. Auto insurance is the largest seller among property and casualty coverages, accounting for 42 percent of receipts in this segment -- over \$81 billion in 1987.

More than 40 percent of auto insurance premiums are written by mutual and reciprocal insurance companies (Wish, 1988). These companies are essentially cooperatives owned by their policyholders. The remaining premiums are written by traditional stock corporations.

As this chapter explains, a wide range of auto insurance coverages is available. About 40 to 50 percent of the typical auto insurance premium is charged for injury-related coverages, with the remainder for property damage protection. Furthermore, a third of the reimbursement for auto injuries comes from other sources, primarily health insurers. Consequently, only a portion of any reduction in injury costs would affect auto insurance prices. Since premiums per registered vehicle have risen an average of 9 percent per year since 1981, a very large reduction probably would be needed to bring about an actual price drop rather than just a slower rise.

MANY AUTO INSURANCE COVERAGES ARE AVAILABLE

Auto insurance is split into physical damage and liability coverages. Physical damage coverages pay for damage to the insured's vehicle. They include:

- o Collision, which pays for repair or replacement of the insured vehicle if it is involved in a crash and the driver of another vehicle is not at fault.
- o Comprehensive, which, among other things, pays for repair or replacement of a vehicle that is stolen or damaged without being involved in a crash.

If the vehicle was financed, the lender normally requires physical damage and liability coverage. Rising belt use should not affect the price of this coverage since it will have minimal impact on crash frequency (O'Neill et al., 1985).

Liability coverages (loosely defined to also include coverage of the insured's own medical costs) reimburse losses resulting from injuries and from at-fault damage to the property of other people. The nature of these coverages depends on state tort law. Liability coverages include:

- o Personal Injury Protection (PIP) coverage in states with no-fault laws. Under no-fault law, a crash-involved vehicle's PIP coverage reimburses the medical costs of vehicle occupants, up to a fixed limit, regardless of who is at fault in the crash. Some reimbursement, at least for serious injuries, also can be obtained by suing the person who was at fault in the crash. Lost income is compensated by auto insurers only under liability coverage of at-fault drivers.
- o Medical payments or own-medical coverage, originally called first-aid coverage, in states where tort liability laws provide that injured occupants will recover their injury-related losses by suing the person at fault in the crash. This coverage pays a modest amount of the medical costs for occupants of the insured vehicle, typically \$1,000, without reference to fault, in tort states. This coverage is designed to assure payment for emergency medical treatment. The insured's health insurance normally reimburses any further medical costs if the insured is at fault in the crash, although coverage against these costs can be purchased as part of the auto medical payments package. Lost income is not compensated by this coverage.
- o Bodily injury coverage, which reimburses other people's medical, income, and other losses when the insured is at fault in a crash. In no-fault states, this coverage applies only to costs that legally can be recovered through tort action.
- o Third-party property damage, which pays for property damage that is the insured's fault.
- o Uninsured (and underinsured) motorist protection, which reimburses the insured's costs if the insured's vehicle or the insured is hit by an uninsured, at-fault motorist. This coverage applies even while the insured is a pedestrian. Again, lost income is not compensated.

In 18 states, injury coverage is written on a no-fault basis. Eighteen additional states require drivers to purchase coverage to reimburse bodily injury and property damage they inflict on others. Even the remaining states have laws requiring those involved in crashes to furnish proof of their financial responsibility (Insurance Information Institute, 1987). These laws encourage but do not ensure purchase of liability insurance.

AUTO INSURANCE PAYS ABOUT TWO-THIRDS OF REIMBURSED CRASH-RELATED INJURY COSTS

Available data suggest that auto insurance pays about two-thirds of total reimbursed crash-related injury costs. The remainder is paid by other insurance programs, which also will benefit from the cost reductions produced by higher belt use.

Almost all automobile insurance limits the insurer's maximum liability. In most states, drivers are required to purchase only \$40,000 of liability coverage for all persons injured in a crash, subject to a limit of at least \$20,000 per individual (Insurance Information Institute, 1987). Automobile policies rarely cover more than \$300,000 to \$500,000. PIP medical coverage typically is limited to \$5,000 to \$25,000, but is unlimited in a few states.

An important implication of liability limits is that auto insurance will not cover the full costs of some injuries. Two national studies (All-Industry Research Advisory Council, 1979; U.S. Department of Transportation, 1971) confirm that severe and fatal injury costs often exceed policy limits, with the public sector and the people involved in the crash typically bearing two-thirds of these costs. Severe and fatal injuries contribute about 85% of the total economic costs -- medical costs and lost earnings -- of injuries resulting from auto crashes.

Other insurance programs also pay a portion of auto injury costs. A 1977 survey of people injured in crashes showed that almost one third of their average reimbursement came from health insurance, long-term disability insurance, life insurance, and such public insurance programs as Medicaid, Medicare, unemployment compensation, and Social Security (All-Industry Research Advisory Council, 1979; Coonley and Gurvitz, May 1983; Houchens, 1985). In states without no-fault systems, these are the only sources of more than \$1,000 in compensation that typically are available to at-fault drivers and their immediate families. When someone is injured while on work-related travel, most costs are paid by Workers' Compensation insurance, health insurance, sick leave, and corporate liability policies (Young, 1988).

INJURY-RELATED COVERAGES ACCOUNT FOR 40-50 PERCENT OF AUTO INSURANCE PRICES

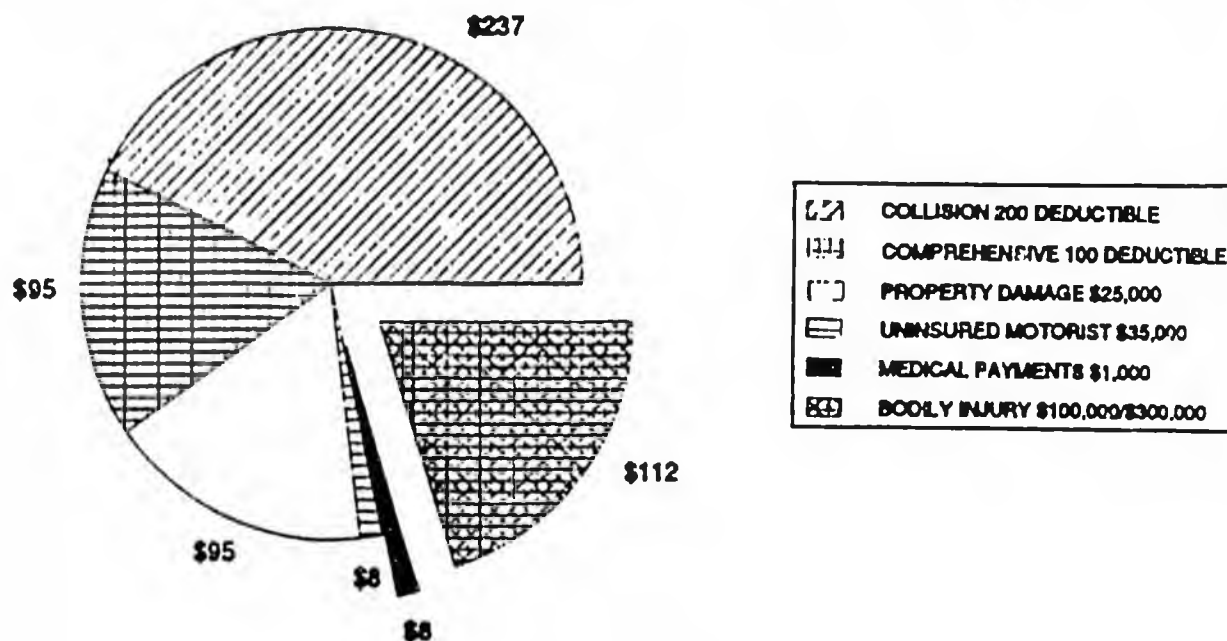
Figure 1 illustrates the price of each coverage for a young driver of a sporty car in central Philadelphia and the middle-aged drivers of a station wagon in suburban Omaha (Yezzi, 1988). The prices shown here are those presently recommended by the Insurance Services Office (ISO). ISO is a rating bureau. It pools data on insurance claims payments and provides advisory information about pricing to the insurers that supplied the data. Figure 1 suggests that drivers, whether paying modest or astronomical prices, are likely to pay less than half of their insurance premiums for bodily injury liability and medical coverage if they buy collision and comprehensive coverage, as about 70 percent do (Docket 74-14-32-6106 and 6126, 1984).

National data obtained for this report from insurers writing more than 30 percent of all auto premiums, when combined with data on total premiums from Wish (1988), indicate that the average driver pays roughly 40 to 50 percent of premiums for injury coverages. These data also show that 10 to 20 percent of the premiums cover the insured's own injury costs and the remaining 25 to 30 percent cover liability if the insured injures another person.

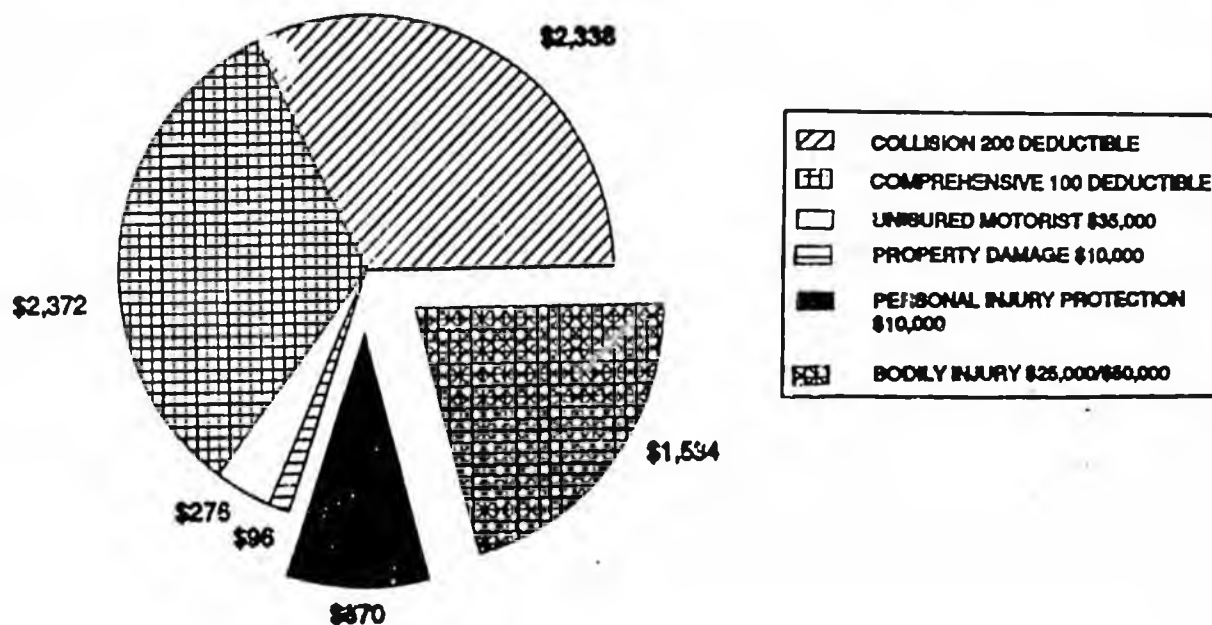
Rising belt use reduces injury, but not property damage, claims costs. Consequently, a 10 percent drop in injury claims costs reduces total claims costs, and presumably insurance prices, by 4 to 5 percent.

Automatic crash protection systems reduce the expected medical claims costs for occupants of the insured vehicle and the expected income loss costs for occupants unrelated to the insured. As Chapter IV describes, many insurers offer a 30 percent discount on PIP or own-medical coverage for vehicles equipped with these systems. Most injury and death claims payments, however, derive from third-party liability claims since lost wages are reimbursed only for these claims. Third-party claims are not reduced when the insured vehicle is equipped with automatic crash protection systems. These claims reductions will appear after enough vehicles have automatic crash protection systems to affect traffic injuries substantially. Until then, discounts for automatic crash protection systems typically will reduce insurance bills for most drivers by 3 to 6 percent (a 30 percent reduction times 10 to 20 percent own-injury).

Figure 1: Price of Auto Insurance Coverages
In Low and High Risk Situations



A. Coverage for a 45-year old married couple with clean driving records who drive a 2-year old station wagon less than 15 miles per day to work from their home in suburban Omaha, Nebraska.



B. Coverage for a single, 23-year old male who has one speeding ticket and drives a 2-year old Japanese sports car more than 15 miles per day to work from his home in central city Philadelphia.

Drivers in tort liability states would receive smaller discounts than drivers in no-fault states, because medical payment coverage in a tort state is a smaller share of a typical insurance bill than PIP coverage in a no-fault state. (For example, in Figure 2 the medical payment slice of the Nebraska driver's pie is smaller than the PIP slice of the Philadelphia pie.) Most of the 27 million drivers insured by State Farm Insurance, the nation's largest auto insurer, would receive discounts of \$9 to \$18 (Insurance Institute, April 1988). Discounts from the ninth largest auto insurer, USAA, typically have been \$15 to \$20 (Insurance Institute, April 1988).

LIABILITY CLAIMS COSTS AND INSURANCE PRICES ARE RISING RAPIDLY

Rapid rises in insurance prices mask somewhat the savings possible from increased belt use. As Figure 2 indicates, liability claims payments have risen dramatically since 1983. In contrast, the annual number of police-reported injuries and the annual payments for physical damage claims were essentially stable during this time period.² In inflation-free dollars, payments per injury rose 13.7 percent per year between 1983 and 1986. Possibly due in part to increased belt use, liability claims costs per injury rose at a slower rate, 5.7 percent in inflation-free dollars, between 1986 and 1987. Accompanying the rise in claims, auto liability insurance prices rose an average of 12 percent per year between 1983 and 1987.

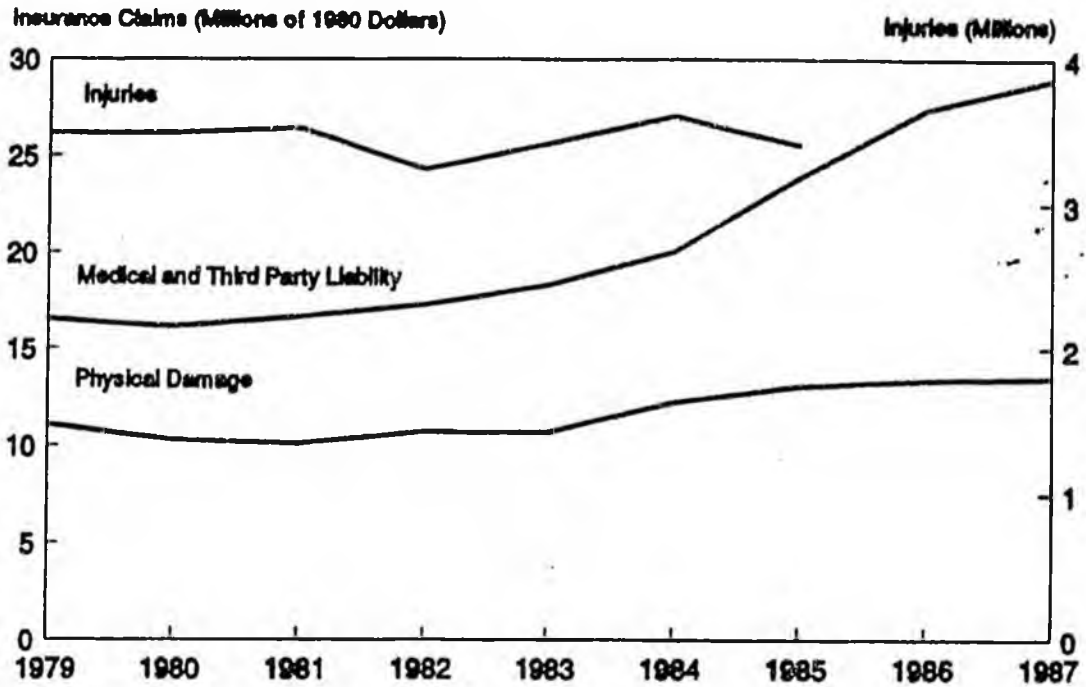
INSURANCE PRICE DETERMINATION IS A COMPLEX PROCESS

A very complex process is used to establish insurance prices. In particular, different states regulate insurers in different ways.

Insurers separate applicants into classes and territories, then use statistical data on losses, tempered by judgment, to determine the price they will offer to each territory-specific class. Auto insurance involves millions of price classes. Because many individual insurers were believed to lack enough data about claims costs to make sound statistical judgment about losses for so many price classes, insurers were permitted to share their claims data (National Commission for the Review of Anti-trust Laws and Procedures, 1979). Insurers in a state pool their loss experiences and are free to base their prices on the pooled experience data. Under the McCarran-Ferguson Act (P.L. 79-15), regulation of this process is delegated to the states (Shapiro et al., 1981).

²Figure 2 is based on the year claims were paid, not incurred. Many injury claims payments lag injury occurrence and physical damage claims payments by a year (Hammitt, 1985).

Figure 2. Time Trends in Injuries and Auto Claims Paid



Source: Injuries from NASS, various years; claims from Best's Aggregates and Averages, 1987-88.

Texas and Massachusetts have chosen to analyze the pooled data and set maximum prices. Elsewhere, many insurers subscribe to "rating bureaus" that pool their loss data. The insurers then add an expense factor to the loss data, and possibly adjust it based on their own loss experience, to determine prices. ISO, the largest rating bureau, pools loss data in 44 states and the District of Columbia.

Anyone who has shopped for auto insurance knows that insurers do not all offer the same prices. A few do quote the prices derived directly from analyses by ISO or another rating bureau, but most insurers only use them as a starting place. Based on the loss experience of their insureds, many offer prices that are a bit higher or lower than the rating bureau's across the board or for most classes of applicants. Some offer discounts from these prices for applicants who own cars with superior safety records or special features like automatic crash protection. Some also apply surcharges for those who present extra risk of loss, for example by buying optional large engines or sports cars. Some large companies base their auto insurance prices entirely on their own loss experience. Finally, some insurers specialize in coverage for high-risk drivers and charge correspondingly high prices (GAO, 1979).

State regulations vary in their details, but adhere to the basic principle that insurers have the option of deriving prices from bureau data or using prices they derive from their own loss and expense experience (Shapiro et al., 1981). Most states require insurers to demonstrate that experience justifies their pricing, either approving price changes before they go into use or within 60 days afterwards. A few states exercise minimal control over pricing (National Commission for the Review of Antitrust Laws and Procedures, 1979). Michigan requires public hearings on price increases. Chapter IV provides further information on the practices in different states.

III. IMPACTS OF BELT USE ON INJURY RATES

To control insurance costs requires slowing or reversing the rise in insurance claims payouts. This can be accomplished by reducing the incidence of injuries, and especially of severe injuries. Safety belt use is one of the most effective and least costly ways to reduce the number and severity of crash injuries.

BELT USE HAS A LONG HISTORY

Safety belts were developed in the 1880s to keep people from bouncing off horse-drawn buggies. In 1922, Barney Oldfield's racer became the first belt-equipped car. Effective January 1, 1968, all new cars were required to have lap and shoulder belts for the driver and right front seat passenger and lap belts for all other seating positions. Recent belt systems include improvements such as retracting belt pretensioners and continuous loop design (Johannessen, 1984).

The potential advantages of belts have gone largely unrealized because many people choose not to wear them. The Department of Transportation has attempted to increase use in many ways, most notably through Federal Motor Vehicle Safety Standard (FMVSS) 208. After years of debate and revision, the automatic crash protection amendment to FMVSS 208 now is taking effect and will apply to all Model Year 1990 cars.

In response to FMVSS 208, roughly 13 percent of Model Year 1987 vehicles included automatic belts or airbags, and at least 25 percent will in Model Year 1988. A few manufacturers include automatic belts or airbags on all of their vehicles.

Between December 1984 and April 1988, 34 states and the District of Columbia passed laws mandating belt use by front seat occupants. Figure 3 shows the states that had laws in April 1988. In addition to the current-law states, Massachusetts and Nebraska implemented laws that subsequently were repealed in public referendums, and the Oregon law must be approved by referendum before it becomes effective. Table 1 shows the effective dates of all the laws that have been passed.

Belt laws in force covered 82 percent of the American populace in April 1988. For the most part, the states that still lacked laws were sparsely populated. Figure 4 shows how coverage grew over time.

Table 1. Effective Dates of Safety Belt Use Laws and Most Recent Estimates of Belt Usage Rates as of April 1988

<u>State</u>	<u>Effective Date</u>	<u>Percentage Belt Use</u>
California	1/86	49%
Colorado	7/87	47%
Connecticut	1/86	56%
Florida	7/86 (1/87)	50%
Georgia	9/88	
Hawaii	12/85	66%
Idaho	7/86	27%
Illinois	7/85	37%
Indiana	7/87	46%
Iowa	7/86 (1/87)	56%
Kansas	7/86 (7/87)	44%
Louisiana	8/86	35%
Maryland	7/86	66%
Massachusetts	1/86-12/86	24%
Michigan	7/85	48%
Minnesota	8/86 (5/88)	32%
Missouri	9/85 (7/87)	41%
Montana	10/87 (1/88)	57%
Nebraska	9/85-11/86	29%
Nevada	7/87	47%
New Jersey	3/85	41%
New Mexico	1/86	46%
New York	12/84	64%
North Carolina	10/85 (1/87)	65%
Ohio	5/86 (7/86)	42%
Oklahoma	2/87	35%
Oregon	1/89	
Pennsylvania	11/87 (3/88)	
Tennessee	4/86 (1/87)	28%
Texas	9/85 (12/85)	54%
Utah	4/86 (10/86)	22%
Virginia	1/88	
Washington	6/86 (1/87)	52%
Wisconsin	12/87	
Dist. Columbia	12/85 (6/86)	55%

Source: Belt use from NHTSA, March 1988; effective dates from NHTSA, April 1988. Dates in parentheses are dates fines became effective if more than one month after the effective date of the law.

The belt laws and the publicity they stimulated raised belt use from about 15 percent nationally in 1984 to about 48 percent in states with belt laws and about 43 percent overall in 1988. Belt use varies considerably from state to state, and sometimes varies over time within a state. Belt use law states have reported use levels as high as 75 percent. Table 1 gives the most recent, often quite approximate, use levels reported by belt law states. Belt use is reported to be about 65 percent in Hawaii, Maryland, New York, and North Carolina. Most states with belt laws reported belt use between 35 and 55 percent. Even some states without laws now are reporting usage rates above 25 percent.

RISING BELT USE HAS REDUCED INJURIES AND FATALITIES

In 1987 alone, NHTSA estimates that the 25 percentage point rise in national belt use over 1984 levels saved about 1,300 lives and prevented about 16,000 moderate to serious injuries. From December 1984, when New York's first safety belt use law became effective, through the end of 1987, these belt use increases have saved about 2,800 lives and prevented about 33,000 moderate to serious injuries.

Since passage of the safety belt laws, several studies have examined the impacts of rising belt use on injuries. These studies address the percentage change in injuries to front seat occupants, since they are covered by all the laws. FARS and NASS data for the year before the first belt laws went into effect, 1984, show that front seat occupants of cars accounted for 48 percent of all traffic fatalities, 47 percent of serious injuries, and 71 percent of moderate and minor injuries. Front seat occupants of pickups and other light trucks, who also are covered by many belt laws, accounted for roughly another 12 percent of the fatalities and 10 percent of the injuries. These national percentages -- coverage of those experiencing roughly 60 percent of fatalities and 80 percent of moderate injuries -- are consistent with the state data.

Impact on Fatalities. Because the most timely and accurate data indicate the incidence of fatal injuries, most studies only have examined the impact on fatalities to front-seat occupants. The most comprehensive analysis of the impact of belt use on fatalities appears in Campbell et al. (1987). In this study, the number of front-seat fatalities that would have occurred without a belt use law was forecast for states grouped by the length of time since they implemented their laws. The projections considered both the previous fatality trend in the states and the current fatality experience of states without laws. Control groups included: (1) fatalities in the same state among pedestrians, rear-seat occupants, and others not covered by the belt law, and (2) front-seat occupants in states without belt laws.

Overall, belt laws were estimated to have reduced front-seat fatalities by 6.6 percent in states where they were implemented before the end of 1986, about a 2.5 percentage point drop for every 10 percentage point rise in belt use. This estimate masks substantial variation in the reductions achieved in individual states. It also underestimates the ultimate impact of some laws since it includes the partial impact in states that issued only warning tickets during a phase-in period. Furthermore, it is conservative because belt use in non-law states rose, thus reducing fatalities in the control group, possibly by as much as 1 percent.

A second comprehensive study (Skinner and Hoxie, 1988) includes a time-series analysis of fatality trends across states and more detailed analyses in nine large states that implemented belt laws by January 1986. This work is based on fatality data through September 1987. It suggests an average fatality reduction of 11.9 percent in the first three months after a belt law is implemented and 6.3 percent thereafter. This equates to about a 2.1 percentage point drop in fatalities for every 10 percentage point rise in belt use on a continuing basis and an overall 2.5 percent drop for the period studied.

Other noteworthy studies of fatality impacts in 1985 include Partyka (1987), Lund et al. (1986), Wagenaar et al. (1987), and Skinner and Hoxie (1986). As Table 2 indicates, these studies suggest a consistent 2.5 to 3.7 percentage point decrease in front-seat fatalities for each 10 percentage point increase in belt use.

Table 2. Decrease in Front-Seat Fatalities
For a 10 Percentage Point Increase in safety belt Use

<u>Study</u>	<u>Reduction</u>
Campbell (1987)	2.5%
Skinner (1987)	2.1-2.5%
Wagenaar (May 1987)	3.2%
Campbell (1986)	3.7%
Lund (1986)	3.7%
Partyka (1987)	2.6%
Skinner (1986)	2.5%

The consensus on a 2.1 to 3.7 percentage point drop in front-seat fatalities for each 10 percentage point increase in belt use derives from the experience of states that generally were experiencing rises in belt use from a prior level of 15 to 20 percent to new levels from 35 to 65 percent. The rate of change in fatalities with respect to belt usage rate may not be linear. In particular, the rate may rise for very high use levels (for example, 80 percent and above). According to one study, when belt use was about 67 percent in Hawaii during 1986 the remaining unbelted drivers had a fatality rate 3.1 times the rate for the belted drivers (State of Hawaii, 1987).

Impact on Injuries. Estimates of the impact of belt use on injuries generally have been based on the injuries indicated in police reports on crashes. Because injury severity necessarily is coded on a rather crude scale at the scene by officers with minimal medical training, it can be relatively inaccurate, especially with respect to head injuries and internal injuries (Partyka, 1982). Nevertheless, police-reported injuries to front-seat occupants have dropped in states that have implemented belt laws.

The Campbell (1987) study provides time series analyses of the impacts on moderate and severe injuries in New York, North Carolina, and Texas, and on severe injuries in Illinois. The other detailed studies available (Wagenaar, March 1987; Hawaii, 1987) arrive at higher estimates.

Table 3. Decrease in Injuries of Front-Seat Occupants
For a 10 Percentage Point Increase in Safety Belt Use

<u>Study</u>	<u>State</u>	<u>Police-Reported Severity</u>	<u>Decrease</u>
Campbell(1987)	New York	K+A+B	1.8%
	North Carolina	K+A+B	2.0%
	Texas	K+A+B	2.0%
	Illinois	K+A	3.0%
Wagenaar (March 1987)	Michigan	K+A+B+C	4.0%
Limm (1987)	Oahu	Hospitalized	4.9%

K = fatality
A = serious injury
B = moderate injury
C = minor injury

As Table 3 shows, at a minimum, a 10 percentage point rise in safety belt use seems to result in a 1.8 to 3 percentage point drop in serious and moderate injuries to front-seat occupants. At the extreme, on Oahu, hospitalizations dropped 4.9 percentage points for each 10 percentage point increase. A complete inventory of crash-related hospitalizations on Oahu showed that those not using belts were 1.8 times more likely to be hospitalized than those who were (Limm, 1987). This impressive statistic was compiled in the first half of 1986, when 74 percent of Oahu drivers were belted.

The studies suggest that a 10 percentage point rise in belt use drops fatalities of front-seat occupants by 2.1 to 3.7 percentage points and moderate and serious injuries by at least 1.8 to 3.0 percentage points. This equates to a drop in overall fatalities by 1.2 to 2.4 percentage points (55 to 65 percent of 2.1 to 3.7 percent) and in moderate and serious injuries by 1.3 to 2.5 percentage points (70 to 85 percent of 1.8 to 3.0 percent).

RISING BELT USE HAS REDUCED INJURY COSTS AND SHOULD REDUCE INSURANCE PRICES

The fatality and injury reductions produced by belt use laws have reduced auto insurance claims by roughly \$1 to 2.5 billion dollars. Other public and private insurers probably saved another \$0.5 to 1.25 billion.

The states with the largest belt usage gains -- about 50 percentage points -- probably have experienced a 6 to 12 percent decrease in fatalities and injuries. The probable result is a 2.4 to 6 percent drop in insurance costs (6 to 12 percent times the 40 to 50 percent of insurance costs that are injury-related). If the cost per auto insurance policy is assumed roughly equal to total premiums (from Wish, 1988) divided by the number of registered vehicles, the average cost reduction per insured vehicle in 1987 was \$11 to \$27 dollars in these states.

Claims costs per injury annually rose 17.5 percent between 1983 and 1986, and 9.7 percent in 1987, according to the data in Chapter II. Annual inflation of 2 to 4 percent in all costs and 6 to 7.5 percent in medical costs (Economic Report, 1988) contributed to the rise in claims costs. Unless the rate of increase in claims costs per injury drops substantially, the reduction in claims costs attributable to rising safety belt use appears likely to slow, but not reverse, the rate of increase in auto insurance prices.

IV. STATE AND INSURANCE INDUSTRY ACTIONS

The insurance industry has examined the linkage between belt use and the price of injury liability coverage. Insurance regulatory agencies in Hawaii, Iowa, Massachusetts, and Texas have analyzed the impacts of rising safety belt use on insurance claims and incorporated this information into their decisions on pricing. The Highway Loss Data Institute, a claims data analysis organization funded by the insurance industry, has examined the impact on injury claims in New York and New Jersey. ISO, the largest rating bureau, has recommended discount factors for vehicles with automatic occupant protection systems. Finally, many auto insurers have offered incentives to encourage belt use.

FOUR STATES HAVE ORDERED PRICE REDUCTIONS

Hawaii's safety belt law mandated a 10 percent reduction in the price of PIP and medical payments coverages for the first three years after passage, followed by conversion to fully actuarial prices that incorporated the impacts of increased belt usage. The 10 percent figure was based on existing research, with particular weight on the Massachusetts Insurance Division's estimates (Santos, 1988).

Hawaii's Department of Commerce and Consumer Affairs is compiling extensive data on the impacts of rising belt use on injury incidence and claims. Preliminary indications are that the 40 percentage point rise in belt use in the state had even more impact than anticipated, with a 20 percent drop in overall fatalities, a 55 percent drop in fatalities to front-seat passengers, and on the order of a 12.5 percent drop in personal injury protection losses (State of Hawaii, 1988).

Iowa's legislature mandated a reduction in the price of bodily injury liability and medical payment coverage to reflect the expected savings in claims costs (Knapp, 1988). The Insurance Department found that in the first six months of the law, roughly a 30 percentage point rise in belt use was associated with a 4.4 percent drop in bodily injury loss payments made to injured persons by insurers of motorists at fault (1.5 percentage points for each 10 percentage point increase) and a 9 percent drop in medical payments paid to motorists by their own insurers (3 percent for each 10). Some insurers, however, experienced virtually no decrease, and the Department noted the difficulty of separating the impacts of the law from variations in medical costs, crash frequency, and other factors. Based on the available data, the Department ordered a 5 percent price reduction.

The Massachusetts safety belt use law required a reduction in auto insurance prices. The Massachusetts Division of Insurance estimated insurer savings on 1986 claims payouts resulting from the state's belt law. Anticipating a 43 percentage point rise in belt use, it ordered an 11.2 percent reduction in 1987 prices for bodily injury liability, PIP, and uninsured motorist coverages. This is a 2.6 percentage point drop in the price of this coverage for each 10 percentage point increase in belt use; it equates to an average drop of 0.8 percent across all types of coverage (Hosford, 1988). Despite the publicity surrounding this reduction and other belt promotion efforts, belt usage rose only 17 percentage points, less than half the amount anticipated. This low belt law acceptance, together with inadequate education and other factors, resulted in the law's repeal in a late 1986 referendum. Based on the more complete claims experience in 1986, prices for injury coverages were increased by 2.8 percent in 1988 to reflect an expected 10 percentage point decrease in belt use due to repeal of the law (Massachusetts, 1987).

The Division's work was actuarially based. Early New York data, and subsequently Massachusetts data, on the percentage reduction in injuries by severity that resulted from rising belt use were multiplied by the percentage of Massachusetts insurance claims costs attributable to each injury severity. Claims costs for injuries to non-occupants then were incorporated into the analysis (Hosford, 1988).

Though not required by the Texas belt use law, the Texas State Board of Insurance factored the law's impacts into its prices in each of 1986, 1987, and 1988 (Daniel, 1988). The 1986 analysis was based on a formula developed by the Highway Users Federation to predict the effects of safety belt use on injury rates by severity. It led to a 21 percent decrease in price for bodily injury liability, PIP, medical payments, and uninsured motorist coverages. The reduction was decreased to 15 percent in 1987, based on methodology refinements that limited the saving per fatality averted to the mean policy liability limit and applied the expected percentage decrease in injuries to front-seat occupant injuries in covered vehicles rather than all injuries.

When police-reported injury and crash rates became available for the first seven months after the law went into effect, they showed that a 45 percentage point increase in belt use in urban areas and an unknown but probably smaller increase elsewhere had caused an 11.5 percent drop in fatality rates and, the actuarial staff assumed, in injury severity. The Board adjusted prices accordingly, to a level 5 percent below the level suggested by claims incurred in the policy year ending June 30, 1986, when the law was in effect for only seven months (Daniel, 1988). The impact essentially is a 2.6 percent reduction in the price of injury coverage for each 10 percentage point rise in belt use.

Table 4 indicates the percentage decreases in injury rates observed or estimated by the insurance regulatory agencies in states where price changes have been ordered because of rising belt use. The agencies estimate that each 10 percentage point rise in belt use has resulted in a 1.7 to 2.8 percentage point drop in injury claims costs. This range is reasonably consistent with the 1.2 to 2.5 percentage point range suggested by the studies reviewed in Chapter III. It also is consistent with earlier NHTSA projections. In its July 1984 regulatory impact analysis on FMVSS 208, the agency estimated that each 10 percentage point rise in automatic belts would produce a 1.8 percentage point drop in injury claims. Adjusting for the difference in effectiveness between automatic and manual belts, this becomes a 1.9 percentage point drop. An insurance cost saving of \$14 per vehicle insured was projected.

Table 4. Decrease in Injury Claims of Covered Occupants For a 10 Percentage Point Increase in Safety Belt Use

<u>State</u>	<u>SEVERITY OF INJURY</u>		
	<u>Fatal</u>	<u>Fatal or Serious</u>	<u>Any*</u>
Hawaii	5.0%	3.1%	2.5%
Iowa		1.5-3.0%	1.7%
Massachusetts	2.2%	4.0%	2.8%
Texas	2.6%		2.6%
<u>NHTSA Regulatory Analysis</u>			1.9%
<u>Insurance Data Analysis Organizations</u>			
Insurance Services Office (automatic restraint)			3.0%
Highway Loss Data Institute			1.7-3.3%

* Percentage of all injury costs.

In other states, the insurance regulatory agencies generally have not compiled systematic information on the impacts of belt laws on prices. To the extent that insurance is a competitive business, the impact may be reflected in the prices filed by insurers as rising belt use helps to control claims costs.³ The impacts most probably will be comparable to those in Hawaii, Iowa, Massachusetts, and Texas: a 1.7 to 2.8 percent drop in the price of bodily injury liability and medical payments or PIP coverage for each 10 percentage point rise in belt use. The 5 to 12 percent reductions in prices for injury coverage that were achieved in these states reduced overall auto insurance prices by an estimated 2 to 6 percent (5 to 12 percent times 40 to 50 percent injury-related), about \$9 to \$27 per vehicle insured.

A notable relationship exists between the clarity of price reductions related to belt use and the insurance regulatory system in a state. Texas and Massachusetts were able to make central policy because they almost unilaterally set insurance prices. Twenty-seven states, including Hawaii and Iowa, review the actuarial basis for and approve price changes before they are put into use. In their belt use laws, the legislatures in Hawaii and Iowa authorized state regulators to mandate one-time insurance price reductions. Normally, they would not have the authority to impose reductions. The remaining states, which are identified in Table 5, largely allow insurers to decide what prices are appropriate (National Commission for the Review of Antitrust Laws and Procedures, 1979). These states have the strongest tradition of moderate intervention in insurance pricing. None ordered price reductions in response to rising belt use.

³See GAO (1979) or Joskow (1973) for a discussion of the industry's structure.

Table 5. How States Regulate Auto Insurance Price Changes

<u>State</u>	<u>Type of Filing</u>	<u>State</u>	<u>Type of Filing</u>
Alabama	PA	Montana	FU
Alaska	PA	Nebraska	PA
Arizona	UF	Nevada	PA (FU)
Arkansas	FU	New Hampshire	PA
California	NF	New Jersey	PA
Colorado	FU	New Mexico	PA
Connecticut	PA (FU)	New York	PA
Delaware	PA (FU)	North Carolina	PA
Florida	PA (UF)	North Dakota	PA
Georgia	PA (FU)	Ohio	FU
Hawaii	PA (FU)	Oklahoma	PA
Idaho	NF	Oregon	FU
Illinois	UF	Pennsylvania	PA
Indiana	FU	Rhode Island	PA
Iowa	UF	South Carolina	PA
Kansas	PA	South Dakota	PA
Kentucky	FU (UF)	Tennessee	PA
Louisiana	PA	Texas	PA
Maine	FU	Utah	FU (UF)
Maryland	FU	Vermont	FU
Massachusetts	PA	Virginia	FU
Michigan	PAH	Washington	PA
Minnesota	FU	West Virginia	PA
Mississippi	PA	Wisconsin	UF
Missouri	UF	Wyoming	NF
Dist of Columb	PA		

Prior Approval (PA) means that new prices cannot be used until approved by the State Insurance regulatory agency. A 30 day review period generally is allowed.

Prior Approval with Public Hearing (PAH) means that the Commission holds a public hearing before approving the price change request.

File and Use (FU) means that new prices can be used as soon as they are filed with the Commission, although they have to be discontinued if the Commission disapproves of them.

Use and File (UF) means that new prices can be used for a fixed time period, generally 30 days, before they are filed with the Commission, although they have to be discontinued if the Commission disapproves of them.

No File (NF) means that price changes are not filed with or reviewed by the Commission.

Letters in parentheses denote how the system operates as a practical matter when it differs from the nominal legal system.

Source: Systems in use from Parsons (1988); definitions from Shapiro et al. (1981).

INDUSTRY-FUNDED ANALYSES ALSO CONFIRM THE RANGE OF IMPACT

Two analyses by industry-funded organizations that analyze claims data further confirm that the impact on prices of injury-related coverage is likely to lie roughly in the 1.7 to 2.8 percent range for each 10 percentage point increase in belt use. First, the Highway Loss Data Institute, an industry-funded claims data analysis organization, studied 1985 injury claims rates for Model Year 1983-85 cars in New York, New Jersey, and Connecticut prior to and after implementation of the New York and New Jersey safety belt laws (Highway Loss Data Institute, 1986). They found that, relative to the control state, a 35 percentage point increase in belt use in New York was associated with a 6 percent drop in injury claims and an 8 percent drop in injury claims in cases with collision damage also claimed. For New Jersey, the corresponding drops were 8 percent and 6 percent for a 24 percentage point rise in belt use. This equates to a 1.7 to 2.3 percent reduction in claims frequency for each 10 percentage point increase in belt use in New York and a 2.5 to 3.3 percent reduction in New Jersey.

Second, since November 1986, ISO has recommended a 30 percent discount on PIP or own-medical coverage for vehicles equipped with automatic safety belts -- essentially for belt use 100 percent of the time -- or with air bags.

MANY INSURERS OFFER INCENTIVES FOR BELT USE

Insurers that in aggregate write at least 35 percent of all premium volume offer a 30 percent discount on PIP or own-medical coverage for cars with automatic belts. Insurers that write another 20 percent of the market, most notably State Farm and Nationwide, offer or are in the process of filing a 10 percent discount. All of these companies and Allstate, which has almost 9 percent of the market, also match or exceed ISO's recommended 30 percent discount for full front air bags. These discounts are not offered in Texas where the Board of Insurance would not approve them (but moved to do so in mid-1988), or in Massachusetts and North Carolina where insurers chose not to offer them. Table 6 lists the discounts offered by selected major insurers. These discounts generally save drivers about \$5 to \$20.

Rising belt use will lead to a reduction of \$1 to \$2.5 billion in insurance payments. Spreading this saving uniformly across all coverages would reduce injury coverage prices about 5 to 10 percent.

As an alternative approach, incentives for increased belt use may be created by using some of the savings to offer a major reduction in the price of one coverage component or a free add-on coverage. Some insurers now offer such incentives. State Farm and the Farmers Insurance Group, for example, both double their accidental death benefit if a fatally injured person was wearing a belt. USAA adds \$10,000 to the benefits under its own medical payment and PIP coverages for any occupant who is injured or killed while wearing a safety belt, protected by an air bag, or secured in a child seat. Between 1984 and April 1988, USAA paid more than \$1 million in claims under this provision (Insurance Institute, April 1988).

Table 6. Insurer Market Shares and Discounts for Vehicles with Automatic Restraint Systems (Selected Insurers, as of April 1988)

Front Insurer	% of Auto Premiums	PIP or Own-Medical Discount for:		
		Automatic Belts	Driver Air bag	Full Air bag
Aetna Casualty	2.9%	30%	20%	30%
Allstate	8.7%	None	20%	30%
American Family	1.0%	30%	30%	30%
Continental	1.3%	30%	30%	30%
Erie Exchange	0.7%	30%	30%	30%
Farmers Group	4.7%	None	None	None
GEICO	1.6%	30%	30%	30%
Hartford	2.1%	30%	20%	30%
Liberty Mutual	2.5%	30%	20%	30%
Maryland Casualty	0.7%	30%	20%	30%
Nationwide	4.1%	10%	25%	40%
Prudential	0.8%	20%	30%	30%
State Farm	15.1%	10%	20%	30%
Travelers	2.5%	30%	15%	30%
USAA	1.9%	30%	60%	60%
U.S.F. & G.	1.6%	30%	30%	30%
ISO Recommendation		30%	20%	30%

Note: Only insurers with large market shares and a few with medium market shares were surveyed. Some insurers that are not mentioned also offer discounts.

Source: Discounts, Insurance Institute for Highway Safety, October 17, 1987 and April 16, 1988. 1986 Market Share, Wasilewski, 1987.

CASE STUDIES SHOW INCENTIVES OFTEN ARE NOT COSTLY

General Motors and its Motors Insurance Corporation mounted one of the best-known insurance incentive campaigns to encourage belt use. From April 16, 1984 until the end of the 1986 model year, buyers of General Motors cars received a free life insurance policy that paid a \$10,000 death benefit if someone was killed in a crash in the car while belted. The coverage lasted for one year from date of purchase. More than 17 million policies were written in the U.S. and Canada, but less than \$7.5 million dollars in claims costs were incurred -- less than 50 cents per vehicle sold (O'Toole, 1988). By structuring a business-related incentive that could be used as the focus of a major vehicle sales campaign and an insurance sales campaign directed at car buyers, General Motors was able to provide tremendous positive publicity for belts with minimal increase in its normal advertising costs.

USAA, the nation's ninth largest writer of auto insurance and primarily a writer of coverage for military officers, announced the strongest air bag incentive program to date on March 30, 1988 (Insurance Institute, April 1988). Again, the package reflected a business-related commitment to auto safety. USAA offered to pay \$300 to any of its insureds as a bonus for buying or taking a long-term lease on a car equipped with an optional air bag in 1988. This offer actually applies to very few vehicles. As of March 1988, optional airbags were available only on the Ford Tempo, Mercury Topaz, Oldsmobile Delta 88, Volvo 740 GLE, and Porsche 944. They were expected to be available later in the year on the Saab 9000T.

USAA is encouraging manufacturers and dealers to market optional air bags aggressively through a companion dealer incentive program in which USAA pays for the dealer prizes awarded for optional air bag sales. It also added a free \$25,000 death benefit to its life insurance policies, which is paid when an insured is killed in an auto crash while belted in an air bag protected position in a car. And it increased its PIP or own-medical discount for an air bag to 60 percent in all but a few states.⁴

⁴USAA also announced a 5 percent discount on property damage and bodily injury coverages for cars equipped with another new safety device -- anti-lock brakes.

USAA's explanation of its decision to offer a strong program of business-related incentives for buying safety devices is consistent with Congress' concept of an insurance-based belt use incentive scheme and suggests how to encourage this type of action. USAA Chief Executive Robert McDermott announced the policy in a joint press conference with NHTSA Administrator Diane Steed. He stated that it was a direct result of a challenge issued by Transportation Secretary Jim Burnley at a meeting of the Insurance Institute for Highway Safety's Board in December 1987. Burnley told insurance executives that he was "100 percent committed to automatic restraints," but that the insurers were far better positioned "to come up with incentives to encourage car buyers to opt for air bags and other safety devices" (Insurance Institute, April 1988).

Burnley continued his campaign at the press conference. In a written statement, he said:

The insurance industry has long had a lead role in advocating these safety devices and now must take a lead role in making them affordable and desirable in the eyes of the American public. Significant insurance discounts and incentives will make air bags more appealing and underscore your belief in the lifesaving effectiveness of this new safety technology.

The largest auto insurer, State Farm, also began using discounts to encourage greater automatic crash protection purchases in 1988. In announcing its new discount structure for automatic restraint systems, State Farm offered a 40 percent discount for cars equipped with both bags and automatic belts, even though none currently are manufactured. Said a State Farm spokesman, "We hope to drive the market a little and get some out there shortly" (Insurance Institute, April 1988). State Farm also noted that its action was "a gesture of support" for automatic crash protection systems rather than a reflection of loss experience (Yates, 1988).

These case studies and the discount structures listed in Table 6 suggest insurers, and even their largest rating bureau, are using insurance price breaks as incentives rather than just reflections of loss experience. This is especially clear for insurers who offer the same percentage discount for air bags that protect only the driver and ones that protect the full front seat since losses will be somewhat higher if only the driver receives air bag protection. More generally, the incremental advantages of adding automatic crash protection depend on how often belts would have been used if automatic crash protection were not available. Since manual belt use currently varies widely between states, the uniform national discounts for cars with automatic crash protection must not accurately reflect expected loss reductions by most states.

V. CONCLUSIONS

Increasing belt use is reducing traffic injuries and auto insurance claims and should slow the growth in insurance prices. It already has done so in a few states and should in more as enough data become available for actuaries to determine the reductions occurring in claims payments. The reductions in both injury rates and auto insurance prices should accelerate as automatic crash protection equipment becomes mandatory. Reductions will be even greater if manual belt use continues to increase.

The insurance claim savings are substantial in the aggregate, but rather small when spread uniformly over all policies.

- o In 1987, the rise in belt use above 1984 levels probably saved private and public insurers \$1.5 to \$3.75 billion dollars. A third of this saving went to health, life, and workers' compensation insurers, however, rather than auto insurers.
- o Injury claims account for 40 to 50 percent of auto insurance claims. Rising belt use probably will reduce injury claims costs by roughly 5 to 12 percent. The \$1 to \$2.5 billion savings to auto insurers, if spread across all injury coverages, would cut typical auto insurance bills by 2 to 6 percent -- about \$9 to \$27 annually per vehicle insured.

The savings produced by rising belt use should be used to promote safety as they are passed on to those insured. One way is to reduce insurance prices directly, either voluntarily or through regulation.

- o Four states reduced insurance prices for injury coverages because belt use laws were implemented. The reductions range from 5 to 12 percent -- a 1.5 to 2.8 percent decrease in cost for each 10 percentage point rise in belt use. The average auto insurance bill in these states also dropped approximately 2 to 6 percent, \$9 to \$27 per vehicle insured.
- o Except in Texas, an act of the state legislature, like the ones passed in Hawaii, Iowa, and Massachusetts, probably would be needed to allow the insurance commission to dictate when and how insurers should incorporate the impacts of rising belt use into their prices.

- o Auto insurance prices have been rising very rapidly because claims payments per injury have risen at least 7 percent per year since 1979. If this trend continues, a price reduction related to belt use probably would slow, but not reverse, the rise in overall prices. Publicity that rising belt use has reduced insurance prices may not convince consumers who are paying more for insurance.

Case studies suggest that carefully structured marketing tools that emphasize the savings from belt use may be effective incentives for improved occupant protection.

- o USAA, the nation's ninth largest auto insurer, offered to pay a \$300 bonus to policyholders who buy or take long-term leases on cars equipped with optional air bags in 1988, negotiated creation of and helped finance incentive programs to encourage dealers to market air bags aggressively, and added other incentive coverages.
- o From April 16, 1984 until the end of the 1986 model year, General Motors gave buyers of their cars a free life insurance policy that paid a \$10,000 death benefit if someone was killed in a crash in the car while belted.
- o Health, disability, life, and other insurers also will benefit from the injury cost reductions produced by increased belt and air bag system use. They also should consider how they can promote increased use.

Transportation Secretary Jim Burnley has challenged the insurance industry "to come up with incentives to encourage car buyers to opt for air bags and other safety devices." Insurers should respond to the Secretary's challenge with creative, highly visible programs to promote increased occupant protection through advertising and incentives. Such programs are more likely to be effective than small reductions in standard injury coverage prices.

MOTOR VEHICLE SAFETY STANDARD NO. 222

School Bus Seating and Crash Protection

S1. Scope. This standard establishes occupant protection requirements for school bus passenger seating and restraining barriers.

S2. Purpose. The purpose of this standard is to reduce the number of deaths and the severity of injuries that result from the impact of school bus occupants against structures within the vehicle during crashes and sudden driving maneuvers.

S3. Application. This standard applies to school buses.

S4. Definitions. "Contactable surface" means any surface within the zone specified in S5.3.1.1 that is contactable from any direction by the test device described in S6.6, except any surface on the front of a seat back or restraining barrier 3 inches or more below the top of the seat back or restraining barrier.

"School bus passenger seat" means a seat in a school bus, other than the driver's seat or a seat installed to accommodate handicapped or convalescent passengers as evidenced by orientation of the seat in a direction that is more than 45 degrees to the left or right of the longitudinal centerline of the vehicle.

S4.1 The number of seating positions considered to be in a bench seat is expressed by the symbol *W*, and calculated as the bench width in inches divided by 15 and rounded to the nearest whole number.

S5. Requirements. (a) Each vehicle with a gross vehicle weight rating of more than 10,000 pounds shall be capable of meeting any of the requirements set forth under this heading when tested under the conditions of S6. However, a particular school bus passenger seat (i.e., test

specimen) in that weight class need not meet further requirements after having met S5.1.2 and S5.1.5, or having been subjected to either S5.1.3, S5.1.4, or S5.3.

(b) Each vehicle with a gross vehicle weight rating of 10,000 pounds or less shall be capable of meeting the following requirements at all seating positions other than the driver's seat: (1) The requirements of §§ 571.208, 571.209, and 571.210 (Standard Nos. 208, 209, and 210) as they apply to multipurpose passenger vehicles; and (2) the requirements of S5.1.2, S5.1.3, S5.1.4, S5.1.5, and S5.3 of this standard. However, the requirements of Standard Nos. 208 and 210 shall be met at *W* seating positions in a bench seat using a body block as specified in Figure 2 of this standard, and a particular school bus passenger seat (i.e., a test specimen) in that weight class need not meet further requirements after having met S5.1.2 and S5.1.5, or having been subjected to either S5.1.3, S5.1.4, S5.3, or § 571.210 (Standard No. 210).

S5.1 Seating requirements. School bus passenger seats shall be forward facing.

S5.1.1 [Reserved]

S5.1.2 Seat back height and surface area. Each school bus passenger seat shall be equipped with a seat back that, in the front projected view, has a front surface area above the horizontal plane that passes through the seating reference point, and below the horizontal plane 20 inches above the seating reference point, of not less than 90 percent of the seat bench width in inches multiplied by 20.

S5.1.3 Seat performance forward. When a school bus passenger seat that has another seat behind it is subjected to the application of force as specified in S5.1.3.1 and S5.1.3.2, and subse-

1972, to December 31, 1975, inclusive, shall meet the requirements of S4.2.1.1 or S4.2.1.2, or at the option of the manufacturer, the requirements of S4.2.2. A protection system that meets the requirement of S4.2.1.1 may be installed at one or more designated seating positions of a vehicle that otherwise meets the requirements of S4.2.1.2.

S4.2.1.1 First option—complete passive protection system. The vehicle shall meet the crash protection requirements of S5 by means that require no action by vehicle occupants.

S4.2.1.2 Second option—belt system. The vehicle shall have seat belt assemblies that conform to Standard 209 installed as follows:

(a) A Type 1 or Type 2 seat belt assembly shall be installed for each designated seating position in convertibles, open-body type vehicles, and walk-in van-type trucks.

(b) In all vehicles except those for which requirements are specified in S4.2.1.2(a), a Type 2 seat belt assembly shall be installed for each outboard designated seating position that includes the windshield header within the head impact area, and a Type 1 or Type 2 seat belt assembly shall be installed for each other designated seating position.

S4.2.2 Trucks and multipurpose passenger vehicles, with GVWR of 10,000 pounds or less, manufactured on or after January 1, 1976. Each truck and multipurpose passenger vehicle, with a gross vehicle weight rating of 10,000 pounds or less, manufactured on or after January 1, 1976, shall meet the requirements of S4.1.2.1, or at the option of the manufacturer, S4.1.2.2 or S4.1.2.3 (as specified for passenger cars), except that forward control vehicles manufactured prior to September 1, 1981, convertibles, open-body type vehicles, walk-in van-type trucks, motor homes, vehicles designed to be exclusively sold to the U.S. Postal Service, and vehicles carrying chassis-mount campers may instead meet the requirements of S4.2.1.2.

S4.2.3 (Reserved)

S4.3 Trucks and multipurpose passenger vehicles, with GVWR of more than 10,000 pounds. Each truck and multipurpose passenger vehicle, with a gross vehicle weight rating of more than 10,000 pounds, manufactured on or after January 1, 1972, shall meet the requirements of S4.3.1 or S4.3.2. A protection system that meets the requirements of S4.3.1 may be installed at one or more designated seating positions of a vehicle that otherwise meets the requirements of S4.3.2.

S4.3.1 First option—complete passive protection system. The vehicle shall meet the crash protection requirements of S5 by means that require no action by vehicle occupants.

S4.3.2 Second option—belt system. The vehicle shall, at each designated seating position, have either a Type 1 or a Type 2 seat belt assembly that conforms to Standard No. 209.

S4.4 Buses. Each bus manufactured on or after January 1, 1972, shall meet the requirements of S4.4.1 or S4.4.2.

S4.4.1 First option—complete passive protection system—driver only. The vehicle shall meet the crash protection requirements of S5, with respect to an anthropomorphic test device in the driver's designated seating position, by means that require no action by vehicle occupants.

S4.4.2 Second option—belt system—driver only. The vehicle shall, at the driver's designated seating position, have either a Type 1 or a Type 2 seat belt assembly that conforms to Standard No. 209.

S4.5 Other general requirements.

S4.5.1 Labeling and driver's manual information. Each vehicle shall have a label setting forth the manufacturer's recommended schedule for the maintenance or replacement, necessary to retain the performance required by this standard, of any crash-deployed occupant protection system. The schedule shall be specified by month and year, or in terms of vehicle mileage, or by intervals measured from the date appearing on the vehicle certification label provided pursuant to 49 CFR Part 563. The label shall be permanently affixed to the vehicle within the passenger compartment and lettered in English in block capitals and numerals not less than three thirty-seconds of an inch high. Instructions concerning maintenance or replacement of a system and a description of the functional operation of the system shall be provided with each vehicle, with an appropriate reference on the label. If a vehicle owner's manual is provided, this information shall be included in the manual.

S4.5.2 Readiness indicator. An occupant protection system that deploys in the event of a crash shall have a monitoring system with a readiness indicator. The indicator shall monitor its own readiness and shall be clearly visible from the driver's designated seating position. A list of the elements of the system being monitored by the indicator shall be included with the information furnished in accordance with S4.5.1 but need not be included on the label.

H B

110

(7)

Date Referred: January 23, 1989

FURTHER REFERRALS: FINANCE

Date of Committee Action: 2/3/89

The JUDICIARY Committee recommends that:

HOUSE BILL NO. 110

"An Act making a special appropriation to the Alaska Court System for redesign of an addition to court facilities in Anchorage; and providing for an effective date."

- be replaced with _____ the same title
- a new title
- have attached amendment(s)
 - do pass
 - do not pass
 - no recommendation
 - individual recommendations
 - additional referral to the _____ Committee

ADOPTS: Judiciary Comm. letter of intent

ATTACHES NEW FISCAL NOTE(S):

- fiscal impact
- zero fiscal note
- zero with analysis

APPROVES PREVIOUS:

- fiscal note(s) published: _____
- zero fiscal notes(s) published: _____

SIGNING DO PASS:

[Signature]

[Signature]

Mike Miller

SIGNING OTHER THAN DO PASS:

(Do Not Pass, No Recommendation, Amend)

Clay Dainoff (no rec)

[Signature]

T. Lee Jones nr

Larry Masten No Rec.

[Signature]

Chairman's signature

A M E M D M E N T

TO HB 110

BY GOLL

Sec. _____. The Court System shall obtain legislative approval before building the court facilities redesigned with this appropriation.

A M E N D M E N T

OFFERED IN THE HOUSE

BY THE JUDICIARY COMMITTEE

TO: HB 110

Page 1, following line 13:

Insert a new bill section to read:

"* Sec. 2. The Alaska Court System shall obtain legislative approval before building the court facilities redesigned with this appropriation."

Renumber the following bill sections accordingly.

Alaska State Legislature




House of Representatives House Judiciary Committee

P. O. Box V
State Capitol
Juneau, Alaska 99811
(907) 465-4990

M E M O R A N D U M

TO: House Finance Committee

FROM: House Judiciary Committee 

RE: HB 110, Anchorage court facility special appropriation

DATE: March 3, 1989

The House Judiciary Committee considered and passed out HB 110. The attached amendment, which requires the court system to obtain legislative approval before building the court facilities redesigned with the appropriation, was considered but failed passage on a three to three vote.

The committee did, however, request that the amendment be sent with the bill to the Finance Committee to serve as an expression of the committee's interest in the matter.

c.c.: Representative Fran Ulmer, Chair
Court System Subcommittee

DEPARTMENT OF REVENUE

TREASURY DIVISION

ELEVENTH FLOOR
STATE OFFICE BUILDING
P.O. BOX 58
JUNEAU, ALASKA 99811-0400

March 10, 1988

The Honorable John Binkley
Co-Chairman
Senate Finance Committee
Alaska State Legislature
P.O. Box V
Juneau, AK 99811

Dear Senator Binkley:

I would like to offer the Department of Revenue's comments on the credit implications of the Anchorage court building financing, as you have requested. They are:

1. the financing would be lease-purchase obligation (either lease revenue bonds or certificates of participation in rent); as such,
 - a. it will be considered by the rating agencies as part of the State's debt burden, generally in the same light as State general obligation bonds, because repayment of the debt comes from the State's general fund; please see the enclosed letter of December 29, 1983 from Richard P. Larkin of Standard & Poor's;
 - b. recognition may be given by the rating agencies to the fact that, in some cases, the additional debt service burden may be partially or entirely offset by reductions in rent of other facilities under true operating leases; nevertheless, the shift to a lease-purchase obligation does change the character of the State's obligation as Mr. Larkin's letter indicates;
 - c. the rating on the debt generally will be one full grade below the State's general obligation bond rating, due to the fact that the lease payments are subject to appropriation and do not carry the full faith and credit pledge of a general obligation bond; see the enclosed excerpt on lease obligations from Standard & Poor's "Debt Ratings Criteria"; this means the interest costs will be as much as 30

basis points, or .3 percent higher, than if the financing was through general obligation bonds;

2. the effect on the State's debt burden resulting from the financing would be considered by the rating agencies both in magnitude and duration;
 - a. the State's capacity to issue debt at its current Aa/AA- ratings has generally been measured by the guideline that debt service should not exceed 5 percent of unrestricted revenues; this includes all debt which is paid from the State's general fund (general obligation bonds, lease-purchase obligations, municipal school debt reimbursement, and University of Alaska revenue bonds); as the enclosed table and graphs indicate, the State debt burden significantly exceeds this level (14.4 percent for FY 88 using September 1987 30th percentile revenue estimates), even if only general obligation debt is considered (7.6 percent); few states with Aa ratings exceed 5 percent; if issuance of additional debt was likely to cause a rating downgrade, such issuance would have to be evaluated from the standpoint of issuers of moral obligation, municipal, and other State and State agency debt whose ratings and interest costs are tied to the State's general obligation rating;
 - b. the agencies have displayed much concern with debt which extends beyond the Prudhoe curve; as a result, a maximum maturity of 10 years or so might have to be considered; this could noticeably increase debt service requirements.

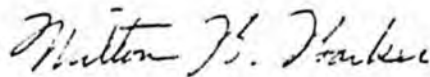
In conclusion, Alaska has many strengths which offset its high debt levels. These are cited in the enclosed rating reviews. It is not clear that issuance of the courthouse financing would raise a serious risk of a rating adjustment. Yet, it would use up some of the State's debt capacity, even though such capacity cannot be precisely measured and would add to the State's fixed costs.

The rating agencies are aware of the authorization for the Anchorage court financing. However, their analysis is based on debt issued. Issuance of financing for the courthouse would likely trigger yet another review of the State's credit by the rating agencies. The State has been under close scrutiny by

The Honorable John Binkley
March 10, 1988
Page 3

the rating agencies (as witnessed by the enclosed reviews)
since the drop in oil prices and will probably remain so, in
any event, with the approaching decline of the Prudhoe curve.

Yours truly,



Milton B. Barker
Deputy Commissioner

MBB/gb
88-72

Enclosures

Standard & Poor's Corporation

25 Broadway New York, New York 10004



December 29, 1983

RECEIVED

JAN 03 1984

ALASKA DEPARTMENT OF REVENUE
TREASURY DIVISION
JUNEAU

Mr. Milt Barker
Deputy Commissioner
Department of Revenue
11th Floor State Office Bldg.
Pouch, SB
Juneau, Alaska 99811

Dear Mr. Barker:

I would like to respond to your letter of December 13, regarding our views on lease obligations.

Lease Payments are viewed in essentially the same light as debt service on general obligation bonds, regardless of whether the obligation is cancellable due to non-appropriation. In fact, debt obligations secured by lease payments are included in our computations for overall debt burden.

Many states do not consider lease rental debt under debt limitation laws, primarily because legal interpretations view the obligations to pay rent as an annual budget item, and not a long term debt with a continuing appropriation. The fact remains, however, that the debt is still outstanding, and payable for as long as the property is being used by the lessee. While many leases permit non-payment of rent and cancellation of lease obligations, Standard & Poor's would be very concerned about an issuer's general obligation rating, in those cases where leases were cancelled as a ploy to avoid paying debt obligations.

I've enclosed some information regarding our approach to rating lease-rental debt obligations. If you have any further questions, feel free to contact Vladimir Stadnyk or myself at (212) 201-1767.

Very Truly Yours,

A handwritten signature in cursive script, appearing to read 'Richard P. Larkin'.

Richard P. Larkin
Managing Vice President
Municipal Finance Department

cc: V. Stadnyk
T. Arthur

LEASE OBLIGATIONS

Lease obligation criteria

This policy statement updates and expands S&P's tax-exempt lease obligation criteria. Over the years, S&P has rated numerous lease transactions both of the instalment-sales and leveraged-lease types, for both real and personal property. Although the basic rating approach remains unchanged, some new innovations in the field, such as "master" leases and lease pools, have required some additional criteria implementation.

Lease-secured ratings differ depending on the lease provisions and the strength of the repayment source. Because constitutional and statutory laws regarding leases vary, few generalizations can be made about them. However, lease obligations generally fall into two categories:

- (1) Leases resembling long-term debt.
- (2) Higher risk obligations requiring annual appropriations and having limited legal remedies.

Ratings for the first category emphasize the long-term and binding nature of certain leases regardless of whether they are considered debt for other purposes such as debt limits or voting requirements. In cases where the lease is long-term, where the lessee covenants to budget and appropriate, where failure to appropriate constitutes an event of default, and where the legal recourse of a holder is similar to that of a long-term debt holder, ratings may be as high as the lessee's senior debt rating, depending on the capacity to make lease payments.

The second category involves leases which depend on budgetary appropriations (fiscal funding) by the lessee, and where legal remedies are limited in the event of nonappropriation. Owing to the risk that lease payments may be terminated before the obligation is repaid, ratings on these transactions are lower than the lessee's full faith and credit rating. Typically the lease rating is one full category below.

To rate a lease transaction requiring an annual appropriation, S&P evaluates the following:

- General creditworthiness of the lessee.
- Essentiality of the leased property.
- Security features in the lease agreement.

In addition, an opinion from a recognized bond counsel is necessary stating that the agreement is a net lease without the right of offset. A second opinion from lessee's counsel is also required stating that the lease transaction is valid, legal, binding, and enforceable.

Rating approach

S&P will rate a lease upon receipt of a formal application. If the entity appropriating the lease payments is rated, a meeting with S&P may be optional. However, the nature of the leased property or lessee may make a meeting advisable. All documentation is due at least two weeks before the rating date. If additional information is needed, the process may take longer.

Lease ratings reflect the credit qualities of the lessee and, therefore, the analysis begins with a review of the lessee's long-term creditworthiness. Since the lease payments are generally not a direct and continuing obligation, the lease rating is lower than the lessee's senior debt rating unless additional credit strengths are present.

After assessing the lessee's general credit strengths, the analysis focuses on the potential for an event of nonappropriation. Since leases must generally be renewed annually or biannually, nonappropriation is a major risk for the lessor and, by assignment, the certificate holder. Whether or not funds will be appropriated often depends on the importance of the leased property in providing essential services such as police and fire protection, general government or courthouse facilities or utility services. In addition, personal property leases for telecommunication systems, fleet purchases of rolling stock (such as police and fire vehicles), and centralized computer equipment are usually considered essential. The use of the property is more important

than its potential for technological obsolescence. However, the lease term should be matched to the property's useful life. S&P, therefore, gives greater weight to leased properties fulfilling essential roles. Leases for less than essential, real or personal property are viewed as weaker credits unless the lessee demonstrates—usually via a certificate of essential use—the need for the leased property. In all cases, the risk of nonappropriation may be reduced by the presence of a non-substitution provision which precludes the lessee from using the same or functionally similar property for at least 30 days in the event of nonappropriation. For property such as seasonal equipment, a longer period may be more suitable.

The history of legislative authorizations for lease financings, prior leasing experience, and the "intent" of the lessee (indicated, for example, by an equity interest in the leased property) are all important in determining lease ratings. These factors, however, are not substitutes for adequate legal protections. In some states, owing to constitutional or political limitations, lease debt is the only financing option. This tends to enhance these financings. For those leases where the effective date depends on successful completion or acceptance of the property, the rating is "provisional." For a master lease, when the lessee uses one agreement for multiple leased property, S&P requests that acceptance and the effective date of lease payments be tied to the receipt of the major lease component. The lessee can also substitute other leased property to assure timely payments. Particularly for state level master-leases where numerous operating departments may be involved, a simplified appropriation process helps assure the timely payment of obligations. A debt-service reserve can provide additional strength.

A rating is assigned for each issue accepted for review, whether or not it is of investment grade quality. Applications which do not meet S&P's basic criteria may not be accepted.

The following structural elements are viewed positively. Their absence or significant variation may adversely affect the rating:

- The term of the lease matches the term of the issue. This avoids exposure on renegotiation; if state law prohibits long-term leases, renewal should be automatic.
- The lessee unconditionally agrees to make rental or purchase-option payments as agreed. Such payments are not subject to counterclaim or offset pending the outcome of possible litigation over the leased property, the lease agreement, or any other aspect of the transaction.
- The lessee agrees to request appropriations for lease payments in its annual budget.
- The lease has a nonsubstitution provision of at least 30 days in the event of a nonappropriation.
- In the event of a nonappropriation, the lessee agrees to make the specified purchase-option payment or to return the leased property to the lessor at its own expense.
- The lessee agrees to maintain the leased prop-

erty in good repair and to insure it against loss or damage in an amount at least equal to the purchase-option value or replacement costs, if repair and replacement are mandated by the lease agreement. If applicable, the lessee maintains business interruption insurance and a special hazard policy. Self-insurance for these risks is permitted, so long as adequate reserve levels are maintained.

- For corporate lessors, there must be a sale and absolute assignment of lease rental payments to the trustee. This assures timely payment to the certificate holders if the lessor becomes insolvent. Other methods of "insolvency-proofing" the lessor must be provided for leveraged lease transactions.
- A security interest in the leased property is provided.
- Potential taxability exposure to the certificate holders should be addressed.
- Permitted investments for "trusteed funds" should meet applicable guidelines.

Documentation requirements

The following documentation is required:

- A completed rating application.
- A bond ordinance or trust agreement.
- An official statement or private placement memorandum.
- Authorizing resolution of the governing body.
- The lease agreements.
- An assignment agreement.
- The lease payment schedule with principle and interest components and the end payment in each year.
- A description of the lessee, its functions, services, management, and budgeting process, particularly as it concerns the lease payments.
- A general description of the leased property.
- A certificate of essential use describing the purpose and function of the leased property, focusing on its importance to the performance of the lessee's services for the duration of the lease term.
- If applicable, a delivery and installation schedule and a copy of the acceptance certificate.
- The opinion of a recognized bond counsel that the lease agreement is a net lease without the right of offset, and an opinion from lessee's counsel that it is valid, legal, binding, and enforceable in accordance with its terms.

Additional documentation may be requested if needed.

Ratio of Debt Service to Unrestricted Revenues
September 1987
(\$ Millions)

Fiscal Year	(1)		(2)				(3)		Certificates of Participation		(4)		Total Debt Service	
	Unrestricted Revenue	State GOB's	%	UA	%	ASBA	%		%	School Debt	%		%	
77	874.3	41.9	4.8%	1.5	.2%	9.9	1.1%	0	0	9.0	1.0%	62.3	7.1%	
78	764.9	50.0	6.5	1.7	.2	10.1	1.3	0	0	11.4	1.5	73.2	9.6	
79	1133.0	60.0	5.3	1.7	.2	10.1	.9	0	0	22.3	2.0	94.1	8.3	
80	2501.2	75.1	3.0	1.8	.1	10.1	.4	0	0	24.1	1.0	111.1	4.4	
81	3718.2	97.6	2.6	2.2	.1	10.0	.3	0	0	38.4	1.0	148.2	4.0	
82	4108.4	97.5	2.4	2.3	.1	10.0	.2	0	0	38.3	.9	148.1	3.6	
83	3631.0	143.6	4.0	2.3	.1	9.9	.3	0	0	36.2	1.0	192.0	5.3	
84	3390.1	166.3	4.9	2.0	.1	9.9	.3	0	0	91.2	2.7	269.4	7.9	
85	3260.0	169.5	5.2	2.0	.1	9.9	.3	.8	0	92.8	2.8	275.0	8.4	
86	3075.0	163.2	5.3	1.8	.1	9.9	.3	.5	0	105.3	3.4	280.7	9.1	
87	1798.7	154.9	8.6	1.8	.1	6.5	.4	.7	0	132.5	7.4	296.4	16.5	
88	1934.2	147.9	7.6	1.7	.1	6.5	.3	3.7	.2	118.1	6.1	277.9	14.4	
89	1784.3	135.5	7.6	1.8	.1	6.5	.4	4.8	.3	115.8	6.5	264.4	14.8	
90	1925.1	120.3	6.2	1.7	.1	6.5	.3	5.2	.3	110.2	5.7	243.8	12.7	
91	1870.5	95.5	5.1	1.7	.1	6.5	.3	5.2	.3	102.9	5.5	211.7	11.3	
92	1834.5	68.2	3.7	1.7	.1	6.5	.4	5.2	.3	100.9	5.5	182.5	9.9	
93	1829.0	59.7	3.3	1.7	.1	5.9	.3	5.2	.3	98.9	5.4	171.3	9.4	
94	1757.5	33.9	1.9	1.5	.1	3.1	.2	5.2	.3	89.1	5.1	132.8	7.6	
95	1682.5	23.1	1.4	1.5	.1	1.5	.1	5.2	.3	78.6	4.7	109.9	6.5	
96	1631.7	21.5	1.3	1.5	.1	0	0	5.2	.3	69.5	4.3	97.7	6.0	
97	1610.3	16.7	1.0	1.5	.1	0	0	5.2	.3	42.1	2.6	65.5	4.1	
98	1577.0	14.4	.9	1.5	.1	0	0	5.2	.3	41.1	2.6	62.2	3.9	
99	1522.0	9.0	.6	1.5	.1	0	0	5.2	.3	39.2	2.6	54.9	3.6	
00	1484.2	2.6	.2	1.5	.1	0	0	4.3	.3	28.6	1.9	37.0	2.5	
01	1452.1	0	0	1.0	.1	0	0	4.3	.3	26.7	1.8	32.0	2.2	
02	1423.5	0	0	.4	0	0	0	4.3	.3	9.1	.6	13.9	1.0	
03	1393.1	0	0	.3	0	0	0	4.3	.3	4.6	.3	9.2	.7	
04	1397.4	0	0	.2	0	0	0	4.3	.3	3.4	.2	8.0	.6	
05	1400.8	0	0	.1	0	0	0	4.3	.3	2.6	.2	7.1	.5	

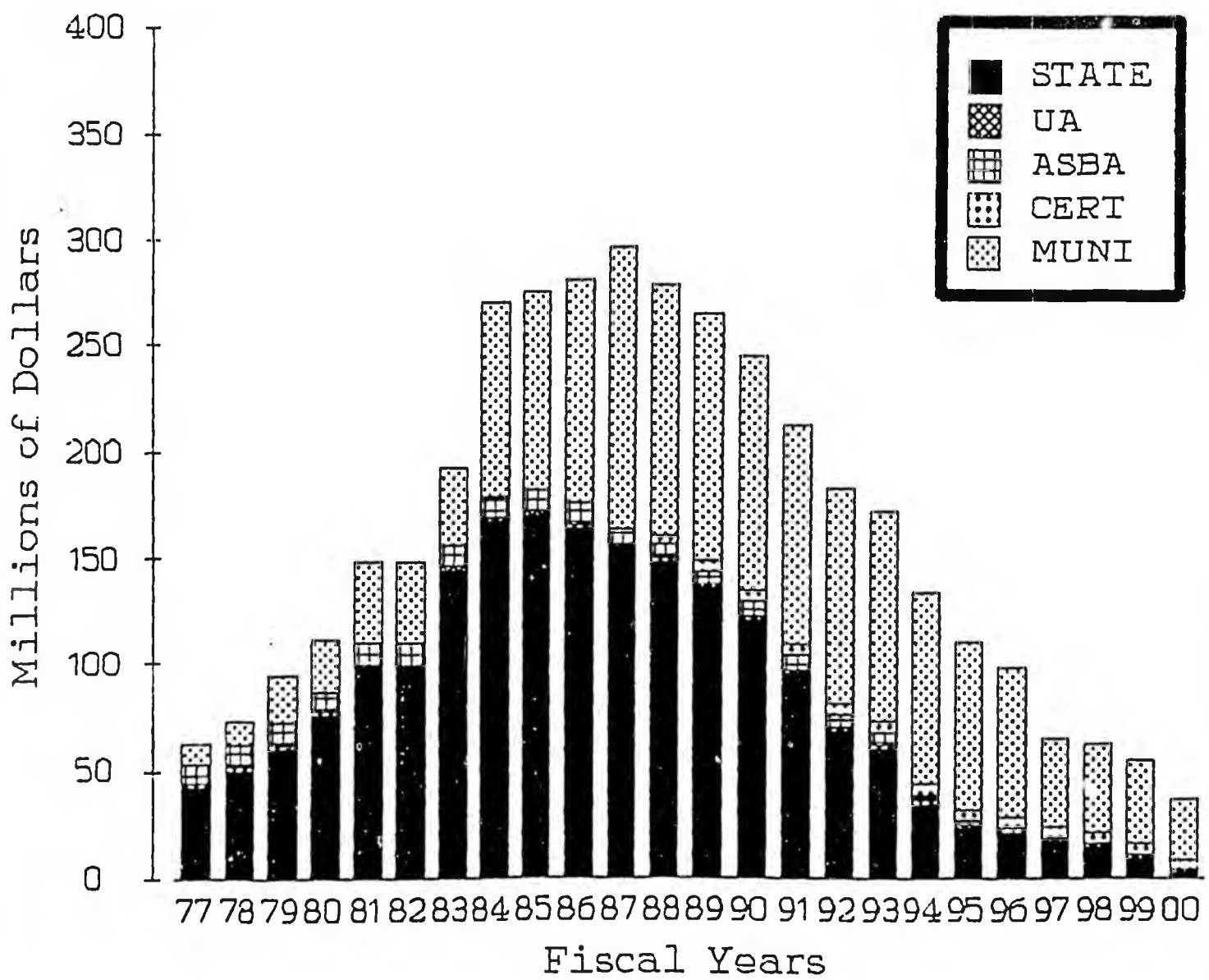
(1) September 1987 Department of Revenue revenue estimates, 30th percentile.

(2) University of Alaska bonds.

(3) Alaska State Building Authority lease revenue bonds.

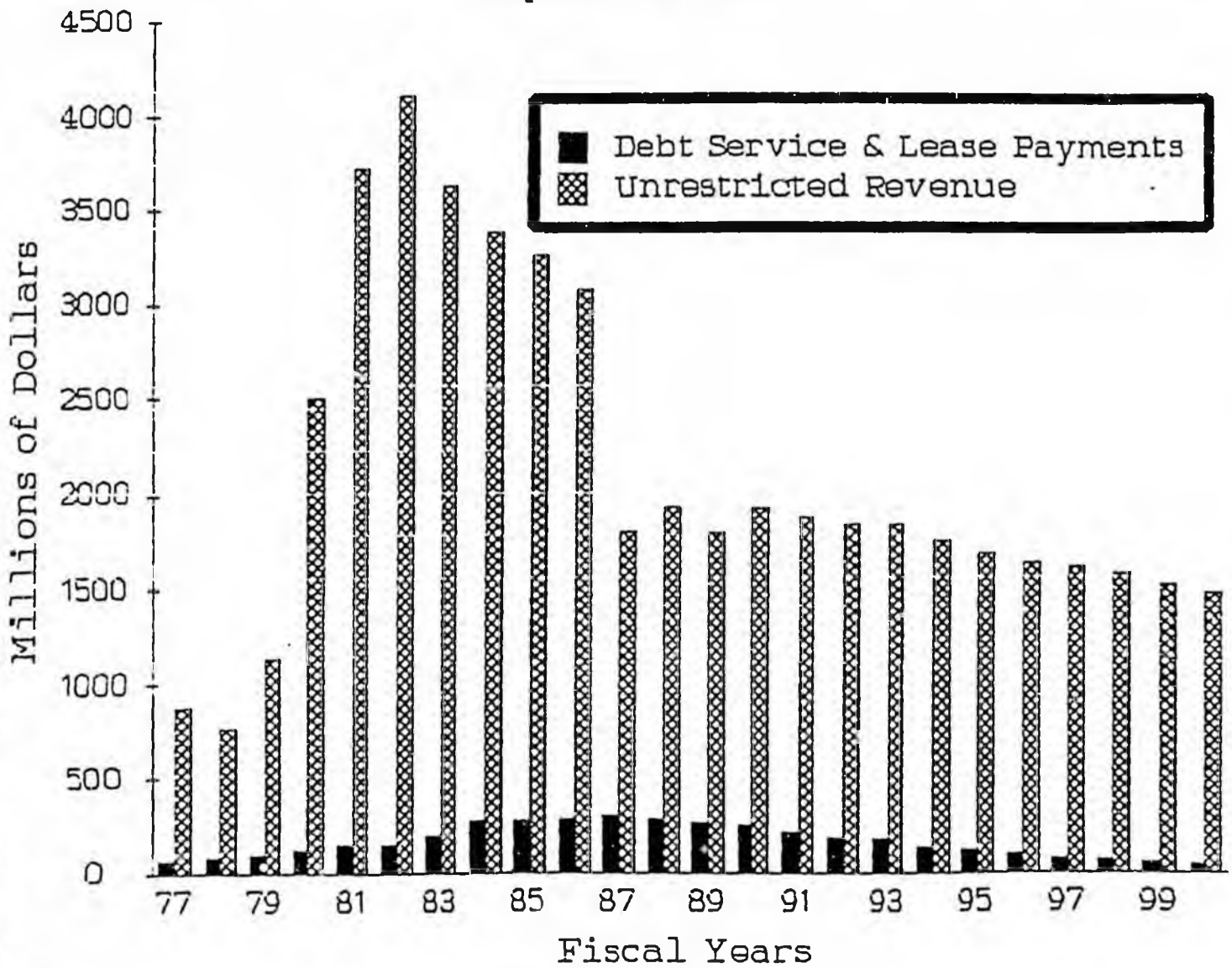
(4) Includes State reimbursement of municipal school debt issued through June 30, 1987.

Total Debt Service & Lease Payments



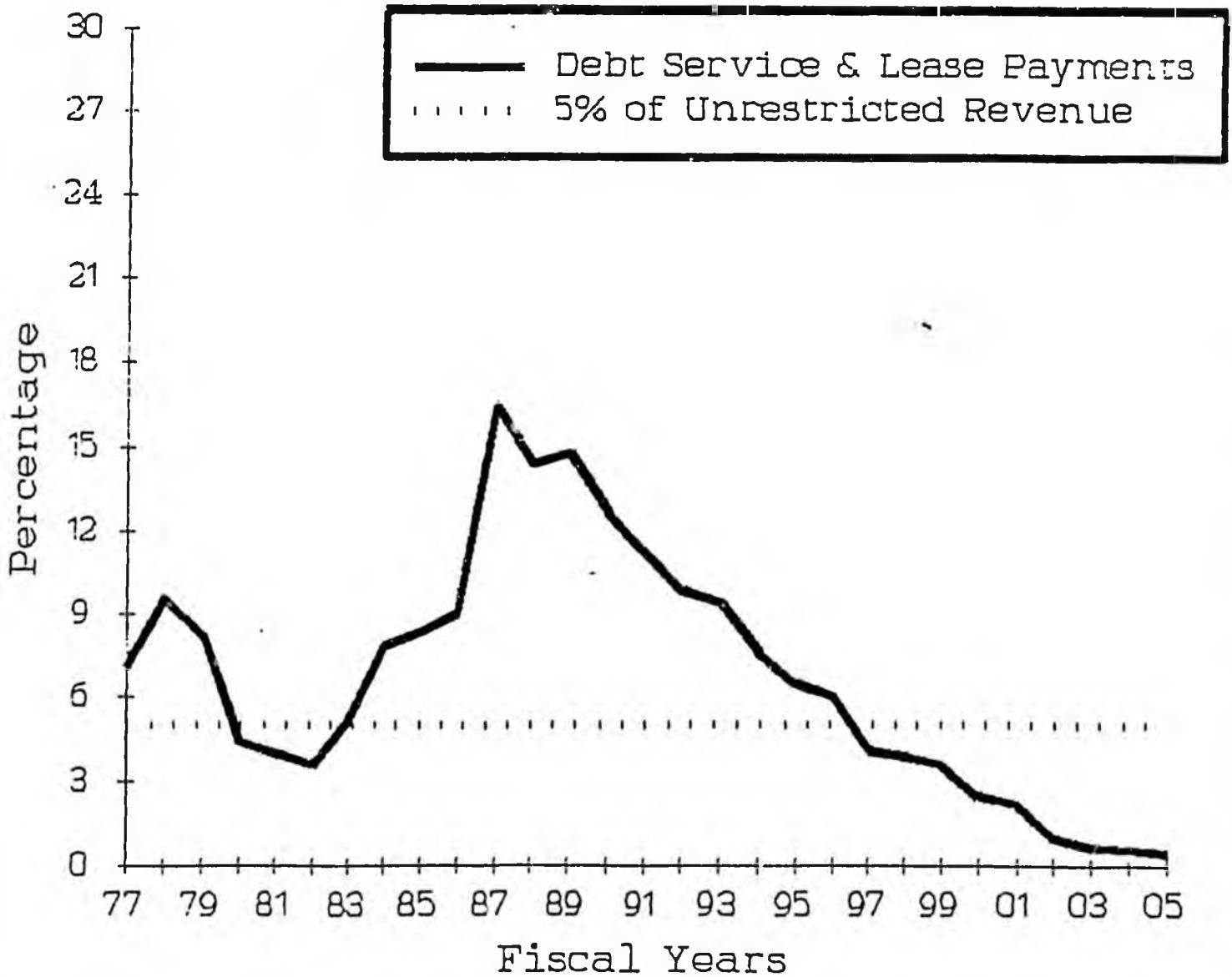
Debt Service vs. Unrestricted Revenue

September 1987



Debt Service as % of Revenue

September 1987



Alaska

Reviewed rating affirmed

Rationale: Alaska's "AA-" rating is affirmed on \$660 million of outstanding general obligation bonds. The rating reflects the state's continuing dependence on petroleum revenues, the slow process of stabilization and continuing volatility of the world oil market, and the state's conservative approach to petroleum revenue projections. Financial performance is commensurate with the rating, as evidenced by a good cash and fund balance position and substantial permanent fund earnings available for general fund appropriation. In the economy, there are signs of improvement in the secondary industries of timber, fishing, tourism, and minerals. Debt remains manageable, and is declining as the state continues to meet capital needs on a pay-as-you-go basis. Overall, the state's economy reflects growth in population, employment, and personal income and development in trade and services sectors.

Debt: The issuance of state debt historically has been high, due to the state's commitment to its capital improvement programs. Since the implementation of a debt management policy in 1983, the state has not issued bonds to meet infrastructure requirements, but rather has relied on pay-as-you-go financing. Depletion of oil-related revenues has sharply reduced appropriations to the capital budget. These appropriations fell to \$337.6 million in fiscal 1987 from a high \$1.2 billion in fiscal 1985, a decline of \$904 million or 72.8%. The fiscal 1988 budget projects another sharp drop in the capital appropriation to \$100.7 million, or a 70.2% fall. State G.O. debt declined from 67% of all Alaska public debt in 1972 to 31% in 1982, and 7% in 1986. Maximum annual debt service on all bonds is \$147.0 million, due in 1987. As currently structured, debt service requirements will decrease steadily through 1990 and accelerate through 2000.

Economy: Alaska's economic base remains primarily extractive, with major dependence upon oil and gas production, aided by the supportive industries of fishing, timber, tourism, and minerals. In 1986, approximately 86% of state revenues came from royalties and taxes paid on state-owned oil and gas leases. In

1987, this dependence declined to 77% and is projected to be 81% in 1988. Surveys indicate a declining production level for both the Cook Inlet fields and the Prudhoe Bay. Crude production at Prudhoe Bay is approximately 560 million barrels annually or 1.53 million barrels per day. Total statewide production is expected to peak at 1.85 million barrels per day and decline to about 775,000 barrels per day by fiscal 2000. This drop will be partially arrested by a miscible gas tertiary recovery project which will add approximately 115 million barrels to total Prudhoe reserves and by production of 222,000 barrels per day from two new fields. These projects are expected to add one and a half to five years to the life of the Prudhoe Bay field. The Alaska Oil & Gas Conservation Commission has estimated the state's remaining recoverable reserves to be 6.6 billion barrels of oil and 30.9 trillion cubic feet of gas. The fishing and timber industries are still important contributors to Alaska's economy. Total revenues to fishermen from catch sold in Alaska for fiscal 1986 totaled \$885.6 million compared to \$700 million in fiscal 1985 and \$602.3 million in fiscal 1984. In 1986, the wholesale value of fish production was estimated at \$1.7 billion. While salmon catches have improved, the shellfish industry, a major revenue contributor, continues to be depressed with the decline of Alaskan king crab and shrimp stocks. Fish processing, which historically had been seasonal, is now a year-round enterprise, due largely to demand for certain products, like surimi, a fish paste used in the manufacture of imitation crab legs. The timber industry continues to be a significant contributor to the Alaskan economy; however, its share of export earnings has been declining since 1980. Exports of forest products have fallen at an average annual rate of 10% due to foreign competition and the strong U.S. dollar. In 1985, forest product exports from Alaska totaled \$213 million or 21% of all state exports. Given future depletion of oil reserves, some focus of attention has been shifted to minerals and mineral deposits. Shipments of coal to Korea from the Usibelli mine began in 1984, and totaled 640,000 tons in 1986. Eleven million tons will be shipped over the life of the

STANDARD & POOR'S CREDITWEEK

contract. Development of a world-class molybdenum mine by U.S. Borax & Chemical Co. has been postponed due to price deterioration. Developmental activities are continuing with the Red Dog and Greens Creek zinc and lead mines. The Red Dog deposit is estimated at 29% of total U.S. deposits and is the world's second largest zinc mine. Tourism contributes significantly to the economy, but is not expected to exceed 1986 levels. In 1986, approximately 783,000 visitors spent over \$1 billion.

Following completion of the Trans Alaska Pipeline System in mid-1977, the population declined to 402,000 from 411,000. Meanwhile, state unemployment rose to 11.1% from 9.3% between 1977-1978. Due to recent weakness in oil and gas prices, 1986 annual unemployment rates have climbed to 10.9% from 9.5% in 1985. The population has grown 25% between 1980-1984. The current estimated population is 527,000. Government employment, historically high in Alaska, accounted for 29% of total income in 1980-1984. State per capita money income rose 9.8% between 1981-1983 to \$12,991, equaling 136.9% of the U.S. average.

Finances: Despite price fluctuations in the world oil market, the state has maintained a good financial posture. Petroleum revenues account for approximately 85% of general fund unrestricted revenues. Based on forecasted declines in petroleum revenues, fiscal 1986 ended with an unreserved fund balance deficit of \$196 million. To offset this deficit in fiscal 1987, \$427.3 million was transferred from the budget reserve fund into the general fund, making it possible for the general fund to end the year with a \$1.8 million deficit. Preliminary figures for fiscal

1988 indicate that as a direct result of a decline in projected petroleum revenues, a \$520 million unreserved fund balance deficit has been identified. It includes a \$250 million appropriation from the general fund to the budget reserve fund to assist in offsetting the deficit for fiscal 1988. Current information points to increased revenues in September which would eliminate the need for appropriating the funds, and at the same time minimizing or completely eliminating any deficit. Otherwise, the state could access \$799 million comprised of permanent fund earnings (\$569 million) and the Raibell Energy Fund (\$230 million) in available funds to correct the deficit. Permanent fund earnings and a proposed \$1 billion budget and reserve fund will be an integral part of the state's plan for softening the volatile petroleum generated revenues. Recognition of the weakened revenue posture is mirrored in the state's operating budget for fiscal 1988. The total operating budget of \$2.1 billion for fiscal 1988 is \$707 million (25.4%) less than fiscal 1986, and \$294.8 million (12.4%) less than fiscal 1987. The June 1987 revenue estimate for fiscals 1987-1989 shows flat growth. Petroleum revenues were an estimated 77% of general fund revenues in 1987, 81% in 1988, and 83% in 1989. These estimates indicate the continued dominance of petroleum revenues as the major contributor to the general fund. Total permanent fund assets for 1987 are \$8.8 billion. Approximately \$363 million of investment earnings from this fund in fiscal 1987 are available for dividend payments to each Alaskan resident. Anticipated payout is \$72.1 per person. The permanent fund earnings available for appropriation in fiscal 1988 will be approximately \$569 million.

Anthony H. Arthur
(212) 208-1777

State of Alaska

March 17, 1987

Comment

Moody's has been informed that both the senate and the house of representatives of the State of Alaska have passed, by a two-thirds vote, legislation which allows use of the Budget Reserve Fund by the General Fund. Signature by the governor is expected within the next few days, and the bill will be effective immediately. This measure should allow the state to finish its fiscal year without further cash shortages.

The legislature is considering various measures which would draw on reserves to erase the undesignated General Fund deficit. The governor intends to balance the budget for 1987-88, but no definitive action has been taken by the legislature to date.

analyst: C. Cohr

0000E01

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State of Alaska

February 27, 1987

Comment

State of Alaska

The State of Alaska is facing a potentially serious cash shortage by the end of March unless corrective action is taken in the interim. General Fund revenues have been sharply reduced following the 1986 break in oil pricing, with unrestricted revenues to the fund in 1985-86 about 11% below the level of the previous year. It has been estimated that the General Fund will need about \$315 million in cash over and above expected receipts for the remainder of the 1986-87 fiscal year. At the present time, state officials expect that additional cash will be needed in the period between March 26, when a payroll is due, and April 1, when a debt service payment is due.

While Alaska has a liquidity problem, it also has substantial funded reserves. The General Fund contains a budget reserve which holds \$431 million and a railbelt energy reserve which holds \$280 million. In addition, about \$171 million of Permanent Fund earnings are generally available to the General Fund. However, use of these funded reserves requires legislative authorization.

One of two courses of action is considered likely. The first is that the legislature will appropriate sufficient monies from the budget reserve. Such legislation has been passed by the house and is pending in the senate but its usefulness is moot as house passage was only by simple majority, delaying effectiveness for 90 days, which is subsequent to the expected pressure date. It is possible that the senate could pass the legislation by a two-thirds vote and return it to the house; approval by that margin allows immediate effectiveness.

The second course of action available is use of the executive power of impoundment. The governor has indicated that if necessary he will invoke that power. In August 1986, the governor used his impoundment power to reduce appropriations. Fairbanks North Star Borough and the borough school district in November 1986 filed suit seeking to enjoin the governor from exercising impoundment powers.

Moody's will continue to monitor this situation and further developments will be reported.

analyst: C. Cohen

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Alaska copes with volatile oil markets

Alaska continues to be subjected to revenue pressures created by the world oil market's volatility. January 1987 estimates projected a 62% decline in petroleum revenues in the fiscal year ending June 30, 1987, which would have led to a \$1.06 billion unreserved fund balance deficit. Only two months later, the situation changed for the better. March 1987 estimates reflect an improving revenue trend which—along with certain remedial actions taken by the state—will eliminate the deficit. Alaska will restrict capital loan program, and general spending appropriations and will use budget reserves and revenues that exceeded the January estimate.

In light of the corrective actions and the financial cushion provided by earnings from Alaska's permanent fund, the AA rating is affirmed on the state's approximately \$656 million in outstanding general obligation debt. However, S&P will continue to monitor Alaska's financial performance, due to concerns over oil market volatility and its effect on the state's revenue performance. It is projected that 77% of fiscal 1987's general fund revenues will come from unrestricted petroleum revenues.

The January 1987 forecast revealed sharp declines in petroleum-related revenues for fiscals 1987-1989, with concurrent declines in the total general fund unrestricted revenues. Major declines were in the severance tax and royalties. When compared to fiscal 1986 actuals, severance tax revenues were estimated to decline 58% in fiscal 1987, 59% in fiscal 1988, and 55% in fiscal 1989. Also versus fiscal 1986's actuals, royalties were expected to decrease 68% in fiscal 1987, 54% in fiscal 1988, and 47% in fiscal 1989.

As the oil market firmed, March 1987's forecast portrayed a much better trend. Severance tax revenues are projected to increase 30% for fiscal 1987, 21% for fiscal 1988, and 21% for fiscal 1989. As for royalties, gains are expected to be 51% in fiscal 1987, 22% in fiscal 1988, and 18% in fiscal 1989.

Governor Steve Cowper plans to address fiscal 1987's revenue pressures and eliminate the potential deficit by restricting spending, tapping the budget reserve fund, and drawing on permanent fund earnings. The state's financial plan projects deficits for fiscals 1988-1991, and proposes draws on permanent fund earnings during those years to the extent needed after other revenue enhancement possibilities are applied. The draws on the permanent fund range from a high of \$368.6 million in fiscal 1987 to a low of \$15.5 million in fiscal 1991. S&P believes that the availability of the permanent fund's earnings will provide a cushion to soften adverse impacts from petroleum revenue declines. Total permanent fund balance is \$8.2 billion, while the unencumbered earnings reserve fund from which draws will be made is projected to be \$510 million.

Governor Cowper has submitted to the legislature a fiscal 1988 budget which takes into consideration reduction in petroleum-related revenue. The budget, which totals \$1.39 billion and includes a \$1.56 billion operating budget, reflects a reduction in state spending of approximately 26% over the level authorized in fiscal 1987 and 34% less than in fiscal 1986. To ensure a budget that would sustain state spending, the governor made four proposals: reimposition of the state income tax, increased fees and license costs, suspension of the economic limit factor affecting oil taxes (a state tax incentive designed to encourage the oil industry to produce marginal fields), and use of a portion of permanent fund earnings. The individual income tax is not likely to receive early approval.

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Alaska adjusts to falling oil prices

in response to sharply declining world oil prices. Alaska recently reduced revenue projections and will adjust its expenditure levels accordingly. These timely actions are in keeping with the state's conservative approach to dealing with possible fluctuations in its main revenue source, oil and gas extraction taxes.

S&P affirms the AA- rating on Alaska's \$752.7 million in outstanding general obligation debt. The rating is based on a continuing strong financial position, a manageable debt position, and an economy that continues to evidence population growth, employment gains, and maturation in the trade and services sectors. S&P believes that over the next several years, the availability of approximately \$2 billion of unrestricted funds will soften the impact on state revenues created by unfavorable fluctuations in world oil prices. The situation will be continuously monitored with a view to identifying the longer-term impact on state operations. (For analysis on Alaska, see *Mar. 3 Credit-Week*.)

In January 1986, Alaska forecast revenue levels at \$3,125 million in fiscal 1986, \$2,719 million in 1987, and \$2,258 million in 1988. To reflect lower oil prices and declining North Slope production, projections made in March reduce fiscal 1986's revenues by \$404 million, 1987's by \$641 million, and 1988's by \$643 million. Despite the cuts, Alaska still will achieve a surplus of \$280 million in fiscal 1986. Although current revenue projections are more conservative than those prepared in January, state forecasters acknowledge that the downside risk exceeds any perceived upside potential given the instability of the oil markets.

Included in the March numbers are favorable adjustments for the Trans Alaska Pipeline System (TAPS) tariff of approximately \$85 million, \$170 million, and \$83 million for fiscal 1986, 1987, and 1988, respectively. Fiscal 1986's revenue projections may be adjusted again, up to \$3,180 million from \$2,721 million, due to a \$243 million Arco Alaska Inc. settlement and \$216 million in refunds and legal expenses from the TAPS settlement.

Controlling expenditures

In addressing the new revenue projections, Governor Bill Sheffield proposed a plan designed to control expenditures. Internal controls on state spending for the remainder of fiscal 1986 will be tightened, including a hiring freeze, travel restrictions, and contract controls. State employee contracts will be reopened for negotiation and reexamined to save money and preserve jobs. To minimize the impact of budget reductions on local taxpayers and the economy, the governor has submitted a proposal to the legislature which would reduce some operating expenses, capital construction, pass-through funds to local governments and school districts, and loan programs. The governor has also proposed the immediate implementation of a budget reserve fund, in which the fiscal 1986 surplus can be deposited for use to offset the current decline in revenues. Efforts are being made to increase the public's awareness of the situation.

The impact of reduced revenues on spending is softened by available and unrestricted cash totaling approximately \$2.5 billion. Of that, \$515 million is composed of a settlement of the Arco tariff case, refunds for past TAPS throughput and legal fees, and a resolution of the outer continental shelf issue with the federal government. Other available funds are \$200 million in an unrestricted account for the Susitna power project, which will not proceed, and a rainy day fund of approximately \$298 million in fiscal 1986, \$284 million in 1987, and \$270 million in 1988. A last resort is the permanent fund, which now totals approximately \$7 billion, use of which would require a constitutional change. Projections for this fund are \$8.5 billion in fiscal 1990 and \$16.6 billion in 2000.

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STATE OF ALASKA

DEPARTMENT OF LAW

OFFICE OF THE ATTORNEY GENERAL

STEVE COWPER, GOVERNOR

REPLY TO:

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March 17, 1988

Hon. Rick Halford, Co-chairman
Senate Finance Committee
Alaska State Legislature
P.O. box V
Juneau, AK 99811

Re: Specific authority for ASBA to
finance Anchorage court facility

Dear Senator Halford:

During a meeting of the Senate Finance Committee on March 16, 1988, you requested our opinion concerning the necessity to obtain specific approval for Alaska State Building Authority (ASBA) involvement in the Anchorage court facility project. AS 18.55.100(d) requires ASBA to receive legislative review and approval before it may "proceed" with a lease-purchase financing under AS 18.55.100(a)(15). The author of this memorandum offered the opinion that the approval given to the supreme court in sec. 3, ch. 78, SLA 1984 was adequate to satisfy the review and approval requirements of AS 18.55.100(d).

We regret that there was not more time to reflect on the basis for the opinion before it was given orally to the committee. Upon careful review and consultation with others, we wish to express substantial reservations concerning the wisdom of proceeding without specific approval of ASBA as lessor of the court facility project. Foremost, our reservations are based on consideration of the reaction of bond counsel and underwriters to any departures from the review and approval process set out in AS 18.55. They may balk at giving an unqualified approval for a project unless a new approval specific to ASBA is granted. Our concern is also based on the fact that the earlier approval given for the project in ch. 78, SLA 1984 was enacted before the review and approval requirement set out in AS 18.55.100(d) was added to ASBA's enabling Act.

The willingness to accept the approval granted in 1984 was based in part on our long-held opinion that a legislative veto of specific projects violates the separation of powers doctrine. It is also significant that the requirement of legislative review and approval of ASBA projects is the more recent enactment. We have successfully maintained in a lawsuit involving the Alaska State Housing Authority (ASHA), ASBA's predecessor

Hon. Rick Halford, Co-chairman
Senate Finance Committee
Re: Specific authority for ASBA

March 17, 1988
Page 12

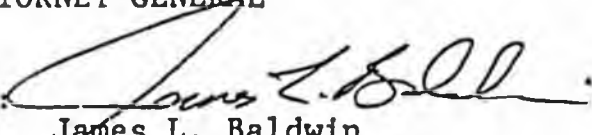
agency, that the legislature may not reserve approval power over specific projects proposed by ASHA. However, the legislature may by law enact specific standards for the exercise of the power of ASHA to lease public buildings. The decision in the case involving ASHA was not appealed to the supreme court. Based on the superior court's decision, we believe that a legislative approval required by statute is not a valid requirement and should not prevent ASBA from proceeding with the project. However, as mentioned earlier, potential investors usually are very cautious to explore the legal authority for this type of financing and will require adequate assurances that ASBA has the power to proceed and the blessings of the legislature.

In our opinion, it would be prudent to provide a new authorization for the Anchorage court facility by enacting the provisions of sec. 3 set out in SB 328. That bill is currently pending consideration in the State Affairs Committee. Rather than provide the committee with a letter of intent with the terms you requested, we suggest that the committee consider adding to the bill under consideration an effective date which states: "* Sec. __. This Act takes effect on the effective date of an Act authorizing the Alaska State Building Authority to proceed with the Anchorage court facility pursuant to AS 18.55.100(d)."

We regret the change in position and any inconvenience it may have caused the committee. However, this inconvenience is necessary to assure that the financing will not be bogged down by the uncertainty of potential investors in any bonds issued by the financing authority.

Sincerely yours,

GRACE BERG SCHAIBLE
ATTORNEY GENERAL

By: 
James L. Baldwin
Assistant Attorney General

JLB/pjg



Alaska Court System

State of Alaska

303 "K" STREET
ANCHORAGE, ALASKA
99501

ARTHUR H. SNOWDEN II
ADMINISTRATIVE DIRECTOR

(907) 274-8611

February 22, 1988

Senator Rick Halford
Alaska State Legislature
P. O. Box V
Juneau, AK 99811

Dear Senator Halford:

Enclosed is the project overview that you requested on behalf of the Senate Finance Committee.

The report documents our findings as to need for the expansion project, the history of project development, the project budget including the architect's current estimate for construction cost, and a record of expenses to date indicating the need for \$1,500,000 to complete the initial project development prior to sale of the bonds.

Sincerely,


Arthur H. Snowden, II
Administrative Director

AHS:bh

Encl.

2/22/88-2

PROJECT OVERVIEW
ANCHORAGE COURTHOUSE EXPANSION PROJECT

FEBRUARY 22, 1988

OFFICE OF ADMINISTRATIVE DIRECTOR
ALASKA COURT SYSTEM
303 K STREET
ANCHORAGE, ALASKA 99501
(907) 264-0547

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February 22, 1988

I. PROJECT DESCRIPTION

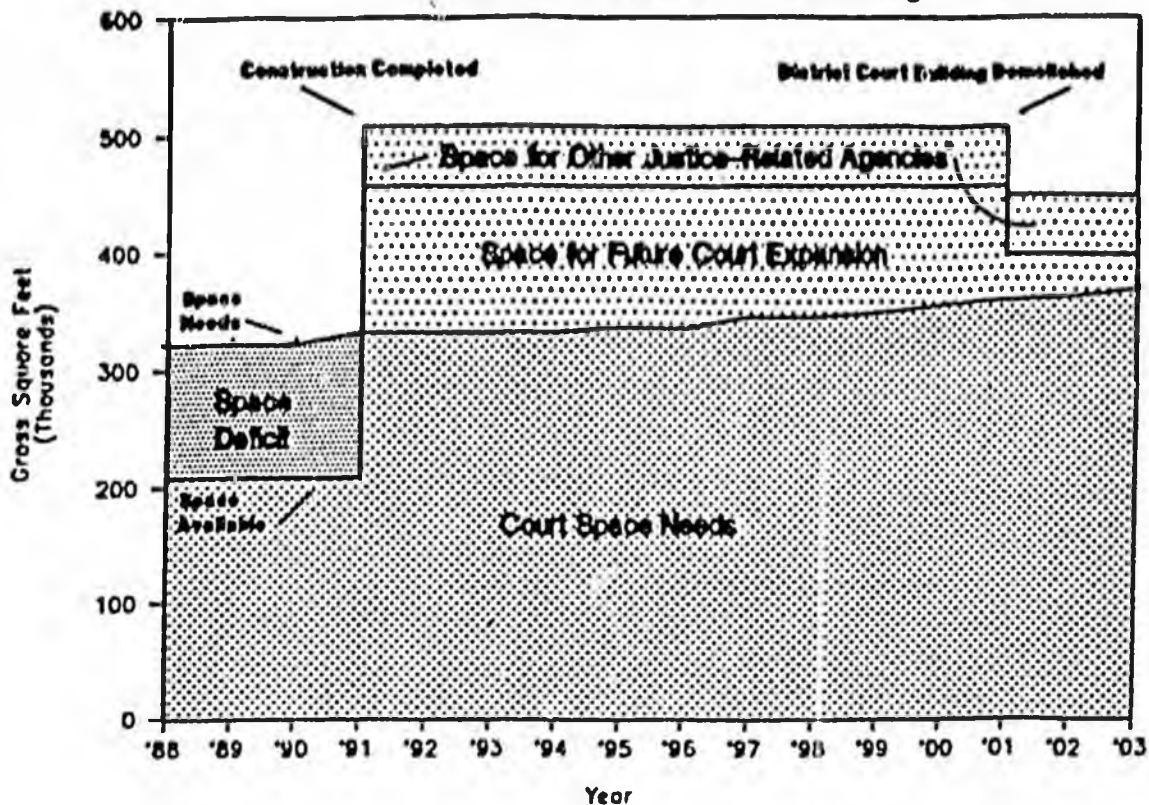
The court currently occupies two adjacent buildings in the downtown business district. The older building fronts on Fourth Avenue and borders on K Street, and constituted the court's facilities from 1964 until 1973. In 1973, the court took occupancy of the newly-constructed, adjacent Boney Memorial court building at Third Avenue and K Streets. Together these buildings provide the Anchorage court with 208,000 square feet of floor space.

Our current facilities are deficient in a number of ways. One of the most significant is that both buildings permit serious breaches of security. Prisoners are circulated through public corridors and lobbies and the potential for escape and/or hostage situations is great. Split departments and the resultant disruption of work flow and public inconvenience is impossible to correct without extensive and costly remodeling to both buildings. Existing jury assembly facilities are substandard with respect to providing adequate space to instruct jurors and to allow appropriate space for waiting. The existing district court building is significantly deficient with respect to current fire code and seismic requirements, and the mechanical and electrical systems are inadequate and difficult to remodel.

The new facility will correct deficiencies in the existing court buildings, will consolidate court offices and court-related agencies and will provide space for future growth. (See Graph 1) To enhance security the new design allows for three separate circulation patterns: general public circulation; private circulation for court system staff; and secured prisoner circulation. The circulation patterns, in conjunction with an easily operated card security system, will provide a level of security that is impossible to achieve in the present facilities and is needed to protect the public and judicial staff from the heightened risks associated with prisoner escapes. The new facility also provides for a secured sallyport for prisoner movement to and from the courthouse. The new facility will also eliminate the current space rental costs for departments housed in leased space. The training center will eliminate the cost of renting space for magistrate, judicial and clerk conferences. The expanded and redesigned jury assembly facilities reflect current model standards for jury management. Other necessities are provided as well.

Alaska Court System

Office Space Needs - 1988 through 2003



Graph 1

Fiscal Impact

Estimated Costs from Present to Completion of Alternative	
Design Costs	\$ 1,500,000
Construction Costs	82,500,000
Reimbursement of Public Facilities Planning Fund (1)	750,000
Project Costs Incurred to Date Not Applicable to Alternative	
Contract Termination Costs	\$ 0
Non-recoverable Project Costs	0
Estimated Annual Operating Costs	
Debt Service (2)	\$8,880,000
Operations and Maintenance Costs (3)	1,683,300
Other Justice-Related Agency Rent Offsets (4)	(870,500)

Notes:

- (1) Repayment of loan for design costs.
- (2) Construction financed with 30-year, lease-revenue bonds.
- (3) Costs estimated at \$.40 per square foot per month for new space.
- (4) Savings from current rental costs (48,360 square feet at \$1.50 per foot per month).

II. PROJECT HISTORY

In FY 1982, the Alaska State Legislature appropriated funds to the Alaska Court System for land acquisition, and planning and design of new court facilities in Anchorage.

Space Management Consultants, a nationally recognized judicial space management firm, was hired to develop a plan for the facility. Based on design guidelines, space standards, and interviews with department heads to determine staff needs, Space Management Consultants developed a program document projecting personnel requirements and space requirements to the year 2005. This document formed the starting point for the architect's design work.

The court system purchased the land across I Street between 4th and the alley for an expansion of court facilities. The firm of McCool-McDonald of Alaska, Inc., was chosen to design the new building. The new facility was planned to provide an additional 350,000 square feet of space, in order to meet the court's projected needs to the year 2005.

The Anchorage court expansion project has had a long history of interaction with Anchorage municipal governmental agencies over the past several years. In January 1982, court administrative staff met with municipal planners to discuss the proposed project. Later in 1982, meetings were held with the mayor and the municipal assembly. The project architect met with representatives from municipal engineering, planning, traffic and fire protection agencies. Four design schemes were created. Meetings continued throughout 1982, on a variety of subjects relating to the proposed project.

In October 1982, the court system filed a Conditional Use Application with the Municipal Planning and Zoning Commission, requesting final approval of the design which had been preferred by municipal staff. However, in December 1982 the Planning and Zoning Commission denied the court's application. The court system appealed the decision of the Planning and Zoning Commission. The Board of Adjustment granted portions of the court system's appeal in August 1983.

In 1984 the Alaska State Legislature authorized the court system to enter into a lease/purchase agreement for construction of a court facility in Anchorage. The Municipality of Anchorage (MOA) has indicated a willingness to finance the expansion project through the issuance of municipal revenue bonds.

On August 23, 1984, the Alaska Court System again filed a request to the Planning and Zoning Commission for final approval of its conditional use application. The court system was required to meet with the Urban Design Commission and the Geotechnical Commission prior to any Planning and Zoning Commission action.

Seismic risk to buildings in Anchorage generally is considered to be quite high. Recognizing this fact, and considering the public nature of the judicial function, the court system engaged seismic design experts H. C. Shah and T. C. Zsutty of Stanford University to develop seismic design criteria for the new facility. In conjunction with Shah and Zsutty's recommendations, a geotechnical investigation and report was completed by

Woodward-Clyde Consultants. Following completion of the seismic criteria and the geotechnical report, a structural design narrative was prepared by Coffman Engineers, Inc. of Anchorage, Alaska. The purpose of the narrative was to present a preliminary structural design that would satisfy the seismic design criteria established by the two previously mentioned reports. This material was presented to the Geotechnical Commission.

Throughout 1985 and 1986 Dr. Shah continued to work with representatives from Woodward-Clyde and Coffman Engineers, to devise detailed seismic design criteria to address any seismic concerns brought by the MOA commissions relating to construction of the court facility on the proposed site.

On June 30, 1986 the Planning and Zoning Commission granted the Alaska Court System a conditional use permit after almost four years of unanticipated delay. The delay has significantly increased the up-front costs associated with the project. Interim remodelling projects were pursued in the existing facility to allow overcrowded departments to continue to function. Professional fees mounted as completed tasks had to be reviewed and updated due to the long passage of time. The result of this delay is that the court lacks \$1.5 million in budgeted funds to complete the planning and design process for this project. (See Appendix Two)

In April 1987 the architect's consultant team completed the schematic design phase and in November 1987 the work on the design development phase was completed. The consultant team is now in the construction documents phase which will be complete in May 1988. The project is scheduled to go to bid in early June, with a target completion date of March 1991.

During this time the court system and the municipality have also come to an out-of-court settlement on a case that had been in litigation since 1978. The settlement reached in December 1987 provides \$350,000 for employee and juror parking at the 6th and H parking garage, to be used by February 1, 1993.

In order to prepare the land purchased for expansion, the existing buildings along 4th Avenue were demolished in the fall of 1987.

III. EVALUATION OF NEED FOR EXPANSION PROJECT

A. Estimation of Needs

The future space needs of the Anchorage court facility were derived from a model which forecasts court staffing levels and resultant space needs based on changes in trial court caseloads and changes in general economic conditions. The model forecasts space needs for the period 1988 through 2003.

The model is based on multiple regression analysis of historical caseloads, population and economic data. Multiple regression analysis is used to determine the mathematical importance of several independent variables in predicting the value of a dependent variable. In the present model, the independent variables of state population, state non-agricultural/civilian employment, and state operating budget are used to predict the dependent variable of trial court case filings. With the inclusion of statewide oil production as an independent variable, the model also predicts appellate court and administrative office staffing. Regression analysis is one of the most widely used "curve fitting" techniques and is appropriate for intermediate and long-term forecasts. The regression analysis produces an equation which can be used to predict future values of the dependent variable based on estimated values of the independent variables. The historical data for the model was obtained from the court system's annual report and from various publications of the state's Department of Labor.

Regression analysis, as well as other historical-based forecasting techniques, suffers from a number of limitations. This method of forecasting assumes that past mathematical relationships will continue to be valid in the future. Additionally, it is not possible to construct a model that adequately reflects all real world factors that affect caseloads and staffing. Further, historical caseload and staffing statistics are difficult to obtain and the statistics that are available may not have been reported on the same basis over the analysis period. The regression analysis was based on only 15 years of data. To evaluate the Anchorage courthouse expansion project required a 15-year forecast of space needs. The model may not have had sufficient data to forecast such a long period. In view of these limitations, the model's projections should be used with caution.

The future economic data used in the regression formulas was obtained from the Institute of Economic and Social Research's Alaska Economy and Housing Market report, dated October 1987. This report provides projections of economic and population data from the present through the year 2010 under several economic scenarios. The report's base economic forecast was used in the model. Oil production data was obtained from a report from the Department of Labor.

B. Caseload Forecasting

The model contains four caseload/staffing forecasting components. The four components are non-traffic filings/staffing, traffic filings/staffing, appellate courts staffing, and administration staffing. Separate components are required to forecast staffing needs for each unique caseload/personnel-space-requirements category. For example, clerical staff is allotted 70 square feet of floor space while superior court judges and related support staff are allocated a combined 2,320 square feet. Personnel-space standards are discussed in a later section.

To develop the first component of the model, the relationship of Anchorage non-traffic case filings to state population, statewide non-agricultural/civilian employment, and the state operating budget was analyzed for the period of 1973 to 1987. Separate analyses were performed for Anchorage superior court, district court, and total non-traffic case filings. Regression formulas were developed for each category of case filings.

To translate the forecasted non-traffic caseloads into staffing requirements, historical staffing patterns for the Anchorage trial courts were reviewed. Workload standards were developed for each personnel-space-requirement category affected by non-traffic filings. The workload standards used in the model are 868 case filings per superior court judge, 2,562 case filings per district court judge, and 300 case filings per clerical position. These figures are the workload averages for fiscal year 1987. The 1987 figures appear to be representative long-term productive capabilities. The forecasted case filings were divided by these standards to estimate future staffing levels for the three categories of employees.

The second forecasting component of the model was developed based on the relationship of Anchorage traffic filings to state population, statewide non-military employment and the state operating budget. A regression formula was developed to correlate traffic caseloads to the identified data. The forecasted traffic filings were converted to staffing requirements by dividing the forecasted caseloads by the workload standard of 3,000 case filings per traffic clerical staff, which is the long-term standard. Other trial court staffing was estimated at 12 percent of the total of judicial, non-traffic and traffic clerical staffing, which is a long-term average of this ratio.

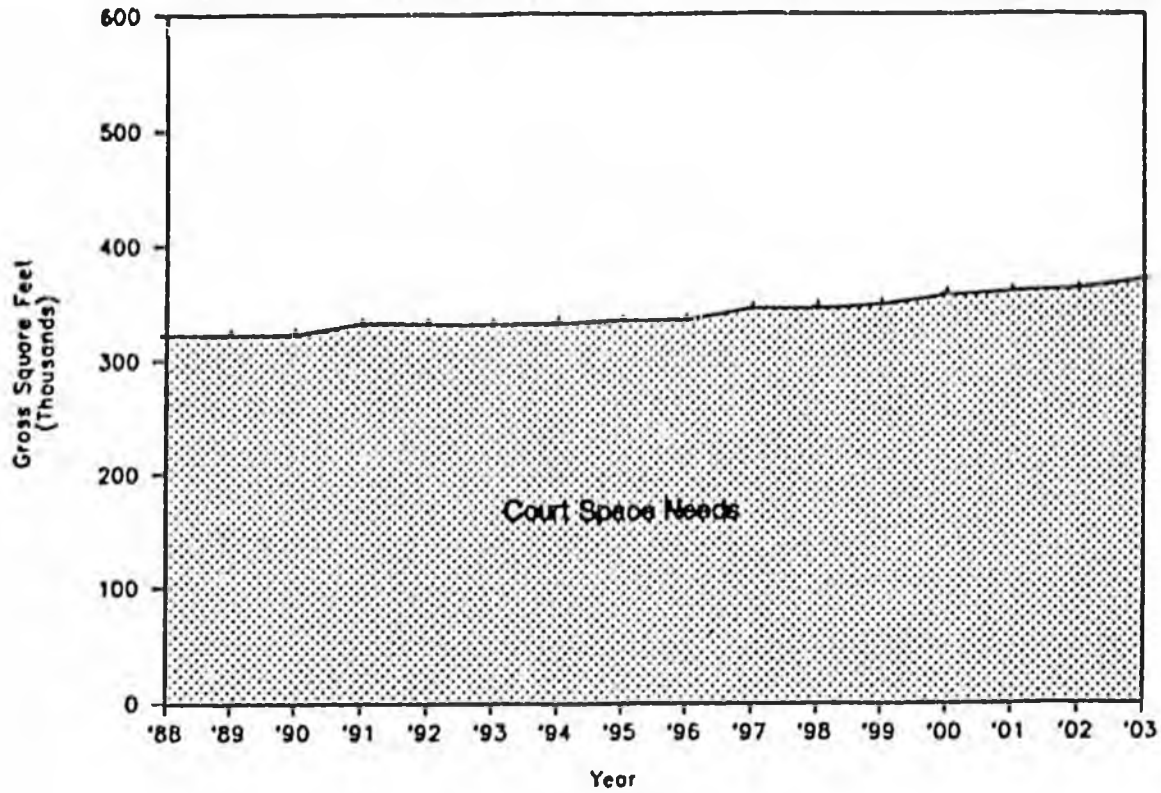
The third and fourth components of the model were developed by separately correlating historical appellate courts and administrative office staff levels for the period of 1974 to 1987 to state population, statewide non-agricultural, civilian employment, the state operating budget, and oil production data. Regression formulas were developed for each category and were used to predict staffing levels based on future changes in the economic and population factors. In addition to court system offices, the Anchorage facility will house the Alaska State Troopers Judicial Services, the Anchorage Alcohol Safety Action Program, the Department of Transportation and Public Facilities Courthouse Maintenance Section, and the Municipality of Anchorage Warrants Section.

Staffing requirements for these entities were obtained from the study prepared by Space Management Consultants.

C. Space Requirement Estimation

Space requirements for the Anchorage court facility were determined by applying standard personnel-space allocation factors (see Appendix One) to the forecasted staffing levels for each year of the forecast period as depicted in Graph No. 1. Specialized space needs, such as courtrooms, hearing rooms and deliberation rooms, were added to judicial employee space needs. The estimated total personnel-space requirements were multiplied by a factor to compute building gross square footage needs. A multiplier factor of 3.4 was used to calculate building gross square footage from net square footage. Net square footage is here defined to be that space which relates to personnel space needs. This multiplier makes provision for the following types of spaces: circulation, clerical and other work areas, public lobbies, reception and waiting areas, library facilities, judicial services other than personnel areas (holding cells, prisoner circulation, control center, toximeter room, etc.), all forms of storage, equipment rooms, public counter areas, duplication rooms, freight delivery, refuse storage and pickup docks, jury assembly areas and training center areas. The multiplier method differs from the method used by Space Management Consultants (SMC) in the original program. The multiplier factor used in the model was calculated to approximate the gross square footage determined by the SMC method. Sufficient time was not available to replicate the model used by SMC. A preliminary comparison of the two methods indicates the multiplier method predicts a slightly higher current gross square footage need than the SMC model. However, the combination of court system staffing estimates and the multiplier predicted slightly lower future space needs than the SMC method.

Alaska Court System
 Projected Office Space Needs in Anchorage - 1988 through 2003



Graph 2

Estimated Staffing and Space Requirements

<u>Year</u>	<u>Trial Courts</u>	<u>Apl Cts & Admin</u>	<u>AASAP</u>	<u>Judl Svc</u>	<u>MOA Warr</u>	<u>DOT Malnt</u>	<u>Total Staff</u>	<u>Estimated Space Needs</u>
1987	209	119	11	5	6	4	354	322,473
1988	202	112	11	5	6	4	340	322,473
1989	200	115	11	6	6	4	342	322,711
1990	200	116	12	7	6	4	345	323,187
1991	206	117	12	8	6	4	353	331,551
1992	206	118	13	9	7	4	357	332,265
1993	207	117	13	10	7	4	358	332,503
1994	209	122	13	11	7	4	366	333,693
1995	212	123	14	12	8	4	373	334,883
1996	214	121	14	13	8	4	374	335,359
1997	221	129	15	14	9	4	392	345,627
1998	224	132	15	15	9	4	399	347,293
1999	227	132	16	16	9	4	404	348,721
2000	233	133	16	17	9	4	412	357,561
2001	236	132	17	18	10	4	417	358,989
2002	241	137	17	19	10	4	428	361,063
2003	244	140	18	20	10	4	436	370,022

APPENDICES

APPENDIX ONE
PROJECT BUDGET

Construction Cost	\$67,570,000
Furnishings and Equipment	6,000,000
Construction Contingency	6,652,000
Art-in-Public-Places Amount	665,000
Construction Administrative Costs, Including Permits, Construction Management Fees, etc.	4,000,000

APPENDIX TWO
ALASKA COURT SYSTEM
ANCHORAGE COURTHOUSE EXPANSION PROJECT

EXPENDITURES to 2/15/88

Site Acquisition, Demolition, and Permits	\$3,258,661.60
Programming	665,940.97
Facilities Design, Seismic Investigation	3,478,460.34
Remodeling Existing Buildings	1,151,786.66
Utilities Relocation	925,119.91
Warehouse Costs	17,621.24
Rental Property Costs	4,840.41
Financing Costs	3,089.80
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TOTAL	\$9,069,672.03

Funds Needed to Complete Design
Phases Prior to Sale of Bonds

Completion of Construction Documents	\$1,223,596.00
Review and Permit Fees	143,404.00
Bidding Costs	133,000.00
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TOTAL	\$1,500,000.00

House Courthouse Committee
Anchorage LIO
December 16, 1988

House Members Present:

Representative Max Gruenberg, Chair
Representative Pat Pourchot
Representative Terry Martin
Representative Alice Hanley
Representative Walt Furnace

Senate Members Present:

Senator Rick Uehling

Testifying from Anchorage:

Art Snowden, Administrative Director, Alaska Court System
Brian Shortell, Presiding Judge of the Third Judicial Dist
Kit Duke, Facilities Manager, Court System
Don Simmons, Executive Assistant to the Anchorage City Manager

:00 - Meeting was called to order by Representative Gruenberg, chair of the committee at 10:50 a.m., welcoming the members of the Legislature attending the meeting, as well as those observing and testifying. Followed agenda with no objection.

:11 - Art Snowden: Art gave a brief history of the courthouse project. In November of 1980 the court system concluded they were out of space in the Boney Building. The court system approached the Legislature in 1981, and the Legislature gave a capital budget request of \$9.96 million in the FY 1982 budget for planning, design, land acquisition and remodeling. A number of problems developed, i.e., seismic considerations, etc. and approval didn't come from Planning and Zoning until 1986 for a conditional use permit. In the meantime, in 1984 the Legislature authorized the Court System to enter into a lease purchase agreement for construction of a facility. Competitive architectural bids were gathered and an architectural firm was selected, and building design began.