COMMITTEE MEETING:

HIGHWAY USERS FEDERATION

1-22-88

STATE OF ALASKA
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Mary Van Nimwegen

House Transportation

1/22/88

Alaska Highway Program Review

An Evaluation
by the
Highway Users Federation
1987

File item #1


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OF ALASKA

ALASKA HIGHWAY REVIEW ADVISORY COUNCIL

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Highway Users Federation
FOR SAFETY AND MOBILITY
1776 Massachusetts Avenue, N.W.
Washington, D.C. 20036

December 1987

OFFICE OF THE PRESIDENT

The Honorable Bette Cato, Chairperson
House Transportation Committee
State of Alaska
Juneau, Alaska

Dear Representative Cato:

The Highway Users Federation is pleased to submit this report of a ten-month review of the Alaska Highway Program. The pages that follow list our major findings and recommendations. The balance of the report is our perspective on the status of the Program, its financing and management.

While we have made a number of recommendations for change to improve program efficiency and effectiveness, we did find much to praise. First and foremost, we found a cadre of dedicated people that have sustained the program over a long period of time throughout leadership and organizational transitions, criticisms by those outside the program that may not have understood the magnitude or complexity of the job to be done and sometimes difficult working conditions.

Also we found much has been accomplished for which Alaskans can be proud. Alaska is in the national forefront in traffic safety and bridge conditions. Notwithstanding the elements that must be dealt with, Alaska's state highway network is "on a par" with other states. Anchorage's arterial street and highway system has come a long way in the 1980's toward being as modern as any in the nation. And the Marine Highway System and most of Alaska's major airports provide reasonable service to its users and the Alaskan economy.

We also pay tribute to the current and previous ADOT&PF management teams that have had to deal with a wider range of responsibilities than any of their counterparts in other state highway or transportation departments of the nation. While most such state officials have highway responsibilities and little more, ADOT&PF officials must administer the state highway program, as well as the operations of the two International Airports, 215 other airports, a nine-ship ferry system, most state-owned buildings and the state equipment fleet.

While Alaska is unique in this most important aspect, the Federation recommends that the current scope of responsibility remain unchanged. However because of this extraordinary scope,

it is recommended that the headquarters staff be augmented to provide more effective policy direction.

Some of the recommendations are far reaching and politically sensitive -- ie. transferring some state highway responsibilities to Alaska's boroughs and cities, and raising highway user taxes and dedicating these to the State Highway Program. However these actions should free up other currently earmarked transportation funds thereby allowing the Department to undertake the other recommendations that require added resources.

Transportation is vitally important to the social and economic well being of Alaskans. The public side of the Alaska transportation System -- that is highways, airports, ferries and harbors -- is a fragile network and the public responsibility to keep the system up and operating safely and efficiently is great. Much progress has been made in building the network. It is important that resources be found to keep what you have and to make those advances that are prudent expenditures within Alaska's overall resources.

The opening page of the report lists the members of the Alaska Highway Program Review Advisory Council. The Council met five times during the course of the review and assisted Highway Users Federation staff in outlining the key issues to pursue and in reviewing factual information and findings.

The pages that follow contain our major findings and recommendations. The rest of the report contains charts and graphs to give interested persons a better understanding of the current status of the Alaska Highway Program. The first chapter outlines how the state and municipalities share road responsibilities, where the money comes from and what agencies spend it. The second chapter discusses road conditions and traffic service. Chapter three indicates the accomplishments of the State Highway Program and how the Program relates to needs. The fourth chapter deals with managing the State Highway Program. Changes over time are shown as well as comparisons with national averages.

The Highway Users Federation is a 55 year old business league made up of the key industries and their associations that have an interest in safe and efficient highway transportation at reasonable costs. On behalf of our members and our affiliate, the Highway Users Federation of Alaska, we appreciate the opportunity to offer our perspectives on the Alaska Highway Program. We are grateful for the cooperation of Commissioner Hickey and the entire staff of the Alaska Department of Transportation and Public Facilities. We stand ready to further assist you in the months and years ahead.

Sincerely,

Lester P. Lamm

MAJOR FINDINGS AND RECOMMENDATIONS

I. Distinguishing Characteristics of Alaska's Highway Program

Alaska's Highway Program has many characteristics that set the Program apart from other states highway programs. The major distinguishing characteristics are as follows:

1. High Road Cost. The annual cost of administering, maintaining and improving Alaska's highway (all roads) and supplementary ferry system -- $48,000 per mile and $1,100 per capita --is above comparable national averages -- $16,000 per mile and $260 per capita. This is due to Alaska's severe weather conditions, unusual foundation characteristics (permafrost), difficult terrain, restricted building and repair seasons, remoteness of many parts of the system and the high cost of materials, supplies, equipment and services.

2. Highway User Taxes Are A Small Portion Of Funds. Unlike most states where highway user taxes and fees are the only state funds used to support the state highway program, Alaska's highway user taxes and fees meet only a small fraction (ten percent) of the Alaska State Highway Program costs.

3. Highway User Taxes Are Low. Alaska truck taxes and fees are the lowest in the nation while Alaska automobile user taxes and fees rank 37th from the top state in the nation.

4. First In Federal $ Received/Federal Taxes Paid. Alaska is first in the nation in the ratio of Federal Aid Highway Program payments received to federal highway user taxes paid. Over the fiscal year 1956 to 1985 period, Alaska has received $2.2 billion in Highway Trust Funds as compared to $256 million in federal highway user taxes paid by Alaskans -- a 9 to 1 ratio.

5. Unique State Highway System. Unlike any other state, Alaska's state highway system serves less than half of Alaska's communities of over 250 persons. Unserved communities are however connected to the rest of the state through a system of state-owned airports and by a state-owned ferry system.

6. Traffic Density Low. Alaska has the second lowest population and the fewest registered motor vehicles of any state in the nation. Only three states have fewer vehicle miles of motor vehicle travel. The average daily traffic on Alaska's roads is one half the national average.

7. Lowest Road Density. Alaska has the largest land area of any state in the nation (2-1/4 times the land area of Texas) and the lowest road density in the nation, only 1 mile of public road per 57 square miles of land area. By way of comparison, Nevada has the next lowest road density with 1 mile of road for every 2.5 square miles of land.

8. Road Miles Are Low. Despite Alaska's vast land area, only Delaware, Hawaii and Rhode Island have fewer miles of public roads.

9. Bridge Leader. Based on a national survey, Alaska is first in the nation in bridge conditions. Alaska has the smallest proportion of deficient bridges among the 50 states.

11. Fewest Traffic Fatalities. Among the 50 states, Alaska and North Dakota had the fewest 1986 traffic fatalities. For 1986, Alaska's mileage death-rate stood at 2.13 deaths per 100 million vehicle-miles of travel or 14 percent below the national average. And when all facts are in, it appears that Alaska's 1987 traffic safety record will improve upon the 1986 record.

12. Most Comprehensive State Department of Transportation. Unlike other state highway and transportation departments, which are mainly responsible for state highway system administration, maintenance, operation and improvement, the Alaska Department Of

Transportation & Public Facilities has major responsibilities for airports, ferries, harbors, public buildings, as well as highways.

13. Most Decentralized Department. The ADOT&PF is more decentralized than any other state transportation agency with major control vested in regional offices as well as the International Airport System and Marine Highway System offices.

II. Major Recommendations

1. Keeping A Good Program Going. First and foremost, Alaska needs to find the money necessary to maintain its record of progress in transportation service. Major strides have been made in developing and improving the state highways, bridges, airports, marine highways and harbors. In all aspects, it is a system in which Alaskans can be proud. Finding the resources to sustain the progress, or at least to sustain the existing system and service levels, in the face of Alaska's social needs, is the most serious challenge.

2a. Setting A State And Municipal Road Responsibility Policy. Currently, the ADOT&PF and Alaska's municipalities share the management of roads within municipalities without a state-municipal, agreed-upon policy that is based on the traffic service (functional) characteristics of the roads. Unlike the state highway networks in other cities of the nation, which serve principally as distributors of statewide traffic to major centers of traffic attraction within urban areas, many of Alaska's urban state highways function as minor arterials or collectors of traffic through or around residential neighborhoods. As a result, the ADOT&PF is looked to for funding the maintenance and improvement of streets and roads that are primarily of concern to citizens in urban neighborhoods. Alaska's rural and urban state highways of statewide traffic significance must compete for scarce funds with streets and roads of only local importance.

2b. Establishing An Urban Arterial Fund. Urban street and highway development has been predicated largely by legislative earmarking of funds for specific improvement projects and by such initiatives as the Anchorage Accelerated Road Program. A statewide approach to meeting urban arterial needs has been lacking. However, once road responsibility policy has been agreed upon and streets and highways transferred to the

appropriate agency (ADOT&PF, cities and boroughs), it is recommended that an Urban Arterial Fund be established to fund the improvement of those arterial streets in Alaska's major municipalities that are not included in the state highway system.

3a. Increasing ADOT&PF Maintenance And Operations Resources. Funds for highway maintenance must be increased to ensure that state highways are preserved and that safe and efficient levels of service are made available to the public.
Responsibility for 292 airports and 5,542 miles of state highway is now spread among a maintenance force of 570 people (as of 6/30/87) as compared to 661 people at the same point in time in 1985. Based on a national survey, Alaska is among the states with the fewest highway maintenance personnel per lane-mile of highway in the nation. Furthermore, the highway and aviation portion of the maintenance and operations expenditures dropped 24 percent from $71.2 million in FY 1986 level to $53.9 million in FY 1987. While the FY 1988 authorization level increased to $61.6 million, this is not adequate to restore effective maintenance operations. Snow and ice removal operations have been reduced to the point where motorists are being inconvenienced, and if a severe winter is experienced, more problems will occur. Signs of physical neglect, while already noticeable, will become more pronounced as water and ice continue to widen unsealed cracks and as shoulder erosion and unrepaired pavement edges continue to break up.

3b. Develop And Publish Maintenance And Operations Options. To arrive at the appropriate highway maintenance funding level, it is suggested that the ADOT&PF develop and publish highway maintenance and operations options. It is suggested that this study define three or more levels of highway maintenance that might be provided With such information specified, along with clear indications of costs and benefits, the Department, the Legislature and the public will have the best possible basis for funding decisions. Service level A would be the optimum with little or no inconvenience to motorists during snow and ice conditions. Potholes and edge raveling would be eliminated. All pavement cracks would be sealed each year. All ditches and culverts would be kept cleaned. Ten percent of the state highway system would be seal-coated each year. Brush would be cut

back annually on all state highways. Shoulders would be leveled each year. Signs, pavement markings, culverts and guardrail would be kept in good repair at all times. The object of the Service Level A evaluation is to determine the cost to 1) gain the maximum service life from each highway and bridge and 2) gain the best possible service for the motorist.

Service level B would be a lower increment of service on all state highways, especially the 1,000 miles of Major Collector Highways. As is the case today, some routes would be closed during winter months. Service level B is most nearly consistent with the 1987 maintenance programs.

Service level C would be a still lower level of maintenance and operations than has heretofore existed.

In each case a full explanation of the options should be developed and published. The short and long range benefits of the optimum service level should be specified, as should the consequences of providing the optional lesser service levels.

4a. Initiating A Comprehensive Needs Analysis. To determine the optimum level of funding for the state highway improvement program, it is recommended that the ADOT&PF make an engineering appraisal of the cost to meet state highway system deficiencies as they are likely to occur over the next ten years. Such an analysis should be carried on concurrently with the maintenance and operations analysis and the revision of state highway responsibilities, because these associated analyses directly affect the needs appraisal. For example, a heavy emphasis on highway preservation reduces the need for surface rehabilitation and visa versa. Also, a smaller urban state highway system will reduce the overall magnitude of state highway system needs.

4b. Building On The Recently Completed Interstate Highway System Needs Estimate. The ADOT&PF has recently completed a mile-by-mile analysis of Interstate Highway System needs. This carefully prepared analysis compared the existing 1,089 miles of Alaska's designated Interstate Highways with "tolerable" highway standards. Deficiencies were noted, estimates of costs to correct deficiencies were calculated and a priority of need assigned to each deficiency. The Interstate Highway Needs Estimate provides an excellent

basis for similar estimates of needs (with different standards of tolerability) for the other four functional systems of state highways, that is Other Principal Arterials, Minor Arterials, Collectors and Local Access Roads.

A summary of the needs estimates, along with the priority established for each need, will provide a sound basis for determining total state highway program needs (capital plus maintenance) with options to fit Alaska's financial capability.

5a. Determining Highway User And Other Tax Resources. Together with an agreed-upon, restructured state highway system and an accurate appraisal of the cost to meet the most needed state highway deficiencies and a determination of highway maintenance and operations costs, it is also recommended that a fiscal analysis be made of highway user taxes and other funds that might be used to meet long range goals for state highway system development, improvement and maintenance. A financial plan should then be set to provide long term stability for a goal-oriented program.

5b. Relating Highway User Taxes To The State Highway Program. Unlike most states, where highway user taxes and fees -- motor fuel taxes, motor vehicle registration fees and other special taxes on motor vehicles, their operation and use -- are the principal resource for funding the state highway program, Alaska's Constitution precludes strict dedication of any tax. However a few other states and the Canadian Provinces have a situation similar to Alaska, and in these cases such taxes are informally dedicated to the state highway program. Officials and the public have recognized that the highway program has such far reaching economic and social implications that a secure funding source is important. It is also recognized that state and provincial highway programs benefit, in terms of effective and efficient use of resources, when transportation officials have reasonable assurance of funds over at least a five year period.

The success of the nation's highway program over the past 70 years is primarily attributable to the fact that it has been supported by user-based funds. Alaska's highway and airport progress has been based on a readily predictable and reasonably stable supply of funds stemming from the Federal Aid Highway and Federal Aviation Programs which are both funded by federal user taxes.

5c. Raising Motor Fuel Taxes and Other Highway User Fees or Dedication of Other Taxes. In order to completely fund the state highway program from state highway user taxes, it will be necessary to raise the existing taxes and fees. New highway user taxes and fees, such as use or sales taxes on motor vehicle transfers, not presently in existence in Alaska is another possibility. Dedication of a portion of mineral severance taxes to the State Highway Program might also be considered. Determining how much of an increase or what new taxes should be employed is beyond the scope of this review, but should be included in the fiscal analysis recommended.

In comparison with their counterparts in the rest of the nation, Alaska's truckers and other motorists currently pay low taxes and fees for truck and automobile use.

For heavy trucks, Alaska ranks lowest in the nation with a tax load of $1,598 per year or 2.0 cents per vehicle-mile of heavy truck travel. This compares to Washington which collects over three times as much ($4,990 per truck, and 6.2 cents per vehicle-mile of heavy truck travel). The highest taxer of heavy trucks is Arizona which collects $11,012 per truck or 13.8 cents per vehicle-mile of heavy truck travel.

For automobiles, Alaska ranks 37th among the states with a $122 tax per average automobile or 1.0 cents per vehicle-mile of travel. The highest in the nation is Rhode Island with an annual tax load of $731 per automobile or 5.9 cents per vehicle-mile of automobile travel (six times the Alaska load). The lowest is New York at $73 per year and 0.6 cents per vehicle-mile of travel. Washington's annual tax on automobiles is $310 per vehicle or 2.5 cents per vehicle-mile of auto travel.

5d. Keeping Trucking And Railroad Industries Competitive. An increase in highway user taxes will increase trucking industry costs, while railroad costs remain unchanged. The existing economic balance between the trucking and railroad industries will have changed. To retain current levels of profitability and service, truck rates may have to increase which may result in loss of business. And there are other consequences that have to be considered in any such tax change. Therefore it is recommended that the change in highway user taxes be preceded by economic analyses of highway/railroad competition and

proposed initiatives that would retain the economic viability of the two competing modes after the tax change.

6. Planning To Upgrade The Existing State Highway System. The recently adopted and implemented process of annually updating the Six Year Capital Improvement Program in close alignment with estimates of federal funds should be maintained as a fundamental tool in managing ADOT&PF capital improvements.
It is also suggested that a state highway surface restoration program be specified with a goal of resurfacing a prescribed number of state highway miles each year - a number that is consistent with the need to upgrade, or at least retain, the current level of rideability, skid resistance and pavement structural integrity. Similar goals as well as schedules of accomplishment should be set to complete the modernization of each of the functional classes of state highways.

7. Planning State Highway System Expansion. Most of Alaska's Interstate Highways, Other Principal Highways, Minor Arterials and Major Collector Highways that link together Alaska's economic centers were built over the past 50 years. It is realistic to forecast that additions will be made to this System over the next 50 years as Alaska expands its economic base. Now is the time to set an overall plan for expansion of the State Highway System and to establish priorities of need for each planned route. With such a plan (or future updated versions of the plan) and link-by-link estimates of cost, Alaska citizens can then decide the time schedule for building each and the means for its financing.
Not only should the plan address Alaska's mineral, forest and recreational resources but also Alaska's strategic military and defense situation. Because of the uncertainty about the amount of traffic that would be generated by many such routes, the use of special low cost design standards should be explored for the initial primitive routes.

8. Setting Statewide Highway Improvement Priorities. At present state highway improvement priorities are based on regional priorities after geographic apportionment of funds. As a result, some funded improvements are of low statewide significance and some

projects of high statewide importance are not being funded. A statewide priority system, developed in concert with the proposed engineering appraisal of highway deficiencies, will aid in setting equitable geographic apportionment of funds and funding the most urgently needed improvements.

9. Recapitalizing the State Equipment Fleet. The ADOT&PF Program includes maintaining a $118 million, 6,500-vehicle equipment fleet for ADOT&PF and 18 other state agencies. A Highway Equipment Working Capital Fund was established by law in 1960 as the accounting mechanism for deposit of lease funds and the appropriation of money for servicing the equipment and replacing worn or obsolete pieces. However, as the result of transfers out of the Fund to meet other State of Alaska needs and a FY 1987 reduction in lease fees to help agencies with budget constraints, the HEWCF was reduced to the point where the 1986 and 1987 schedules of equipment replacement could not be met. As a result state agencies are having to cope with the problem of maintaining equipment that should have been replaced or making do without those pieces that cannot be kept operable.
To meet the problem, the ADOT&PF raised lease rates in FY 1988 and appointed a task group to review the needs of the State Equipment Fleet and to recommend other necessary actions.

10. Establishing A Motor Carrier Advisory Council. There are a number of important issues that face government officials and the trucking industry. Sizes and weights, industrial use highways, safety, taxation and railroad competition are a few of the current issues that need to be discussed in open forums. To gain greater cooperation and better understanding of the issues and positions of the various interests, it is recommended that the ADOT&PF establish a Motor Carrier Advisory Council representing truckers, shippers, and the state agencies involved with truck regulation, and that recommendations be made to the ADOT&PF Commissioner. It is suggested that a trucking industry leader act as chairman of the Council but with ADOT&PF staff support in setting agendas.

11. Retaining A Strong Research Effort Program. By the nature of Alaska's climate and topography, the ADOT&PF has had to maintain a strong research program aimed at finding the most economical and effective methods of building and maintaining highways, as well as airports, harbors, ferries and public buildings. Finding the funds to keep a strong research program is vital to the ADOT&PF Program. Likewise, it is essential that important research results be brought to the attention of design, maintenance and construction staff.

III. Other Recommendations

The following are a list of other suggestions to enhance the efficiency and effectiveness of administering the ADOT&PF program:

1. Strengthening the Headquarters Function. The technical capability of the ADOT&PF headquarters staff should be augmented to strengthen its role of providing policy direction, improve the monitoring of Program expenditures, provide better support for the diverse elements of the ADOT&PF Program, better monitor the condition and performance of the state transportation systems, better plan for transportation systems that will promote safe and efficient travel as well as economic development, establish both maintenance management and pavement management systems and better inform the public of Alaska's transportation progress and problems.
This recommendation is not to be construed as a criticism of decentralized management of Alaska's Transportation Program but as a necessary augmentation that will provide resources to better coordinate the decentralized management team.

2. Improving Accountability. The ADOT&PF public information program should be expanded to better inform the public on:
a) how tax resources are being spent overall as well as according to mode,
b) on progress or lack of progress on meeting goals and,
c) on special problems that need to be addressed.

At the minimum, comprehensive ADOT&PF annual, or biennial, reports should be prepared and published.

In 1987 the Department placed heavy emphasis on accounting for previous and current expenditures on capital projects. A training program aimed at improving staff understanding and use of the Alaska State Accounting System was also implemented. Nevertheless, continued effort is needed to resolve the capital project accounting problem.

3. Enhancing Productivity. With one out of every three ADOT&PF Program dollars devoted to personnel services, the ADOT&PF should continue to give high priority to reviewing and analyzing staff productivity, and a comprehensive plan of manpower needs should be developed. Furthermore, guidelines need to be established on the use of consultants based on comparative analyses of public/private costs.

4. Improving Staff Morale. The ADOT&PF should continue to seek to bring more middle management and other employees into the decision making process. The formation of task committees to make a full evaluation of internal needs and to study specific problems is a good method of gaining greater employee appreciation of the Program, a greater sense of involvement and more pride of accomplishment.

5. Upgrading the ADOT&PF Personnel Function. The ADOT&PF needs to establish a career guidance program aimed at retaining key leaders and preparing others to step up to leadership assignments. The personnel section should become the key resource in meeting the needs of employees while at the same time assisting management to place the best qualified person in each management position.

6. Coordinating Maintenance Management. There is a need for a review of the current methods of managing the maintenance and operations program. Revisions should be made where it is found necessary to improve on the reporting of information needed to set program goals and to monitor progress toward meeting such goals. An Alaska highway and airport maintenance manual should be developed to enhance maintenance efficiency and effectiveness.

CONTENTS

INTRODUCTION, BACKGROUND AND ACKNOWLEDGEMENTS

The Review of the Alaska Highway Program was performed under contract with the Alaska Legislature. Most of the investigative work was accomplished from January through September 1987.

This is the seventh in a series of highway program reviews that the Highway Users Federation has accomplished over the 1984 through 1987 period. Prior to the Alaska Review, the highway programs of Tennessee (1984), Idaho (1984-1985), Indiana (1985), Mississippi (1985-1986), Nebraska (1986-1987), and Missouri (1987) were reviewed and reports submitted. Mr. Marshall Reed, PE, the Federation's Manager of State Transportation Studies has directed each of the efforts. Mr. Antony Petty managed the Alaska report production, and Ms. Nancy Calvin assisted with report graphics.

Advisory Council. A Highway Program Review Advisory Council was established to assist in the Review. Its members, all Alaskans, are listed on the second page of this report. All have close ties to the Alaska Highway Program.

The Council met five times during the course of the Review to help establish the most important issues to be pursued and to counsel the Federation on the findings.

The Highway Users Federation is indebted to the Council members for their assistance. It was observed that while each member has an economic stake in the Alaska Highway Program, each displayed an overriding interest in pursueing the best course for Alaskans and the Alaska economy.

ADOT&PF Cooperation. In each of the reviews, the work was carried out cooperatively with the state highway or transportation department. The ADOT&PF found office space for the Project Director within the headquarters' building, and Ms. Ginger Johnson (the ADOT&PF Public Information Officer) was appointed Project Liaison Officer. All of the Alaska data used in the Review came from the ADOT&PF and other Alaska agencies.

Highway Users Federation. The Highway Users Federation is a national business league made up of those corporations and associations that have an interest in safe and efficient highway transportation. The organization was first established in 1932, and it has been instrumental over the years championing the many aspects of our nation's highway programs that increase highway efficiency and safety at reasonable costs.

Highway Users Federation of Alaska. The Highway Users Federation of Alaska is an affiliate of the national organization, and it focuses on Alaska highway and traffic safety issues. All members are Alaska citizens. They represent such groups as the Alaska Trucking Association, the Alaska Chapter of the Associated General Contractors and Alaska's oil industry. It was the HUFA that brought the highway program review process to the attention of the Alaska House Transportation Committee, and that Committee sponsored the legislation required to establish the agreement for the $60,000 Alaska Highway Program Review.

Review Process. The object of the highway program review process is to evaluate the effectiveness of each state's total highway program in meeting its citizens needs for safety, service and cost effective transportation now and in the future.

Strengths of the current program and areas which can be improved are identified. Current assignments of responsibilities and resources between the state and local governments are analyzed as are the processes by which decisions are made in the planning, construction, maintenance and operation of the state highway system.

While much of the Review entailed interviews of key ADOT&PF officials in Juneau, trips were made -- via the State Highway System, the Alaska Marine Highway System and both commercial and chartered aircraft -- to most of Alaska's major cities and many of the smaller communities. Officials in each ADOT&PF Region were contacted as well as the Directors of the Alaska Marine Highway System and the International Airports.

Anchorage officials were interviewed to gain their perspective on municipal street and highway progress and problems. Also many remote communities were visited for first hand impressions on transportation operations and System needs.

The ADOT&PF maintenance foremen in many of the maintenance stations were contacted to determine their impressions of needs versus available resources. Over half of the State Highway System was driven.

Based on data summaries, comparisons with national statistics, visual impressions, interview comments, knowledge of other state highway programs and Advisory Council discussions, the major findings and recommendations were formulated and refined. The ADOT&PF headquarters' staff, as well as the Region and Division staffs, reviewed and commented on both the major findings and recommendations and the facts and figures presented in preliminary drafts of this final report.

In general, ADOT&PF officials and employees displayed an extraordinary amount of interest in the interviews and findings. The Highway Users Federation considered all comments in formulating this final report.

We hope that our perspectives on the Alaska Highway Program wil be useful as you plan for the future.

CHAPTER I

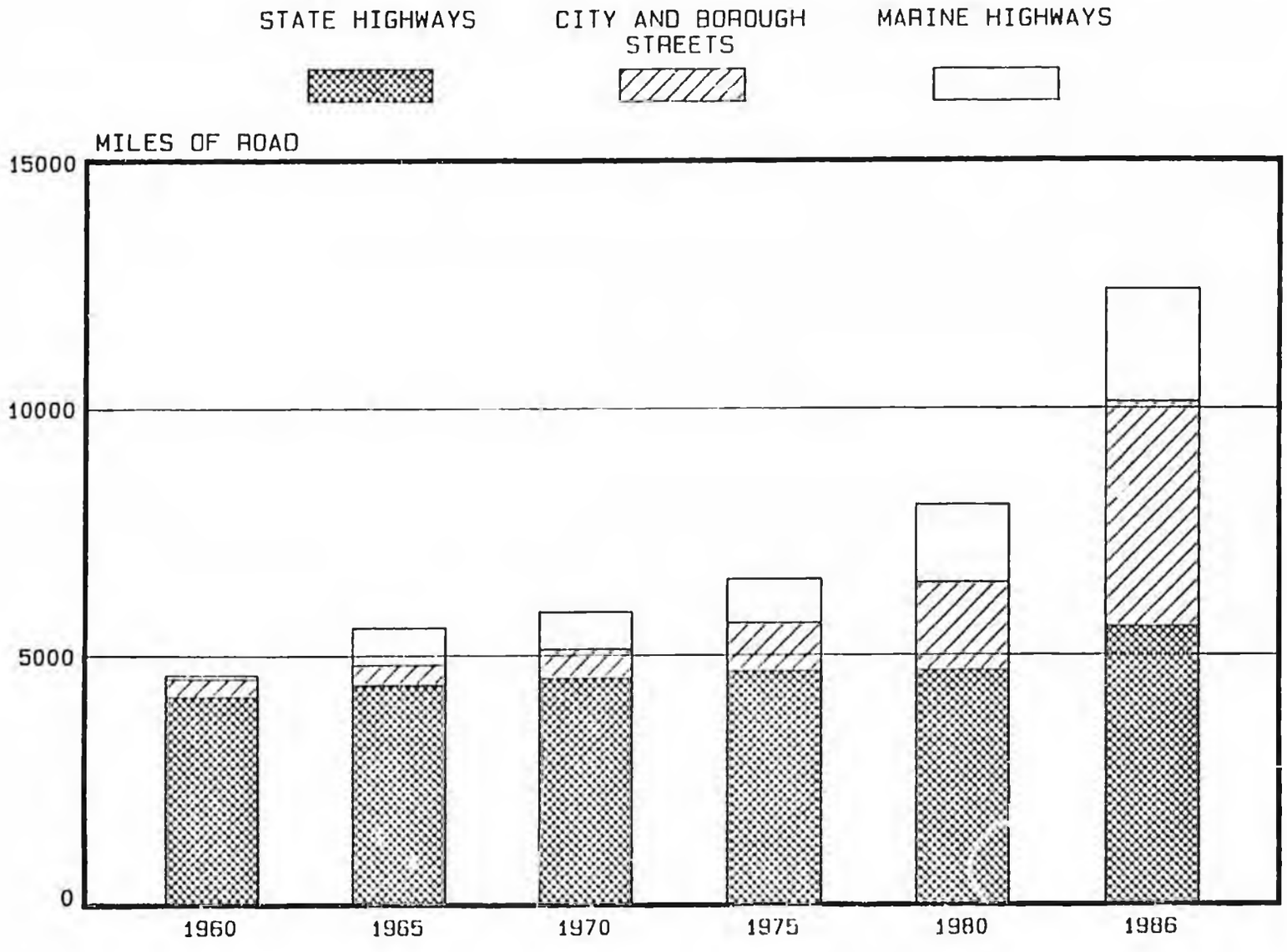
TRANSPORTATION FINANCE & RESPONSIBILITIES

CHAPTER I

TRANSPORTATION FINANCE AND RESPONSIBILITIES

This Chapter includes a Review of the Role of the State, Cities and Boroughs in Sharing Responsibilities for Administering, Maintaining, Operating and Improving Alaska's Transportation System as well as a Review of the Funds Available to Meet These Responsibilities.

MILES OF ROAD



NOTE: EXCLUDING FEDERALLY OWNED ROADS.

Over 10,000 Miles Of Road. Discounting the 224,000 miles of road that are under the direct control of federal agencies, there are 3.6 million miles of land service roads in the United States. Alaska's 12,370 miles is less than three one hundreths of a percent. Yet Alaska's land area is 16 percent of the nations total. Only Delaware, Hawaii and Rhode Island have fewer miles of road.

Marine Highway Routes Are State Highways. Including the ferry routes of the Marine Highway System, there are 7,824 miles of highway that are considered state highways. These routes are administered, operated, maintained and improved by the Alaska Department of Transportation and Public Facilities.

Since 1960 the state highway system (including Marine Highway System routes) has doubled in extent. The most significant change is the expansion of the Marine Highway System, due largely to the shift in the status of service to the Aleutian Chain in 1981 from testing and demonstration to permanently, scheduled service.

However during this 27 year period, the 416 mile Dalton Highway was built by private interests and added to the State Highway System. Also during this time, the 325 mile Parks Highway was completed to provide better highway service between Alaska's two largest centers, Anchorage and Fairbanks. Other shorter links of state highways have also been added.

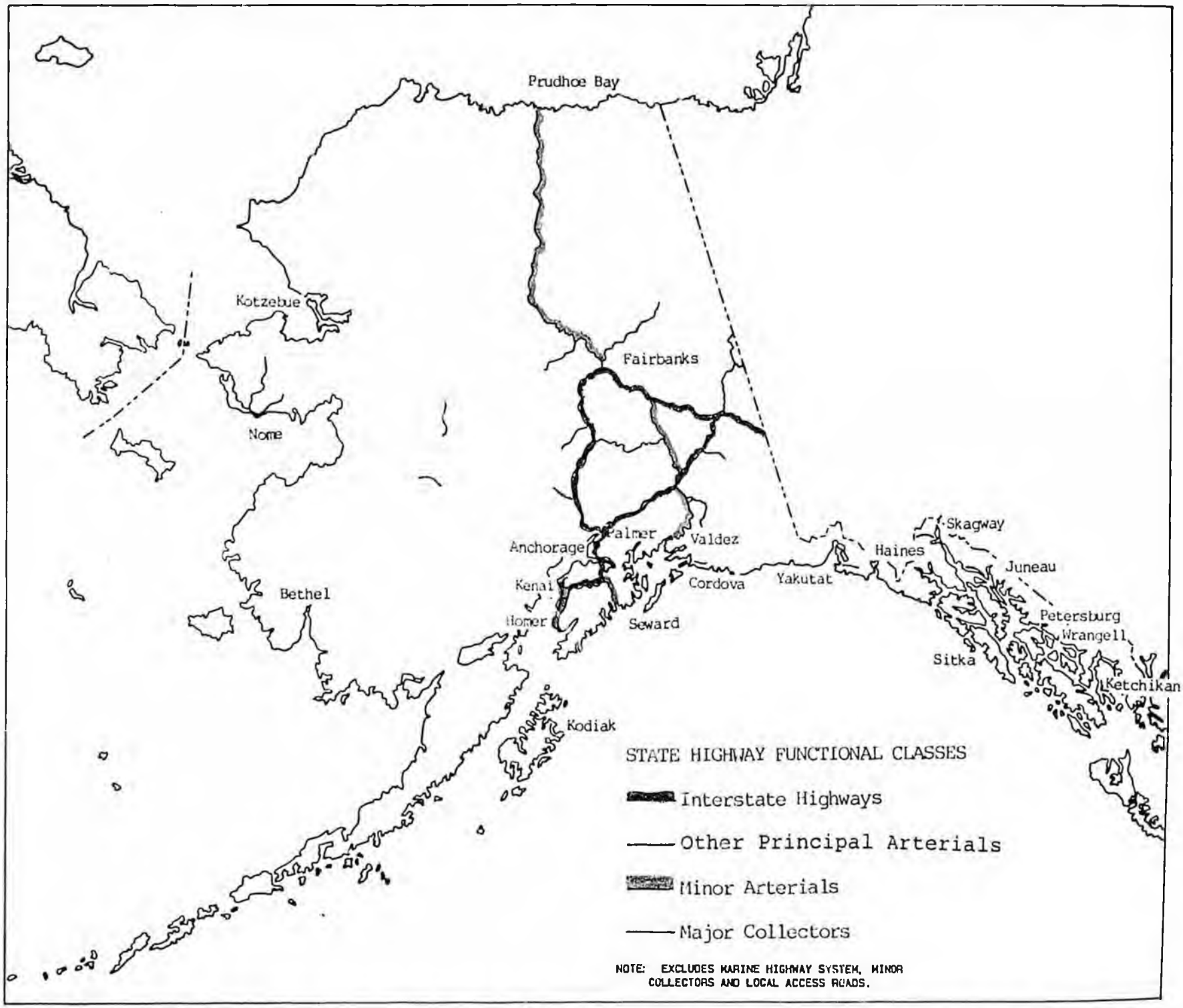
Alaska Unique. The truly striking transportation distinction between Alaska and the rest of the nation is that the majority of Alaska's communities of over 250 people are not connected by land via the State Highway System. The remoteness of some places, the water barriers and the difficulty of traversing the terrain have made such connections either impossible or inordinately expensive. Alaska has therefore relied on a system of ferry routes with nine ships capable of conveying both passengers and vehicles to some communities and to an extensive system of airports that allows air service to all other communities of over 30 people.

The Alaska Railroad. Alaska also has a 480 mile railroad system that is vitally important to the shipment of general commodities as well as mineral and forest products over the Seward to Fairbanks mainline. A spur to Whittier connects the main line with the Marine Highway System on Prince William Sound and to barges that service the "lower 48 states"..

In 1982, the State of Alaska purchased the railroad line, equipment and property. The Alaska Railroad Corporation operates the freight and passenger service. While the railroad is independent of the ADOT&PF, the ADOT&PF Commissioner is a member of the Alaska Railroad Company's Board of Directors.

Cities And Boroughs Also Have Road Responsibilities. In those parts of Alaska that have a population base and a system of local government (city or borough), the governmental entity can accept responsibility for some roads. While the ADOT&PF is not required to take into the State Highway System those roads that cities and boroughs will not accept, typically the ADOT&PF does take on this responsibility.

Leap In City And Borough Roads. Note that the chart indicates a significant growth in city and borough road and street mileage over the 1960 to 1986 period. Some of the increase is related to subdivision street construction by developers and some is related to state appropriations for specified roads. However some of the increase is due to better accounting by the cities and boroughs for road miles, since 1980 state legislation greatly increased the state revenue sharing funds that are based on miles of road.


Prudhoe Bay
Kotzebue
Fairbanks
Nome
Palmer
Anchorage
Valdez
Skagway
Haines
Juneau
Kenai
Cordova
Yakutat
Bethel
Homer
Seward
Petersburg
Wrangell
Sitka
Ketchikan
Kodiak
STATE HIGHWAY FUNCTIONAL CLASSES
Interstate Highways
Other Principal Arterials
Minor Arterials
Major Collectors
NOTE: EXCLUDES MARINE HIGHWAY SYSTEM, MINOR COLLECTORS AND LOCAL ACCESS ROADS.

FUNCTIONAL CLASSES OF RURAL ROADS

Functional Highway Classification - A Basis For Management Decisions. Most state highway agencies classify their state highways based on their traffic service functions. The resulting hierarchy gives managers a tool for decision-making regarding the distribution of scarce resources. Design standards, improvement priorities and maintenance standards are all related to the functional classification of roads. The map shows the functional designation of Alaska's major rural roads and their extensions through urban areas.

Interstate Highways, The Most Important Arteries. Alaska's most important rural roads are those designated to be Interstate Highways (1,089 miles). These connect Alaska's largest centers – Anchorage and Fairbanks – with each other and to the main route of land travel into Alaska. An Interstate Highway Spur also connects Anchorage with the Kenai Peninsula.

As the chart at right shows, the average mile of Interstate Highway is traversed by 1,750 vehicles per day. Alaska's Interstate Highway System's average traffic density is only one seventh the 12,900 vehicles per day average traffic density on all rural Interstate Highways in the nation. Due to this lower traffic density, Alaska's rural Interstate Highways are built to two-lane design standards rather than the four-lane, divided highway standards found in other states.

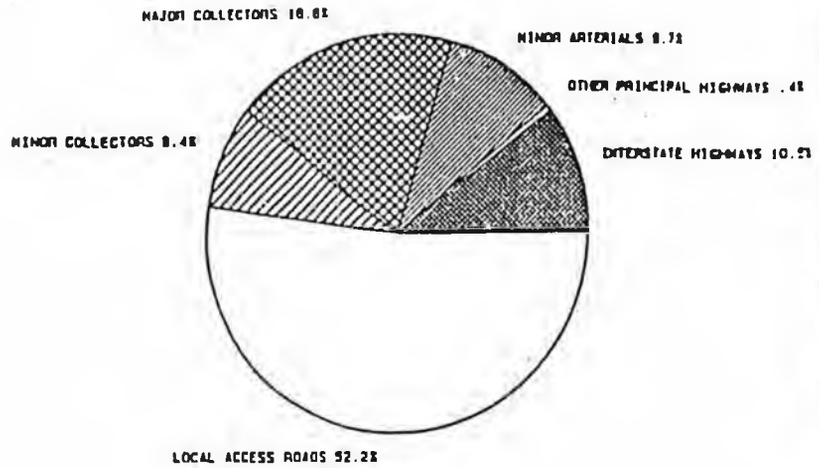
Other Principal Arterials Next In Importance. In terms of traffic service, Alaska's Other Principal Arterials are next in importance. The Egan Expressway in Juneau and the Klondike and Haines Cut-Off Highways are examples of Other Principal Arterials. They are important because they connect Haines, Skagway and Juneau to the Alcan Highway and to the Alaska Marine Highway System.

Minor Arterials Expand The System. As seen, the Minor Arterials link other important Alaska centers with the Interstate Highway System.

Major and Minor Collectors. the Major and Minor Collector Highways further expand the system. All remaining rural roads that serve long-distance travel are designated as Collector Highways. However not all Collectors are state highways, as some are under the jurisdiction of Alaska's cities and boroughs. The Major Collector classification is given to the more heavily travelled Collectors.

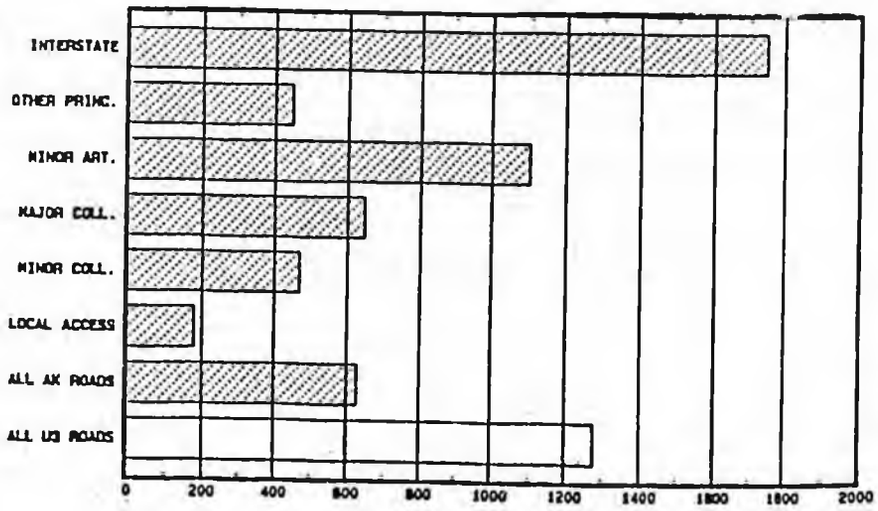
Local Access Roads. The remaining rural roads (not shown on the map) that serve individual or small groups of houses, camps or farms are termed local access. These roads function predominantly as a means of access to land, rather than as a means to convey people, products and raw materials through an area. Most such roads are in the Matinuska-Susitna and Kenai Boroughs.

MILES

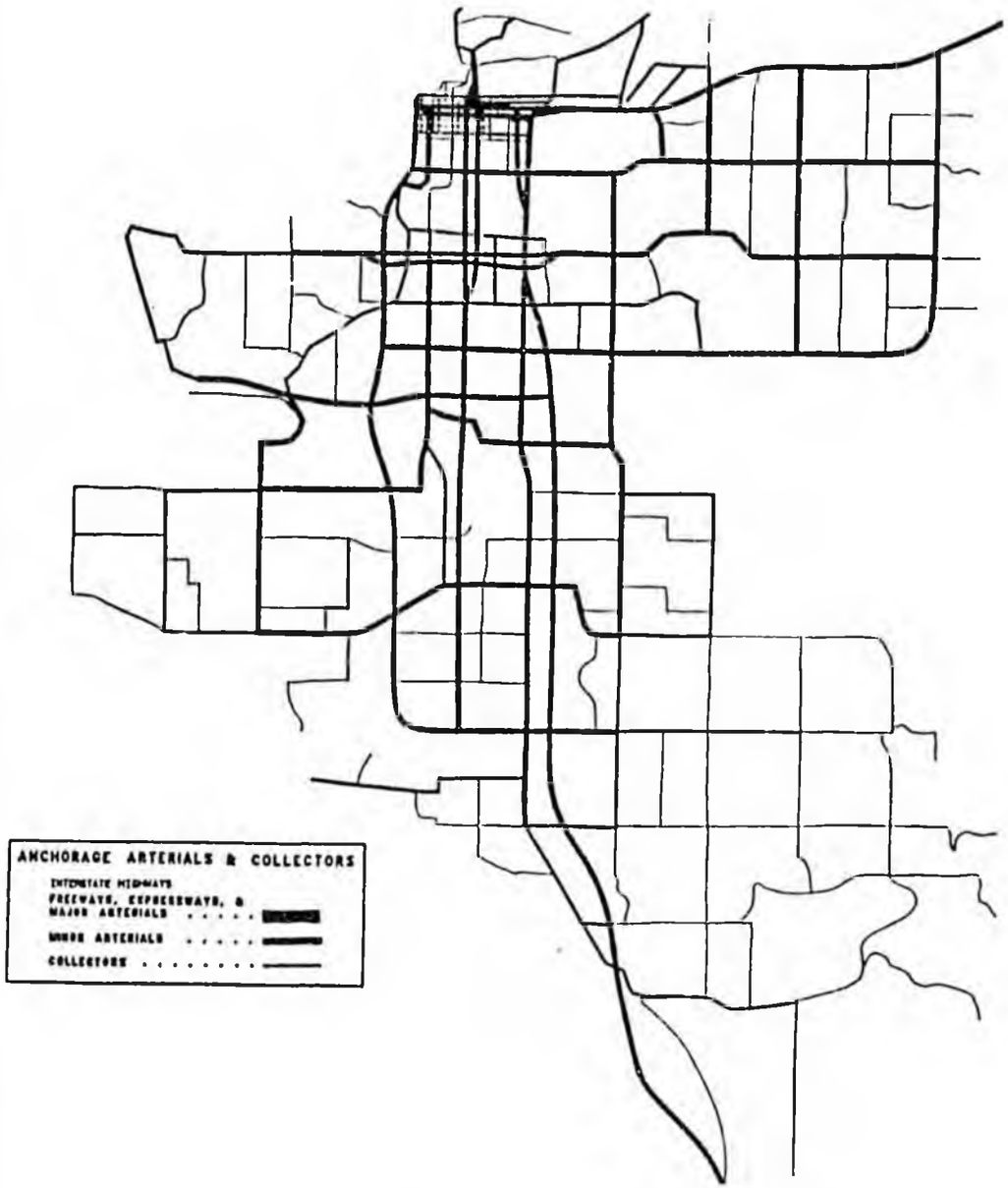


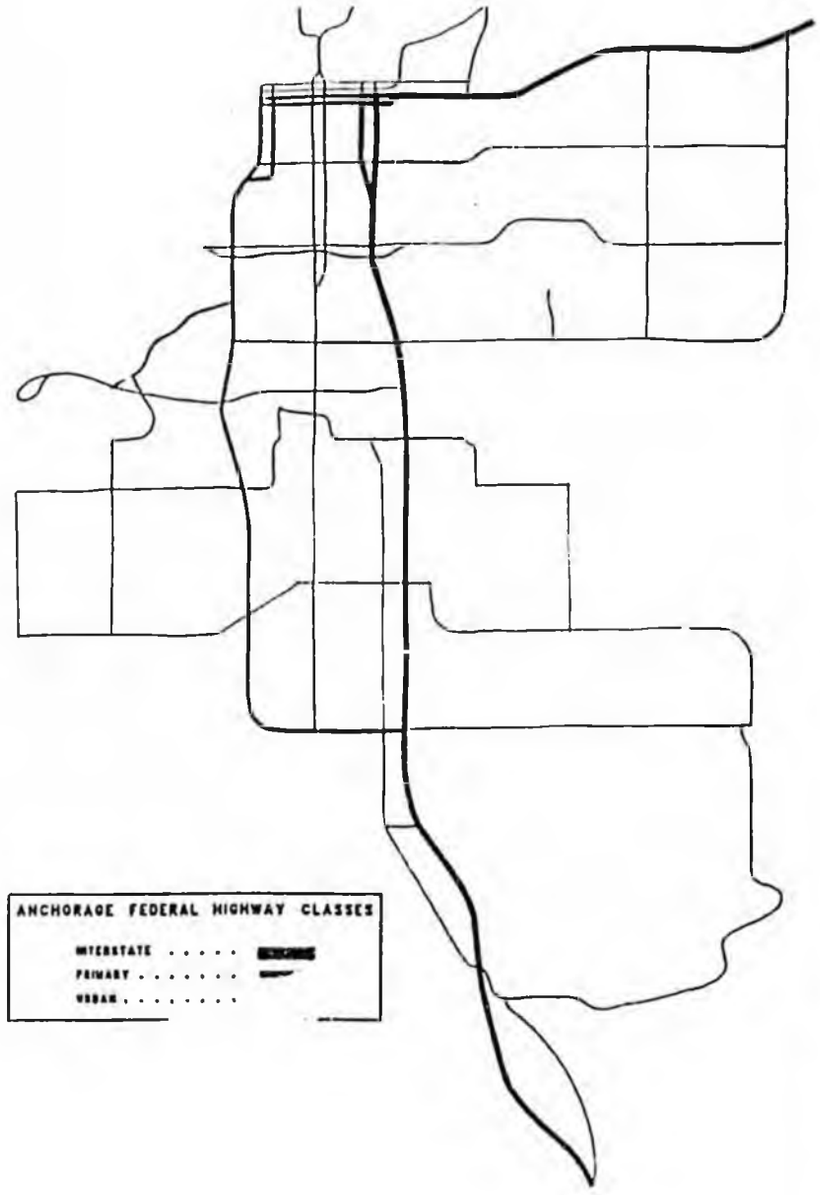
TOTAL: 9,980 MILES

TRAFFIC DENSITY



ANCHORAGE ROAD CLASSIFICATIONS





Functional Highway Classification Also An Urban Management Tool. The maps show three types of Anchorage road classifications. In the upper left are the functional classes agreed upon cooperatively by ADOT&PF and Anchorage officials. The designated Federal Aid Highway Systems are shown in the upper right. And the map on the bottom right shows the designated state highways.

Not shown is the street and highway maintenance scheme agreed upon by ADOT&PF and Anchorage officials in which some state highways are maintained by the Municipality of Anchorage and some municipal streets are maintained by the ADOT&PF. Also not shown are the 780 miles of Local Access Streets in the Anchorage urbanized area.

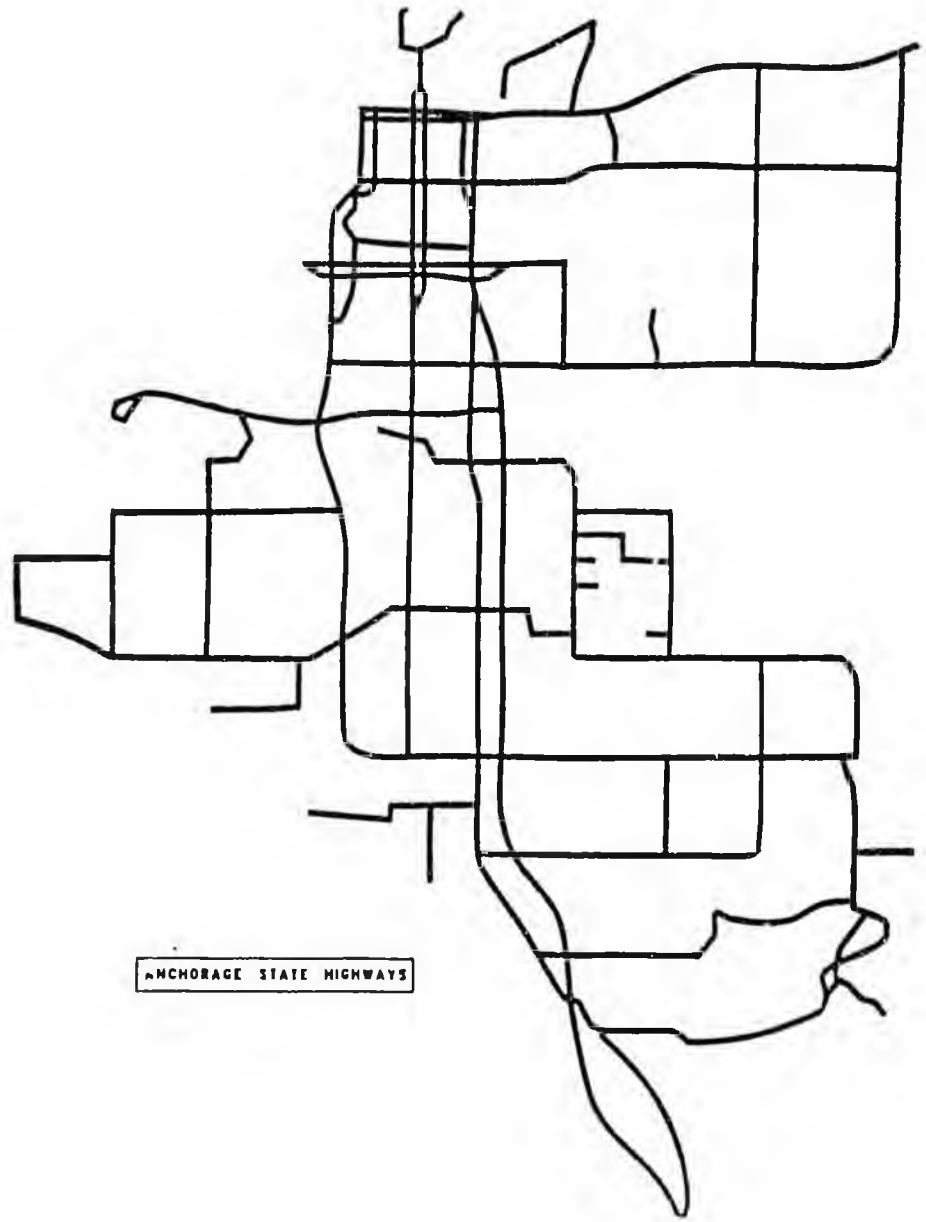
The below table indicates the importance of each functional class of Anchorage streets and highways. Of particular significance is the 88 miles of Interstate Highways, Freeways, Expressways and Major Arterials (9 percent of the miles) which serve almost two thirds (65.4 percent) of Anchorage's daily motor vehicle travel.

Functional Classes	Miles	% Mi.	% Travel	Traffic Density*
Interstate, Freeways, Expressways and Major Arterials	88	9.0	65.4	25,400
Minor Arterials	29	3.0	11.4	13,400
Collectors	80	8.2	10.1	4,300
Local Access	780	79.8	13.1	600
	977	100	100	

* Average daily vehicles per road mile.

The designated Federal Aid Highway System routes – Interstate, Primary and Urban – were adopted based on the traffic service function. These are the routes eligible for improvement with Federal Aid Highway Program funds. I-3

High Proportion of State Highways. There are 176 miles of state highway in the Municipality of Anchorage and 801 miles of either municipal street or streets that are "service area maintained". By agreement with the Municipality, the service areas levy road taxes and maintain all non-state highways within their area.



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At 16 percent of the road miles, the state highway system serving Anchorage is more extensive than the average urban state highway network (13 percent) in the nation. (And the national statistics are biased on the high side by high proportions of state highways in the cities of several Eastern states.) Furthermore in Alaska's urban areas, many streets and roads that serve a collector or minor arterial function are state highways.

As a result state resources must be used for the operation, maintenance and improvement of routes with only a minor traffic service function. Routes of greater statewide traffic service significance–in terms of their function in either connecting communities or distributing statewide traffic to important economic centers within urban areas–must compete for scarce state resources with the urban collector and minor arterial routes of low statewide significance. Compounding the problem is the fact that ADOT&PF officials must unnecessarily deal with urban issues such as land use and traffic control that are more properly a local responsibility.

Joint Action Needed. While the ADOT&PF has authority to transfer responsibility for state highways to local government, this is a very difficult problem due to the local government cost implications. Therefore, to resolve the issue of urban highways, it is recommended that the ADOT&PF and the Legislature first establish a state highway jurisdiction policy in concert with municipal officials and then make the changes that satisfy the policy.

Use The Functional Classification Plan. The most widely accepted basis for redefinition of state highways is the functional classification hierarchy of streets and highways. This is used to test alternative state/local jurisdictional plans.

Suggested Alternatives. One obvious alternative is to place only urban extensions of state highways on the urban state highway network. A second is to add to the first by including all Freeways and Expressways. The third alternative would be the addition of Major Arterials.

Financial Resources Are An Important Consideration. To ease the burden of a shift in urban road responsibility, there are financial and management arrangements that can be established.

One such arrangement is the Urban Arterial Board in the State of Washington. Only 6.7 percent of the urban road mileage in Washington is designated as state highway. Therefore the Washington Legislature established an Urban Arterial Fund and an Urban Arterial Board in 1968 to assist municipalities on a fund matching basis to make improvements to those designated urban arterials that are not state highways. It is recommended that Washington's success in limiting urban state highway responsibilities to major arterials and the success of the Urban Arterial Board and the Urban Arterial Fund in meeting Washington's urban arterial needs be studied for possible application in Alaska.

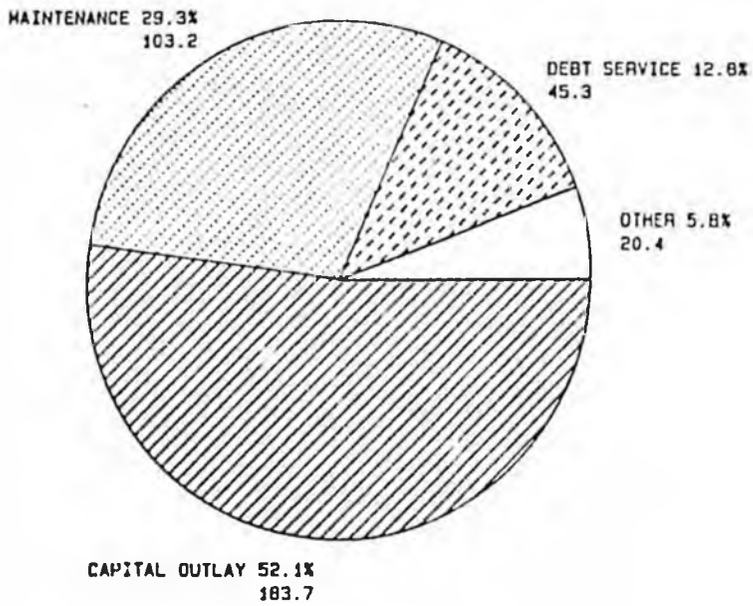
First Steps Taken. The need for a clear policy on road control is recognized by Alaska officials. In 1987 the Alaska Legislature set forth the following directive to begin dealing with the issue:

> "IT IS THE INTENT OF THE LEGISLATURE THAT DOT/PF: 1) ESTABLISH A ROAD RESPONSIBILITY TASK FORCE COMPRISED OF REPRESENTATIVES OF DOT/PF, LOCAL GOVERNMENTS, UNORGANIZED AREAS, AND USER GROUPS. THE TASK FORCE IS TO REVIEW THE FEASIBILITY OF TRANSFERRING THE RESPONSIBILITY OF DIRECT MAINTENANCE ON CERTAIN ROUTES FROM THE STATE TO LOCAL GOVERNMENTS, AND TO EXAMINE REASONABLE AND EQUITABLE FUNDING SOURCES FOR MAINTENANCE ACTIVITIES, INCLUDING A REVIEW OF THE MOTOR FUEL TAX AND OF THE EXISTING ROAD SERVICE ACCOUNT IN THE STATE' REVENUE SHARING PROGRAM. THE TASK FORCE SHALL ALSO STUDY THE ISSUES OF ROAD OWNERSHIP, LIABILITY, AND THE TRANSFER OF EQUIPMENT AND EMPLOYEES..."

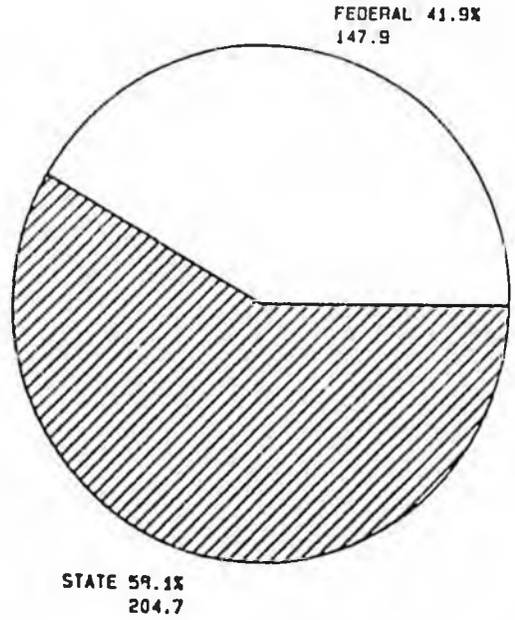
In September 1987, the ADOT&PF selected a facilitator to assist the Commissioner in responding to the mandate. In November, the Task Force was named and a first meeting planned.

1986 STATE HIGHWAY PROGRAM

EXPENDITURES



RECEIPTS



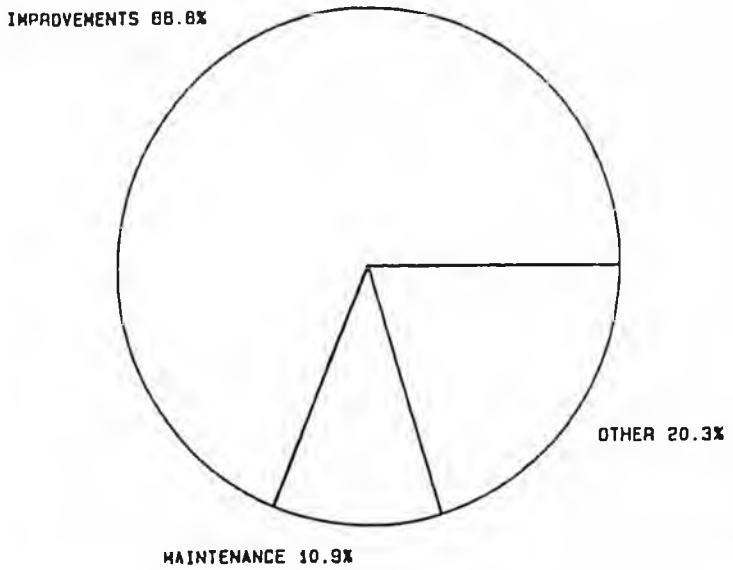
TOTAL: $352.6 MILLION

Highway Expenses Five Times The National Average. For 1986 (calendar year) the ADOT&PF reported to the Federal Highway Administration that it spent $353 million on state highway administration, maintenance, operations and improvement. This is about $700 per capita and compares with a $140 per capita national average of expenditure on state highways.

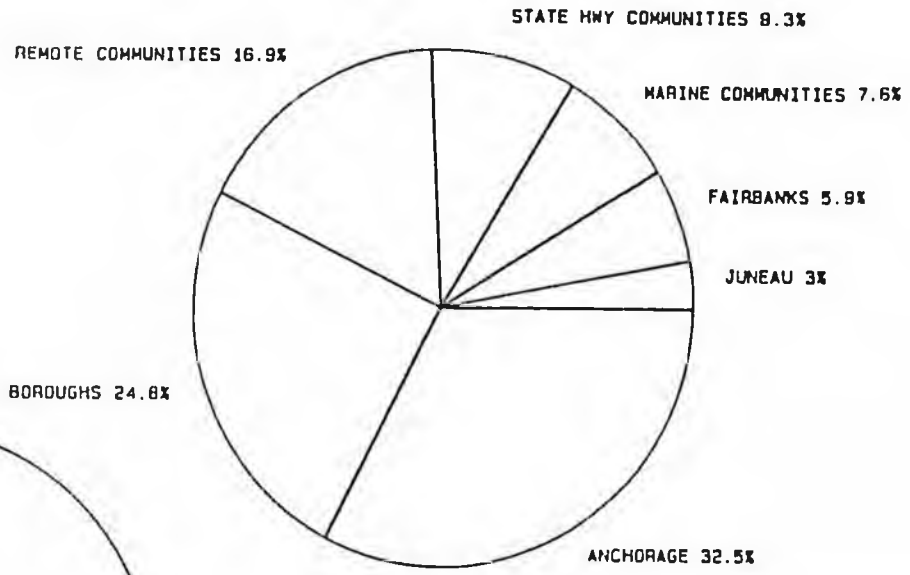
Marine Highway System Costs Included. Included are all 1986 capital as well as maintenance and operations expenditures for both land service state highways and the Marine Highway System. Also included are $45.3 million to service the state debt on borrowing for previous state highway system improvements. Law enforcement and safety expenditures amounting to $11.4 million are included in the "other" category of expenditure as well as $4.7 million for highway program administration and $4.2 million for highway planning and research. Finally in the other category is the 1986 expenditure of $4.3 million for Local Service Roads and Trails, which is a portion of the State Highway Program (administered by the ADOT&PF) but directed toward local road betterments.

1985 LOCAL ROAD & STREET PROGRAMS

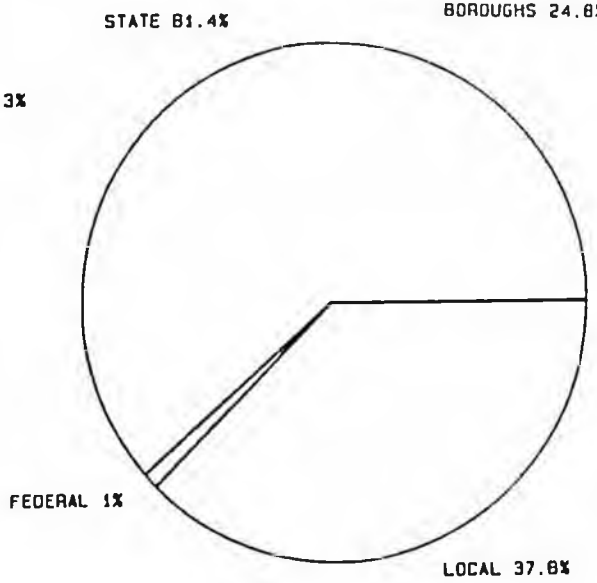
SPENDING CATEGORIES



UNITS OF GOVERNMENT



SOURCE OF FUNDS



TOTAL: $237.8 MILLION

Total Road Spending High. Alaskans raised and spent $237.8 million in 1985 (calendar year) for upkeep and improvement of the 3,992 miles of local streets and roads. For a population base of only 536,000 persons, this is a very significant level of expenditure. When combined with the 1986 state highway program of expenditure, it is estimated that total 1986 highway, street and road spending was about $590 million or $1,090 per capita, about four times the national average ($260 per capita).

Important ADOT&PF Factfinding Function. To assist the Office of the Governor and the Legislature and to comply with federal mandates, the ADOT&PF annually surveys, compiles and reports on local road and street spending. The ADOT&PF also verifies annually the current mileage of local roads and streets and this provides the base for state apportioning of road revenue sharing funds. 1985 information is the latest available on local road finance.

Road Revenue Sharing Funds. When the Legislature fully funds this program, each community receives a base of $2,500 per mile of conventional road and $1,500 for each mile of ice roads. However these amounts are adjusted upwards to accomodate higher costs in many areas of the state.

While communities are required to use only 20 percent of the funds for road purposes, ADOT&PF studies show that a majority of the road revenue sharing funds are actually used for road purposes.. Only that portion of the road revenue sharing funds that were actually devoted to municipal road programs are reported in the annual ADOT&PF surveys of municipal road expenditures.

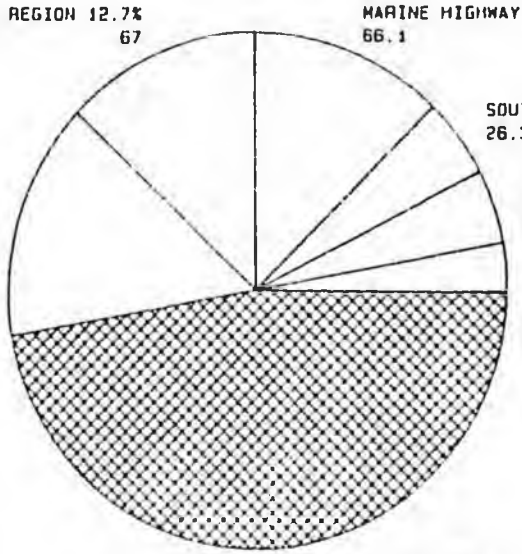
Special Terminology Used. Note the special terminology used in the "Units of Government" chart. "State Highway Communities" refers to all cities (15) directly served by the land service State Highway System, excluding Anchorage and Fairbanks. "Marine Communities" are the 20 cities, excluding Juneau, that are served by the Marine Highway System but not connected to the land service State Highway System. The "Remote Communities" are the remaining incorporated or unincorporated places not served by state highways or ferries.

State Funds Rising. In 1985, state grants for local roads amounted to $145 million, up from $88.4 million in 1984. This includes the portion of road revenue sharing funds that were used in road upkeep and other state funds appropriated for specific local road improvements. On the average the 1985 state contribution toward local road and street upkeep amounted to $270 per capita, but ranged from $120 per capita in the seven boroughs to $740 per capita in the Remote Communities.

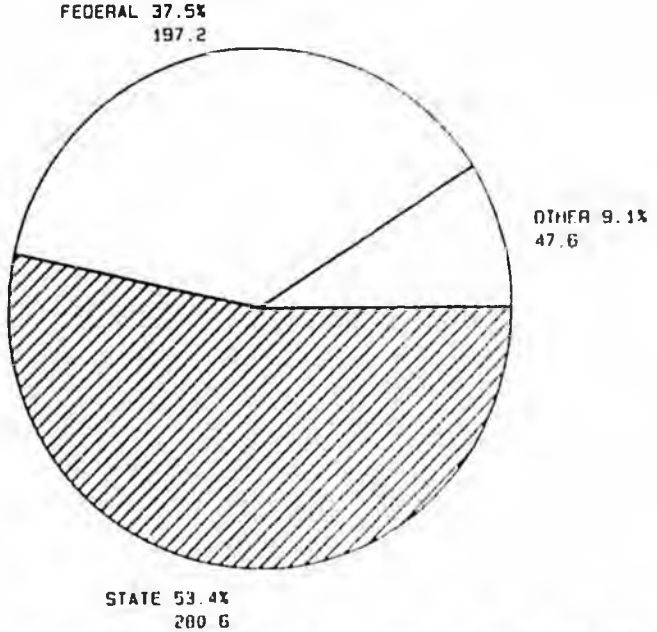
Fairbanks High in 1985 State Road Receipts. Based on miles of local road in each community, Fairbanks led with $132,000 per mile in state road receipts, while at the other extreme, the seven boroughs received an average of $13,000 per mile. Anchorage received $50,500 per mile. However in reviewing municipal road receipts and expenditures, it should be recognized that the year-to-year fluctuations are large and closely related to specific road improvements authorized by the Legislature.

1986 ADOT&PF EXPENDITURES

AREA

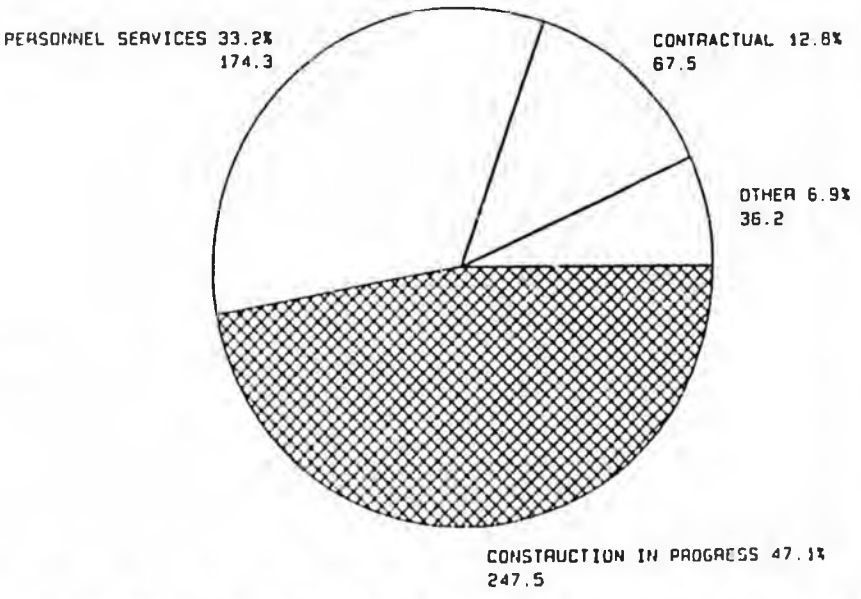


FUND SOURCES



TOTAL: $525.4 MILLION

EXPENDITURE OBJECTS



ADOT&PF Spent $525.4 Million In 1986. The charts above and at right are five perspectives on Alaska Department of Transportation and Public Facilities expenditures in fiscal year 1986. The ADOT&PF is not only responsible for State Highway System administration, operations, maintenance and improvement, but also owns, operates and maintains the nine-ship Marine Highway System, two International Airports, 215 other airports, 45 seaplane floats, harbor facilities, the state equipment fleet and almost 400 state owned buildings.

Highlights:

- o Payments for construction in progress, mostly highway and airport improvements, represented almost half of all expenses, $247.5 million.
- o Spending in the Northern Region, which has the most miles of state highway, led the three ADOT&PF regions.
- o Not included as ADOT&PF income is the $33.8 million in passenger and vehicle fees for Marine Highway System passage, which accrue directly to the Alaska Treasury.
- o About three fourths of the federal funds are reimbursements from the Federal Highway Trust Fund for state highway improvements. The other one fourth is from the Federal Airport Trust Fund for airport improvements.
- o Some of the "other" income is from concessions and fees from Anchorage and Fairbanks International Airport usage. These funds are deposited in the International Airport Enterprise Fund.
- o Two thirds (66.8 percent) of all expenditures were directed to private enterprise for construction in progress, supplies and other costs of business operation. One third (33.2 percent) was for ADOT&PF salaries and benefits.
- o 57.2 percent of all expenditures were for design (consulting or in house), right of way purchase and construction progress payments for improvements to highways, airports, ferries, harbors and other public facilities.

More Information Needed On Finance Trends. The information shown is the result of a special analysis made for this Review by the ADOT&PF. However it has been Highway Users Federation experience in other state highway program reviews that such information is readily available in the annual reports of the state highway and transportation departments. The information is important for the following reasons:

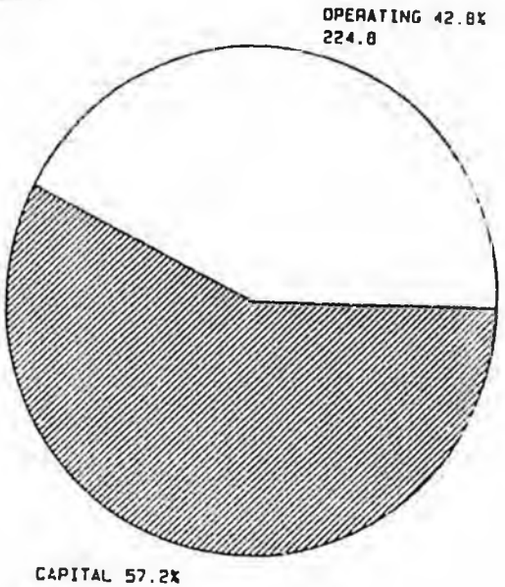
1) to place the Program in perspective with the programs of other state highway and transportation departments in order to detect possible inconsistencies,

2) to place modal components in perspective,

3) to analyze trends, and

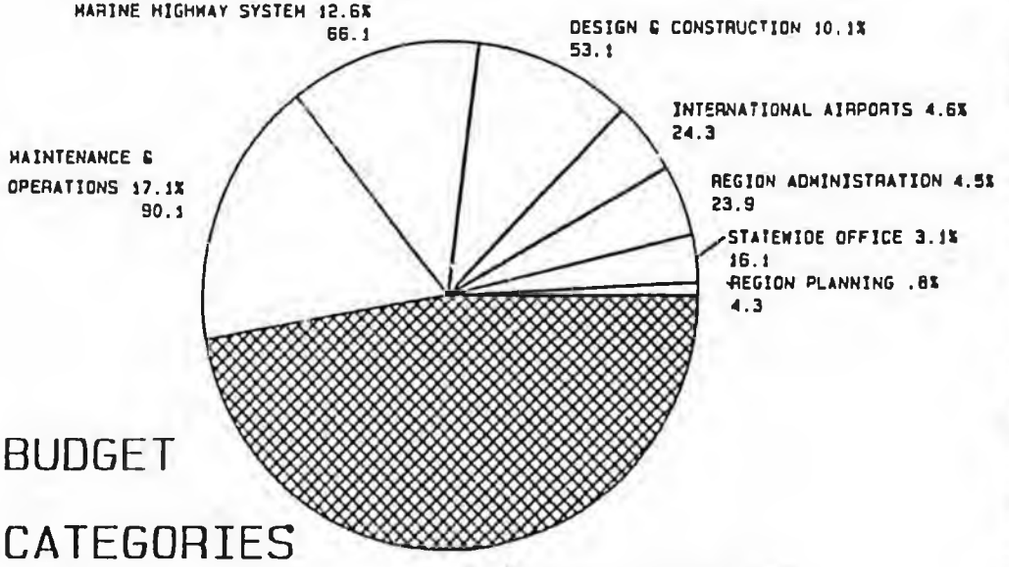
4) to provide legislators, administrators, other officials and constituent organizations with information necessary to make informed decisions regarding Program direction and support.

MAJOR BUDGET ELEMENTS



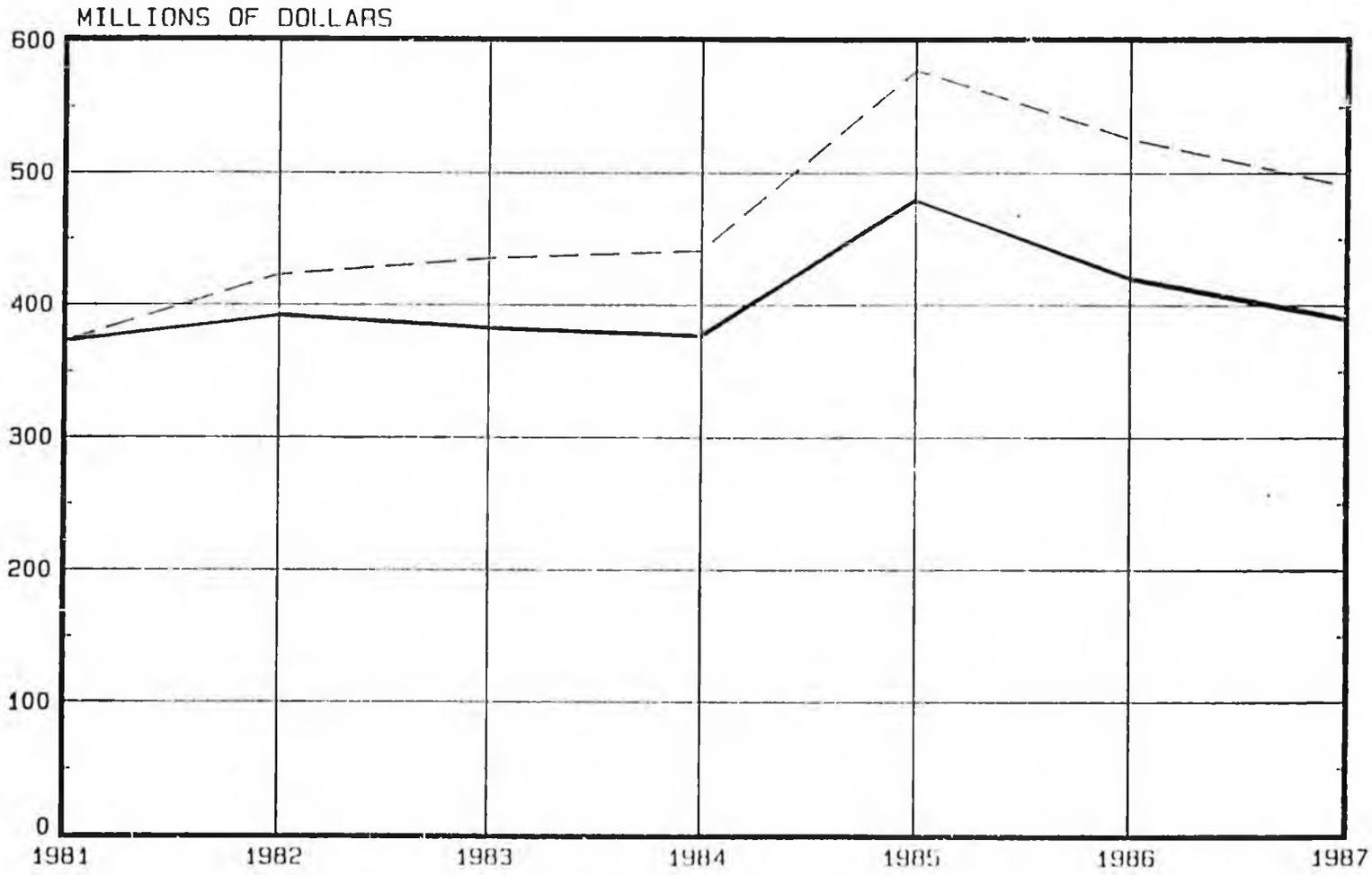
TOTAL: $525.4 MILLION

BUDGET CATEGORIES



ADOT&PF EXPENDITURE TRENDS

CURRENT $ CONSTANT 1981 $

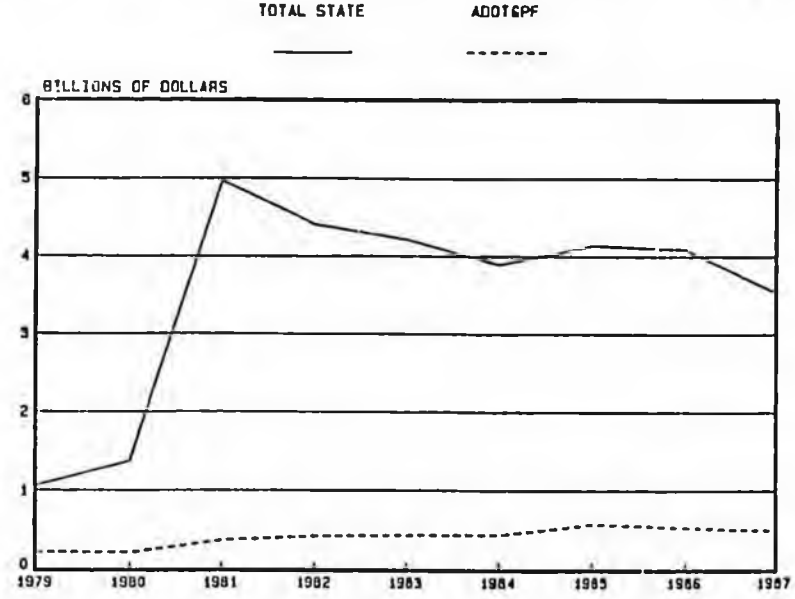


ADOT&PF Spending Up Modestly Over Last Seven Years. Two views of ADOT&PF spending over the 1981 to 1987 period are shown in the above chart. The dashed line shows the actual spending while the solid line depicts the value of the spending when inflation is considered. (The Anchorage Area Consumer Price Index was used to show the 1981 value of each current year's spending.) As a result of the eroding value of money, ADOT&PF spending of $493 million in FY 1987 was worth only $385 million in terms of what could be purchased with 1981 money. Despite the apparent $120 million increase in ADOT&PF funds, the 1987 spending level was up by only $20 million or five percent over the 1981 level.

ADOT&PF Expenditure Increases Are Low When Related To Travel Increases. Travel change is one indicator of transportation finance need. During the 1981 to 1987 period motor vehicle travel in Alaska increased 62 percent, airport enplanements increased by 25 percent and Marine Highway System passengers were up by 9 percent. Furthermore, the lane-miles of state highway increased 12 percent, thereby increasing the demand for such maintenance activities as snow and ice control.

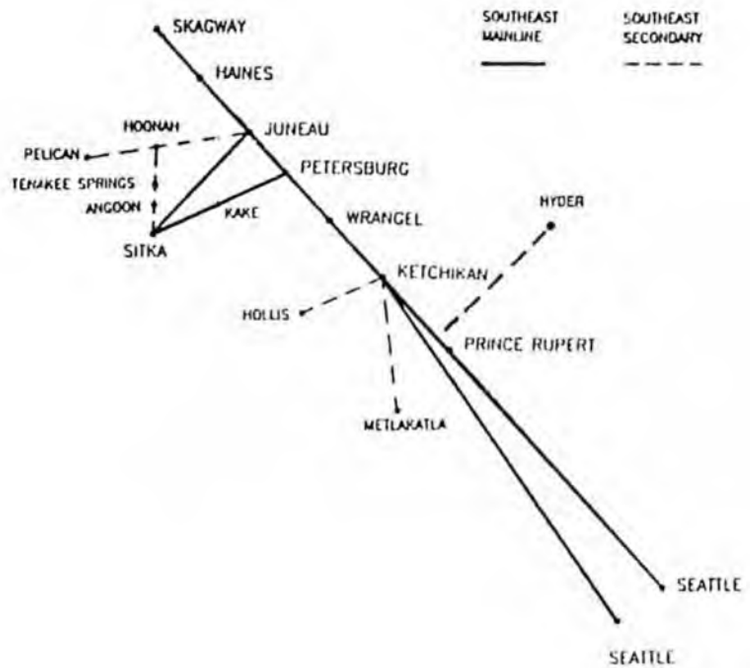
ADOT&PF Proportion of Total State Spending Has Diminished. While ADOT&PF spending has risen from $212 million in 1979 to $493 million in 1987, other state spending has risen even faster. This is noted by the fact that 1987 ADOT&PF expenditures represented 13 percent of total State of Alaska expenditures in 1987, down from 20 percent in 1979.

ADOT&PF & TOTAL STATE EXPENDITURES

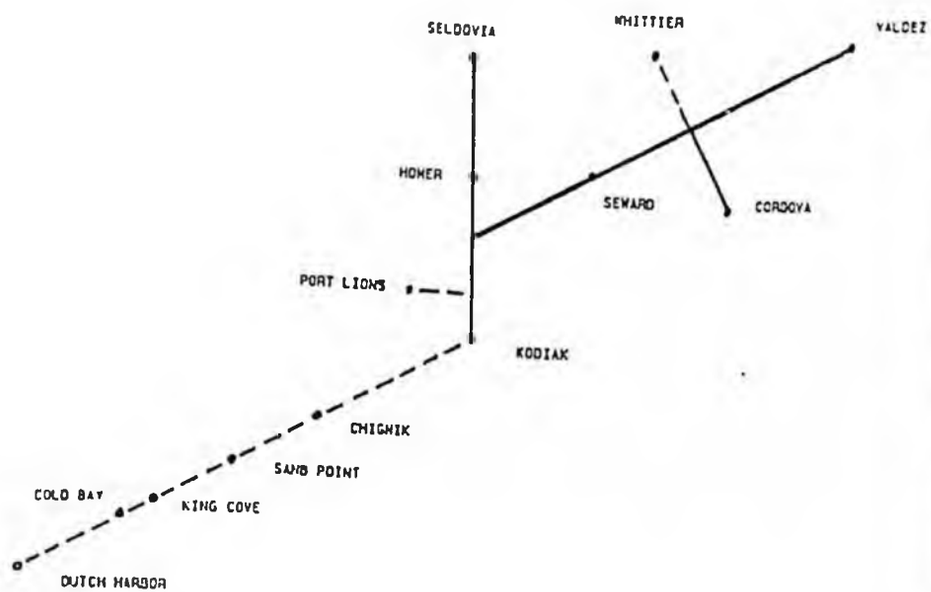


MARINE HIGHWAY SYSTEM

SOUTHEAST



SOUTHWEST



Waterborne Highway System. Alaska has more coastline than the rest of the United States combined. And more than half of its cities are unreachable by conventional highways. These are the reasons that Alaskans in 1960 voted the necessary bonds to establish the state's waterborne highway system. Operating as a division of the Department of Transportation and Public Facilities, the Marine Highway System started with one vessel – the Motor Vessel Chilkat. During its first fully operational year in 1963, four ships served the fleet.

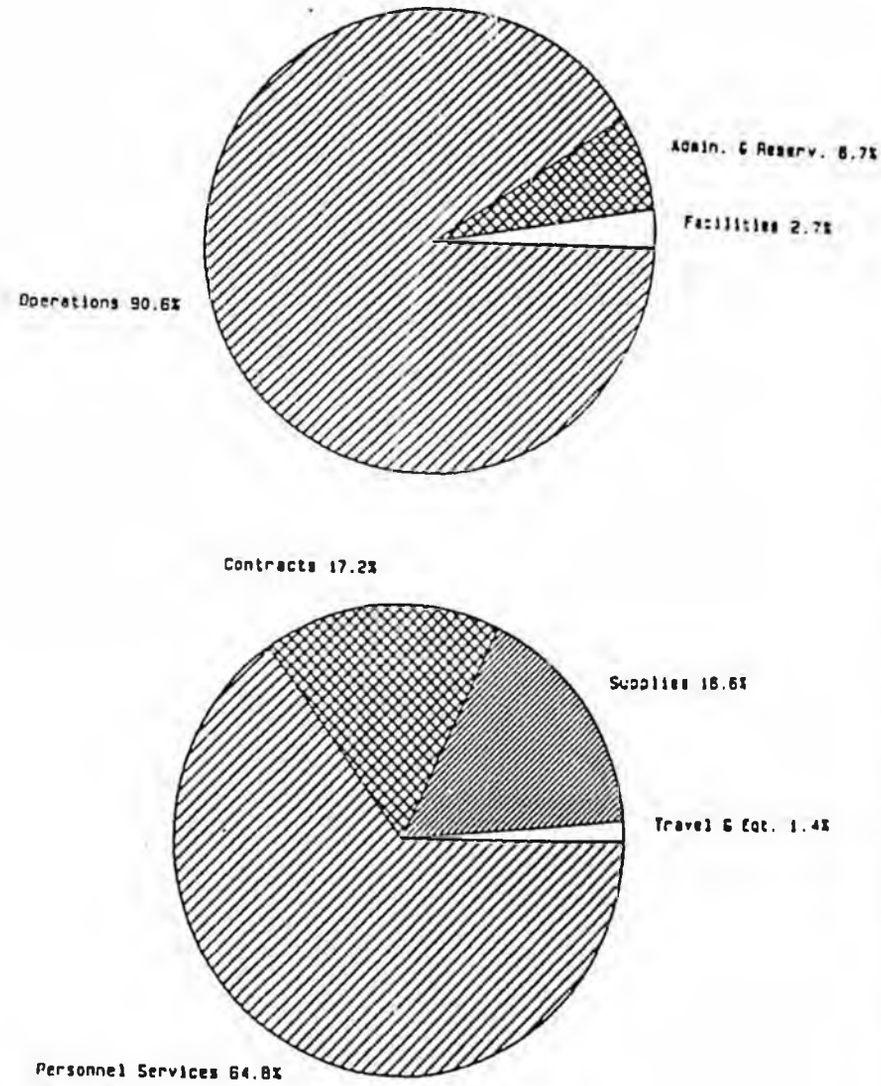
Nine Vessel Fleet. The original system operated from northern terminals at Skagway and Haines, to Prince Rupert in the south. Since then service has been extended to Seattle. And the nine ships, which now comprise the fleet, also provide feeder service in Southeastern Alaska, as well as from the Kenai Peninsula to the island city of Kodiak, to the communities of the Aleutian Chain, and to the communities on Prince William Sound.

The Motor Vessel Columbia is the largest ferry. Built in 1973 the Columbia is 418 feet long, with a capacity for 1,000 passengers and 180 automobiles. She has a service speed of 19 knots. There are 20 2-berth cabins and 71 4-berth cabins.

The other ferries range in size from 100 feet to 408 feet and have passenger carrying capacities ranging from 75 to 750 persons as well as auto and truck carrying capability. Food service, state rooms, cocktail lounges and solariums are available.

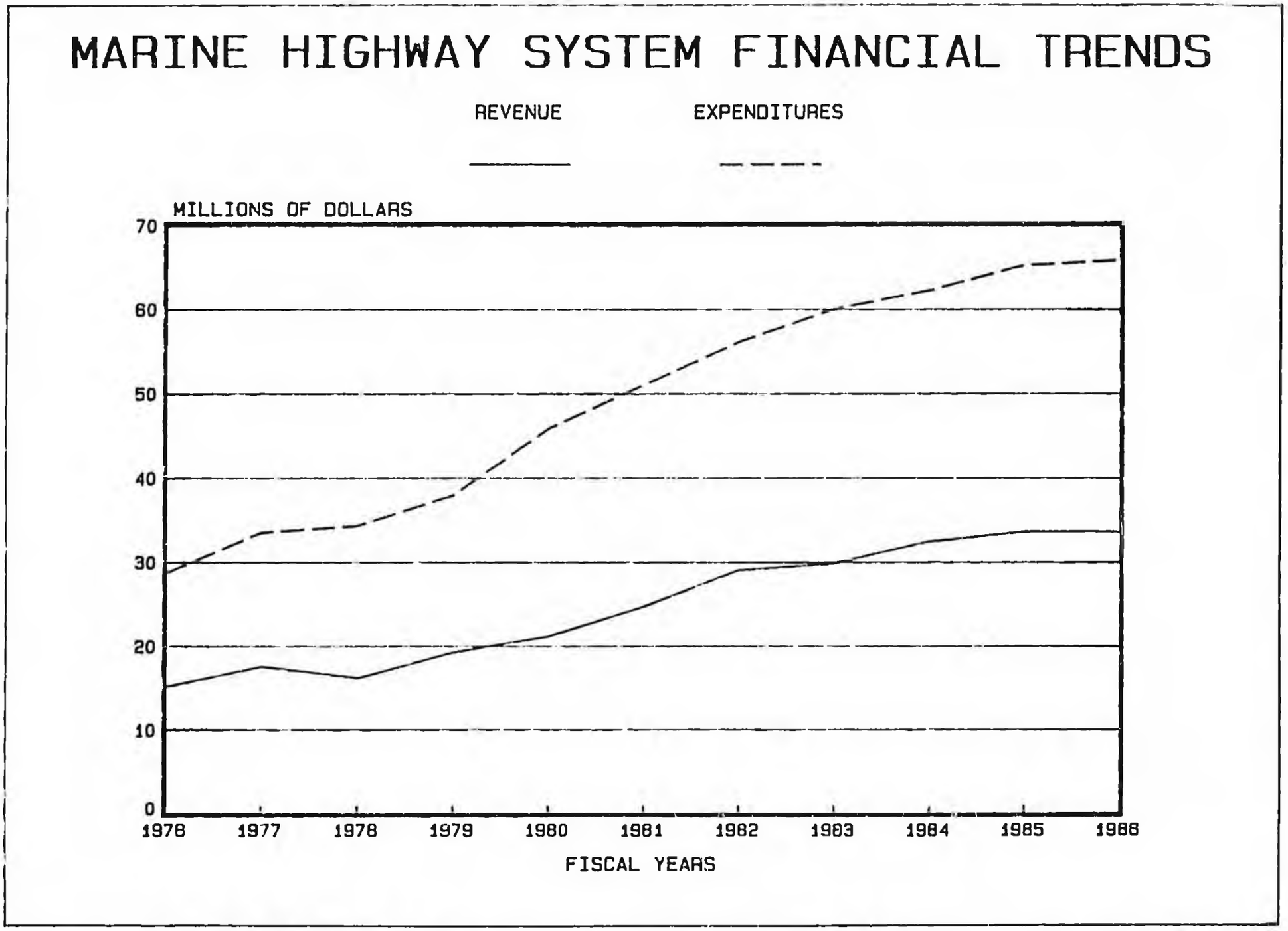
Unique System. No other state department of transportation in the nation operates a ferry fleet that offers such extensive service.

1987 BUDGET



Total: $63.4 Million

MARINE HIGHWAY SYSTEM FINANCIAL TRENDS



Fares Cover Over Half AMHS Costs. As shown above, passenger and vehicle fares and other en route receipts met about 55 percent of all costs in fiscal year 1986. (FY 1987 expenditures were $65 million while revenues were $33.8 million.) And this relationship between revenues and expenditures has remained approximately steady for the past 12 fiscal years.

Operations Are The Major Costs. As shown in the 1987 budget charts on the right, the costs of ship operations including necessary overhauls and improvements are 90.6 percent ($56.4 million) of all costs. The manning of shore facilitiesand overall administration costs, including the operation of the reservation system, is 9.4 percent ($7.0 million) of budgeted costs.

Personnel Costs Are Almost Two Thirds of All Costs. The 1987 budgeted complement included 879 persons, (705 permanent, 174 seasonal or part-time). To operate the ships safely and efficiently, to maintain the equipment and to serve the personal needs of passengers, AMHS personnel costs are almost two thirds (64.8 percent) of total costs.

Morale Good. Despite the extensive travel, crew morale seems to be good. Management in recent years has made progress in attending to member concerns and in giving crew members a greater voice in management decisions. Periodic Director and crew meetings have proved to be successful.

Need To Budget For Ship Replacements. The ferries range in age from 10 to 24 years with the average being 18 years old. With ship replacement costs ranging from $10 million for the smaller ships to $100 million for the larger ships, it would be prudent for Alaskans to begin setting aside funds annually to meet replacement needs. As is the case for Alaska's International Airport capital assets, it is suggested that future needs be accounted for in the annual budget process. Passenger and vehicle revenue is the suggested source of depreciation funds.

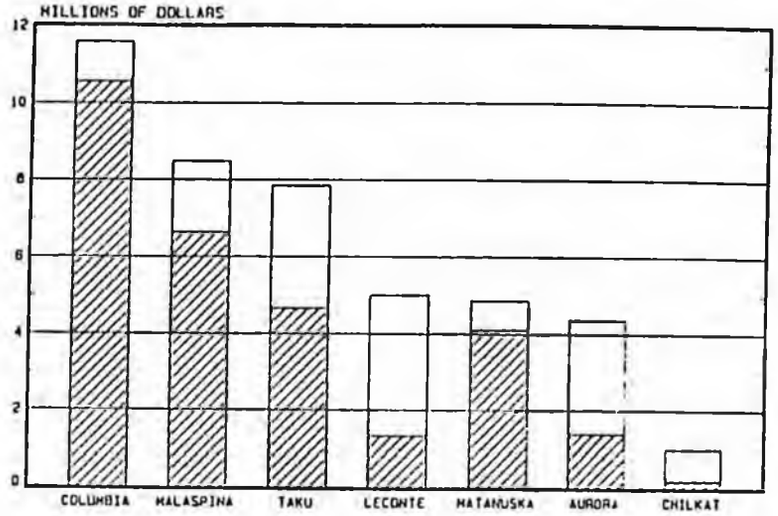
Need For Secure Funding Sources. As is the case for highway planning, ADOT&PF officials need the assurance of secure funds over a three to five year period in order to plan the most effective and efficient program of AMHS operations, maintenance and improvements. Passenger and vehicle revenue should form the base of such funds with set annual supplements from the Legislature and the communities served.

SHIP-BY-SHIP ANALYSIS

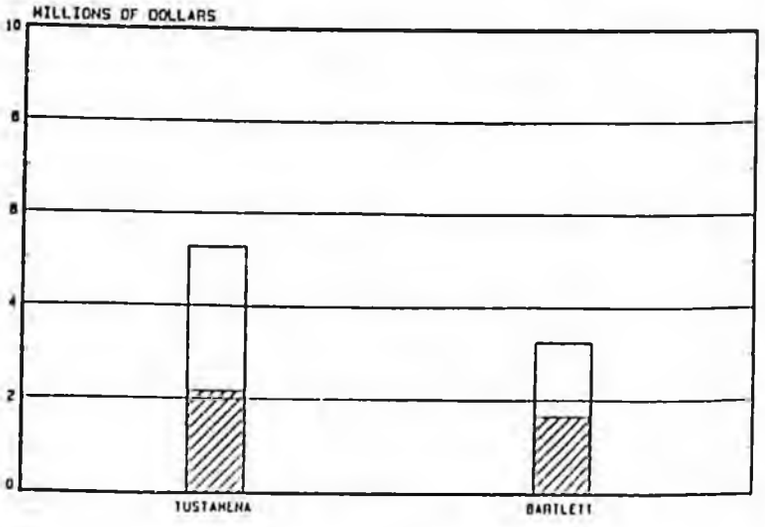
1988 REVENUE

1988 EXPENDITURES

SOUTH EAST SYSTEM



SOUTH WEST SYSTEM



AIRPORTS

International

Central Region
- Anchorage International

Northern Region
- Fairbanks International

Regional Center

Central Region
- Bethel
- Cold Bay
- Dillingham
- Kodiak

Northern Region
- Barrow
- Galena
- Kotzebue
- Nome

Southeastern Region
- Juneau
- Ketchikan

District

Central Region
- Aniak
- Cordova Mile 13
- Homer
- Kenai Municipal
- King Salmon
- McGrath
- St. Marys
- Unalaska/Dutch Harbor

Northern Region
- Deadhorse
- Fort Yukon
- Gulkana
- Unalakleet

Southeastern Region
- Petersburg
- Sitka
- Wrangell

Transport

Central Region
- Flat
- Iliamna
- Merrill Field
- Platinum
- Sand Point

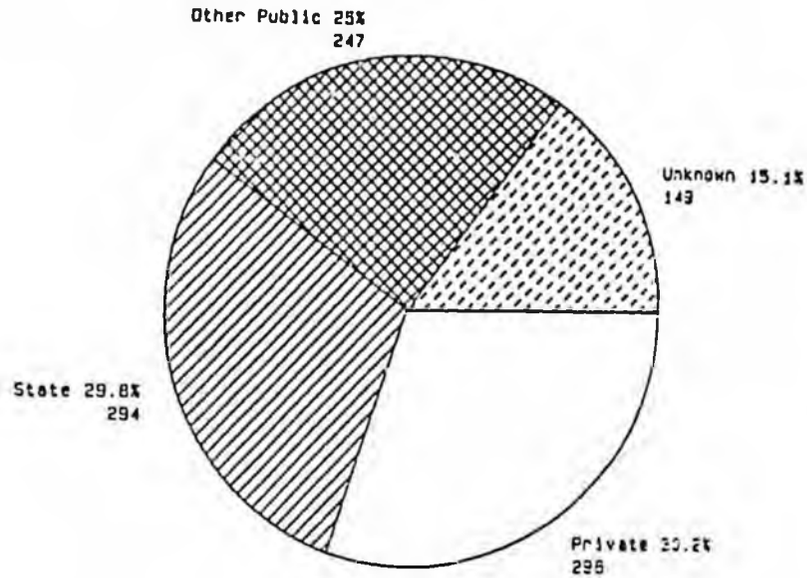
Northern Region
- Bettles
- Dahl Creek
- Prudhoe Bay
- Tok Junction
- Valdez

Southeastern Region
- Klawock
- Yakutat

There are 998 airports and bush landing strips in Alaska with 215 out of 294 state-owned facilities actually maintained by the ADOT&PF. The Anchorage and Fairbanks airports are included in the Alaska International Airport System in that they serve commercial aircraft of many nationalities. Due to their complexity, the International Airports are managed by a special division of the ADOT&PF.

AIRPORT OWNERSHIP

Total: 998

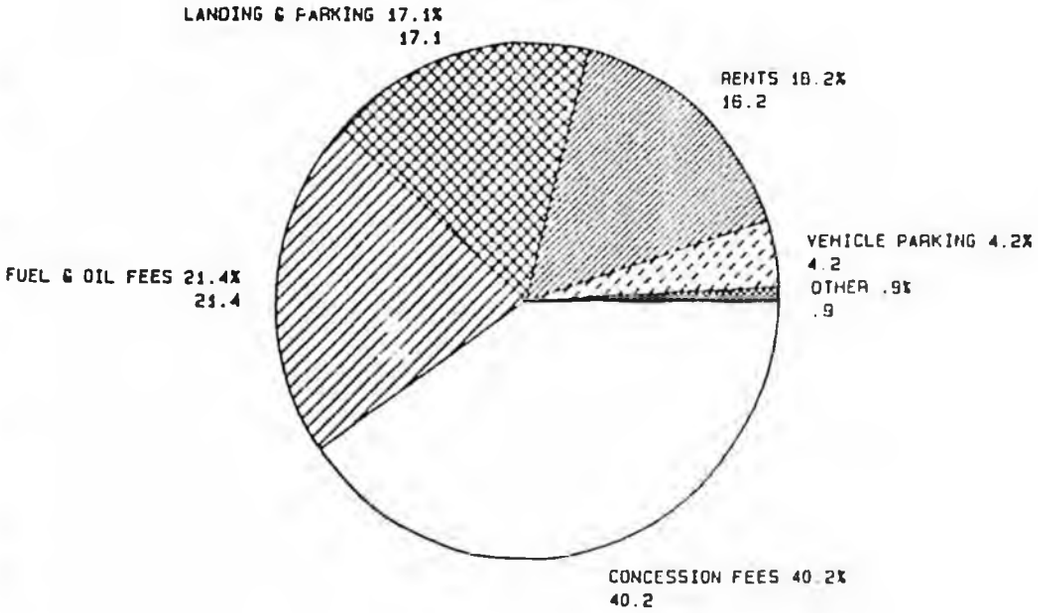


STATE AIRPORTS

FUNCTIONAL CLASSIFICATION	CENTRAL REGION	NORTHERN REGION	SOUTHEAST REGION	TOTAL
INTERNATIONAL	1	1	0	2
REGIONAL CENTER	4	4	1	9
DISTRICT	7	4	3	14
TRANSPORT	4	5	2	11
COMMUNITY	83	46	17	146
LOCAL	39	50	23	112
TOTAL:	138	110	46	294

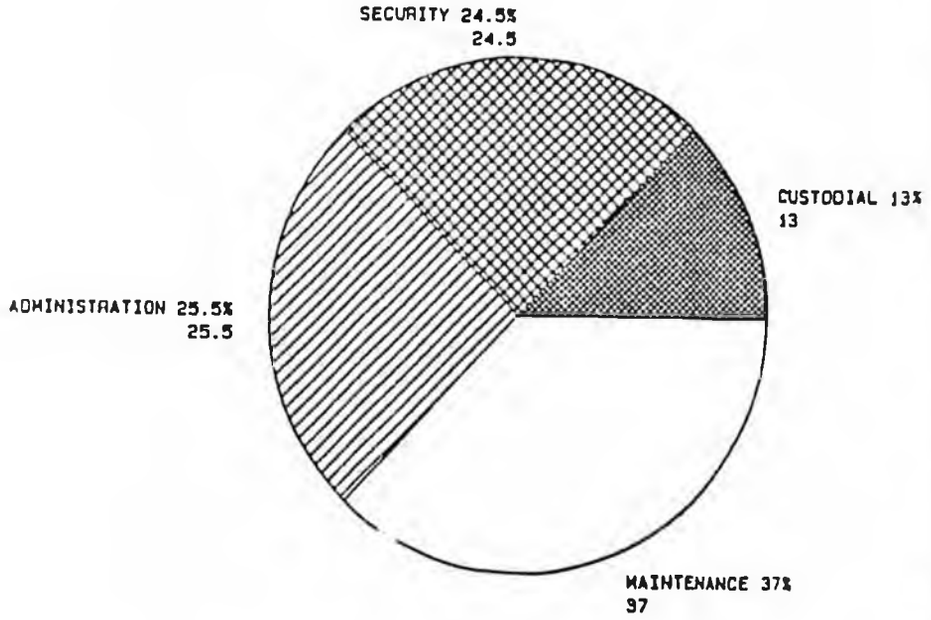
INTERNATIONAL AIRPORTS

1986 REVENUE



TOTAL: $47.9 Million

1986 OPERATING EXPENSES



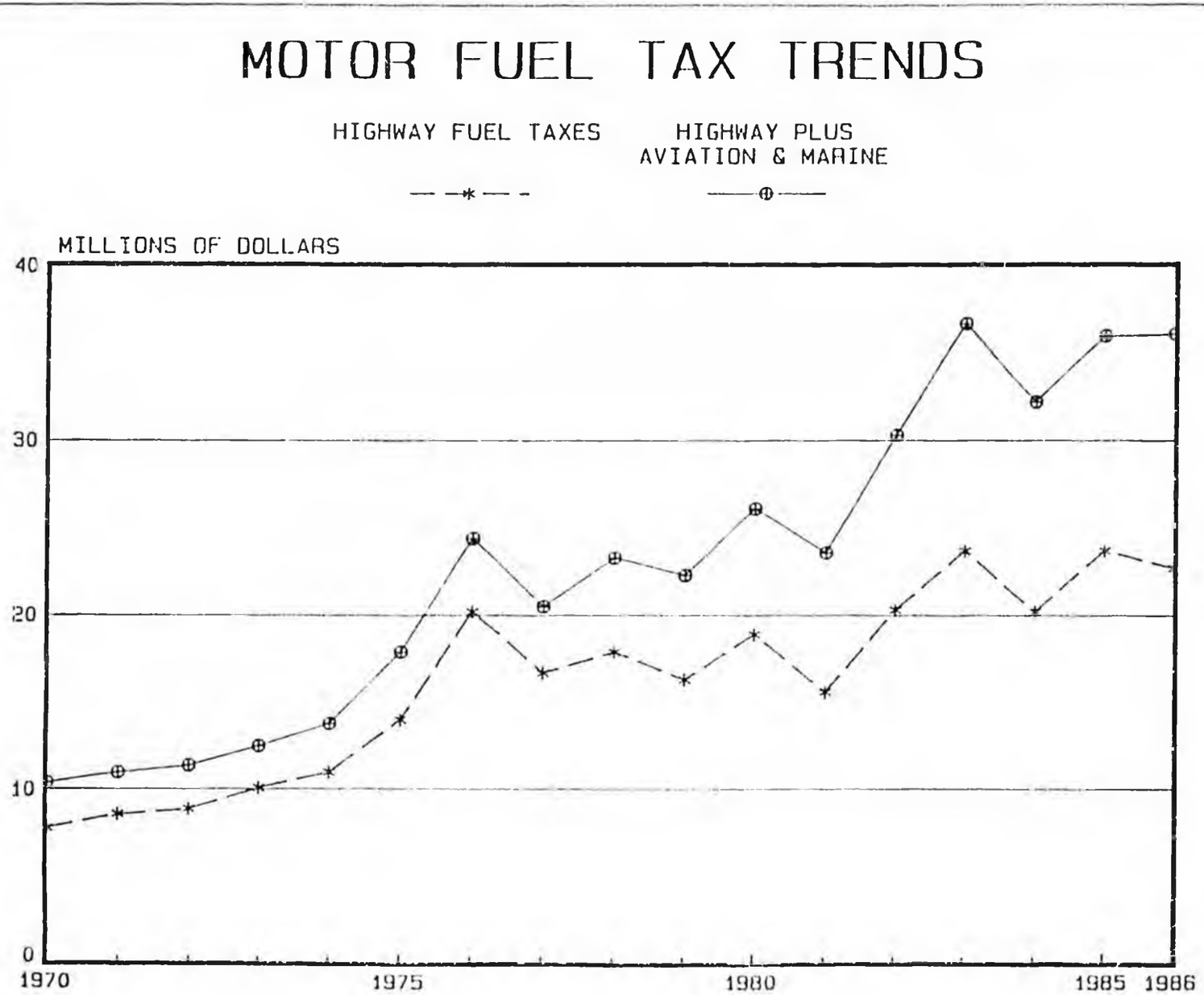
TOTAL: $25.5 Million

Because of its fast growth, extensive capital needs, self-sufficient nature and the need to guarantee the amortization of Alaska International Airport System bonds, all operating revenue generated and all expenditures are accounted for in a special Enterprise Fund. As indicated, revenues in fiscal year 1986 amounted to $47.9 million up from $42.5 million in 1985. And despite Alaska's economic downturn, revenues continued upward in 1987 to $48.9 million. As of June 30, 1986 the combined value of the two airports stood at $293 million up from $251 million a year earlier.

Bond Debt Up. At the close of fiscal year 1986 bonded indebtedness stood at $41.9 million. An additional $38.0 million of revenue bonds were issued in November 1986 for construction of the parking garage at the Anchorage International Airport.

Improvements. In fiscal year 1986 the $22.4 million in operating income together with $2.0 million in federal grants and net interest income of $0.9 million were used to make bond principal payments ($2.0 million), to increase restricted assets ($0.1 million), to increase working capital ($3.8 million) and to upgrade airport property, plant and equipment ($19.3 million).

MOTOR FUEL TAX TRENDS



Secure Funding Source Needed. One of the problems of providing a secure, predictable source of funds for Alaska's State Highway Program is that the highway user tax base does not provide enough revenue to support highway system maintenance and improvement needs. However for most other states of the nation the motor fuel taxes, the auto and truck registration fees and assorted other taxes and fees levied on motor vehicles and their use do provide the necessary funds to support the State Highway Program. The success of the nation's highway programs is largely attributable to the fact that secure and predictable highway user taxes have met the capital, operating and maintenance needs.

Low Highway User Taxes And Fees. The reason that Alaska's highway user taxes and fees do not meet highway program needs is that they are low in comparison with other states.

For heavy trucks, Alaska ranks lowest in the nation with a tax load of $1,598 per year or 2.0 cents per vehicle-mile of heavy truck travel. This compares to Washington which collects over three times as much ($4,990 per truck, and 6.2 cents per vehicle-mile of heavy truck travel). The highest taxer of heavy trucks is Arizona which collects $11,012 per truck or 13.8 cents per vehicle-mile of heavy truck travel.

For automobiles, Alaska ranks 37th among the states with a $122 tax per average automobile or 1.0 cents per vehicle-mile of travel. The highest in the nation is Rhode Island with an annual tax load of $731 per automobile or 5.9 cents per vehicle-mile of automobile travel (six times the Alaska load). The lowest is New York at $73 per year and 0.6 cents per vehicle-mile of travel. Washington's annual tax on automobiles is $310 per vehicle or 2.5 cents per vehicle-mile of auto travel.

The above facts are based on a 1987 U. S. Department of Transportation report, "Road User and Property Taxes". The taxes and fees were those in effect on January 1, 1987. Included are all highway user taxes and, where applicable, state personal property taxes. The study compared annual taxes on a 80,000 lb. gross vehicle weight truck/trailer combination driven 80,000 miles per year and a 4,200 lb. gross vehicle weight automobile driven 12,500 per year.

Raising Motor Fuel Taxes. Alaska's motor fuel tax, which has not changed since 1961, is eight cents per gallon and the revenue trend from the tax is as shown in the chart.

A comparison of the 1988 revenues with 1988 State Highway Program receipts (page I-5) shows a wide disparity. A ninefold increase in the tax on fuel used in highway travel would have been required to raise the $200.5 million per year of state funds, including debt service, motor vehicle law enforcement and highway safety programs.. Over a fivefold increase in total motor fuel tax receipts (highway plus aviation and marine fuel taxes) would have been required to raise the $200.5 million of state funds used to support the 1988 State Highway Program

However as shown on page III- 11, a doubling of the total motor fuel tax would meet the FY 1988 budget for highway and airport maintenance. As has been the experience of state highway program managers in other states, the earmarking of highway user taxes and fees (or other taxes, such as mineral severance taxes) for the state highway program or distinct parts of the program, such as highway maintenance, enables program managers to better plan for efficient and effective use of the funds.

Maintaining Balance Between Competitors. The Alaska Railroad Corporation and private truckers compete for freight movement in some important corridors. And it is important to maintain the existing balance in trucking and railroad costs when enacting highway finance initiatives. Higher highway user taxes would immediately change costs in the trucking industry to the railroads advantage -- unless the railroads costs were raised concurrently.

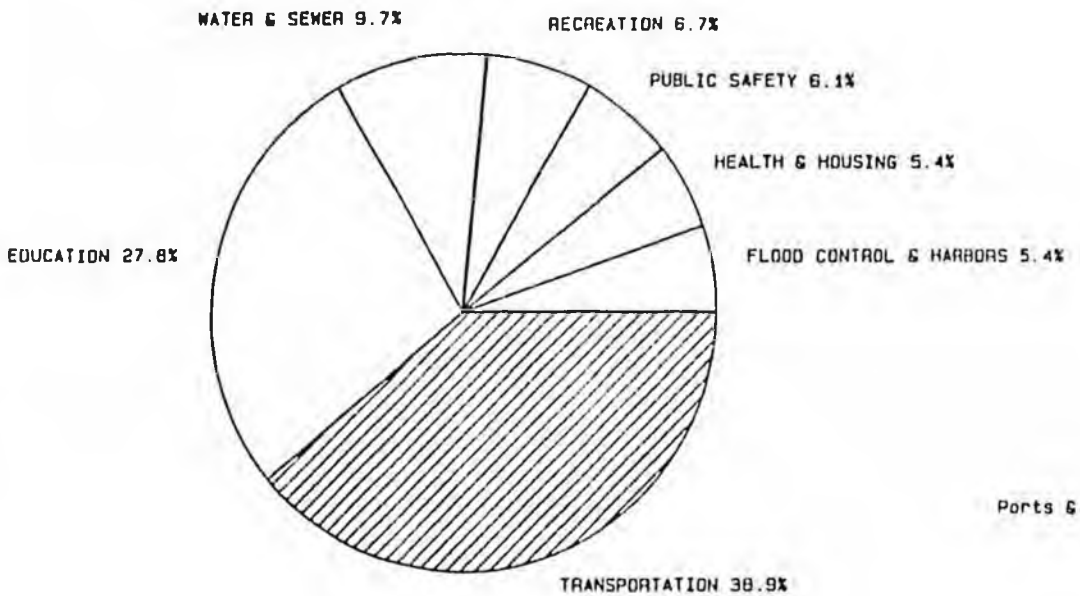
Two Possibilities That Need Further Study. One solution is enactment of legislation requiring the Alaska Railroad Corporation to pay motor fuel taxes. The Railroad is currently exempt from such taxes.

A second solution is to establish a regulation requiring the Alaska Railroad Corporation to pay monthly, quarterly or annual fees to the Alaska Treasurer in lieu of the taxes.

In either case it is suggested that at least half of the added railroad payments be used for railroad/highway grade separations. This would expand the program of constructing grade separations thereby enhancing safety and the efficiency of both rail and truck freight operations.

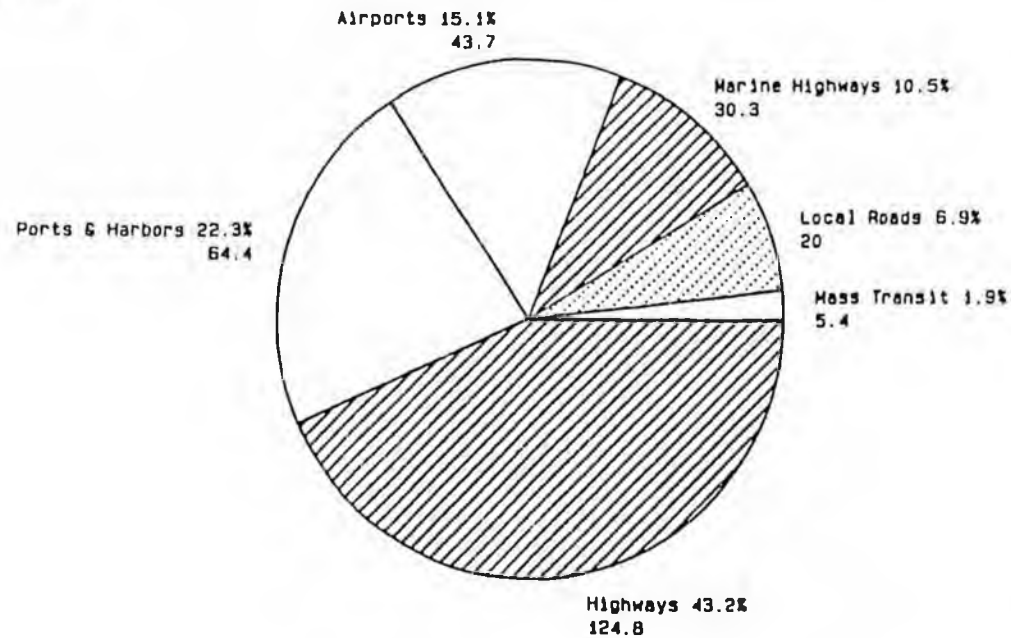
STATE BONDS

TOTAL SINCE STATEHOOD



TOTAL: $1.4 BILLION AS OF 6/30/84

TRANSPORTATION DEBT



TOTAL: $288.6 MILLION AS OF 12/31/86

Transportation Debt Being Rapidly Amortized. As shown in the right hand pie chart, the state transportation debt stood at $288.6 million as of December 31, 1986. This is down by $47.6 million from the close of the previous calendar year and $95.5 million down from two years previous. At that rate of amortization, state transportation bonds will be eliminated in six years.

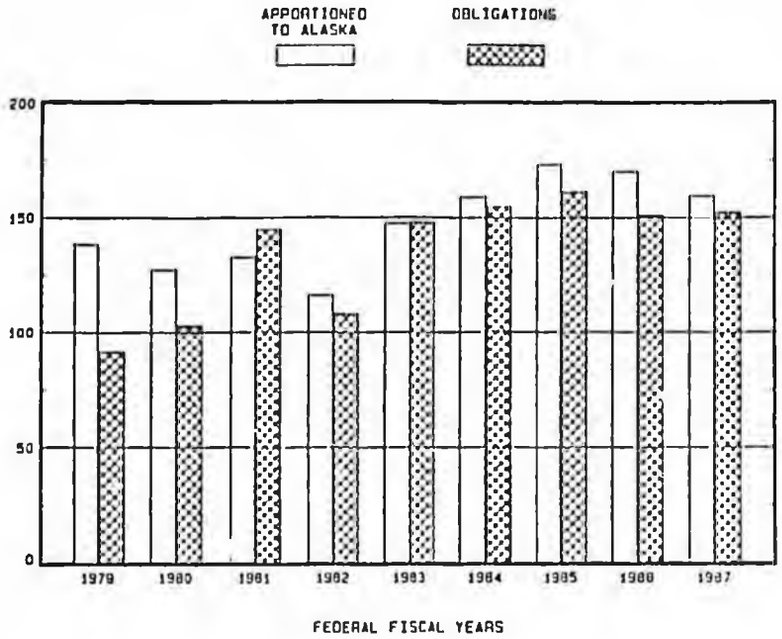
At $155.1 million, the debt for land highways and the Marine Highway System represented 53.7 percent of the December 31, 1985, transportation debt (The revenue bonds sold by the Alaska International airport System are not included in the charts.)

Some states rely extensively on the bond market for their state highway capital improvement programs. As a nation, total state highway debt was $20 billion as of December 31, 1985,the latest year in which debt summary information is available.

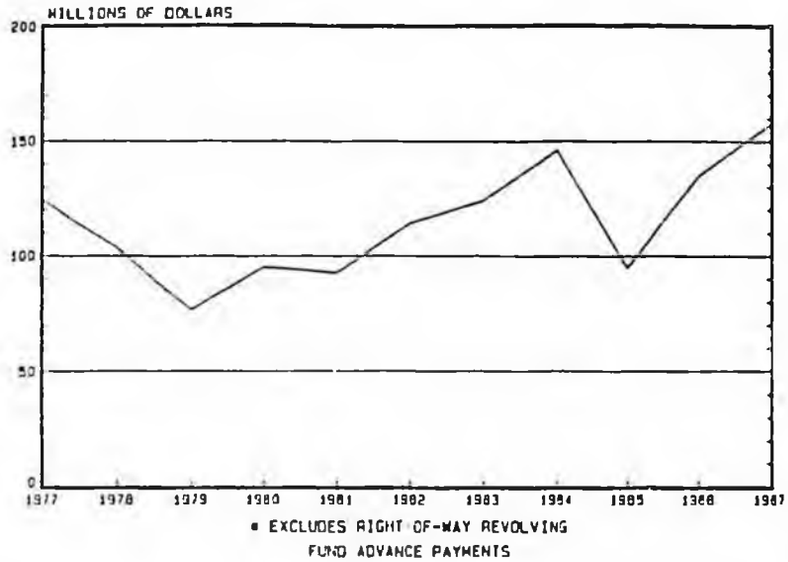
Alaska leads The Way In Public/Private Cooperation. Alaska has three outstanding examples of private funding for highway construction – 1) the 416 mile Dalton Highway built by oil interests; 2) the 50 miles of Red Dog Mine Access Road being financed by the Alaska Industrial Development Authority which will be reimbursed by private mining interests; and 3) the $1.3 million contribution by a trucking firm for the upgrading of the Klondike Highway to allow heavy-laden ore trucks to gain access from Canadian mines to the port at Skagway.

Military Involvement Also Important. The construction of the Alaska Highway in both Canada and Alaska by the U.S. Army during the early part of World War II was also a tremendous contribution to Alaska highway development.

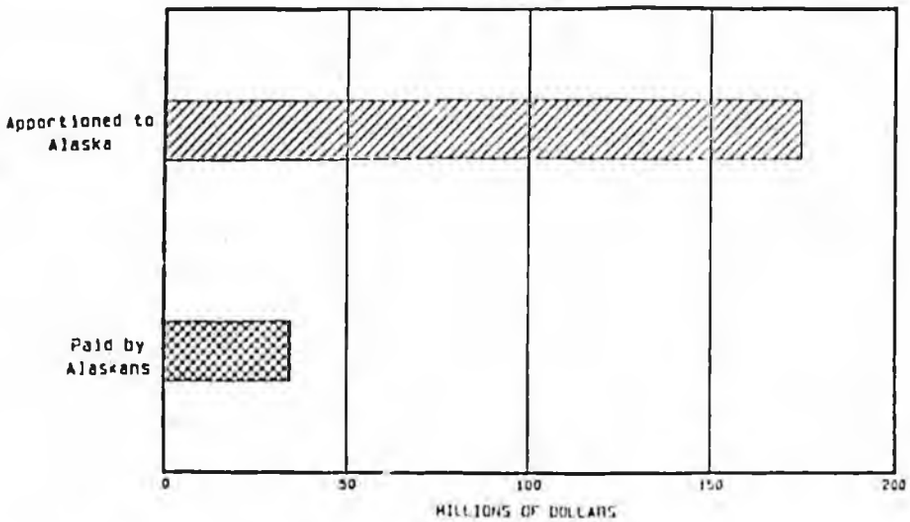
FEDERAL AID HIGHWAY PROGRAM



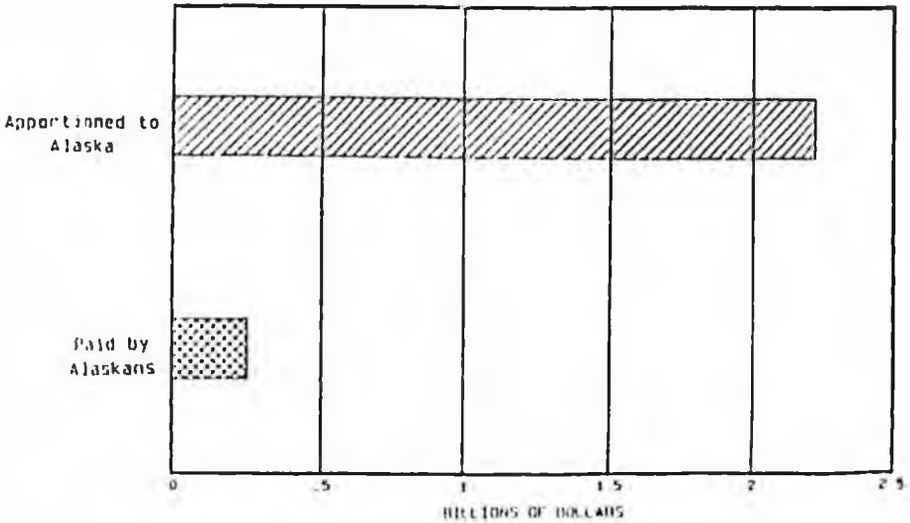
REIMBURSEMENTS



FY 1985



SINCE 1956



Federal Aid Highway Program Critically Important To Alaska. The chart on the upper left indicates the trends in the amounts of federal funds:
1) apportioned to Alaska, and 2) made available after budget limitations were applied by lawmakers and actually used (obligated for subsequent spending on Alaska road and bridge improvements). Federal aid highway funds are restricted by federal mandate for highway, ferry and ferry terminal improvements as well as planning, research and safety activities. Federal funds cannot be directed to highway maintenance activities.

1987 A Record. The upper right chart tracks actual payments to Alaska from 1977 to 1987 (federal fiscal years). Note that 1987 was Alaska's record-high year for Federal Aid Highway Program receipts. The federal funds stem largely from a nine cents per gallon tax on gasoline, a three cents per gallon tax on gasohol, a 16 cents per gallon tax on diesel and other special motor fuels, as well as a 12 percent sales tax on heavy truck and truck trailer purchases, a tax on truck tire sales and an annual use tax on heavy trucks. The federal highway user taxes are accounted for in the U.S. Treasury in a Highway Trust Fund and apportioned to each state for the modernization of major highway systems and bridges.

Federal Budget Controls Limit Spending. For the October 1, 1985 to September 30, 1986 federal fiscal year, Alaska was apportioned $165 million of authorized funds, but due to federal obligational control limitations only $151 million of the apportioned funds were actually available to Alaska. In other words $14 ($9 federal and $1 state) million worth of highway improvement projects could not be started because the obligation ceiling restricted the use of authorized and available Highway Trust Fund money.

Slowdown In Highway Improvements. The situation is far worse for fiscal year 1988 because it is controlled by the authorization levels mandated by the Surface Transportation and Uniform Relocation Assistance Act of 1987. This act reduced annual authorization levels over the 1988 to 1991 period. Furthermore, obligational control further limits fiscal year 1988 funds to about $130 million. Unless obligational controls are lifted, Alaska's highway improvement program will be sharply lower than the 1983 to 1987 experience.

Federal Incentives For Road And Bridge Modernization. The portion of the cost borne by federal highway user taxes, depends on the Federal Aid Highway System – Interstate, Primary, Secondary, Urban classification of the road to be improved. Federal funds will participate in 94.7 percent of the cost of Interstate Highway System original construction or rehabilitation, 91.4 percent of the cost of improving the other Systems and 80 percent of bridge replacement or rehabilitation costs. Overall, every dollar of Alaska funds that are made available for highway and bridge improvements is matched by nine dollars of Federal Highway Program funds – up to the limit of federal obligation authority. This is a great incentive for Alaska highway and bridge modernization.

Alaska Benefits The Most From The Federal Aid Highway Program. The bottom left chart indicates the amount of Federal Aid Highway Program funds apportioned to Alaska in 1985, as well as the amount of federal highway user taxes paid by Alaskans in that year. The bottom right chart summarizes both Alaska's apportionment of Federal Aid Highway Program funds and Alaskans payment of federal highway user taxes over the 1956 to 1985 period. At five and one half to one for FY 1985 and nine to one overall, Alaska leads all other states in the ratio of apportionments to taxes paid. This is due primarily to the fact that state apportionments of federal funds are related to the extent of land area in each state. Alaska, having the largest proportion of land of any state in the nation, receives disproportionally large shares of Federal Aid Highway Program funds.

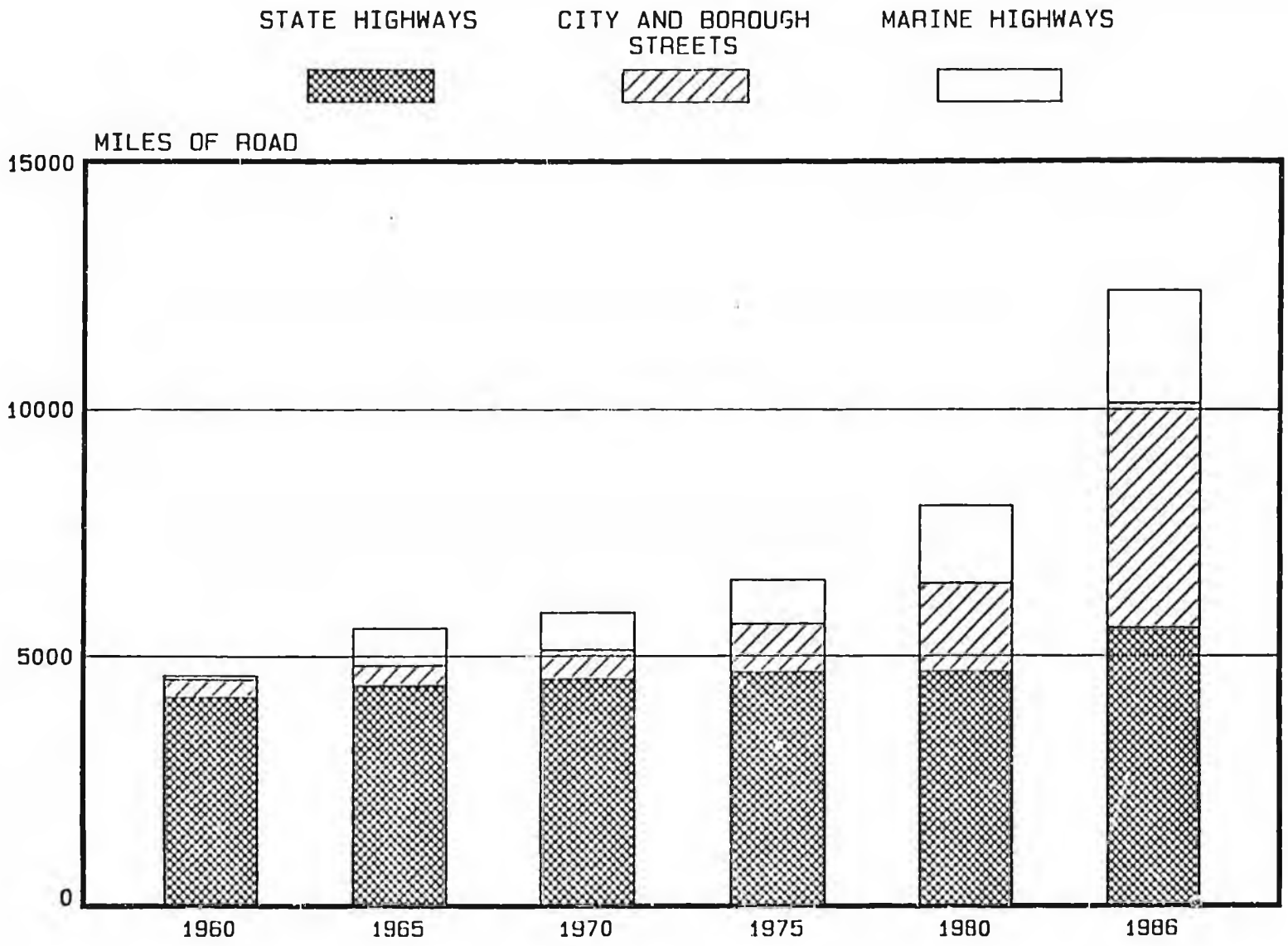
Non-monetary Benefits. Besides financial assistance, there are other benefits that come with a strong Federal Aid Highway Program. First, it is required that national design standards be used and this promotes national uniformity as well as the safest possible highway environment. Second, federal officials on the scene in Alaska (the Juneau office of the Federal Highway Administration has a 12-person professional staff) provide both an oversight function as well as technical assistance to ADOT&PF officials. Lastly, the long standing spirit of cooperation that has prevailed between federal and ADOT&PF officials has been a stabilizing influence in Alaska's program of highway improvement.

CHAPTER I

TRANSPORTATION FINANCE AND RESPONSIBILITIES

This Chapter includes a Review of the Role of the State, Cities and Boroughs in Sharing Responsibilities for Administering, Maintaining, Operating and Improving Alaska's Transportation System as well as a Review of the Funds Available to Meet These Responsibilities.

MILES OF ROAD



NOTE: EXCLUDING FEDERALLY OWNED ROADS.

Over 10,000 Miles Of Road. Discounting the 224,000 miles of road that are under the direct control of federal agencies, there are 3.6 million miles of land service roads in the United States. Alaska's 12,370 miles is less than three one hundreths of a percent. Yet Alaska's land area is 16 percent of the nations total. Only Delaware, Hawaii and Rhode Island have fewer miles of road.

Marine Highway Routes Are State Highways. Including the ferry routes of the Marine Highway System, there are 7,824 miles of highway that are considered state highways. These routes are administered, operated, maintained and improved by the Alaska Department of Transportation and Public Facilities.

Since 1960 the state highway system (including Marine Highway System routes) has doubled in extent. The most significant change is the expansion of the Marine Highway System, due largely to the shift in the status of service to the Aleutian Chain in 1981 from testing and demonstration to permanently, scheduled service.

However during this 27 year period, the 416 mile Dalton Highway was built by private interests and added to the State Highway System. Also during this time, the 325 mile Parks Highway was completed to provide better highway service between Alaska's two largest centers, Anchorage and Fairbanks. Other shorter links of state highways have also been added.

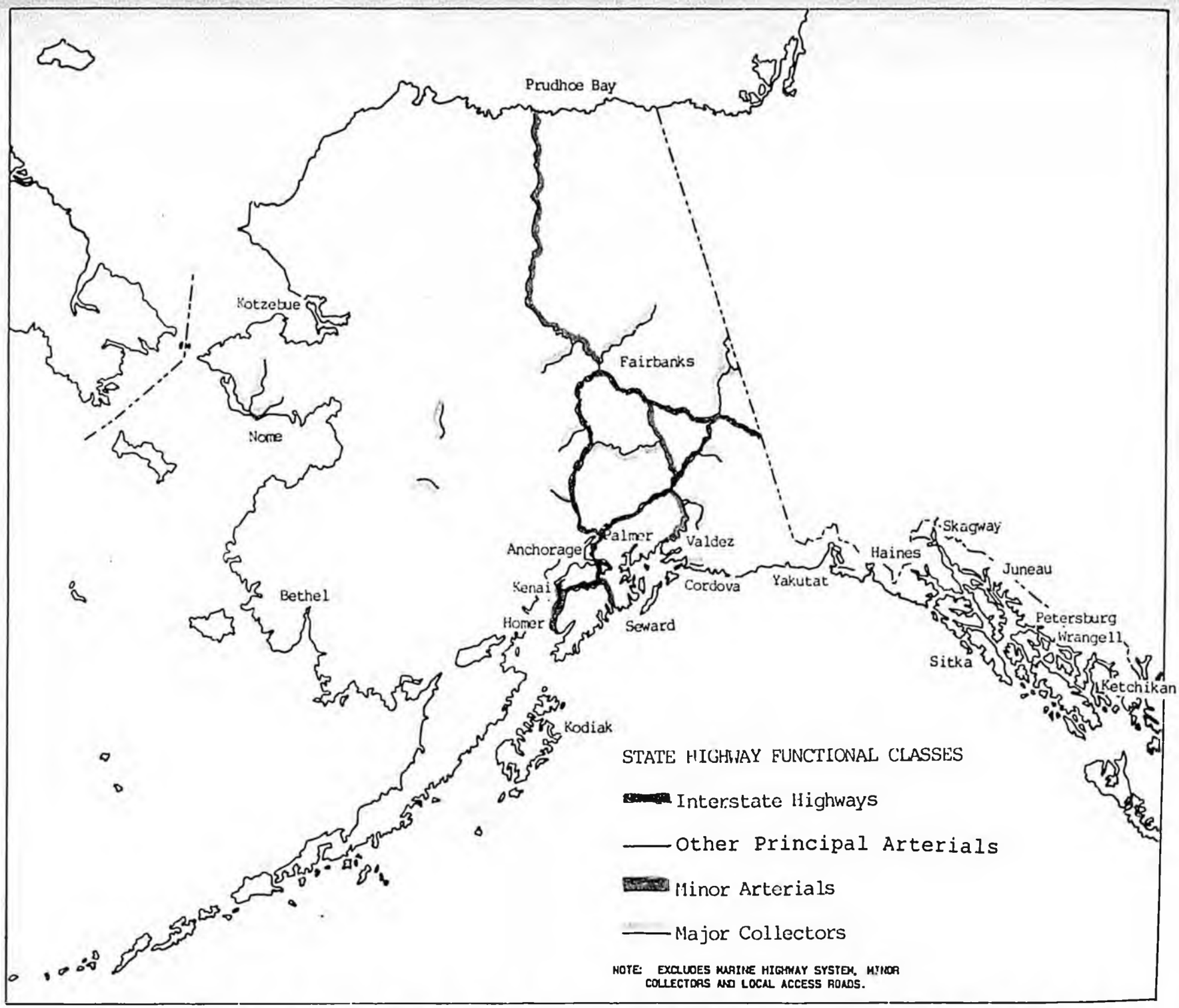
Alaska Unique. The truly striking transportation distinction between Alaska and the rest of the nation is that the majority of Alaska's communities of over 250 people are not connected by land via the State Highway System. The remoteness of some places, the water barriers and the difficulty of traversing the terrain have made such connections either impossible or inordinately expensive. Alaska has therefore relied on a system of ferry routes with nine ships capable of conveying both passengers and vehicles to some communities and to an extensive system of airports that allows air service to all other communities of over 30 people.

The Alaska Railroad. Alaska also has a 480 mile railroad system that is vitally important to the shipment of general commodities as well as mineral and forest products over the Seward to Fairbanks mainline. A spur to Whittier connects the main line with the Marine Highway System on Prince William Sound and to barges that service the "lower 48 states"..

In 1982, the State of Alaska purchased the railroad line, equipment and property. The Alaska Railroad Corporation operates the freight and passenger service. While the railroad is independent of the ADOT&PF, the ADOT&PF Commissioner is a member of the Alaska Railroad Company's Board of Directors.

Cities And Boroughs Also Have Road Responsibilities. In those parts of Alaska that have a population base and a system of local government (city or borough), the governmental entity can accept responsibility for some roads. While the ADOT&PF is not required to take into the State Highway System those roads that cities and boroughs will not accept, typically the ADOT&PF does take on this responsibility.

Leap In City And Borough Roads. Note that the chart indicates a significant growth in city and borough road and street mileage over the 1960 to 1986 period. Some of the increase is related to subdivision street construction by developers and some is related to state appropriations for specified roads. However some of the increase is due to better accounting by the cities and boroughs for road miles, since 1980 state legislation greatly increased the state revenue sharing funds that are based on miles of road.


Prudhoe Bay
Kotzebue
Fairbanks
Nome
Bethel
Anchorage
Palmer
Valdez
Kenai
Cordova
Yakutat
Haines
Skagway
Juneau
Homer
Seward
Petersburg
Wrangell
Sitka
Ketchikan
Kodiak
STATE HIGHWAY FUNCTIONAL CLASSES
Interstate Highways
Other Principal Arterials
Minor Arterials
Major Collectors
NOTE: EXCLUDES MARINE HIGHWAY SYSTEM, MINOR COLLECTORS AND LOCAL ACCESS ROADS.

FUNCTIONAL CLASSES OF RURAL ROADS

Functional Highway Classification - A Basis For Management Decisions. Most state highway agencies classify their state highways based on their traffic service functions. The resulting hierarchy gives managers a tool for decision-making regarding the distribution of scarce resources. Design standards, improvement priorities and maintenance standards are all related to the functional classification of roads. The map shows the functional designation of Alaska's major rural roads and their extensions through urban areas.

Interstate Highways, The Most Important Arteries. Alaska's most important rural roads are those designated to be Interstate Highways (1,089 miles). These connect Alaska's largest centers -- Anchorage and Fairbanks -- with each other and to the main route of land travel into Alaska. An Interstate Highway Spur also connects Anchorage with the Kenai Peninsula.

As the chart at right shows, the average mile of Interstate Highway is traversed by 1,750 vehicles per day. Alaska's Interstate Highway System's average traffic density is only one seventh the 12,900 vehicles per day average traffic density on all rural Interstate Highways in the nation. Due to this lower traffic density, Alaska's rural Interstate Highways are built to two-lane design standards rather than the four-lane, divided highway standards found in other states.

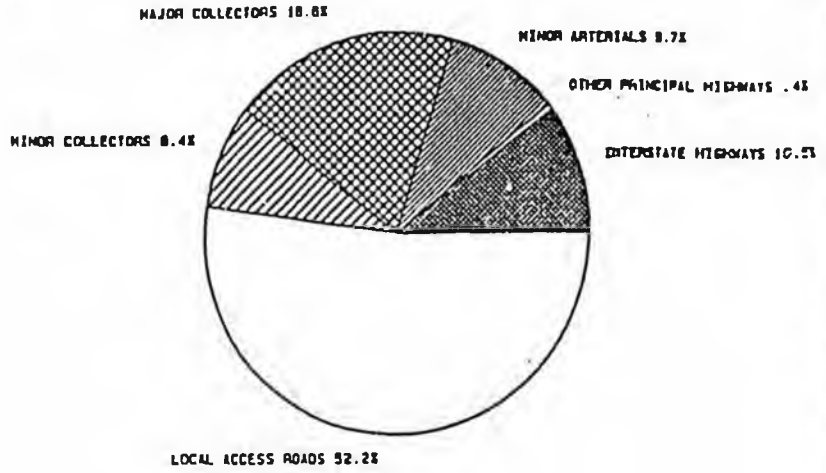
Other Principal Arterials Next In Importance. In terms of traffic service, Alaska's Other Principal Arterials are next in importance. The Egan Expressway in Juneau and the Klondike and Haines Cut-Off Highways are examples of Other Principal Arterials. They are important because they connect Haines, Skagway and Juneau to the Alcan Highway and to the Alaska Marine Highway System.

Minor Arterials Expand The System. As seen, the Minor Arterials link other important Alaska centers with the Interstate Highway System.

Major and Minor Collectors. the Major and Minor Collector Highways further expand the system. All remaining rural roads that serve long-distance travel are designated as Collector Highways. However not all Collectors are state highways, as some are under the jurisdiction of Alaska's cities and boroughs. The Major Collector classification is given to the more heavily travelled Collectors.

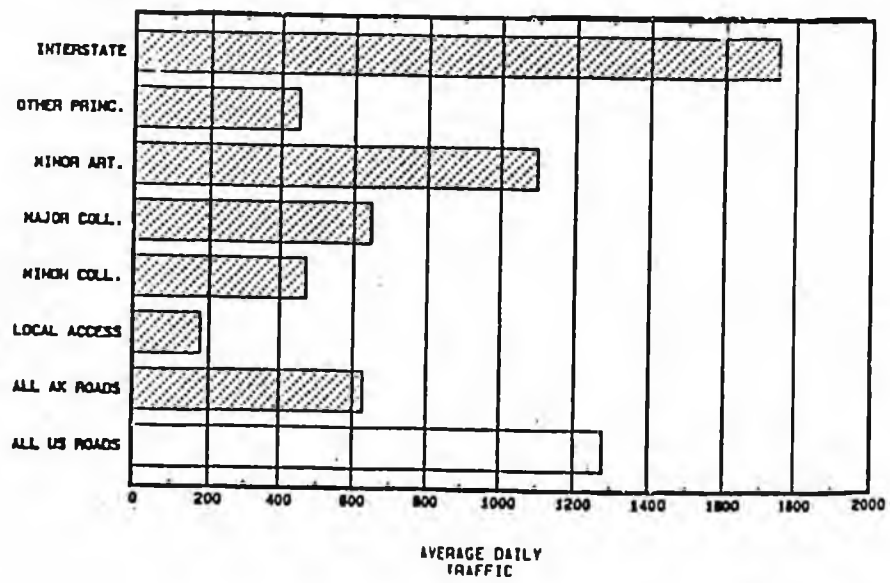
Local Access Roads. The remaining rural roads (not shown on the map) that serve individual or small groups of houses, camps or farms are termed local access. These roads function predominantly as a means of access to land, rather than as a means to convey people, products and raw materials through an area. Most such roads are in the Matinuska-Susitna and Kenai Boroughs.

MILES

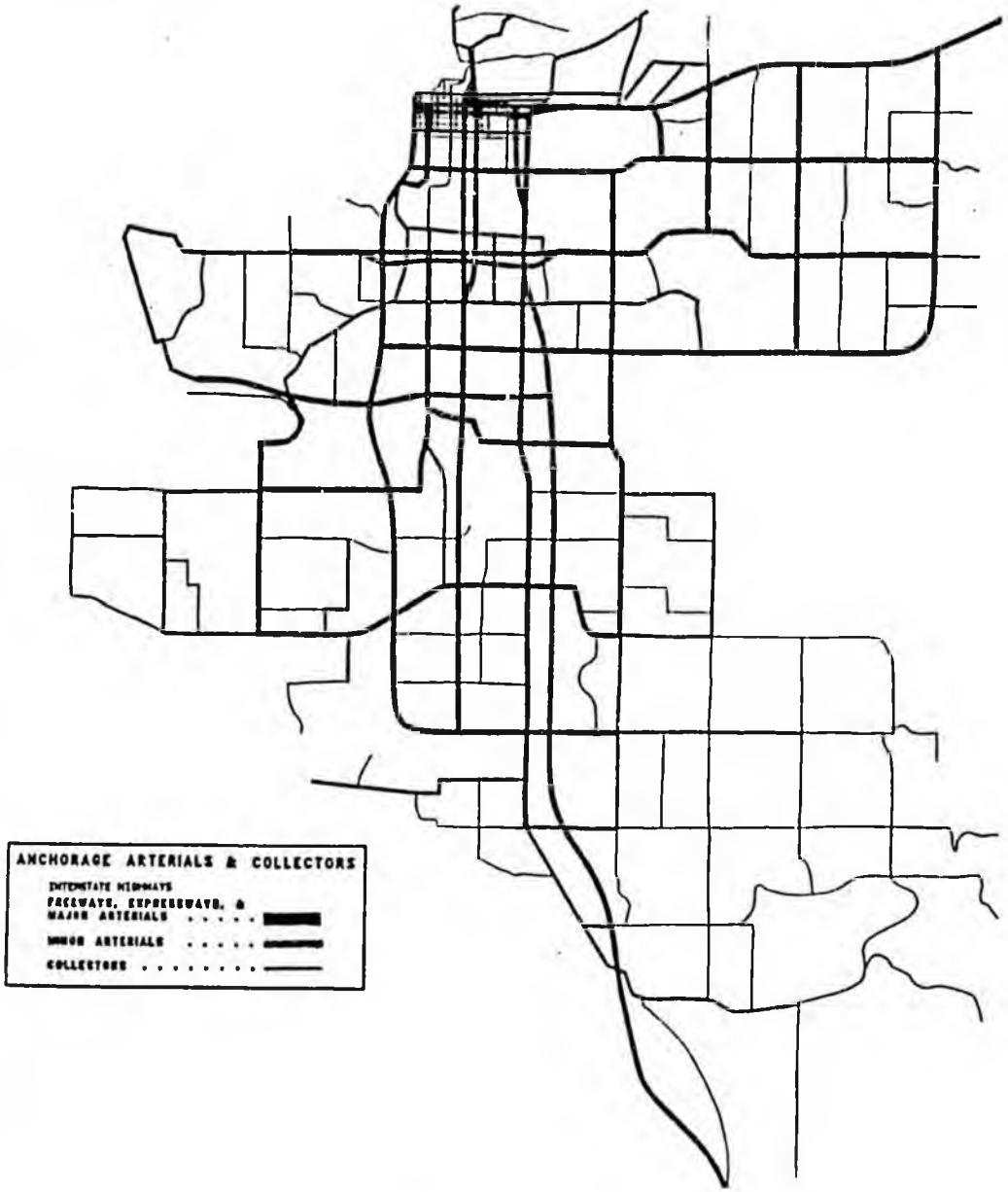


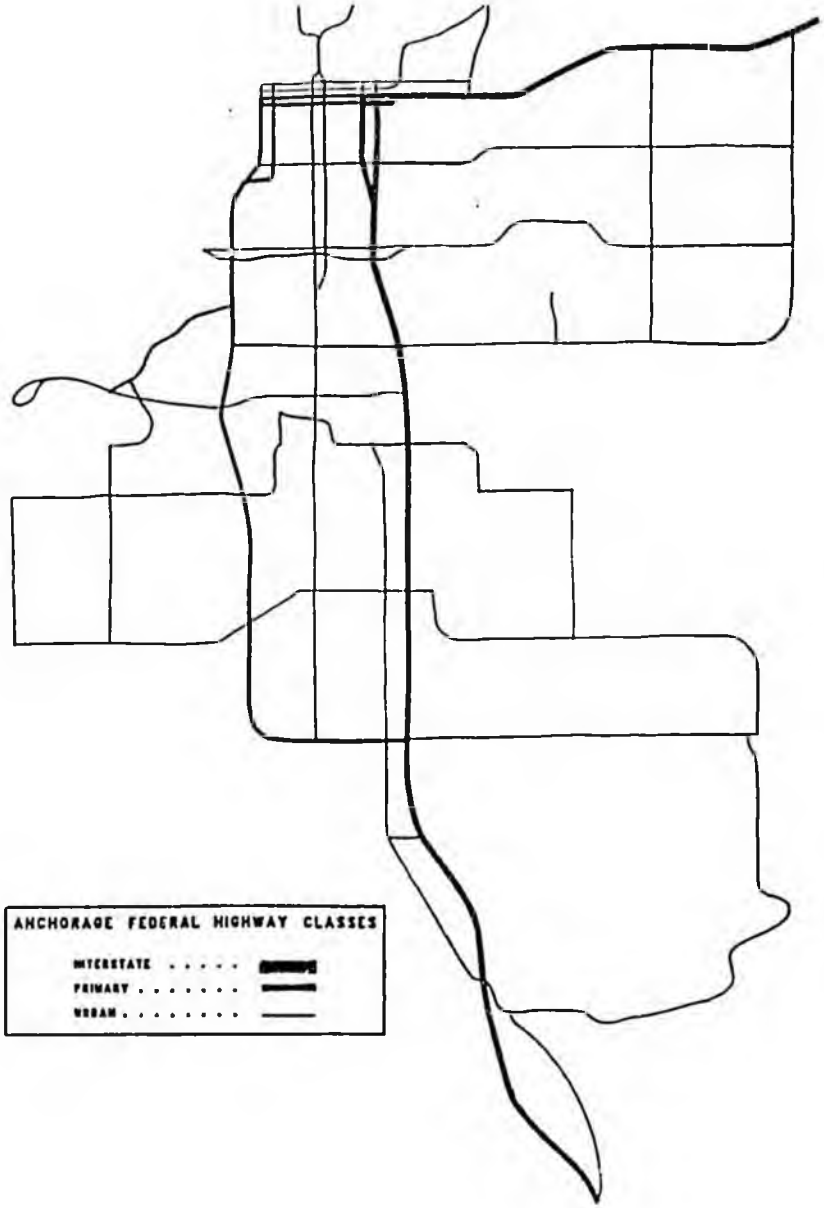
TOTAL: 9,980 MILES

TRAFFIC DENSITY



ANCHORAGE ROAD CLASSIFICATIONS





Functional Highway Classification Also An Urban Management Tool. The maps show three types of Anchorage road classifications. In the upper left are the functional classes agreed upon cooperatively by ADOT&PF and Anchorage officials. The designated Federal Aid Highway Systems are shown in the upper right. And the map on the bottom right shows the designated state highways.

Not shown is the street and highway maintenance scheme agreed upon by ADOT&PF and Anchorage officials in which some state highways are maintained by the Municipality of Anchorage and some municipal streets are maintained by the ADOT&PF. Also not shown are the 780 miles of Local Access Streets in the Anchorage urbanized area.

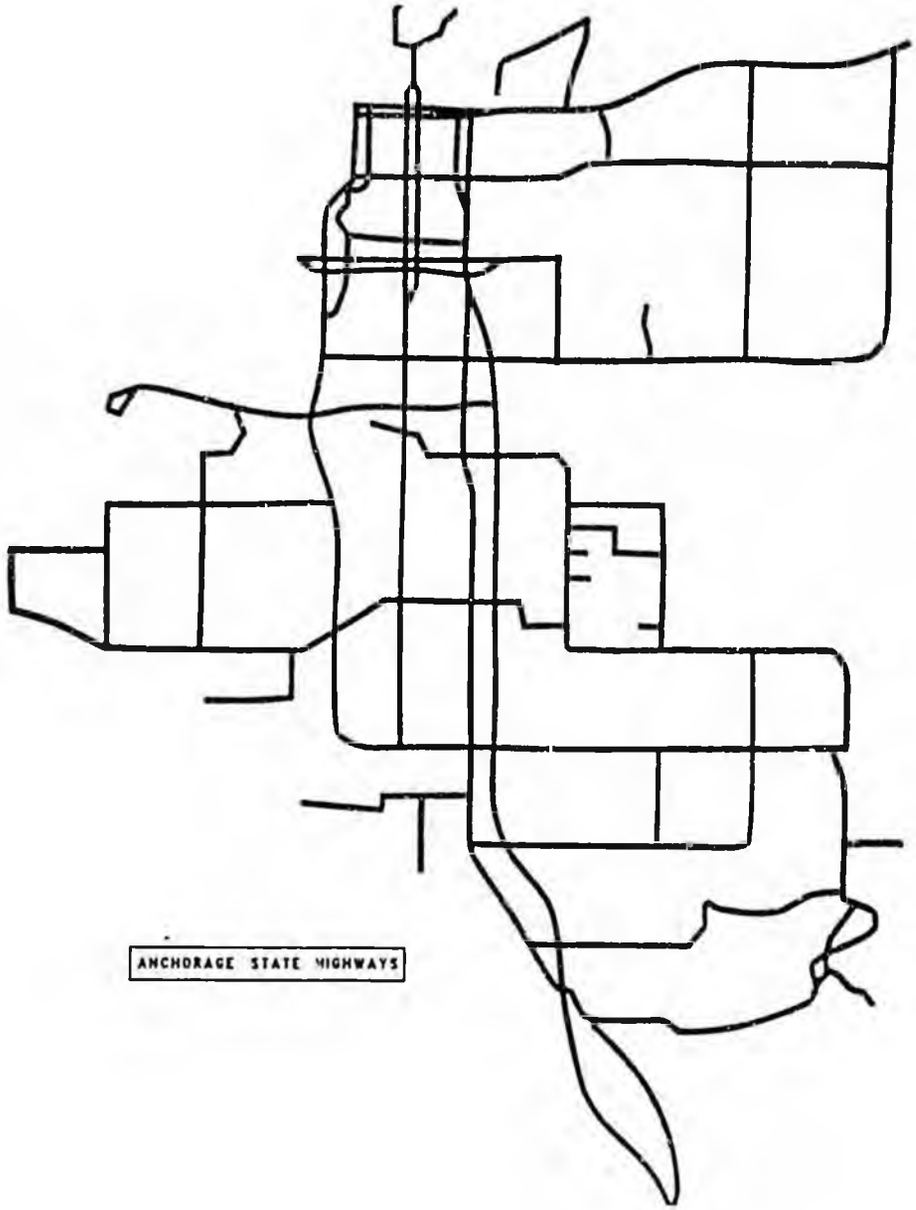
The below table indicates the importance of each functional class of Anchorage streets and highways. Of particular significance is the 88 miles of Interstate Highways, Freeways, Expressways and Major Arterials (9 percent of the miles) which serve almost two thirds (65.4 percent) of Anchorage's daily motor vehicle travel.

Functional Classes	Miles	% Mi.	% Travel	Traffic Density*
Interstate, Freeways, Expressways and Major Arterials	88	9.0	65.4	25,400
Minor Arterials	29	3.0	11.4	13,400
Collectors	80	8.2	10.1	4,300
Local Access	780	79.8	13.1	600
	977	100	100	

* Average daily vehicles per road mile.

The designated Federal Aid Highway System routes -- Interstate, Primary and Urban -- were adopted based on the traffic service function. These are the routes eligible for improvement with Federal Aid Highway Program funds. I-3

High Proportion of State Highways. There are 176 miles of state highway in the Municipality of Anchorage and 801 miles of either municipal street or streets that are "service area maintained". By agreement with the Municipality, the service areas levy road taxes and maintain all non-state highways within their area.



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At 18 percent of the road miles, the state highway system serving Anchorage is more extensive than the average urban state highway network (13 percent) in the nation. (And the national statistics are biased on the high side by high proportions of state highways in the cities of several Eastern states.) Furthermore in Alaska's urban areas, many streets and roads that serve a collector or minor arterial function are state highways.

As a result state resources must be used for the operation, maintenance and improvement of routes with only a minor traffic service function. Routes of greater statewide traffic service significance–in terms of their function in either connecting communities or distributing statewide traffic to important economic centers within urban areas–must compete for scarce state resources with the urban collector and minor arterial routes of low statewide significance. Compounding the problem is the fact that ADOT&PF officials must unnecessarily deal with urban issues such as land use and traffic control that are more properly a local responsibility.

Joint Action Needed. While the ADOT&PF has authority to transfer responsibility for state highways to local government, this is a very difficult problem due to the local government cost implications. Therefore, to resolve the issue of urban highways, it is recommended that the ADOT&PF and the Legislature first establish a state highway jurisdiction policy in concert with municipal officials and then make the changes that satisfy the policy.

Use The Functional Classification Plan. The most widely accepted basis for redefinition of state highways is the functional classification hierarchy of streets and highways. This is used to test alternative state/local jurisdictional plans.

Suggested Alternatives. One obvious alternative is to place only urban extensions of state highways on the urban state highway network. A second is to add to the first by including all Freeways and Expressways. The third alternative would be the addition of Major Arterials.

Financial Resources Are An Important Consideration. To ease the burden of a shift in urban road responsibility, there are financial and management arrangements that can be established.

One such arrangement is the Urban Arterial Board in the State of Washington. Only 6.7 percent of the urban road mileage in Washington is designated as state highway. Therefore the Washington Legislature established an Urban Arterial Fund and an Urban Arterial Board in 1968 to assist municipalities on a fund matching basis to make improvements to those designated urban arterials that are not state highways. It is recommended that Washington's success in limiting urban state highway responsibilities to major arterials and the success of the Urban Arterial Board and the Urban Arterial Fund in meeting Washington's urban arterial needs be studied for possible application in Alaska.

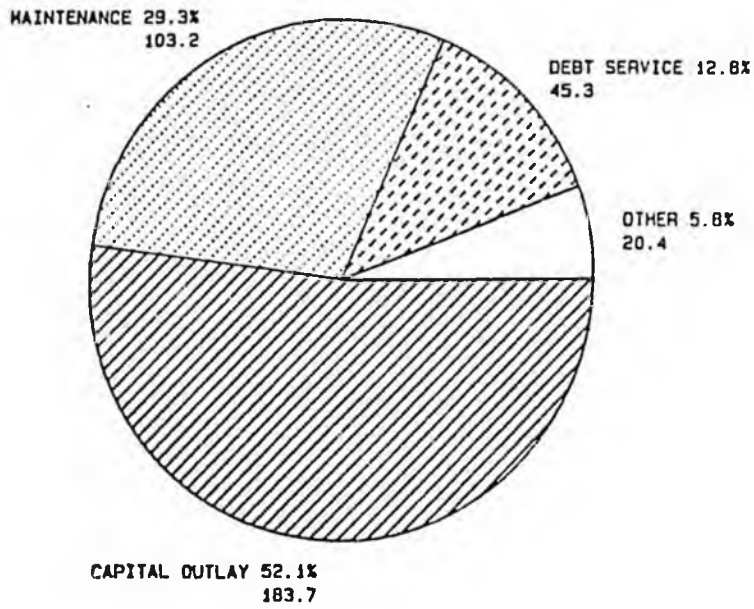
First Steps Taken. The need for a clear policy on road control is recognized by Alaska officials. In 1987 the Alaska Legislature set forth the following directive to begin dealing with the issue:

> "IT IS THE INTENT OF THE LEGISLATURE THAT DOT/PF: 1) ESTABLISH A ROAD RESPONSIBILITY TASK FORCE COMPRISED OF REPRESENTATIVES OF DOT/PF, LOCAL GOVERNMENTS, UNORGANIZED AREAS, AND USER GROUPS. THE TASK FORCE IS TO REVIEW THE FEASIBILITY OF TRANSFERRING THE RESPONSIBILITY OF DIRECT MAINTENANCE ON CERTAIN ROUTES FROM THE STATE TO LOCAL GOVERNMENTS, AND TO EXAMINE REASONABLE AND EQUITABLE FUNDING SOURCES FOR MAINTENANCE ACTIVITIES, INCLUDING A REVIEW OF THE MOTOR FUEL TAX AND OF THE EXISTING ROAD SERVICE ACCOUNT IN THE STATE' REVENUE SHARING PROGRAM.
> THE TASK FORCE SHALL ALSO STUDY THE ISSUES OF ROAD OWNERSHIP, LIABILITY, AND THE TRANSFER OF EQUIPMENT AND EMPLOYEES..."

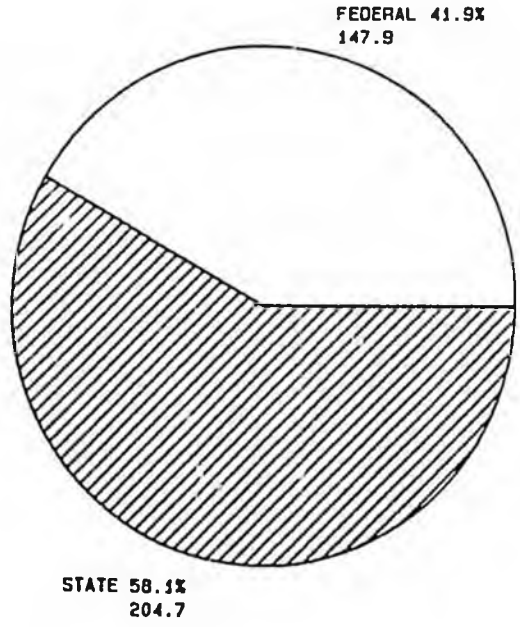
In September 1987, the ADOT&PF selected a facilitator to assist the Commissioner in responding to the mandate. In November, the Task Force was named and a first meeting planned.

1986 STATE HIGHWAY PROGRAM

EXPENDITURES



RECEIPTS



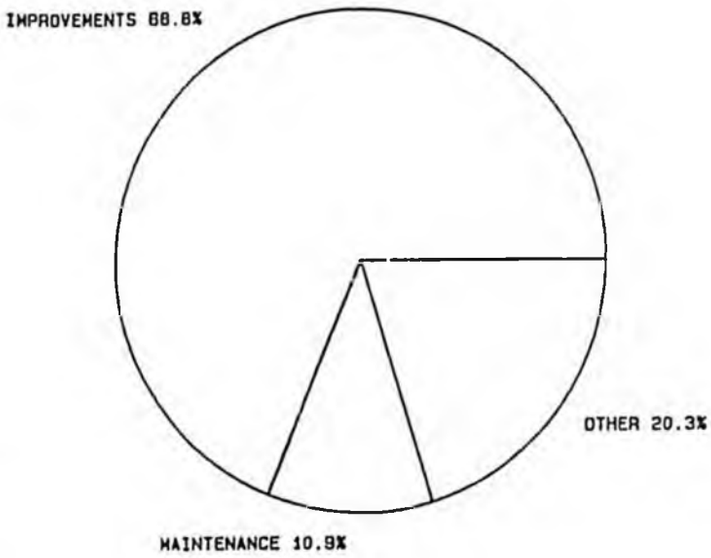
TOTAL: $352.6 MILLION

Highway Expenses Five Times The National Average. For 1986 (calendar year) the ADOT&PF reported to the Federal Highway Administration that it spent $353 million on state highway administration, maintenance, operations and improvement. This is about $700 per capita and compares with a $140 per capita national average of expenditure on state highways.

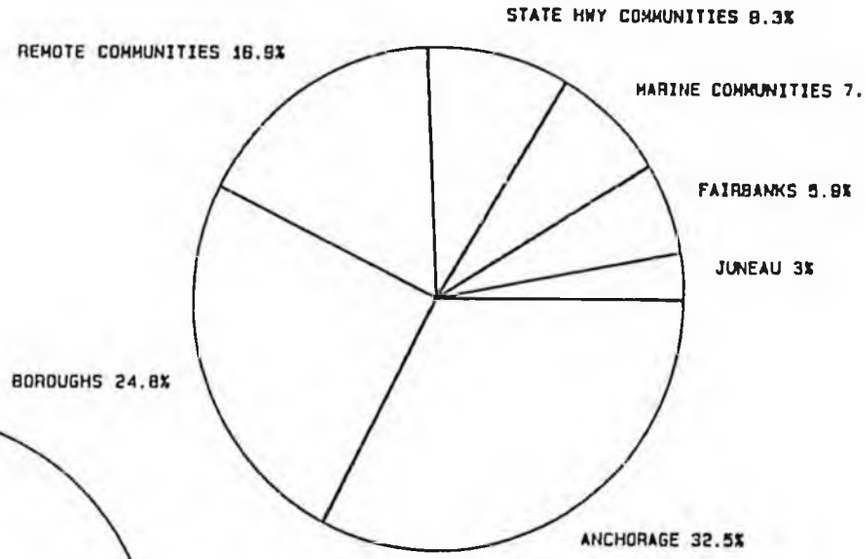
Marine Highway System Costs Included. Included are all 1986 capital as well as maintenance and operations expenditures for both land service state highways and the Marine Highway System. Also included are $45.3 million to service the state debt on borrowing for previous state highway system improvements. Law enforcement and safety expenditures amounting to $11.4 million are included in the "other" category of expenditure as well as $4.7 million for highway program administration and $4.2 million for highway planning and research. Finally in the other category is the 1986 expenditure of $4.3 million for Local Service Roads and Trails, which is a portion of the State Highway Program (administered by the ADOT&PF) but directed toward local road betterments.

1985 LOCAL ROAD & STREET PROGRAMS

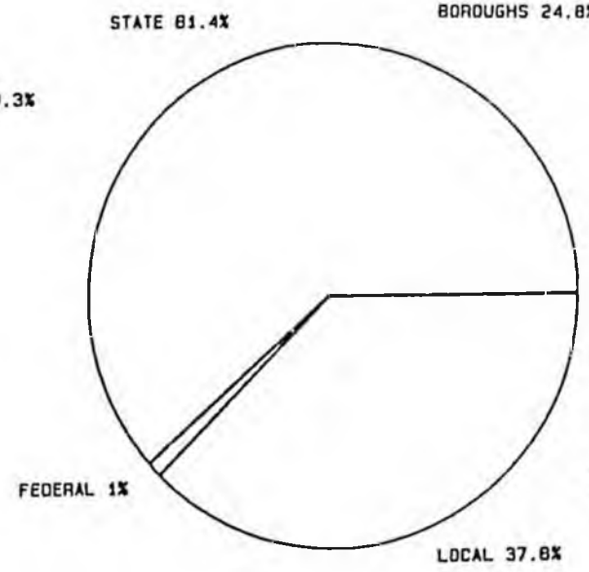
SPENDING CATEGORIES



UNITS OF GOVERNMENT



SOURCE OF FUNDS



TOTAL: $237.8 MILLION

Total Road Spending High. Alaskans raised and spent $237.8 million in 1985 (calendar year) for upkeep and improvement of the 3,992 miles of local streets and roads. For a population base of only 536,000 persons, this is a very significant level of expenditure. When combined with the 1986 state highway program of expenditure, it is estimated that total 1986 highway, street and road spending was about $590 million or $1,090 per capita, about four times the national average ($260 per capita).

Important ADOT&PF Factfinding Function. To assist the Office of the Governor and the Legislature and to comply with federal mandates, the ADOT&PF annually surveys, compiles and reports on local road and street spending. The ADOT&PF also verifies annually the current mileage of local roads and streets and this provides the base for state apportioning of road revenue sharing funds. 1985 information is the latest available on local road finance.

Road Revenue Sharing Funds. When the Legislature fully funds this program, each community receives a base of $2,500 per mile of conventional road and $1,500 for each mile of ice roads. However these amounts are adjusted upwards to accomodate higher costs in many areas of the state.

While communities are required to use only 20 percent of the funds for road purposes, ADOT&PF studies show that a majority of the road revenue sharing funds are actually used for road purposes.. Only that portion of the road revenue sharing funds that were actually devoted to municipal road programs are reported in the annual ADOT&PF surveys of municipal road expenditures.

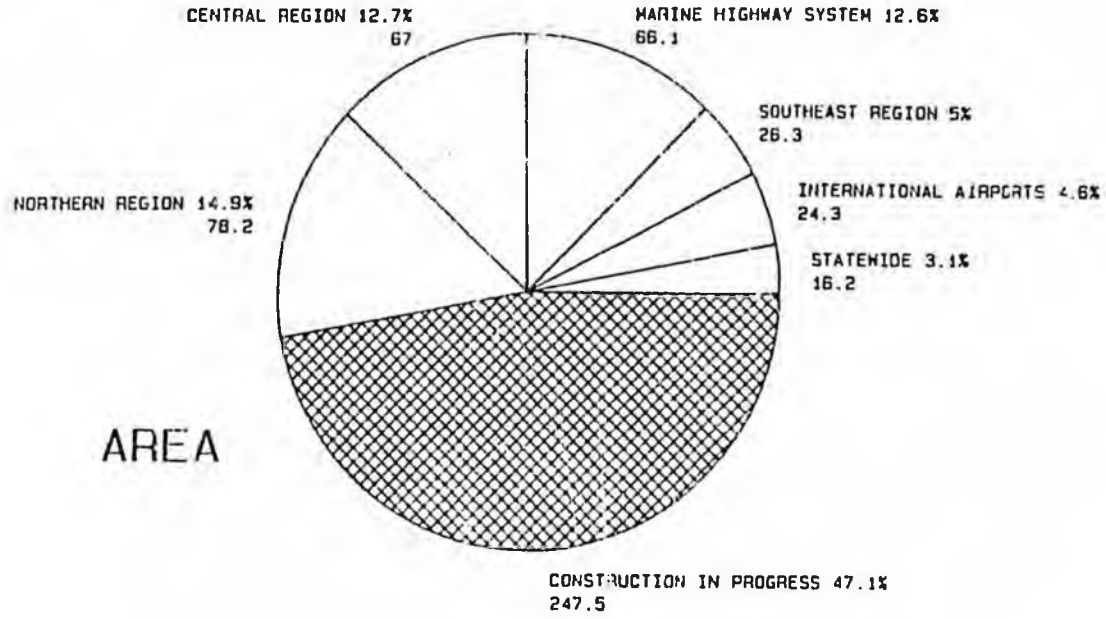
Special Terminology Used. Note the special terminology used in the "Units of Government" chart. "State Highway Communities" refers to all cities (15) directly served by the land service State Highway System, excluding Anchorage and Fairbanks. "Marine Communities" are the 20 cities, excluding Juneau, that are served by the Marine Highway System but not connected to the land service State Highway System. The "Remote Communities" are the remaining incorporated or unincorporated places not served by state highways or ferries.

State Funds Rising. In 1985, state grants for local roads amounted to $145 million, up from $88.4 million in 1984. This includes the portion of road revenue sharing funds that were used in road upkeep and other state funds appropriated for specific local road improvements. On the average the 1985 state contribution toward local road and street upkeep amounted to $270 per capita, but ranged from $120 per capita in the seven boroughs to $740 per capita in the Remote Communities.

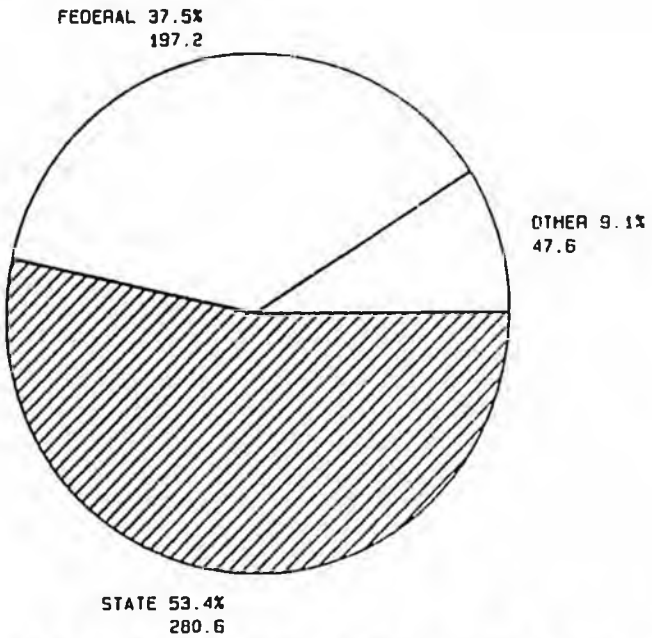
Fairbanks High In 1985 State Road Receipts. Based on miles of local road in each community, Fairbanks led with $132,000 per mile in state road receipts, while at the other extreme, the seven boroughs received an average of $13,000 per mile. Anchorage received $50,500 per mile. However in reviewing municipal road receipts and expenditures, it should be recognized that the year-to-year fluctuations are large and closely related to specific road improvements authorized by the Legislature.

1986 ADOT&PF EXPENDITURES

AREA

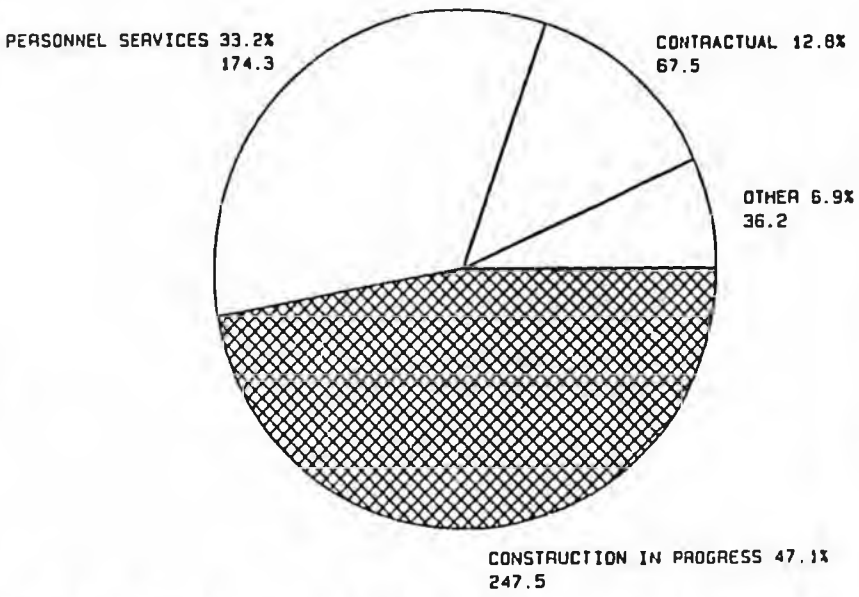


FUND SOURCES



TOTAL: $525.4 MILLION

EXPENDITURE OBJECTS



ADOT&PF Spent $525.4 Million in 1986. The charts above and at right are five perspectives on Alaska Department of Transportation and Public Facilities expenditures in fiscal year 1986. The ADOT&PF is not only responsible for State Highway System administration, operations, maintenance and improvement, but also owns, operates and maintains the nine-ship Marine Highway System, two International Airports, 215 other airports, 45 seaplane floats, harbor facilities, the state equipment fleet and almost 400 state owned buildings.

Highlights:

- o Payments for construction in progress, mostly highway and airport improvements, represented almost half of all expenses, $247.5 million.
- o Spending in the Northern Region, which has the most miles of state highway, led the three ADOT&PF regions.
- o Not included as ADOT&PF income is the $33.8 million in passenger and vehicle fees for Marine Highway System passage, which accrue directly to the Alaska Treasury.
- o About three fourths of the federal funds are reimbursements from the Federal Highway Trust Fund for state highway improvements. The other one fourth is from the Federal Airport Trust Fund for airport improvements.
- o Some of the "other" income is from concessions and fees from Anchorage and Fairbanks International Airport usage. These funds are deposited in the International Airport Enterprise Fund.
- o Two thirds (66.8 percent) of all expenditures were directed to private enterprise for construction in progress, supplies and other costs of business operation. One third (33.2 percent) was for ADOT&PF salaries and benefits.
- o 57.2 percent of all expenditures were for design (consulting or in house), right of way purchase and construction progress payments for improvements to highways, airports, ferries, harbors and other public facilities.

More Information Needed On Finance Trends. The information shown is the result of a special analysis made for this Review by the ADOT&PF. However it has been Highway Users Federation experience in other state highway program reviews that such information is readily available in the annual reports of the state highway and transportation departments. The information is important for the following reasons:

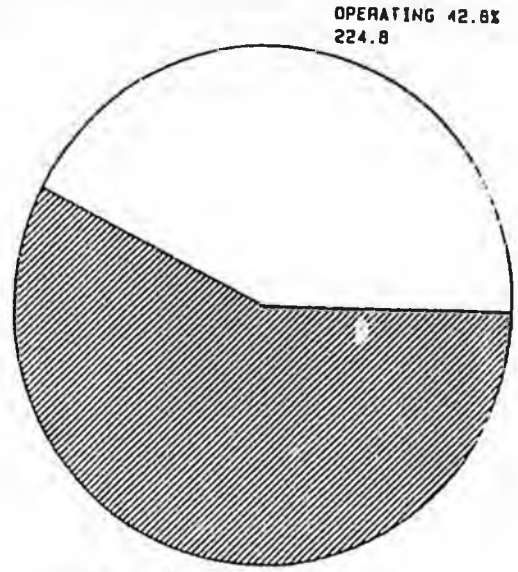
1) to place the Program in perspective with the programs of other state highway and transportation departments in order to detect possible inconsistencies,

2) to place modal components in perspective,

3) to analyze trends, and

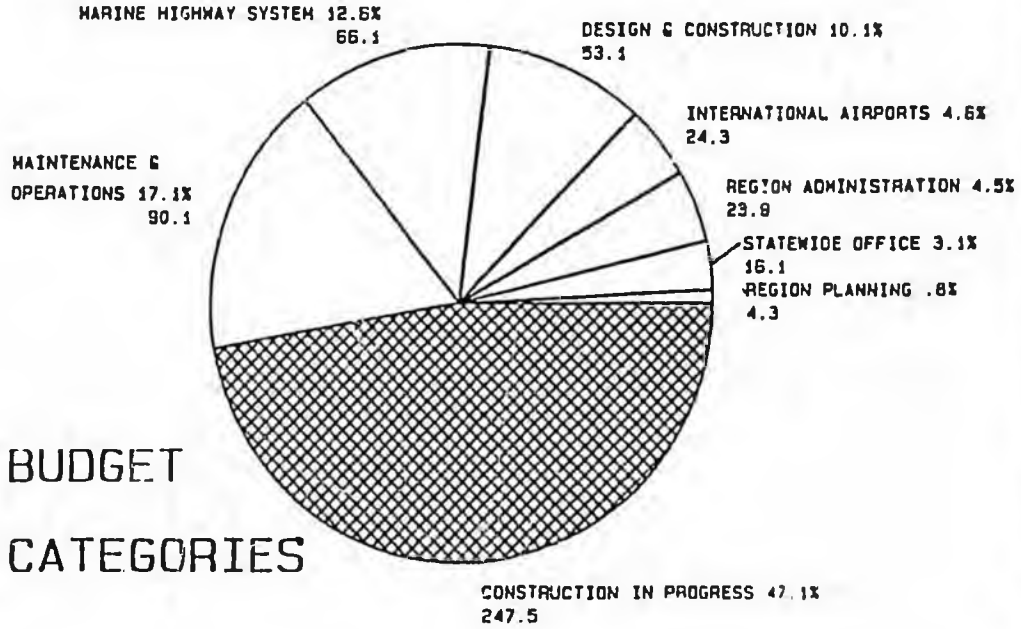
4) to provide legislators, administrators, other officials and constituent organizations with information necessary to make informed decisions regarding Program direction and support.

MAJOR BUDGET ELEMENTS



TOTAL: $525.4 MILLION

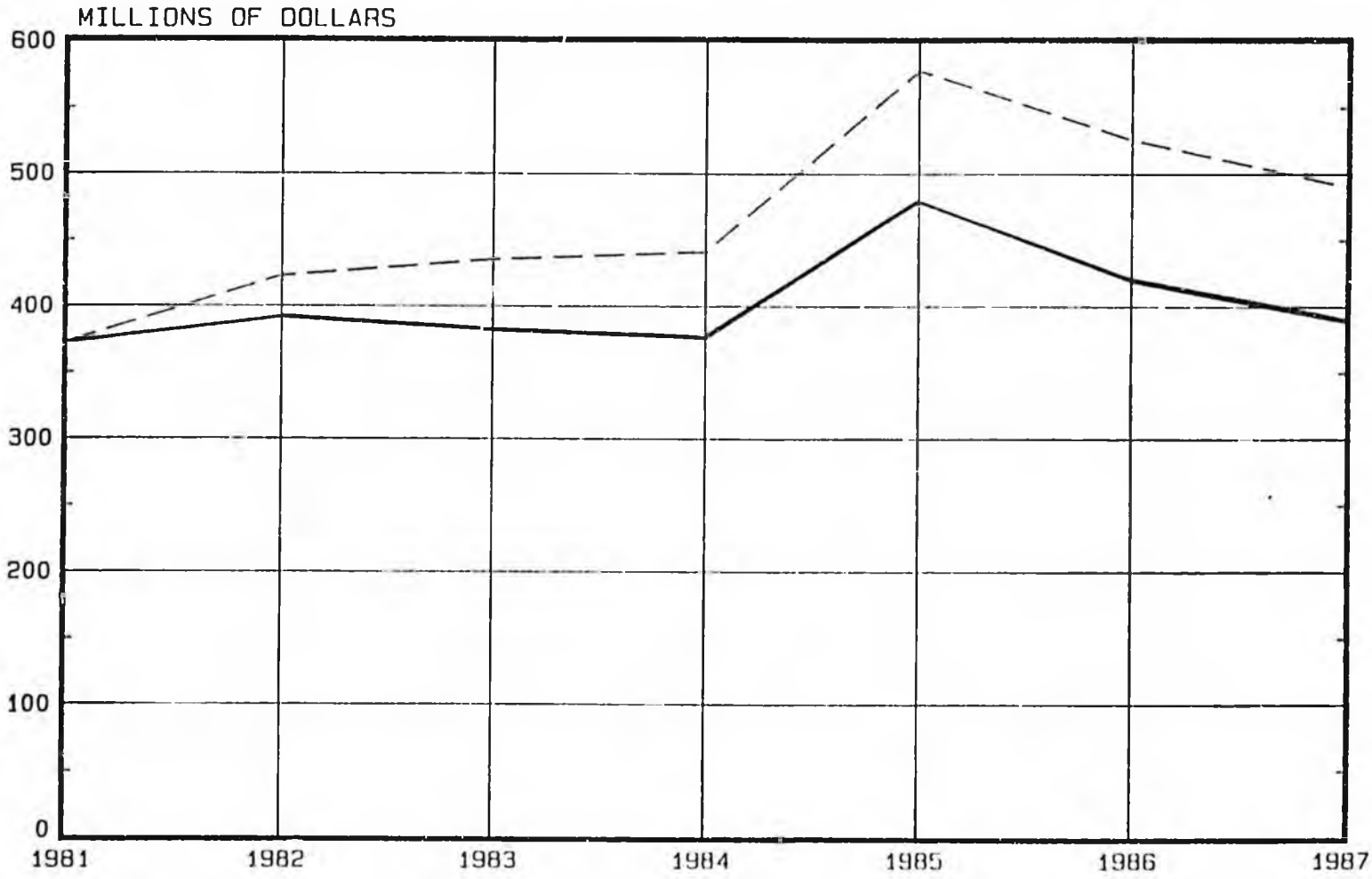
BUDGET CATEGORIES



ADOT&PF EXPENDITURE TRENDS

CURRENT $ — — — —

CONSTANT 1981 $ ——————

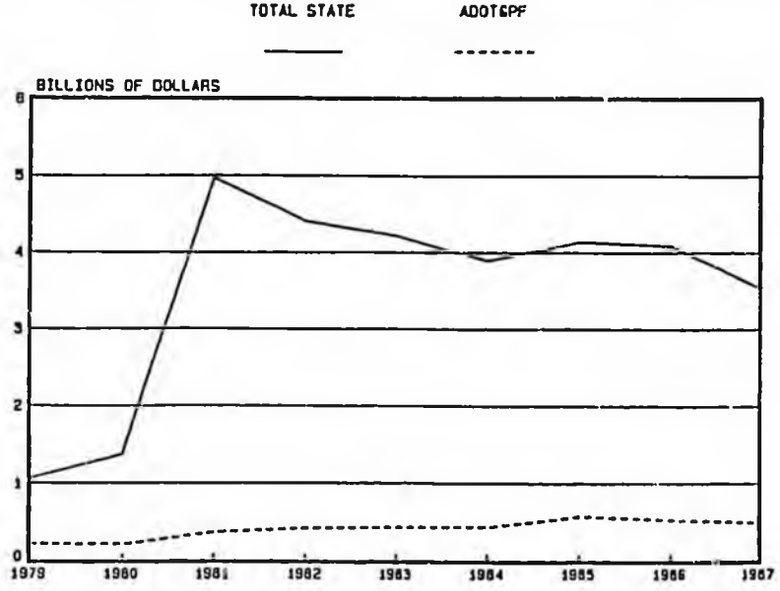


ADOT&PF Spending Up Modestly Over Last Seven Years. Two views of ADOT&PF spending over the 1981 to 1987 period are shown in the above chart. The dashed line shows the actual spending while the solid line depicts the value of the spending when inflation is considered. (The Anchorage Area Consumer Price Index was used to show the 1981 value of each current year's spending.) As a result of the eroding value of money, ADOT&PF spending of $493 million in FY 1987 was worth only $385 million in terms of what could be purchased with 1981 money. Despite the apparent $120 million increase in ADOT&PF funds, the 1987 spending level was up by only $20 million or five percent over the 1981 level.

ADOT&PF Expenditure Increases Are Low When Related To Travel Increases. Travel change is one indicator of transportation finance need. During the 1981 to 1987 period motor vehicle travel in Alaska increased 62 percent, airport enplanements increased by 25 percent and Marine Highway System passengers were up by 9 percent. Furthermore, the lane-miles of state highway increased 12 percent, thereby increasing the demand for such maintenance activities as snow and ice control.

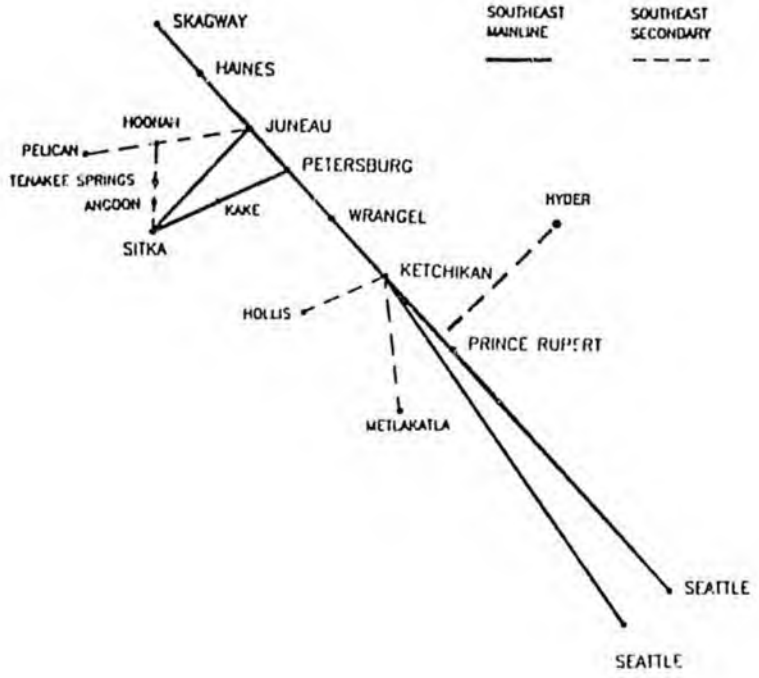
ADOT&PF Proportion of Total State Spending Has Diminished. While ADOT&PF spending has risen from $212 million in 1979 to $493 million in 1987, other state spending has risen even faster. This is noted by the fact that 1987 ADOT&PF expenditures represented 13 percent of total State of Alaska expenditures in 1987, down from 20 percent in 1979.

ADOT&PF & TOTAL STATE EXPENDITURES

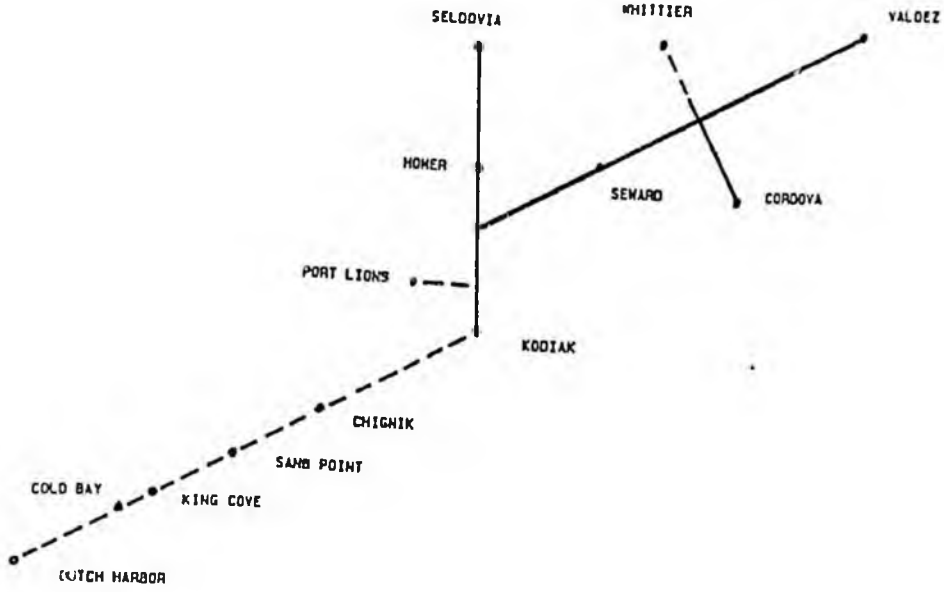


MARINE HIGHWAY SYSTEM

SOUTHEAST



SOUTHWEST



Waterborne Highway System. Alaska has more coastline than the rest of the United States combined. And more than half of its cities are unreachable by conventional highways. These are the reasons that Alaskans in 1960 voted the necessary bonds to establish the state's waterborne highway system. Operating as a division of the Department of Transportation and Public Facilities, the Marine Highway System started with one vessel -- the Motor Vessel Chilkat. During its first fully operational year in 1963, four ships served the fleet.

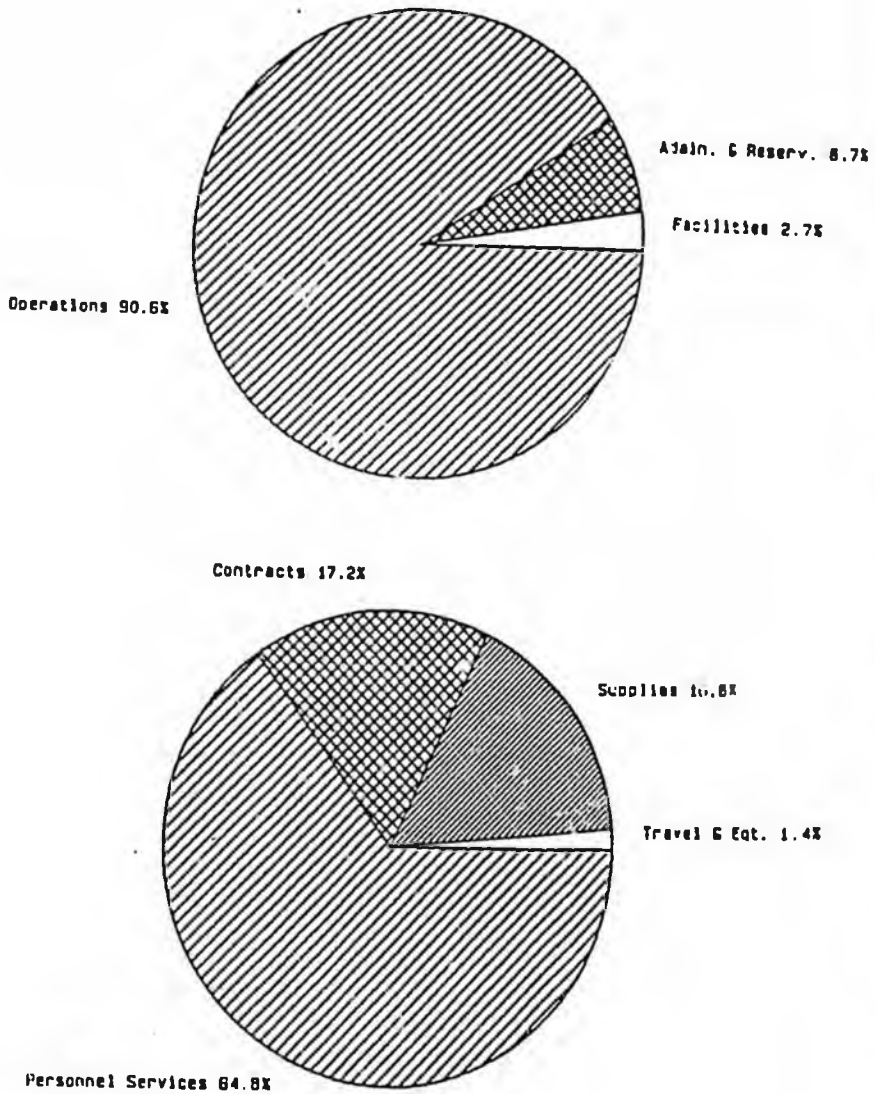
Nine Vessel Fleet. The original system operated from northern terminals at Skagway and Haines, to Prince Rupert in the south. Since then service has been extended to Seattle. And the nine ships, which now comprise the fleet, also provide feeder service in Southeastern Alaska, as well as from the Kenai Peninsula to the island city of Kodiak, to the communities of the Aleutian Chain, and to the communities on Prince William Sound.

The Motor Vessel Columbia is the largest ferry. Built in 1973 the Columbia is 418 feet long, with a capacity for 1,000 passengers and 180 automobiles. She has a service speed of 19 knots. There are 20 2-berth cabins and 71 4-berth cabins.

The other ferries range in size from 100 feet to 408 feet and have passenger carrying capacities ranging from 75 to 750 persons as well as auto and truck carrying capability. Food service, state rooms, cocktail lounges and solariums are available.

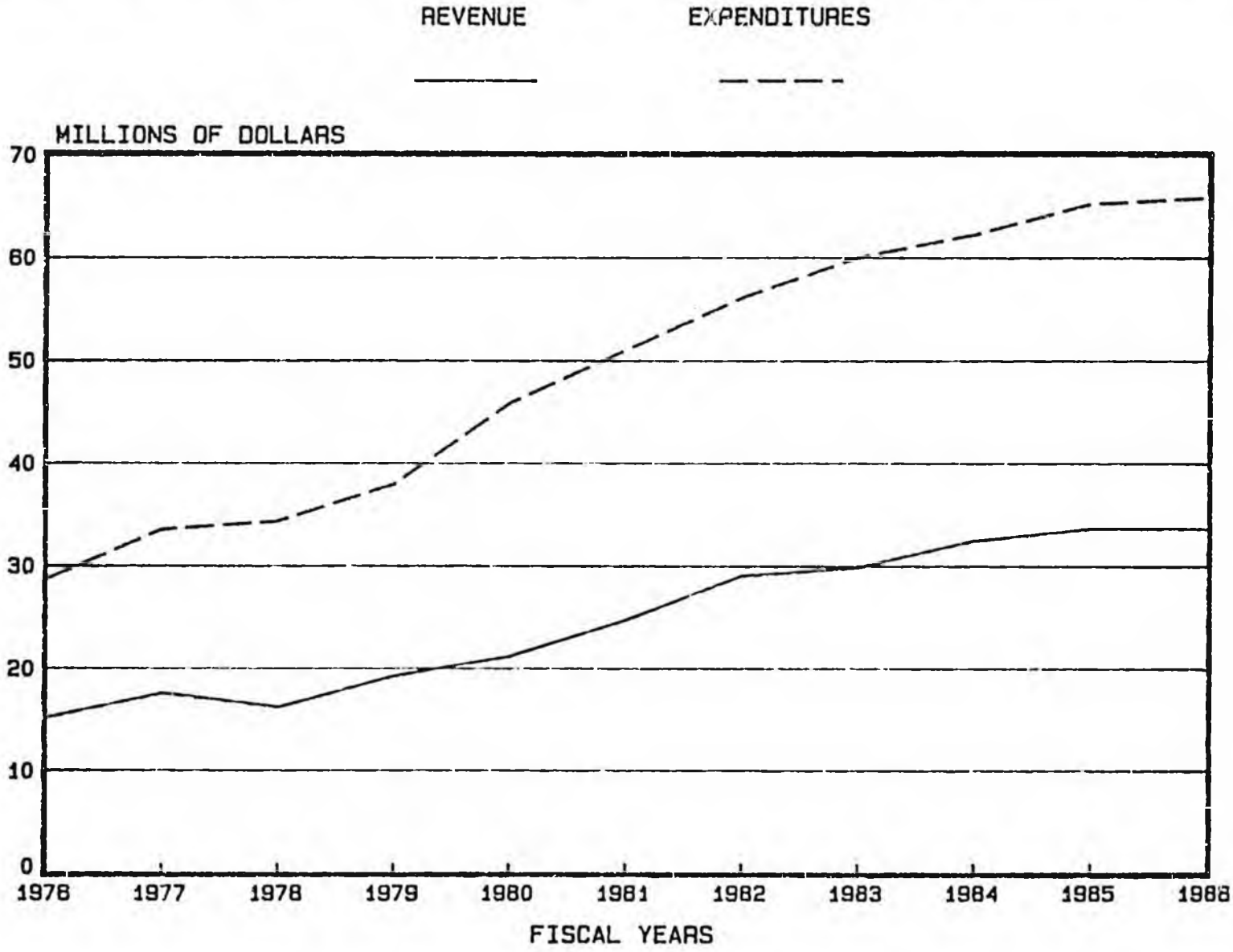
Unique System. No other state department of transportation in the nation operates a ferry fleet that offers such extensive service.

1987 BUDGET



Total: $63.4 Million

MARINE HIGHWAY SYSTEM FINANCIAL TRENDS



Fares Cover Over Half AMHS Costs. As shown above, passenger and vehicle fares and other en route receipts met about 55 percent of all costs in fiscal year 1986. (FY 1987 expenditures were $65 million while revenues were $33.8 million.) And this relationship between revenues and expenditures has remained approximately steady for the past 12 fiscal years.

Operations Are The Major Costs. As shown in the 1987 budget charts on the right, the costs of ship operations including necessary overhauls and improvements are 90.6 percent ($56.4 million) of all costs. The manning of shore facilitiesand overall administration costs, including the operation of the reservation system, is 9.4 percent ($7.0 million) of budgeted costs.

Personnel Costs Are Almost Two Thirds of All Costs. The 1987 budgeted complement included 879 persons, (705 permanent, 174 seasonal or part-time). To operate the ships safely and efficiently, to maintain the equipment and to serve the personal needs of passengers, AMHS personnel costs are almost two thirds (64.8 percent) of total costs.

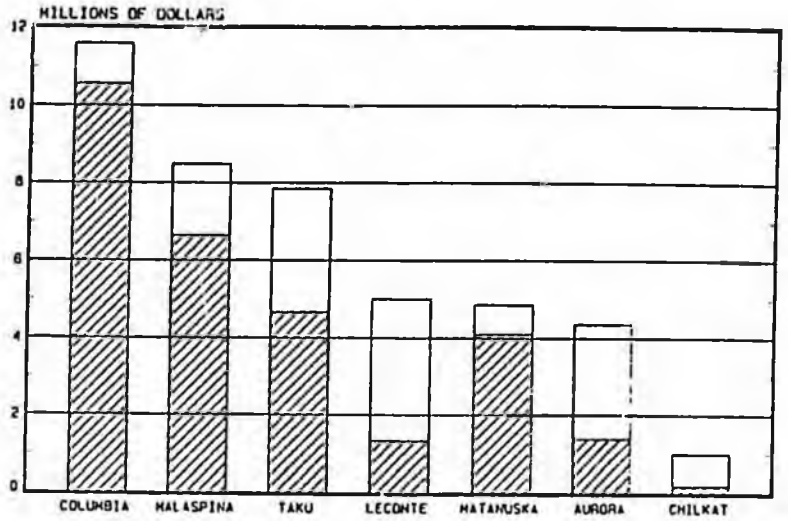
Morale Good. Despite the extensive travel, crew morale seems to be good. Management in recent years has made progress in attending to member concerns and in giving crew members a greater voice in management decisions. Periodic Director and crew meetings have proved to be successful.

Need To Budget For Ship Replacements. The ferries range in age from 10 to 24 years with the average being 18 years old. With ship replacement costs ranging from $10 million for the smaller ships to $100 million for the larger ships, it would be prudent for Alaskans to begin setting aside funds annually to meet replacement needs. As is the case for Alaska's International Airport capital assets, it is suggested that future needs be accounted for in the annual budget process. Passenger and vehicle revenue is the suggested source of depreciation funds.

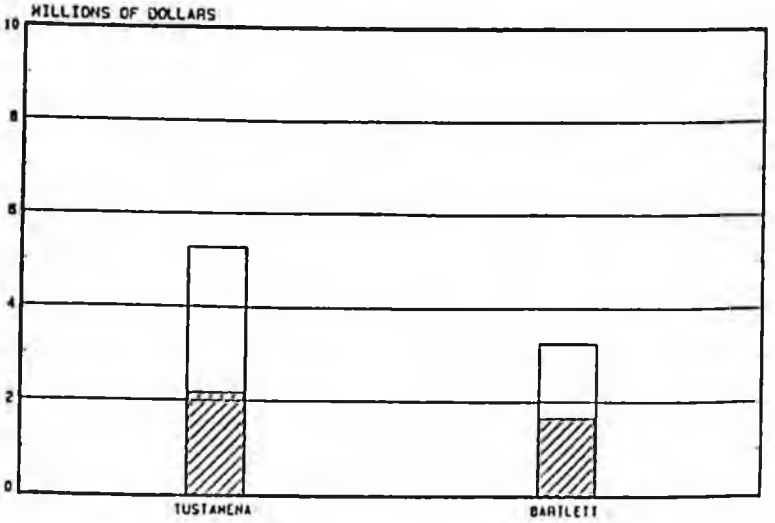
Need For Secure Funding Sources. As is the case for highway planning, ADOT&PF officials need the assurance of secure funds over a three to five year period in order to plan the most effective and efficient program of AMHS operations, maintenance and improvements. Passenger and vehicle revenue should form the base of such funds with set annual supplements from the Legislature and the communities served.

SHIP-BY-SHIP ANALYSIS

SOUTH EAST SYSTEM



SOUTH WEST SYSTEM



AIRPORTS

International

Central Region
- Anchorage International

Northern Region
- Fairbanks International

Regional Center

Central Region
- Bethel
- Cold Bay
- Dillingham
- Kodiak

Northern Region
- Barrow
- Galena
- Kotzebue
- Nome

Southeastern Region
- Juneau
- Ketchikan

District

Central Region
- Aniak
- Cordova Mile 13
- Homer
- Kenai Municipal
- King Salmon
- McGrath
- St. Marys
- Unalaska/Dutch Harbor

Northern Region
- Deadhorse
- Fort Yukon
- Gulkana
- Unalakleet

Southeastern Region
- Petersburg
- Sitka
- Wrangell

Transport

Central Region
- Flat
- Iliamna
- Merrill Field
- Platinum
- Sand Point

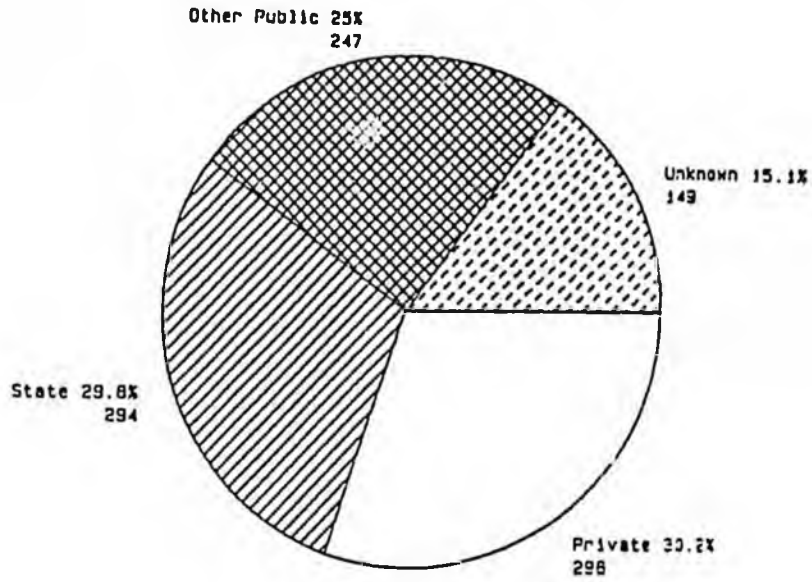
Northern Region
- Bettles
- Dahl Creek
- Prudhoe Bay
- Tok Junction
- Valdez

Southeastern Region
- Klawock
- Yakutat

There are 998 airports and bush landing strips in Alaska with 215 out of 294 state-owned facilities actually maintained by the ADOT&PF. The Anchorage and Fairbanks airports are included in the Alaska International Airport System in that they serve commercial aircraft of many nationalities. Due to their complexity, the International Airports are managed by a special division of the ADOT&PF.

AIRPORT OWNERSHIP

Total: 998

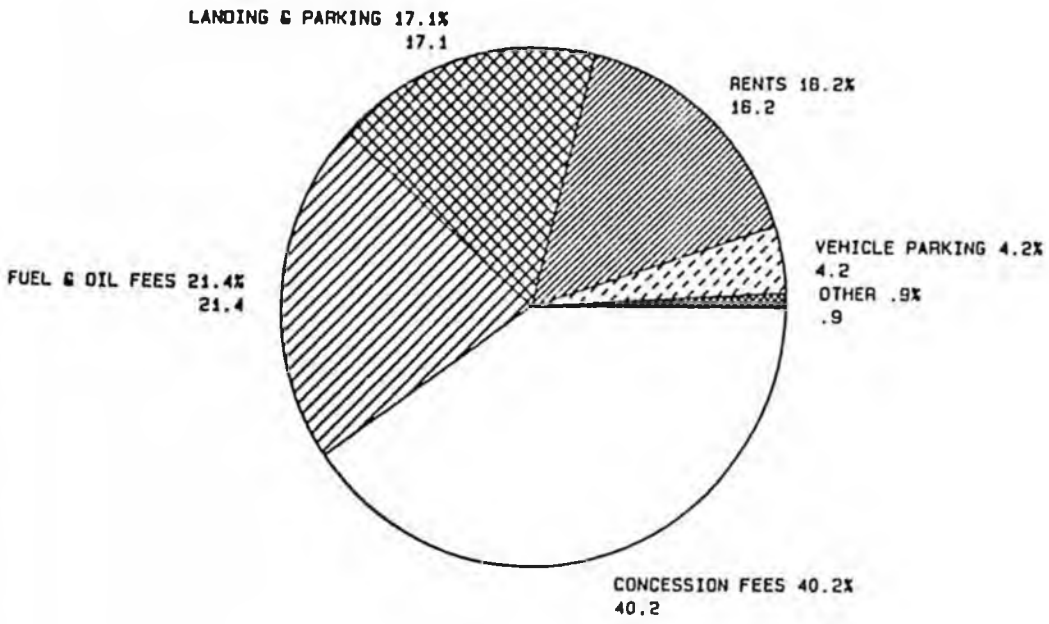


STATE AIRPORTS

FUNCTIONAL CLASSIFICATION	CENTRAL REGION	NORTHERN REGION	SOUTHEAST REGION	TOTAL
INTERNATIONAL	1	1	0	2
REGIONAL CENTER	4	4	1	9
DISTRICT	7	4	3	14
TRANSPORT	4	5	2	11
COMMUNITY	83	46	17	146
LOCAL	39	50	23	112
TOTAL:	138	110	46	294

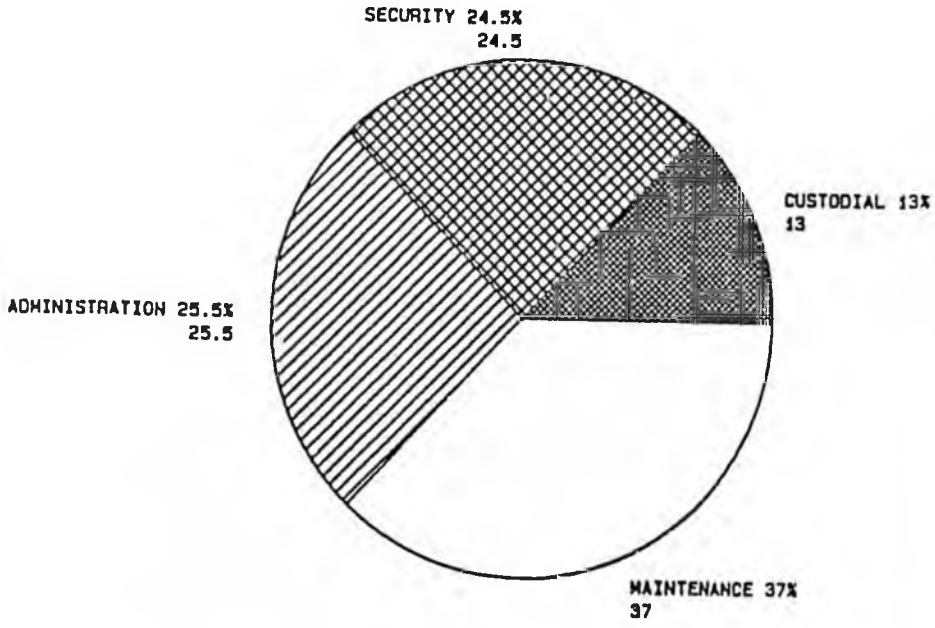
INTERNATIONAL AIRPORTS

1986 REVENUE



TOTAL: $47.9 Million

1986 OPERATING EXPENSES



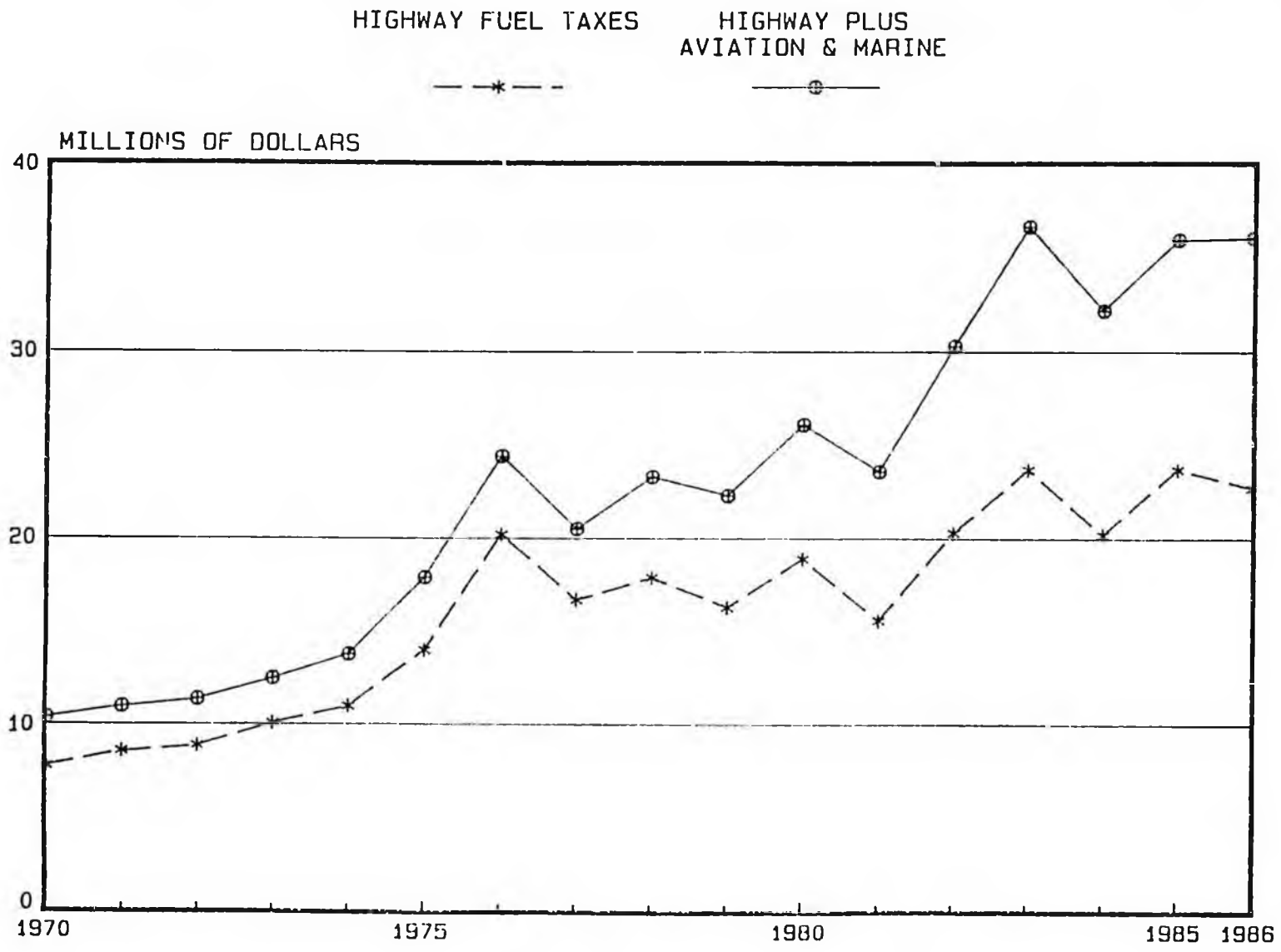
TOTAL: $25.5 Million

Because of its fast growth, extensive capital needs, self-sufficient nature and the need to guarantee the amortization of Alaska International Airport System bonds, all operating revenue generated and all expenditures are accounted for in a special Enterprise Fund. As indicated, revenues in fiscal year 1986 amounted to $47.9 million up from $42.5 million in 1985. And despite Alaska's economic downturn, revenues continued upward in 1987 to $48.9 million. As of June 30, 1986 the combined value of the two airports stood at $293 million up from $251 million a year earlier.

Bond Debt Up. At the close of fiscal year 1988 bonded indebtedness stood at $41.9 million. An additional $38.0 million of revenue bonds were issued in November 1986 for construction of the parking garage at the Anchorage International Airport.

Improvements. In fiscal year 1986 the $22.4 million in operating income together with $2.0 million in federal grants and net interest income of $0.9 million were used to make bond principal payments ($2.0 million), to increase restricted assets ($0.1 million), to increase working capital ($3.8 million) and to upgrade airport property, plant and equipment ($19.3 million).

MOTOR FUEL TAX TRENDS



Secure Funding Source Needed. One of the problems of providing a secure, predictable source of funds for Alaska's State Highway Program is that the highway user tax base does not provide enough revenue to support highway system maintenance and improvement needs. However for most other states of the nation the motor fuel taxes, the auto and truck registration fees and assorted other taxes and fees levied on motor vehicles and their use do provide the necessary funds to support the State Highway Program. The success of the nation's highway programs is largely attributable to the fact that secure and predictable highway user taxes have met the capital, operating and maintenance needs.

Low Highway User Taxes And Fees. The reason that Alaska's highway user taxes and fees do not meet highway program needs is that they are low in comparison with other states.

For heavy trucks, Alaska ranks lowest in the nation with a tax load of $1,598 per year or 2.0 cents per vehicle-mile of heavy truck travel. This compares to Washington which collects over three times as much ($4,990 per truck, and 6.2 cents per vehicle-mile of heavy truck travel). The highest taxer of heavy trucks is Arizona which collects $11,012 per truck or 13.8 cents per vehicle-mile of heavy truck travel.

For automobiles, Alaska ranks 37th among the states with a $122 tax per average automobile or 1.0 cents per vehicle-mile of travel. The highest in the nation is Rhode Island with an annual tax load of $731 per automobile or 5.9 cents per vehicle-mile of automobile travel (six times the Alaska load). The lowest is New York at $73 per year and 0.6 cents per vehicle-mile of travel. Washington's annual tax on automobiles is $310 per vehicle or 2.5 cents per vehicle-mile of auto travel.

The above facts are based on a 1987 U. S. Department of Transportation report, "Road User and Property Taxes". The taxes and fees were those in effect on January 1, 1987. Included are all highway user taxes and, where applicable, state personal property taxes. The study compared annual taxes on a 80,000 lb. gross vehicle weight truck/trailer combination driven 80,000 miles per year and a 4,200 lb. gross vehicle weight automobile driven 12,500 per year.

Raising Motor Fuel Taxes. Alaska's motor fuel tax, which has not changed since 1961, is eight cents per gallon and the revenue trend from the tax is as shown in the chart.

A comparison of the 1986 revenues with 1988 State Highway Program receipts (page I-5) shows a wide disparity. A ninefold increase in the tax on fuel used in highway travel would have been required to raise the $200.5 million per year of state funds, including debt service, motor vehicle law enforcement and highway safety programs.. Over a fivefold increase in total motor fuel tax receipts (highway plus aviation and marine fuel taxes) would have been required to raise the $200.5 million of state funds used to support the 1988 State Highway Program

However as shown on page III- 11, a doubling of the total motor fuel tax would meet the FY 1988 budget for highway and airport maintenance. As has been the experience of state highway program managers in other states, the earmarking of highway user taxes and fees (or other taxes, such as mineral severance taxes) for the state highway program or distinct parts of the program, such as highway maintenance, enables program managers to better plan for efficient and effective use of the funds.

Maintaining Balance Between Competitors. The Alaska Railroad Corporation and private truckers compete for freight movement in some important corridors. And it is important to maintain the existing balance in trucking and railroad costs when enacting highway finance initiatives. Higher highway user taxes would immediately change costs in the trucking industry to the railroads advantage -- unless the railroads costs were raised concurrently.

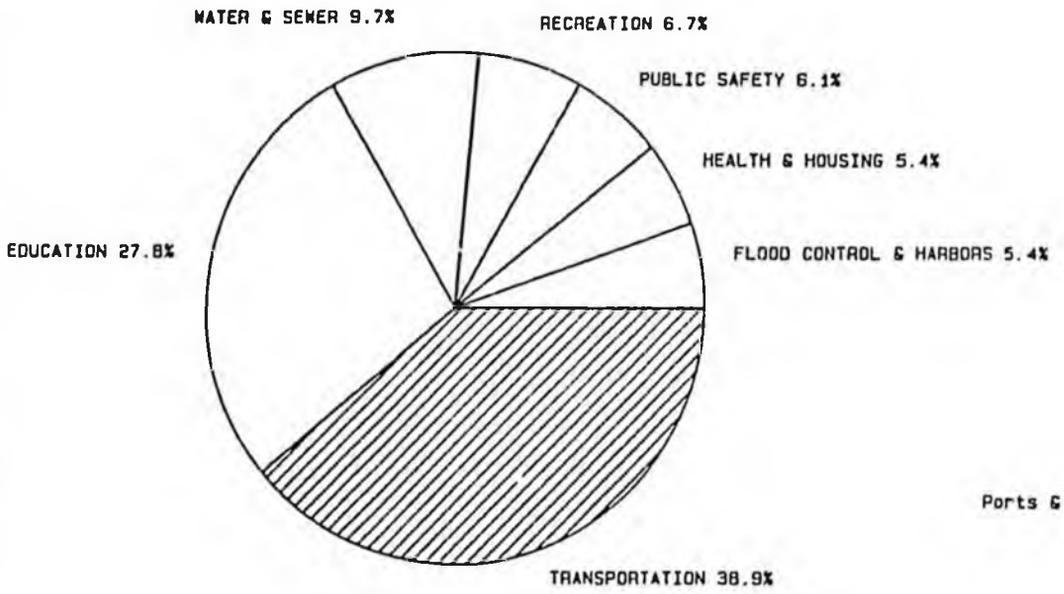
Two Possibilities That Need Further Study. One solution is enactment of legislation requiring the Alaska Railroad Corporation to pay motor fuel taxes. The Railroad is currently exempt from such taxes.

A second solution is to establish a regulation requiring the Alaska Railroad Corporation to pay monthly, quarterly or annual fees to the Alaska Treasurer in lieu of the taxes.

In either case it is suggested that at least half of the added railroad payments be used for railroad/highway grade separations. This would expand the program of constructing grade separations thereby enhancing safety and the efficiency of both rail and truck freight operations.

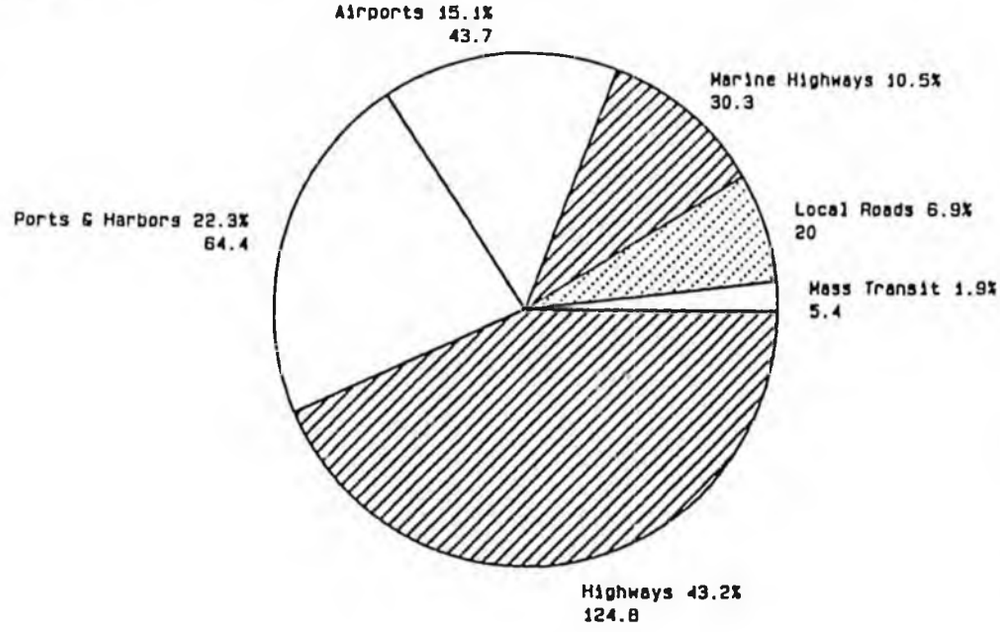
STATE BONDS

TOTAL SINCE STATEHOOD



TOTAL: $1.4 BILLION AS OF 6/30/84

TRANSPORTATION DEBT



TOTAL: $288.6 MILLION AS OF 12/31/86

Transportation Debt Being Rapidly Amortized. As shown in the right hand pie chart, the state transportation debt stood at $288.6 million as of December 31, 1986. This is down by $47.6 million from the close of the previous calendar year and $95.5 million down from two years previous. At that rate of amortization, state transportation bonds will be eliminated in six years.

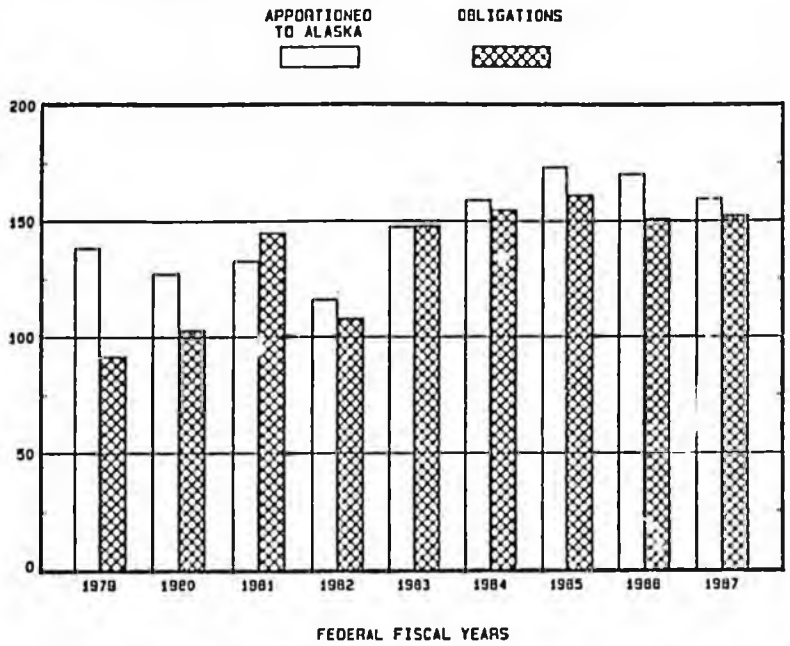
At $155.1 million, the debt for land highways and the Marine Highway System represented 53.7 percent of the December 31, 1985, transportation debt. (The revenue bonds sold by the Alaska International airport System are not included in the charts.)

Some states rely extensively on the bond market for their state highway capital improvement programs. As a nation, total state highway debt was $20 billion as of December 31, 1985,the latest year in which debt summary information is available.

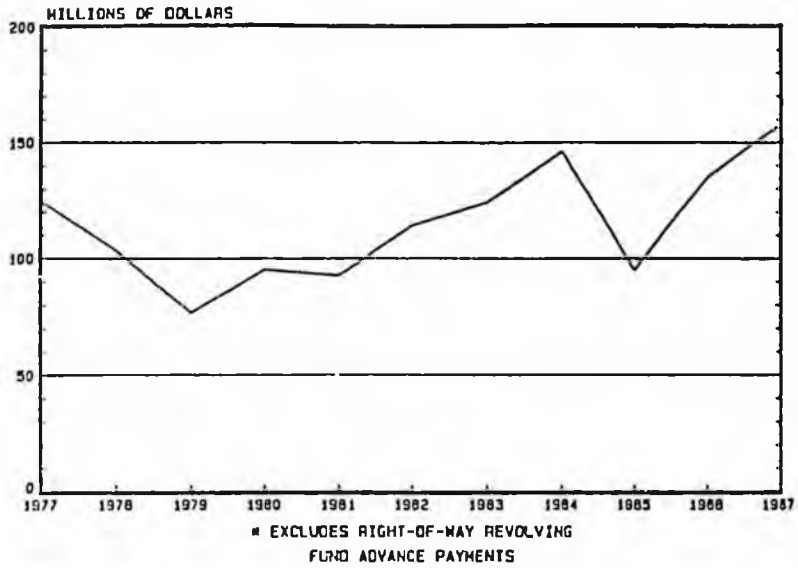
Alaska leads The Way in Public/Private Cooperation. Alaska has three outstanding examples of private funding for highway construction – 1) the 416 mile Dalton Highway built by oil interests; 2) the 50 miles of Red Dog Mine Access Road being financed by the Alaska Industrial Development Authority which will be reimbursed by private mining interests; and 3) the $1.3 million contribution by a trucking firm for the upgrading of the Klondike Highway to allow heavy-laden ore trucks to gain access from Canadian mines to the port at Skagway.

Military Involvement Also Important. The construction of the Alaska Highway in both Canada and Alaska by the U.S. Army during the early part of World War II was also a tremendous contribution to Alaska highway development.

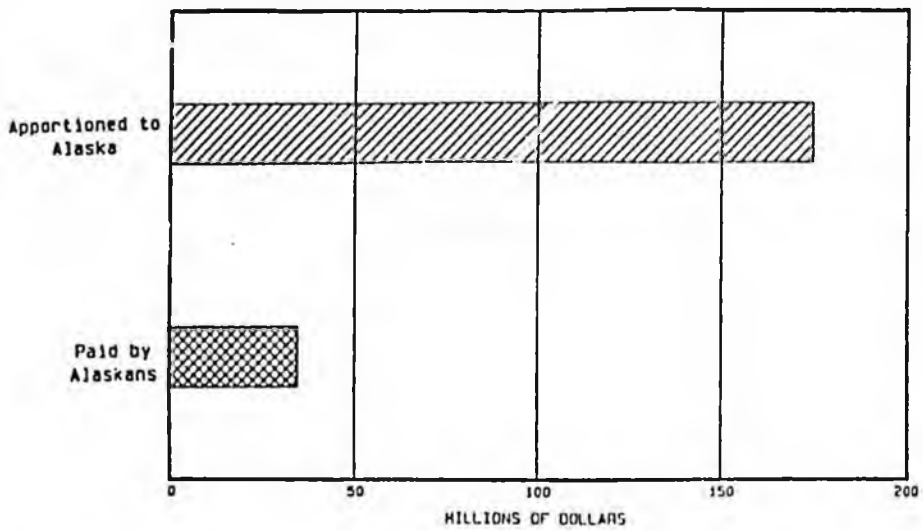
FEDERAL AID HIGHWAY PROGRAM



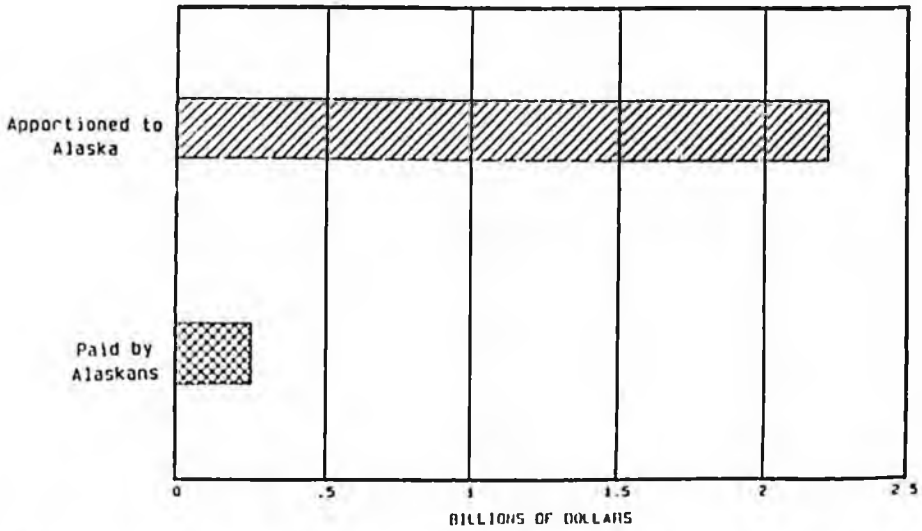
REIMBURSEMENTS



FY 1985



SINCE 1956



Federal Aid Highway Program Critically Important To Alaska. The chart on the upper left indicates the trends in the amounts of federal funds:

1) apportioned to Alaska, and 2) made available after budget limitations were applied by lawmakers and actually used (obligated for subsequent spending on Alaska road and bridge improvements). Federal aid highway funds are restricted by federal mandate for highway, ferry and ferry terminal improvements as well as planning, research and safety activities. Federal funds cannot be directed to highway maintenance activities.

1987 A Record. The upper right chart tracks actual payments to Alaska from 1977 to 1987 (federal fiscal years). Note that 1987 was Alaska's record-high year for Federal Aid Highway Program receipts. The federal funds stem largely from a nine cents per gallon tax on gasoline, a three cents per gallon tax on gasohol, a 16 cents per gallon tax on diesel and other special motor fuels, as well as a 12 percent sales tax on heavy truck and truck trailer purchases, a tax on truck tire sales and an annual use tax on heavy trucks. The federal highway user taxes are accounted for in the U.S. Treasury in a Highway Trust Fund and apportioned to each state for the modernization of major highway systems and bridges.

Federal Budget Controls Limit Spending. For the October 1, 1985 to September 30, 1986 federal fiscal year, Alaska was apportioned $165 million of authorized funds, but due to federal obligational control limitations only $151 million of the apportioned funds were actually available to Alaska. In other words $14 ($9 federal and $1 state) million worth of highway improvement projects could not be started because the obligation ceiling restricted the use of authorized and available Highway Trust Fund money.

Slowdown In Highway Improvements. The situation is far worse for fiscal year 1988 because it is controlled by the authorization levels mandated by the Surface Transportation and Uniform Relocation Assistance Act of 1987. This act reduced annual authorization levels over the 1988 to 1991 period. Furthermore, obligational control further limits fiscal year 1988 funds to about $130 million. Unless obligational controls are lifted, Alaska's highway improvement program will be sharply lower than the 1983 to 1987 experience.

Federal Incentives For Road And Bridge Modernization. The portion of the cost borne by federal highway user taxes, depends on the Federal Aid Highway System -- Interstate, Primary, Secondary, Urban classification of the road to be improved. Federal funds will participate in 94.7 percent of the cost of Interstate Highway System original construction or rehabilitation, 91.4 percent of the cost of improving the other Systems and 80 percent of bridge replacement or rehabilitation costs. Overall, every dollar of Alaska funds that are made available for highway and bridge improvements is matched by nine dollars of Federal Highway Program funds -- up to the limit of federal obligation authority. This is a great incentive for Alaska highway and bridge modernization.

Alaska Benefits The Most From The Federal Aid Highway Program. The bottom left chart indicates the amount of Federal Aid Highway Program funds apportioned to Alaska in 1985, as well as the amount of federal highway user taxes paid by Alaskans in that year. The bottom right chart summarizes both Alaska's apportionment of Federal Aid Highway Program funds and Alaskans payment of federal highway user taxes over the 1956 to 1985 period. At five and one half to one for FY 1985 and nine to one overall, Alaska leads all other states in the ratio of apportionments to taxes paid. This is due primarily to the fact that state apportionments of federal funds are related to the extent of land area in each state. Alaska, having the largest proportion of land of any state in the nation, receives disproportionally large shares of Federal Aid Highway Program funds.

Non-monetary Benefits. Besides financial assistance, there are other benefits that come with a strong Federal Aid Highway Program. First, it is required that national design standards be used and this promotes national uniformity as well as the safest possible highway environment. Second, federal officials on the scene in Alaska (the Juneau office of the Federal Highway Administration has a 12-person professional staff) provide both an oversight function as well as technical assistance to ADOT&PF officials. Lastly, the long standing spirit of cooperation that has prevailed between federal and ADOT&PF officials has been a stabilizing influence in Alaska's program of highway improvement.

CHAPTER II

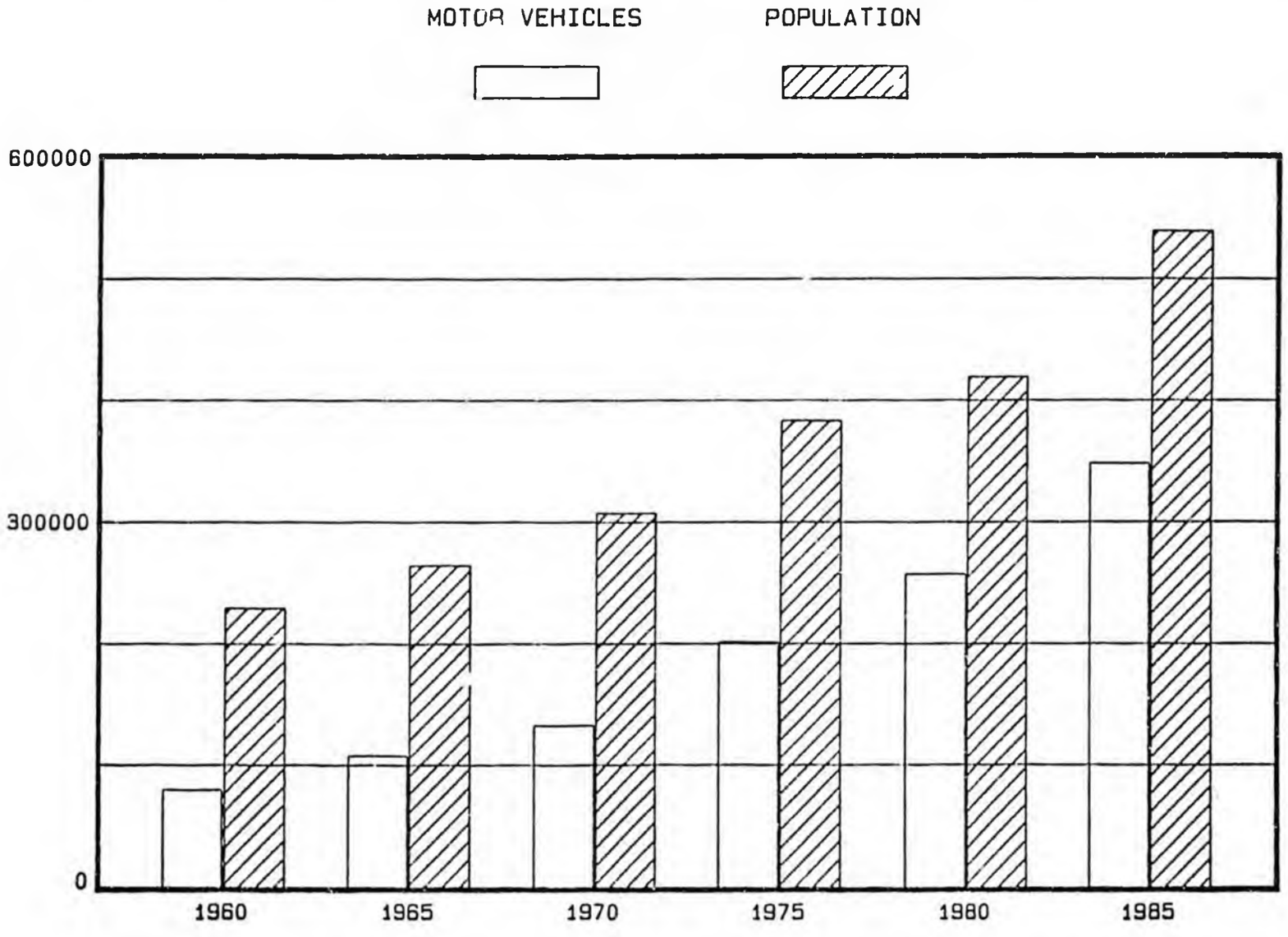
HIGHWAY PERFORMANCE AND CONDITION

CHAPTER II

Highway Performance and Conditions

Population, Registered Motor Vehicles, Motor Vehicle Travel and Traffic Safety Trends are Analyzed. The Status of Alaska's Highways and Bridges as well as the Means for Measuring the Status are Reviewed. The Trends in Passengers and Vehicles Carried by the Marine Highway System are Presented along with the Trend in Airport Use. Where applicable, Comparisons are made with National Averages.

POPULATION AND MOTOR VEHICLE TRENDS

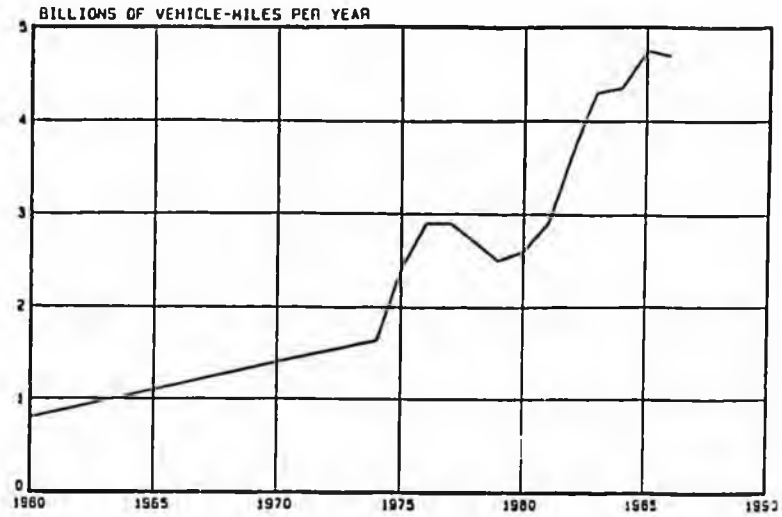


National Comparison. For the last 25 years, the total United States population increased by 30 percent while registered motor vehicles doubled and travel tripled. Significant as these statistics are, Alaska's growth far surpasses the national averages. Between 1960 and 1985 Alaska's population doubled while the number of registered motor vehicles quadrupled and the vehicle miles of motor vehicle travel increased sixfold.

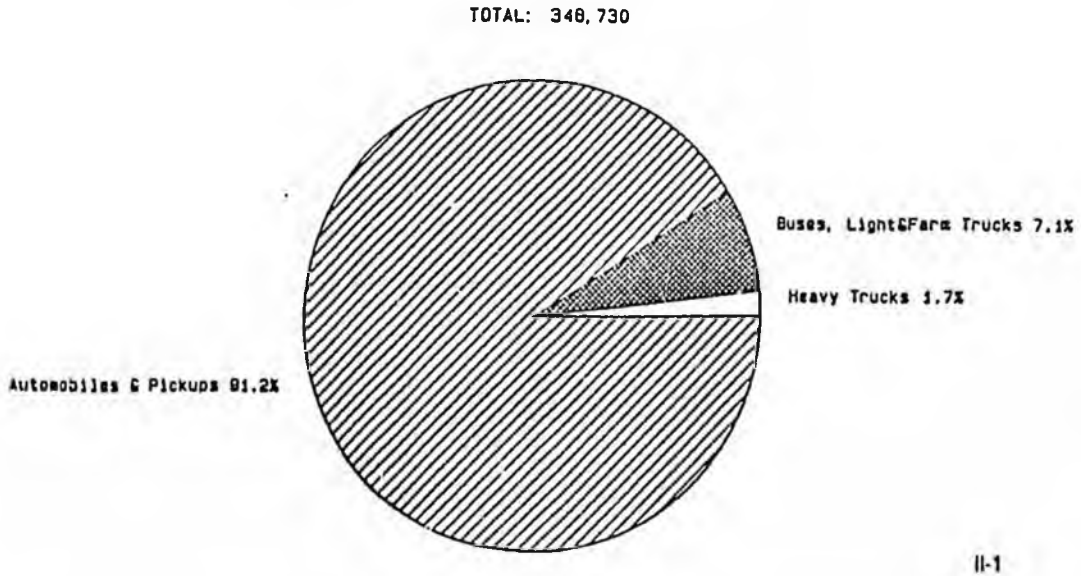
Motor Vehicles Catching Up With People. Like the rest of the nation, the number of registered motor vehicles is approaching unity with population. In 1960 there was one vehicle for every three people in Alaska. Now there are two vehicles for every three Alaska citizens.

Anchorage Important. Just under half (47 percent) of Alaska's citizens live in Anchorage and almost a third (31 percent) of the motor vehicle travel is on Anchorage urbanized area streets and state highways.

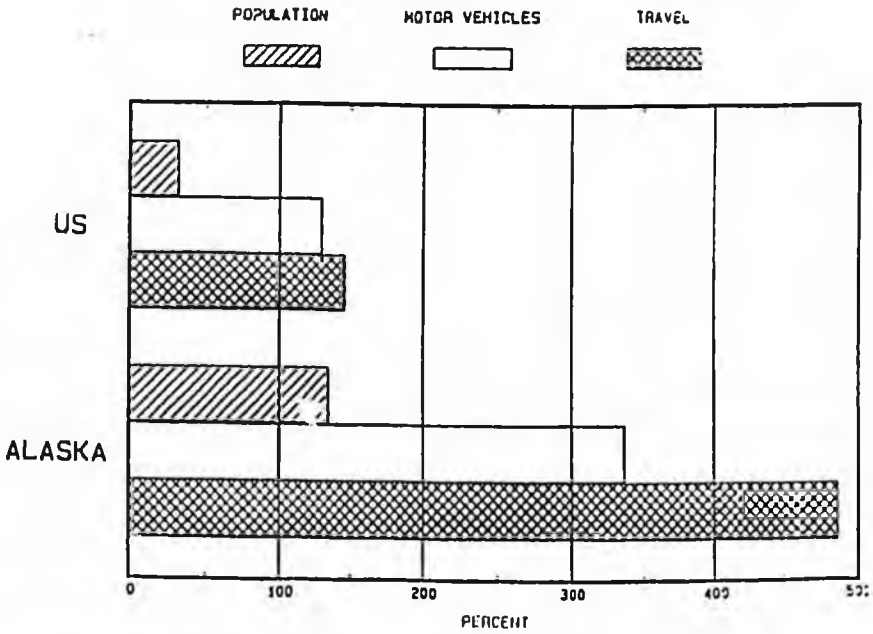
MOTOR VEHICLE TRAVEL TREND



1985 REGISTERED MOTOR VEHICLES

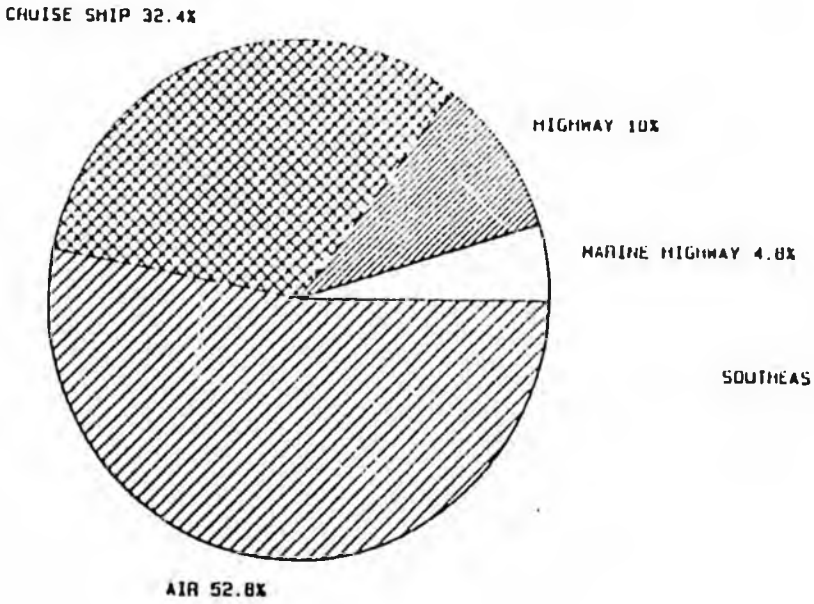


1960-1985 PERCENT INCREASES



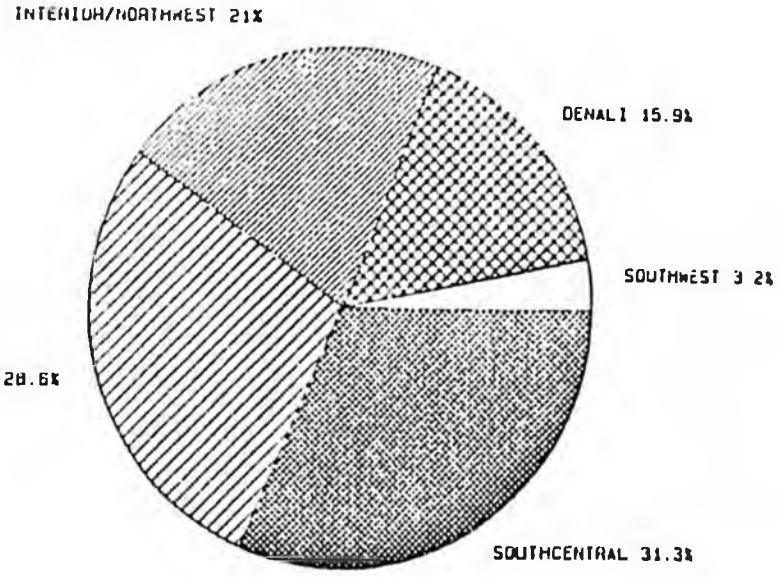
1985 VISITORS TO ALASKA

MODE OF TRANSPORTATION



431,200 ENTERING VISITORS
SUMMER 1985

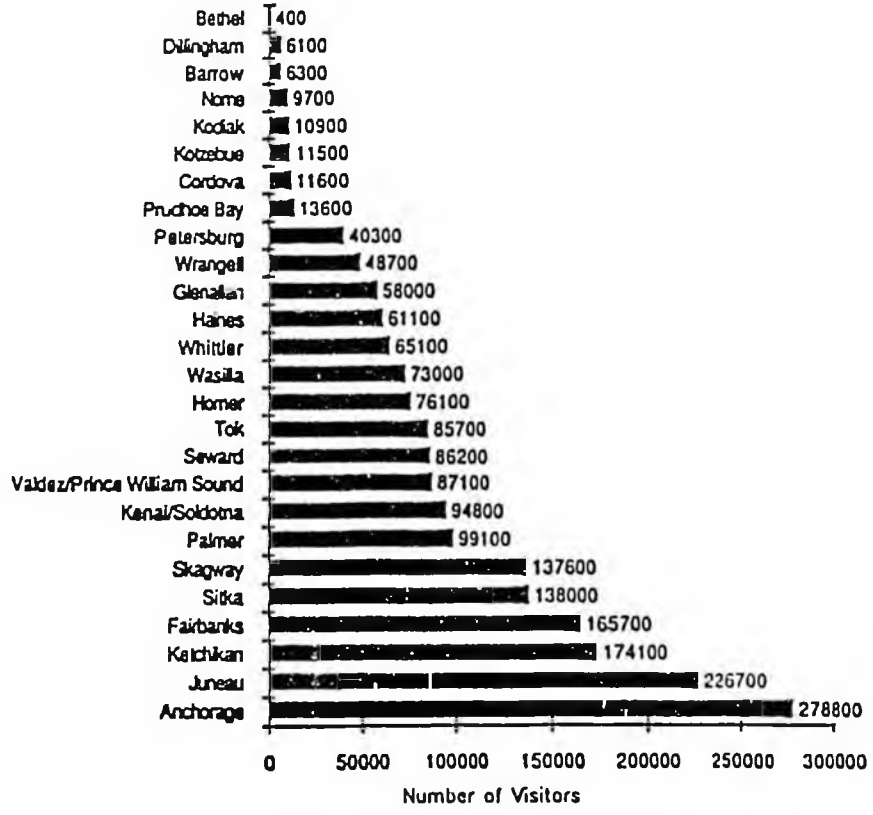
REGION VISITED



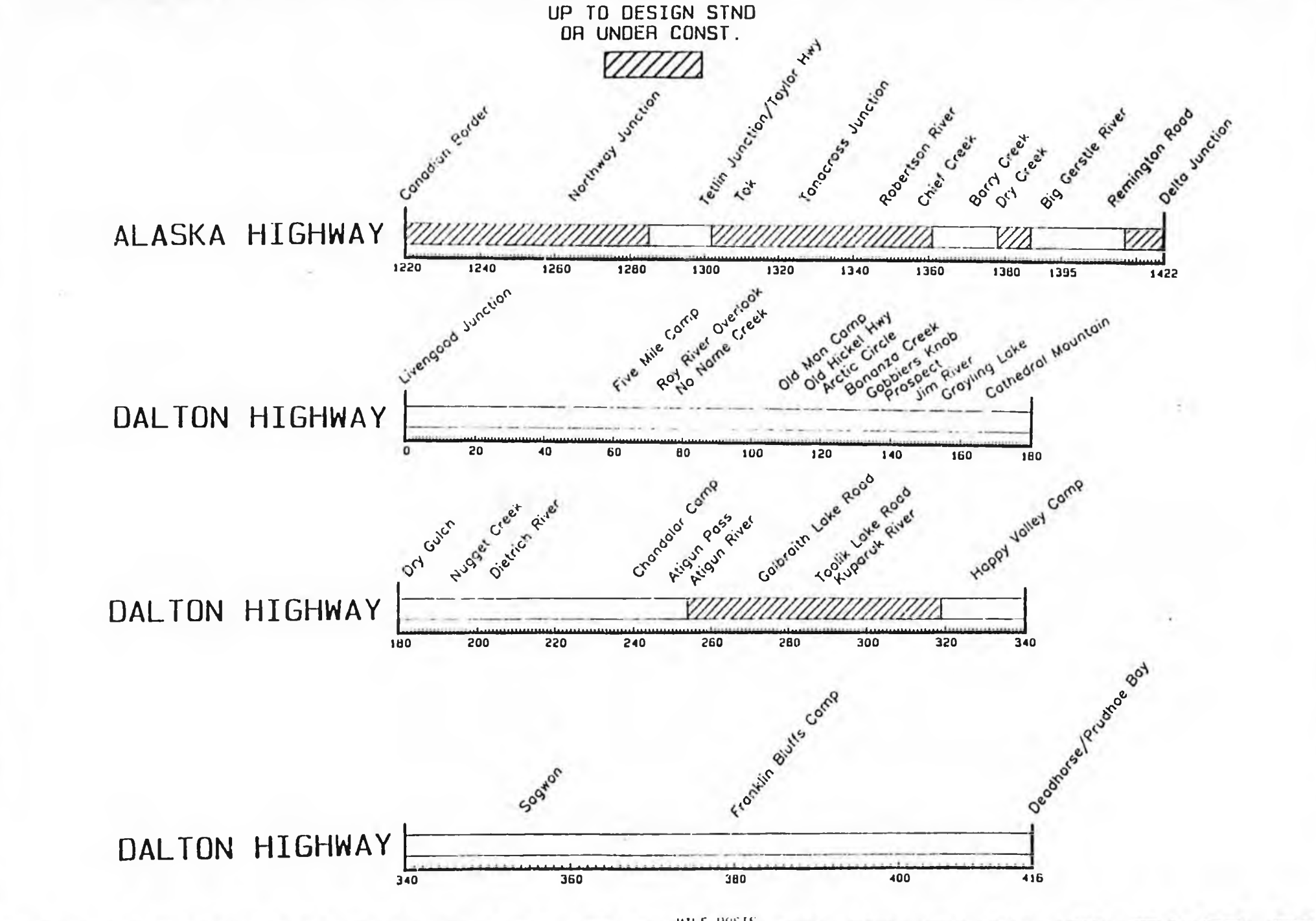
TOTAL VISITS: 904,600
SUMMER 1985

While much of Alaska's future is difficult to predict because of its heavy ties to resource development, Alaska's picturesque scenery and exceptional hunting, fishing and camping opportunities are certain to continue attracting national and international visitors. A 1985 survey of Alaska's visitors shows the significance of the travel modes and the popularity of the various regions and communities.

NUMBER OF VISITORS TO COMMUNITIES



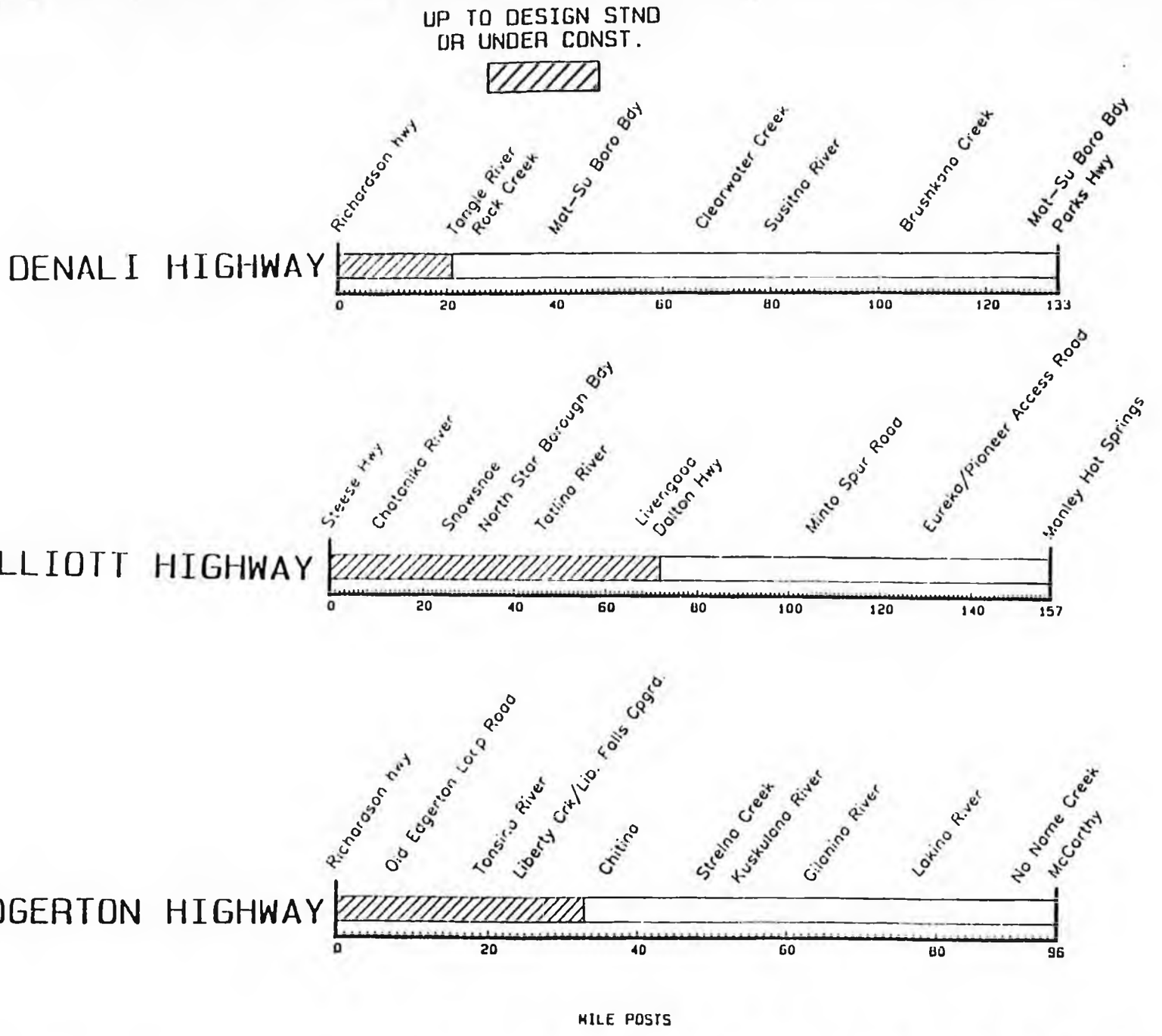
ANALYSIS OF NORTHERN REGION HIGHWAYS



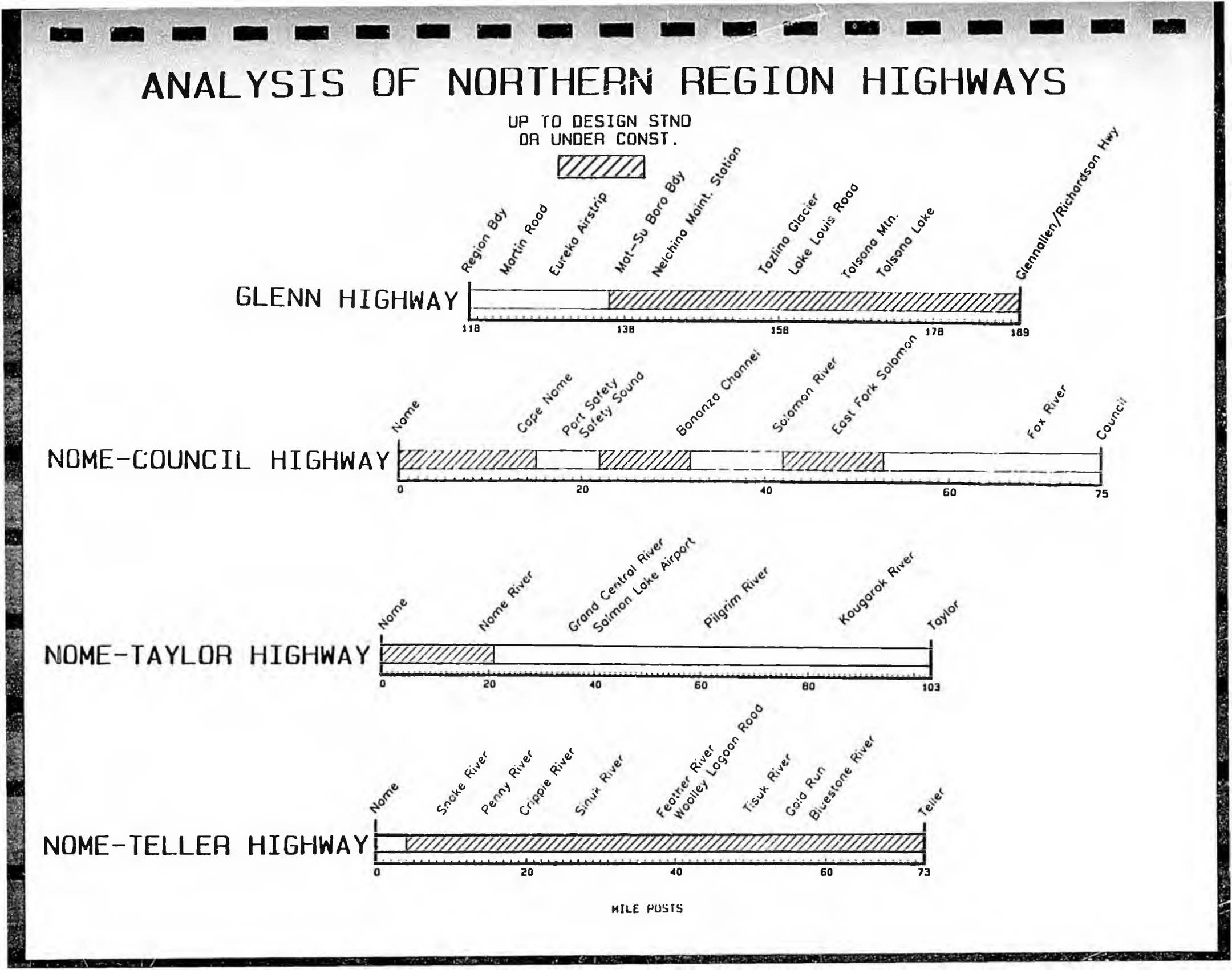
The page above and the following six pages graphically show the status of Alaska's major state highways. The cross-hatched sections were being improved in 1987 or were judged by ADOT&PF planners and engineers to meet tolerable standards of design. The blank sections are judged to be intolerable in terms of surface conditions, pavement width or alignment. A cursory review shows that about half of the road miles have tolerable physical and traffic service characteristics while half have serious deficiencies that need to be corrected.

The charts are arranged by ADOT&PF Region beginning with the Northern Region which has the most extensive miles of state highway.

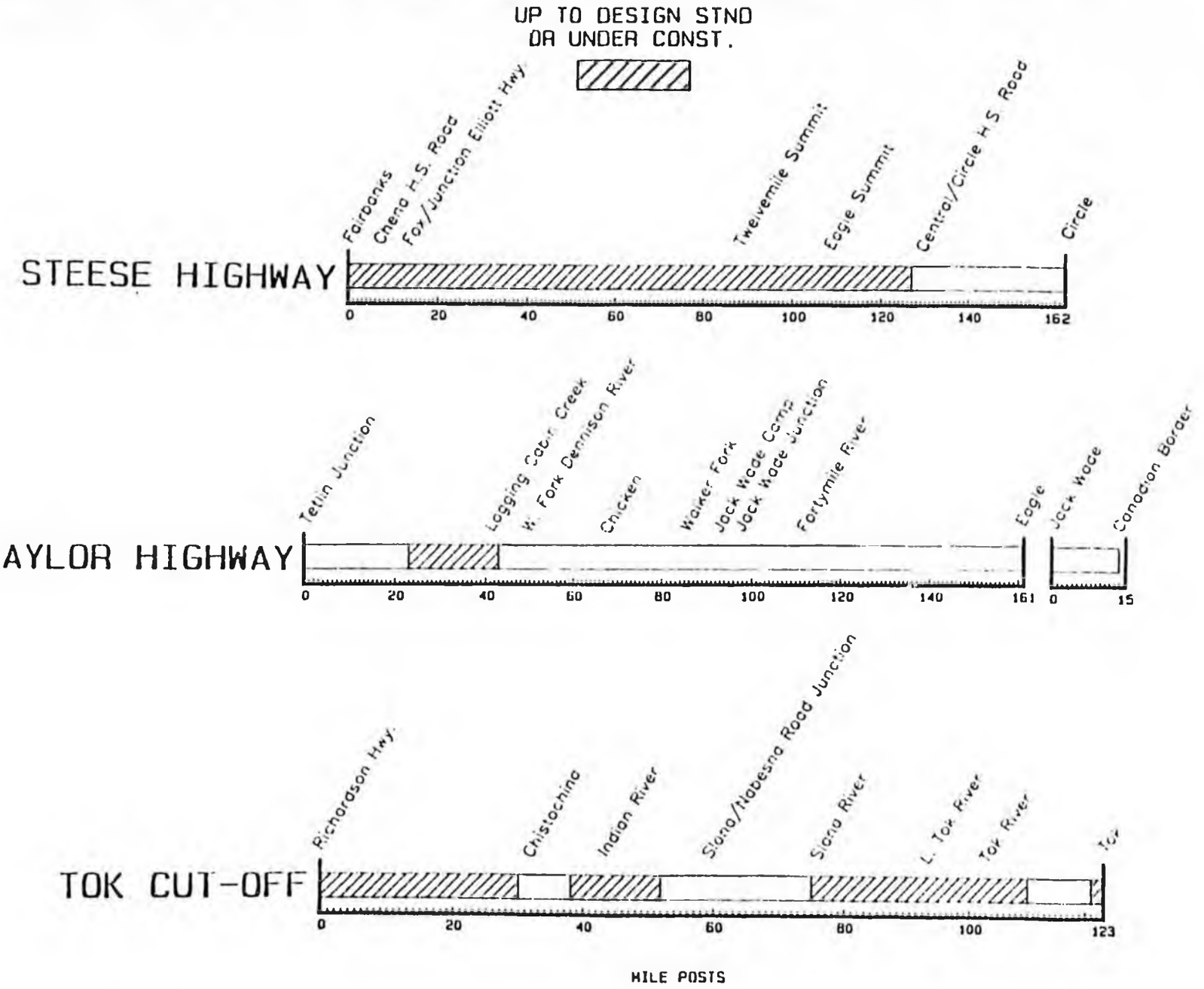
ANALYSIS OF NORTHERN REGION HIGHWAYS



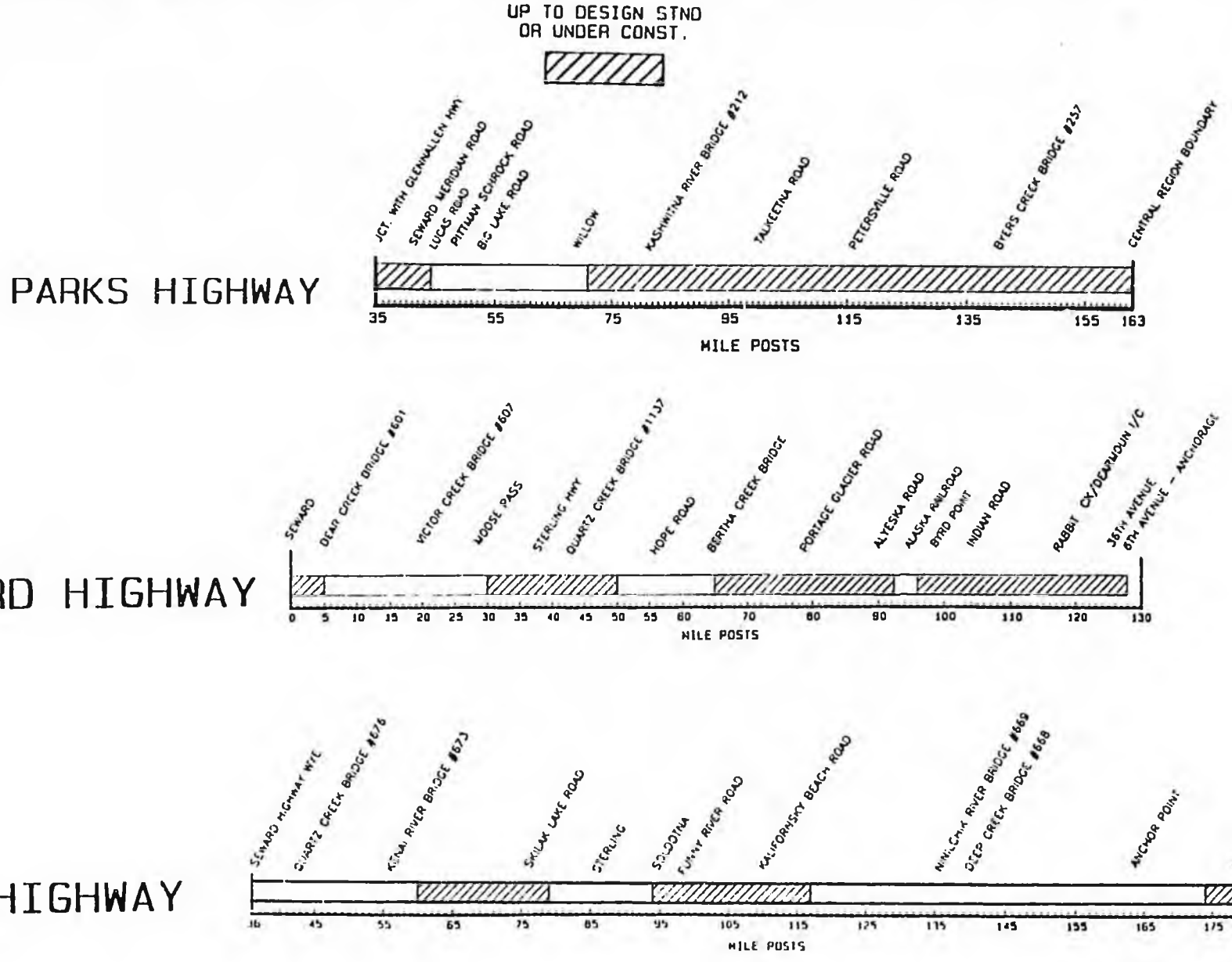
ANALYSIS OF NORTHERN REGION HIGHWAYS



ANALYSIS OF NORTHERN REGION HIGHWAYS



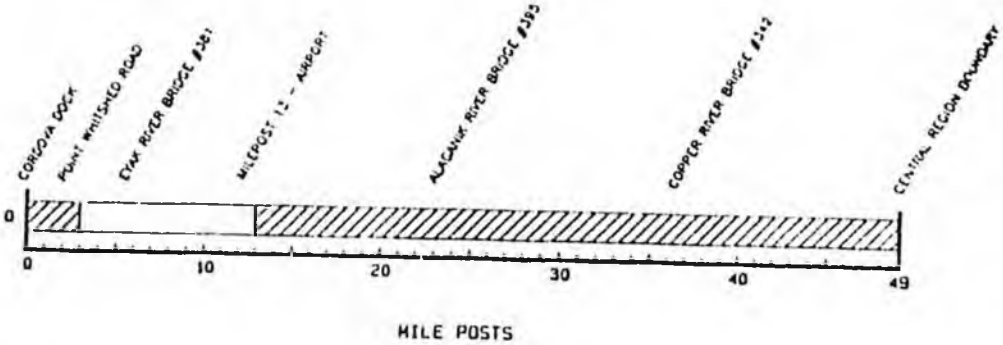
ANALYSIS OF CENTRAL REGION HIGHWAYS



ANALYSIS OF CENTRAL REGION HIGHWAYS

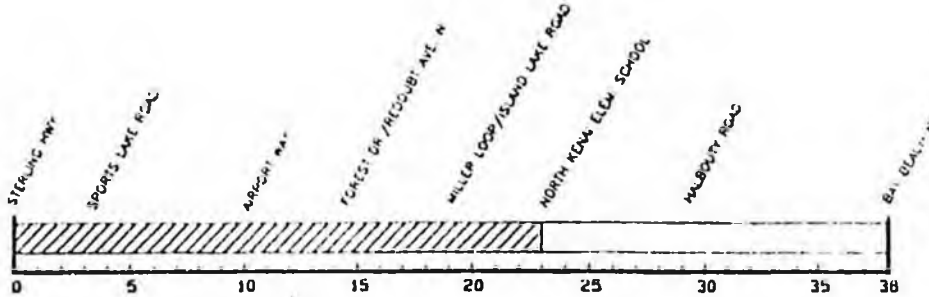
UP TO DESIGN STND
OR UNDER CONST.

COPPER RIVER HIGHWAY



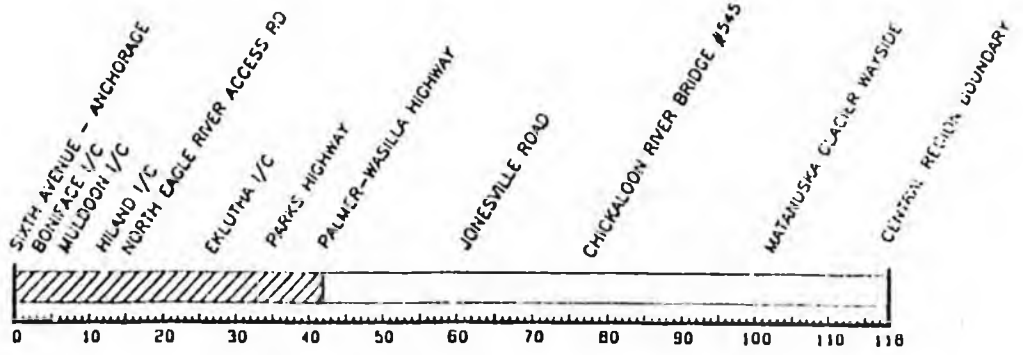
MILE POSTS

KENAI SPUR ROAD



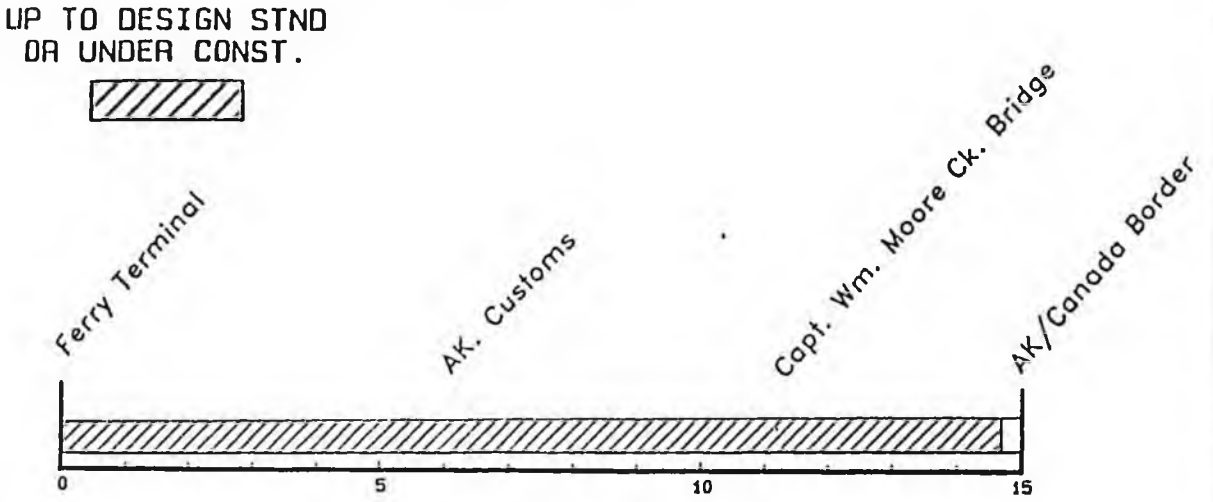
MILE POSTS

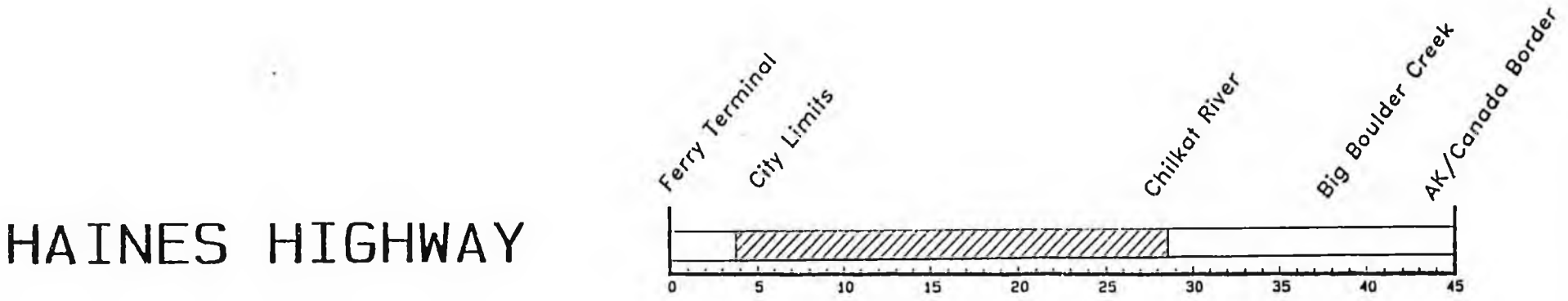
GLENN HIGHWAY



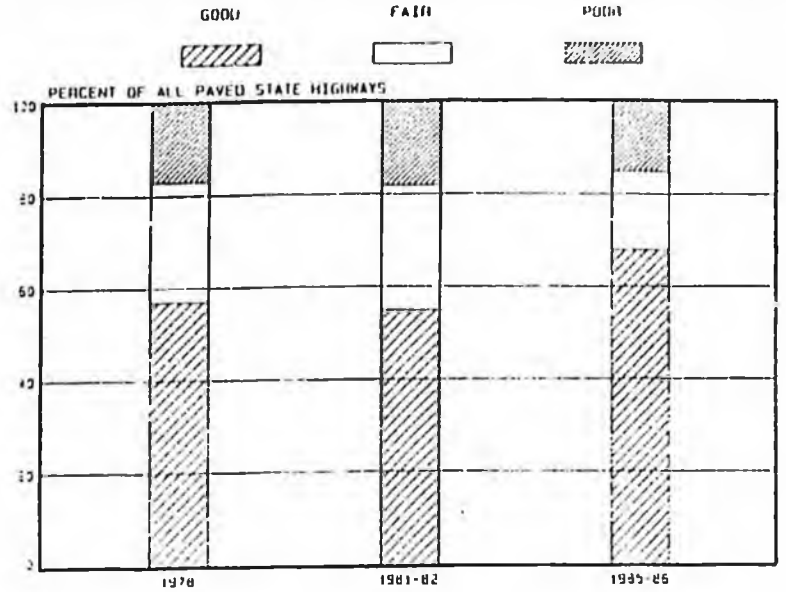
MILE POSTS

ANALYSIS OF SOUTHEAST REGION HIGHWAYS

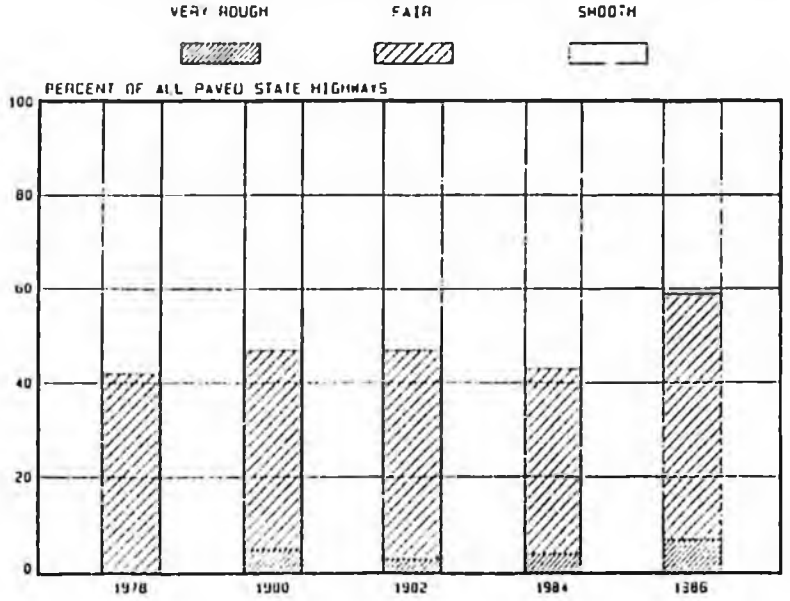




PAVEMENT STRUCTURAL CONDITION TREND



HIGHWAY RIDEABILITY TREND



Starting in 1978 the ADOT&PF's Research Section began surveying the condition of the paved sections of the state highway system. Both the structural integrity and the smoothness, or rideability, of the pavement were judged.

Structural Improvement; Deterioration in Rideability. The uppermost chart indicates the trend in the proportion of highways judged to be "good", "fair" and "poor" in terms of pavement soundness. The proportion of pavement in good structural condition has moved from 58 percent in 1978 surveys to 69 percent in 1985-1986 surveys, while over the same period of time, the proportions of paved state highway with fair and poor structural ratings decreased.

On the other hand, the lower chart shows that the proportion of very rough pavement (in terms of rideability) rose from less than one percent in 1978 to seven percent in 1986. At the same time, the proportion of state highways with smooth pavement dropped from 58 percent in 1978 to 41 percent in 1986.

National Surveys Give Low Ratings To Alaska's Highways. The ADOT&PF participates in periodic national surveys of sample sections of highways in order to provide federal officials and Congress a national overview of pavement conditions and highway performance. This information is used to judge the effectiveness of the Federal Highway Program. However according to the latest compilation of theses nationwide assessments of pavement condition, Alaska does not fair well. For example based on 1985 information, Alaska's rural Interstate Highway System was judged to be 45th among the 50 states in pavement serviceability.

Applauding Condition Rating Efforts. Alaska officials are commended for finding the resources to periodically measure the structural soundness and rideability of all state highway pavements. The information is used to not only accurately determine overall trends in pavement serviceability but also to pinpoint the most critical pavement rehabilitation needs. Not all states have identified the importance of such information to policymakers.

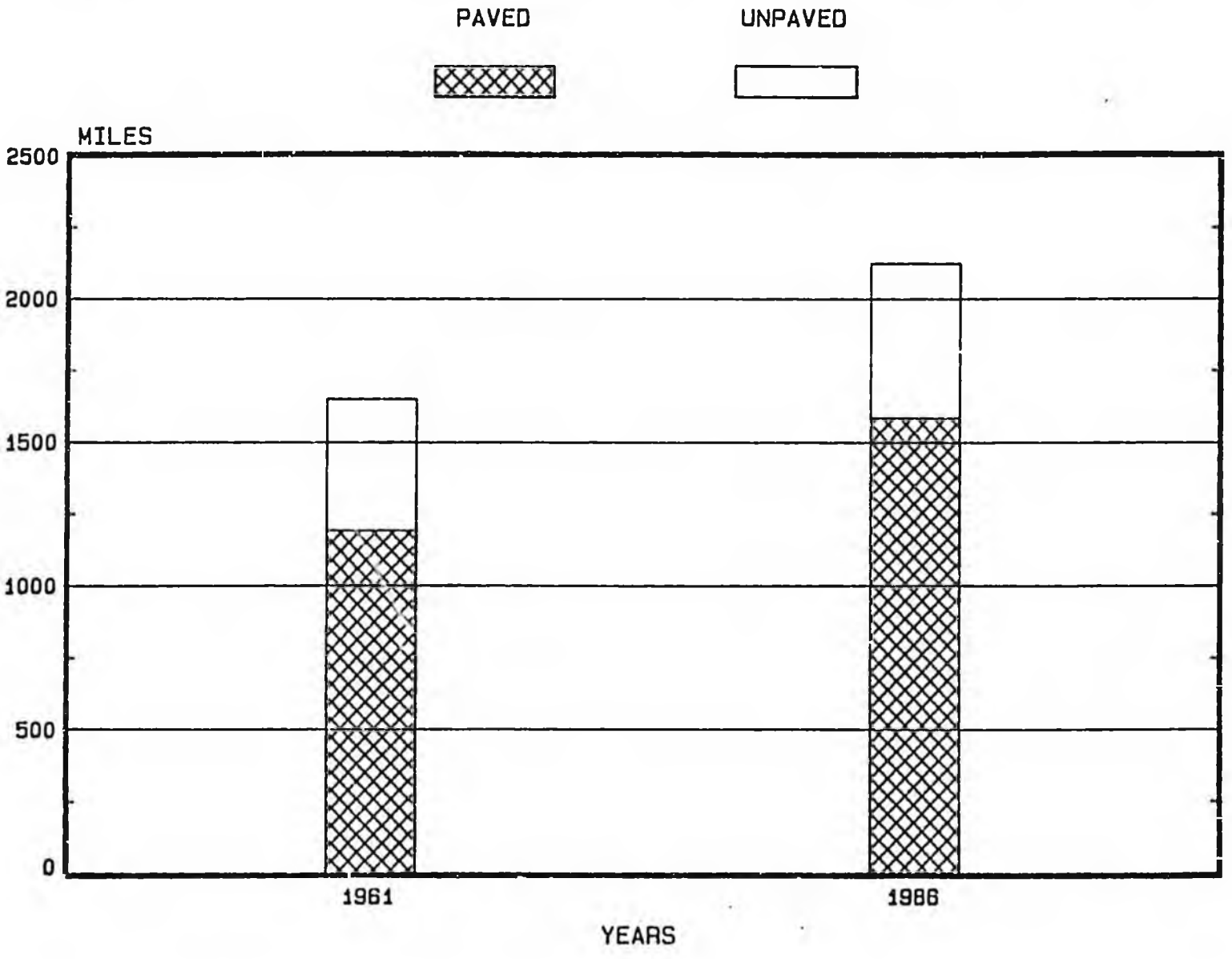
Further Efforts Needed. However other elements of the ADOT&PF physical inventory of the State Highway System need to be improved to provide up-to-date information on current physical characteristics, functions and traffic service and to provide the best possible information on trends. In general, the public and Alaska's policymakers need to be better able to answer the question, "Is the System improving, deteriorating or remaining static?"

Need For Better Information On Municipal Roads. With the exception of road miles, there is currently no central source of information on the physical and traffic service characteristics of the city streets and borough roads that are not a part of the State Highway System. But this is important information in that over $100 million in state funds are directed annually to municipal road programs (see page I-6). It is therefore recommended that the ADOT&PF – in cooperation with municipal officials – develop and keep current the physical and traffic service inventories of municipal roads, as well as state highways, and to report periodically on changes that take place.

Pavement Management System Needed. Many states have coupled their pavement rating processes with techniques for evaluating alternative improvements and estimates of the economic advantages of each. Greater pavement maintenance efforts can be compared with seal coats, various thicknesses of overlays or recycled overlays, and more complete rehabilitation of the pavement and subgrade to determine cost comparisons, both now and over the pavement life. Such information has proven to be an important aid to policymakers in making cost effective improvement program decisions.

While the ADOT&PF is making good progress toward implementing a pavement management system, it is recommenced that the ADOT&PF and the Legislature continue to give high priority to this important new tool.

INTERSTATE, PRINCIPAL & MINOR ARTERIALS



Almost 400 Miles Of Paved Highways Added To State System. The above chart is a comparison of paved and unpaved miles of the more important state highways -- Interstate, Other Principal Arterials and Minor Arterials. While the miles of paved highways has increased by 392, the amount of unpaved routes is still a significant proportion of Alaska's most important state highways.

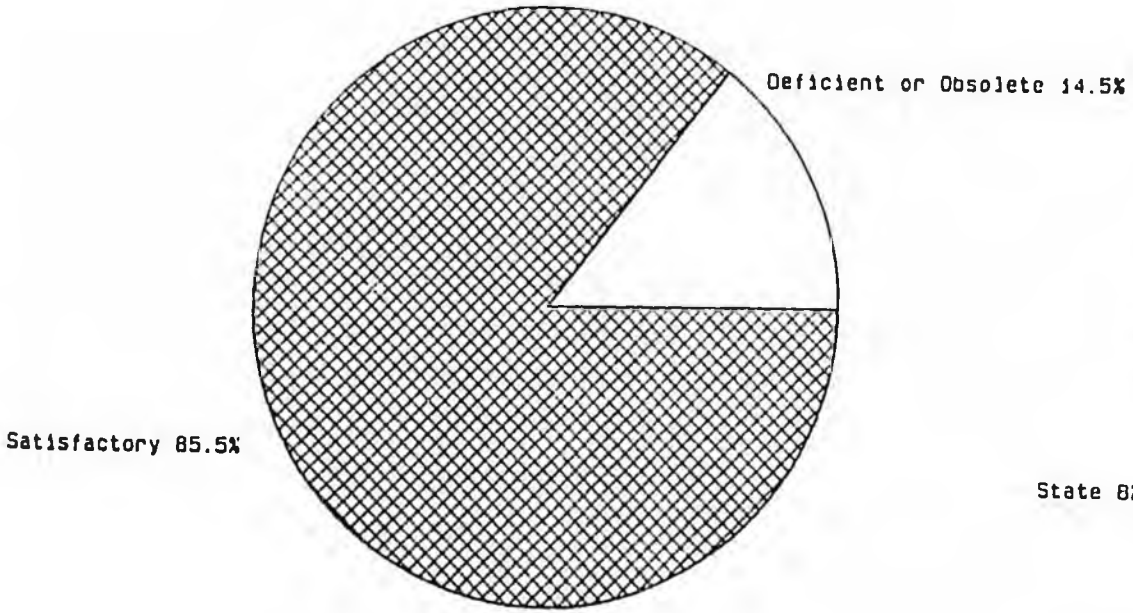
More Trend Information Needed. In order for officials and Alaska's taxpayers to determine whether or not progress is being made, more trend information is needed. As Alaska's highway inventories and highway evaluation techniques are improved, such information will become available to better judge State Highway Program effectiveness.

More Comprehensive Annual Reports Needed. The ADOT&PF, like many transportation agencies in the nation during the 1970's stopped the development and publication of periodic (annual or biennial) comprehensive reports on program progress. But now with greater public concern for the expenditure of tax resources, transportation agencies are returning to the documentation of progress or lack of progress in meeting overall objectives.

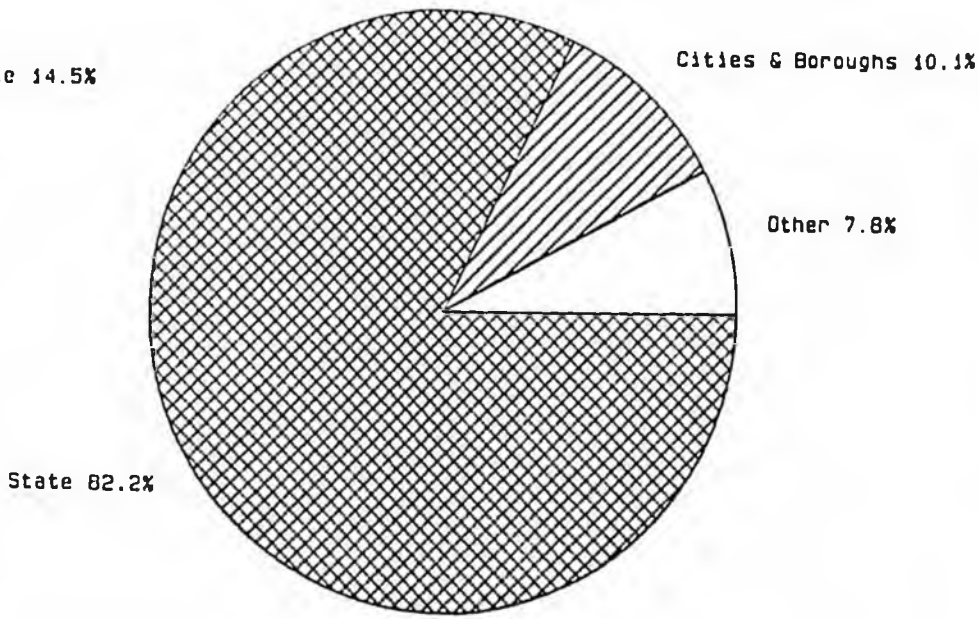
Periodic reports with emphasis on charts and maps are an excellent method of communicating the facts about complex transportation programs. The information is needed by the ADOT&PF management team and by Alaska's lawmakers to help make the best use of scarce resources.

ALASKA BRIDGES

CONDITION



RESPONSIBILITIES



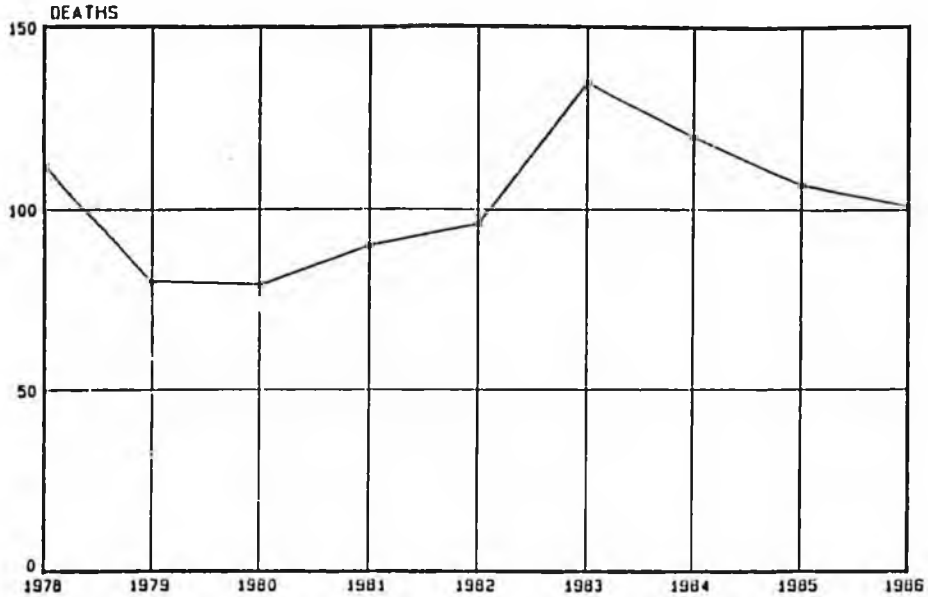
TOTAL: 825

NOTE: INCLUDES ALL BRIDGES OVER 20' SPAN

Alaska Excels In Bridges. If by national standards Alaska's highway pavement is below the average, likewise by national standards Alaska is the leader in bridge conditions. As compared with the nation as a whole where deficiencies have been found in 42 percent of the bridges, 85.5 percent of Alaska's bridges are in satisfactory condition. No other state has as high a percentage of their bridges in satisfactory condition.

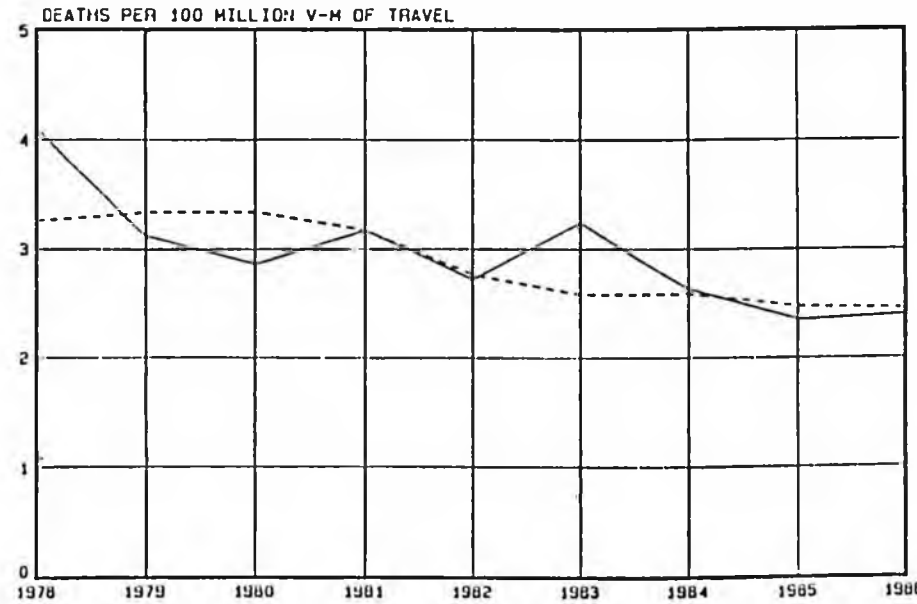
Biennial Bridge Surveys. In 1970 Congress mandated that every state inspect and report on bridge conditions on a biennial basis. The above charts and the cited statistics are as found in these national surveys and the resulting reports.

HIGHWAY SAFETY



TRAFFIC FATALITIES

ALASKA _____ U.S. - - - - - - -



FATALITY RATES

Traffic Safety Statistics Headed In Right Direction. Both the number of annual traffic fatalities and the number of annual traffic fatalities per 100 million vehicle miles of travel have been on a downward trend since 1983 . Alaska's 1986 2.4 fatality rate (traffic deaths per 100 million vehicle-miles of travel) is 41 percent below the rate just ten years ago. Furthermore, Alaska's traffic fatality rate has been below the national average for the last two years.

As shown in the table below, traffic fatalities are not the only positive accident statistics, as both the number of accidents and the number of injuries decreased from 1985 to 1986 and from the three-year, 1983-to-1985 averages to 1986.

	1985	1986	% Change from 1985	% Change from previous 3-year average
Vehicle-miles of Travel (millions)	4.8	4.7	-1.7%	+4.4%
Accidents	7,700	14,858	-19.1%	-23.8%
Fatalities	127	101	-20.5%	-25.7%
Injuries	6,165	5,525	-11.6%	-18.9%

Challenging 1988 Traffic Safety Goal. The traffic safety statistics are as reported in the Alaska Highway Safety Plan For Fiscal Year 1988, published by the Alaska Highway Safety Planning Agency. This Agency, which is responsible for the coordination of Alaska's overall traffic safety program, has established a 1988 goal of a further reduction in Alaska's traffic fatality rate to 2.0 deaths per 100 million vehicle miles driven. Judging by the preliminary estimates of 1987 traffic fatalities, which are down considerably from 1986 levels, the stated goal for 1988 may have been reached in 1987.

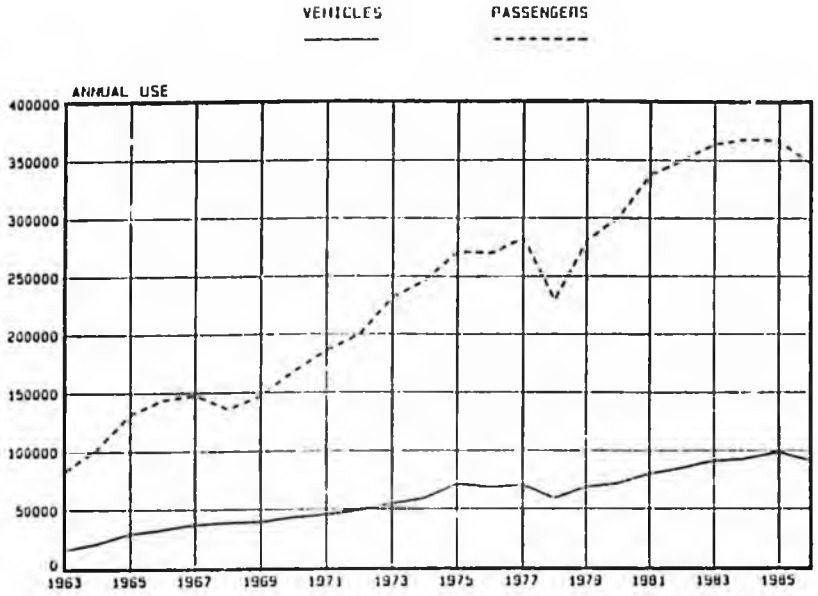
Engineered Safety Important. One of the major challenges ahead for the Alaske Highway Program is to continue the reduction of annual traffic fatalities in the face of increasing motor vehicle travel. Much of the progress to date nationally and in Alaska is due to the program of ever-improving the highway environment in terms of wider lanes, wider shoulders, separation of opposing lanes of traffic with medians, better control of intersections, increasing sight distances, improved signing and markings and all the other elements of highway modernizations. Much of the traffic safety progress of the future depends on continuing the modernization of Alaska's highways and bridges.

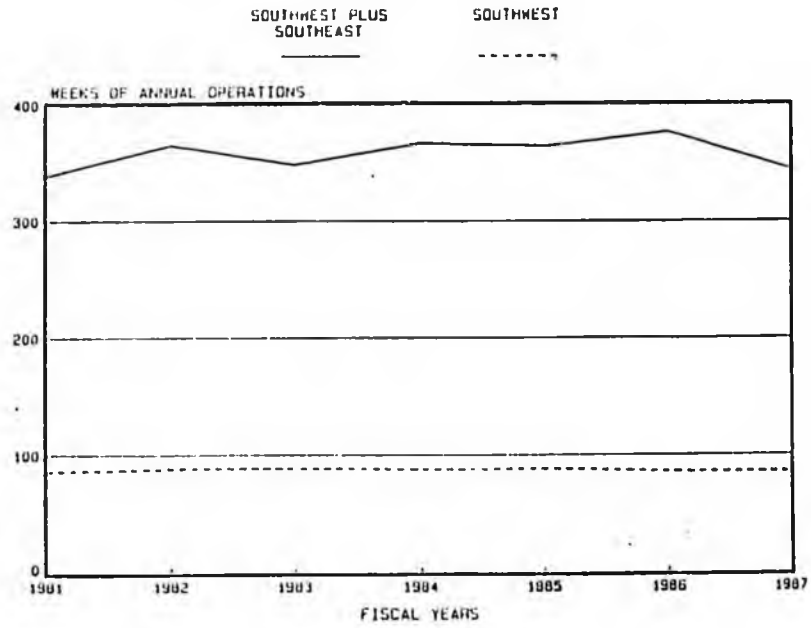
HIGHWAY ANALYSIS SYSTEM

- ROAD LOG
- ROAD AND BRIDGE CHARACTERISTICS
- FUNCTIONAL CLASS
- TRAFFIC
- SURFACE CONDITIONS
- UPGRADE HISTORY
- ACCIDENTS
- BRIDGE RATINGS
- TRUCK WEIGHTS
- GEOGRAPHIC CODE

New Integrated Data Retrieval System. The ADOT&PF in 1987 made operational a new automated system for storing and analyzing highway and bridge information. The chart indicates some of the types of data that are being stored, retrieved and analyzed in the System. The Department now has a new powerful tool. However as discussed previously, some of the highway inventory information remains to be obtained and entered into the System. Much progress has been made, but there is a formidable job ahead for the ADOT&PF before this System becomes completely useful.

MARINE HIGHWAY SYSTEM TRENDS





Outside of the strike year, 1978, the Alaska Marine Highway System has enjoyed almost constant growth in passengers and vehicles served. Based on observations and interviews with passengers, the System appears to be a popular and vital part of the economics of both Southeast and Southwest Alaska.

Recent Studies. However to deal with a number of important issues surrounding AMHS service, the ADOT&PF in 1985 commissioned a series of studies. Some of the more important issues dealt with by the consulting team are as follows:

1. The capacity of the System is taxed by the tourist demand to and from Seattle thereby causing reservation problems for Alaska citizens.

2. Likewise the capacity from Juneau northward to Haines and Skagway is sometimes overtaxed.

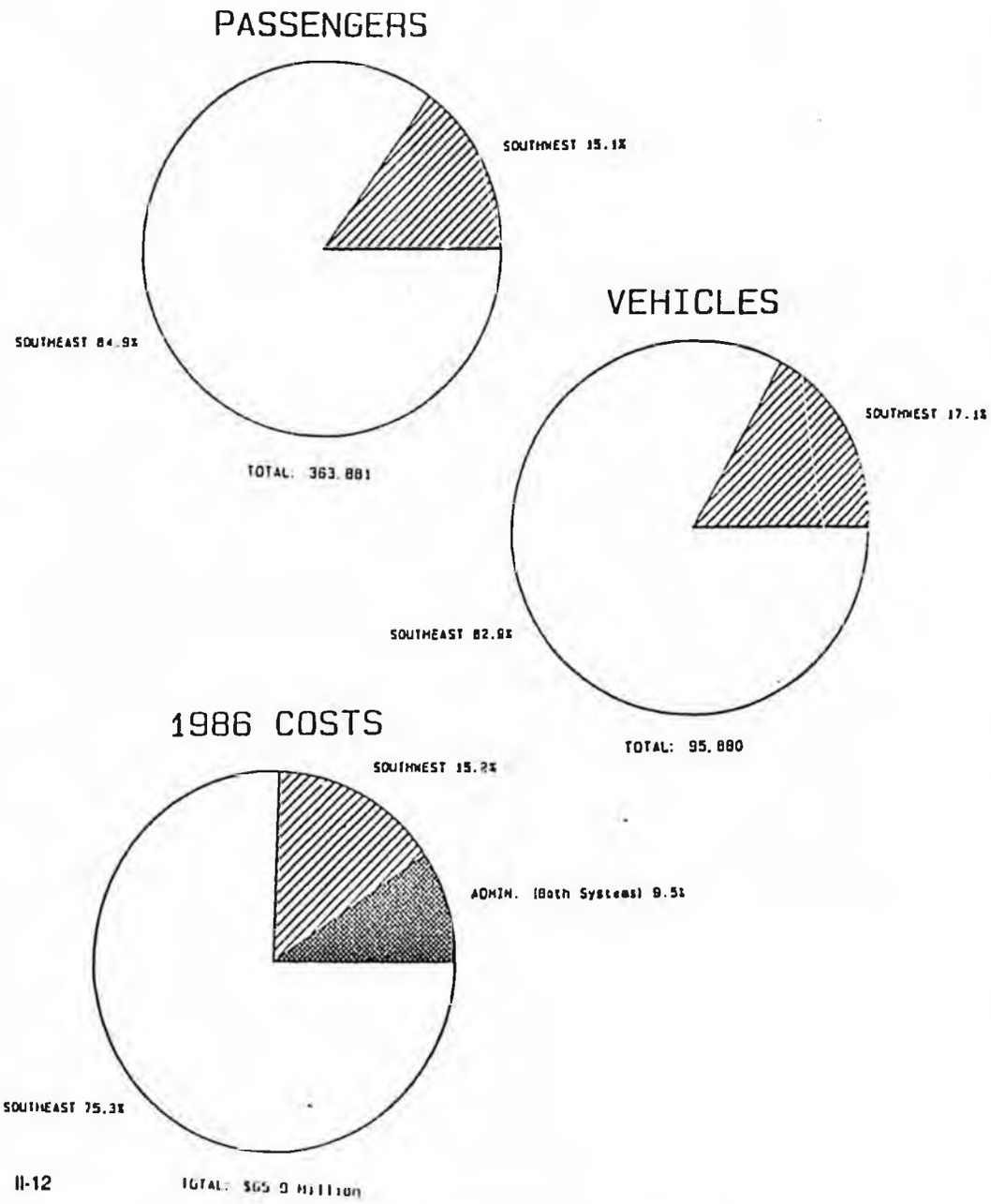
3. Providing mainline service to out-of-the-way communities causes navigational problems and adds a days time to through travellers or travellers between Juneau and all points south.

4. Building highways, new terminals and adding short ferry links to shorten some trips might relieve capacity problems and improve overall accessibility thereby generating induced travel and economic expansion.

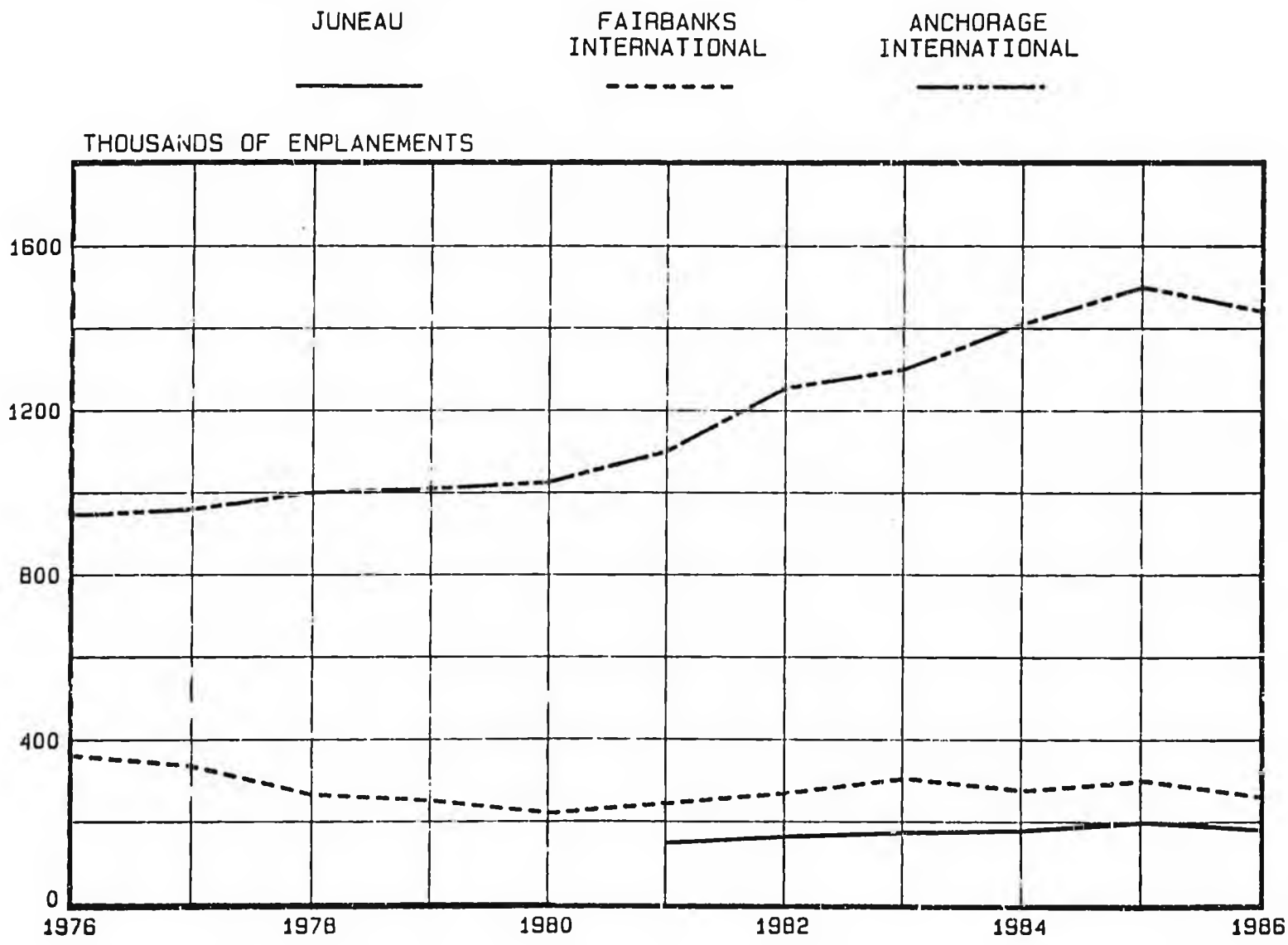
5. The addition of high speed ferries might also relieve capacity problems, allow additional service to some communities and provide basic service to other communities not now served.

While the studies did indicate much could be done, the estimated, initial capital costs for most alternatives studied were prohibitively high. The exceptions were the proposals to add new, high-speed ferries, but even these had a high budget impact.

S.E. & S.W. SYSTEMS COMPARED



USE OF MAJOR AIRPORTS



Commercial Airline Use Of Key Airports. The chart indicates the trends in commercial airline enplanements at Alaska three key airports.

Anchorage Growth Spectacular. Since 1980 the Anchorage International Airport has seen a 50 percent rise in airline deplanements and enplanements. And these figures do not include the Europe-to-Orient refueling, stopover flights that Anchorage International Airport enjoys.

Good Physical Condition. While the evaluation of Alaska's airports was beyond the scope of the Review, it was observed that each of the key airports were in good physical condition with modern terminals and good parking and road access.

Other Airports Being Improved. The other 215 airports, that are operated and maintained by the ADOT&PF, are in various stages of improvement. With the aid of Federal Airport Improvement Program funds, it appears that Alaska has made good progress in ensuring that isolated communities have reasonable airport facilities.

Private Airplanes Important To Alaskans. The Federal Aviation Administration reports that there were 9,604 licensed private aircraft belonging to Alaska citizens in 1986. Thus about five percent of Alaska families have air mobility.

CHAPTER III

HIGHWAY PROGRAM AND NEEDS

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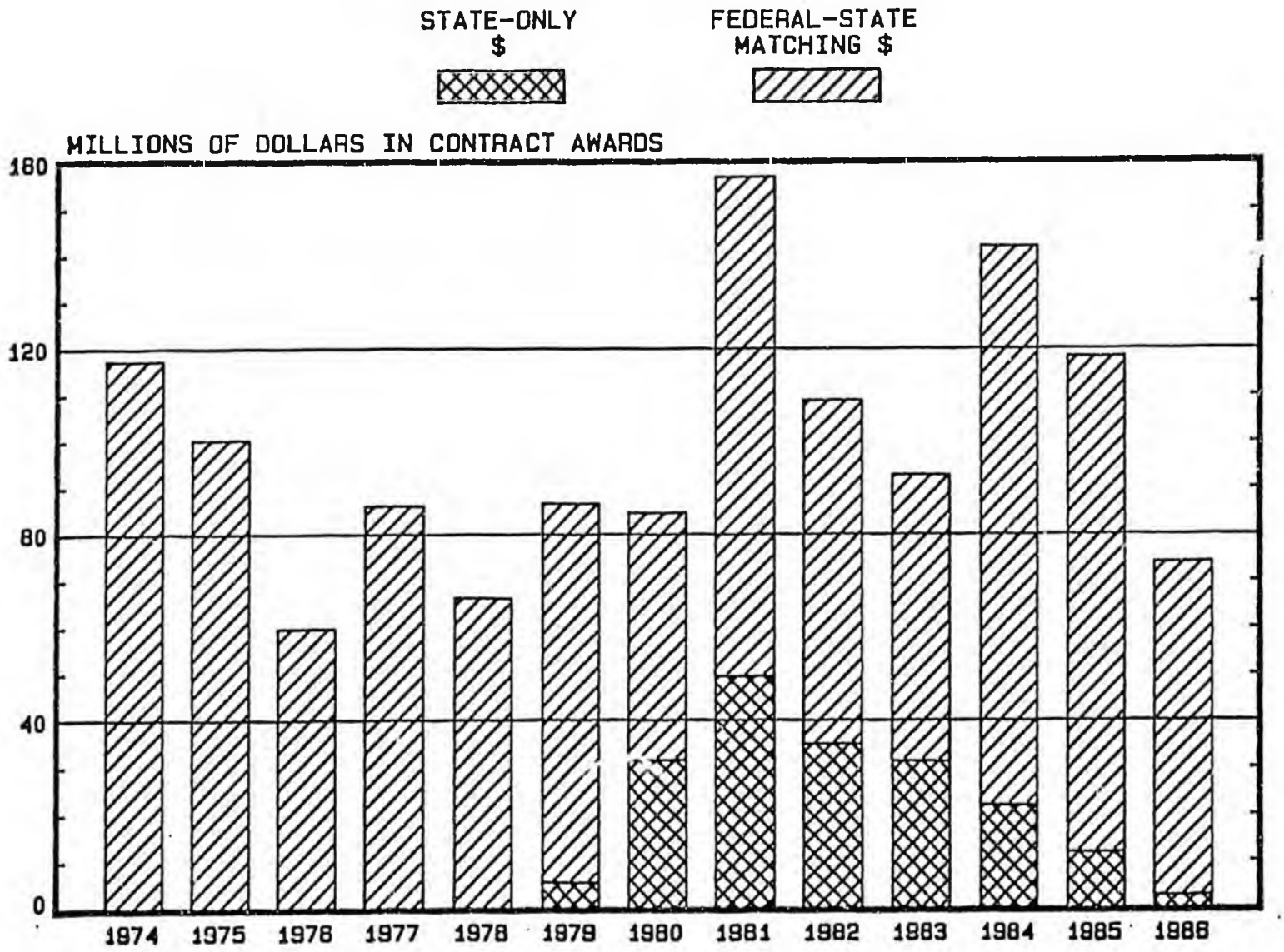
HIGHWAY PROGRAM AND NEEDS

A Review of the State Highway and Bridge Improvement (Construction) Program in terms of both Accomplishments to date and Plans for the Future. The Utility of Engineering Analyses of Highway Needs is Discussed, as is the Expansion of the State Highway System. Also reviewed is the Highway and Airport Maintenance and Operations Program as it Relates to the Physical Condition of Alaska's Highways and the Traffic Service Provided. The Accomplishments of the ADOT&PF Research Program are also Analyzed.

HIGHWAY IMPROVEMENT HISTORY



$1.3 Billion, 13 Year Program. The above chart shows that over the 1974-1986 period (calendar years), the ADOT&PF awarded $1.3 billion in contracts to both build new state highways and to reconstruct, rehabilitate or otherwise modernize existing state highways. While the sum of each year's annual contract awards ranged from $60 million in 1976 to $157 million in 1981, the average for the period was $100 million. While not shown on the chart, ADOT&PF officials indicate $108 million in highway construction awards were made in calendar year 1987.

Disappearance Of State-Only Improvements. Two types of funding were used. The first and most prevalent is the combination of Federal Aid Highway Program funds with matching state funds. The other is state-only funds. The downward trend in state-only contracts since 1981 is consistent with Alaska's downtrend in state resources.

Matching Federal Funds Important. Most state highway and transportation officials view matching federal aid funds as the first call on available resources. This is especially true in Alaska where each Alaskan dollar made available for highway construction contract awards, generates nine matched dollars from the Highway Trust Fund (the repository of federal highway user taxes and fees) -- up to the limit of obligational authority set by Congress and the National Administration.

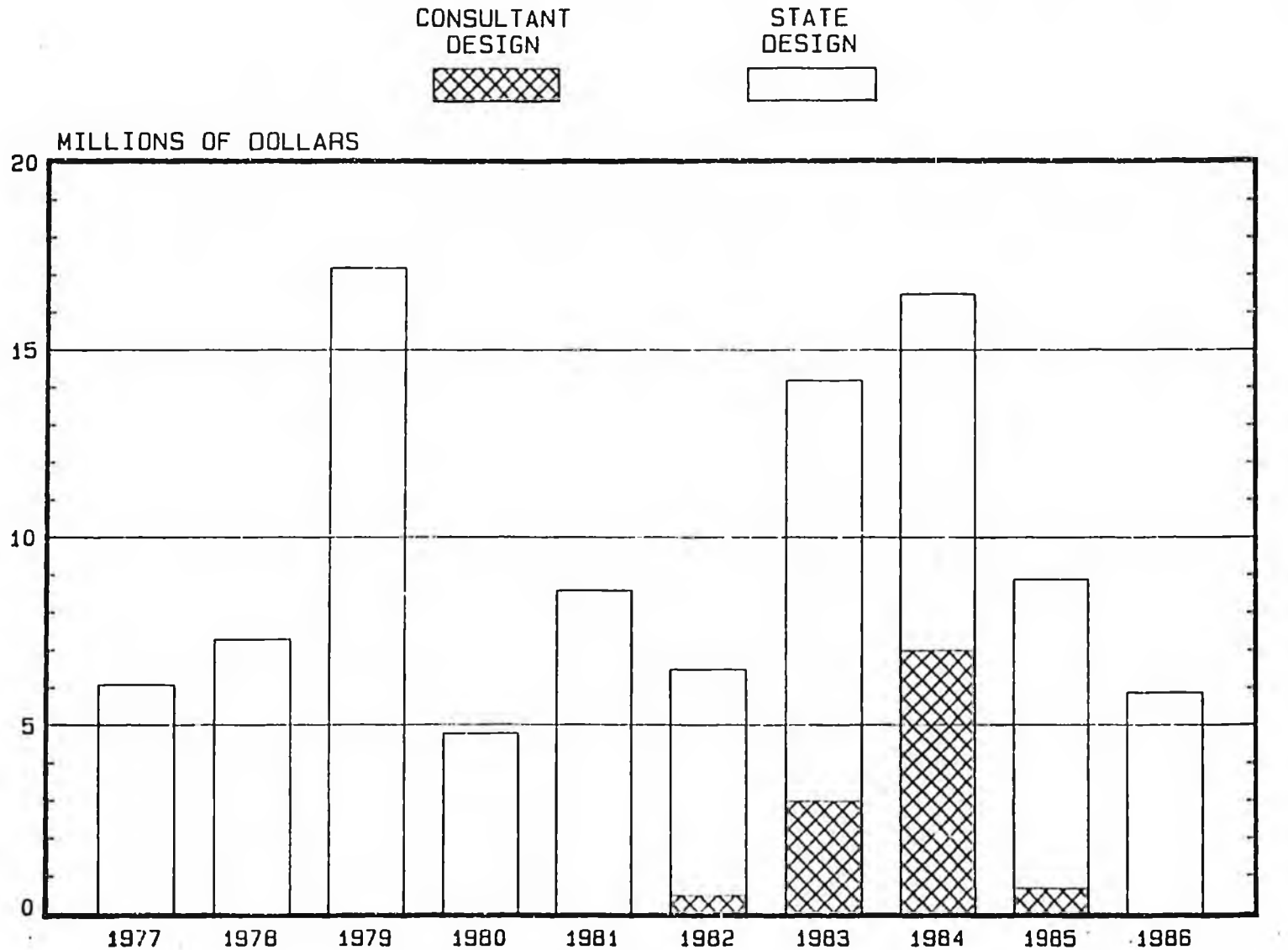
Highway Contract Awards And Federal Obligations. Note that the dollar volume of highway contract awards is consistantly less than the dollar volume of annual obligations of Federal Aid Highway Program funds (see page I-15). The apparent discrepancy is due to the fact that more than just highway improvements are committed to in the process of obligating federal aid highway funds, such as bridge rehabilitation or construction projects, construction engineering and inspection, highway planning and research activities and right of way purchases.

Up And Down Nature Of Annual Construction Awards Tough On Contracting Industry. It is important for Alaska to retain a cadre of experienced highway contracting firms in order to gain the lowest possible bid prices and the best quality improvements. However the wide deviations in annual ADOT&PF contract awards make it difficult for the contracting industry and its employees. The uncertainty about the dollar volume of ADOT&PF improvement Programs impedes the contractors' ability to plan ahead in terms of equipment, materials and manpower. Such uncertainty could force some Alaska contractors out of business (especially the small ones) or could force some contractors to relocate in other states.

Need For State-Only Program. Most states find the resources to maintain at least a small state-only highway improvement program in order to make some essential, usually low cost improvements that cannot wait for the normal federal clearances or that are not eligible for federal financing. Furthermore, some states maintain a large state-only improvement program to both accomplish many low cost improvements and to augument the larger more comprehensive federal aid program.

However when highway and transportation officials face a situation -- such as Alaska faces now -- where it is difficult to raise the funds to match federal aid highway funds, most state-only improvements are deferred. As a result, the state loses the ability to fund some types of low cost improvement, such as highway resurfacing, that do not always need to include other design improvements like alignment changes, pavement widening, guardrail installation -- but are necessary to qualify for federal funds. In other words, there are some improvements that while necessary, do not meet federal criteria for matching funds. ADOT&PF officials need the flexability of at least a $10 million state-only highway improvement program.

BRIDGE IMPROVEMENT HISTORY

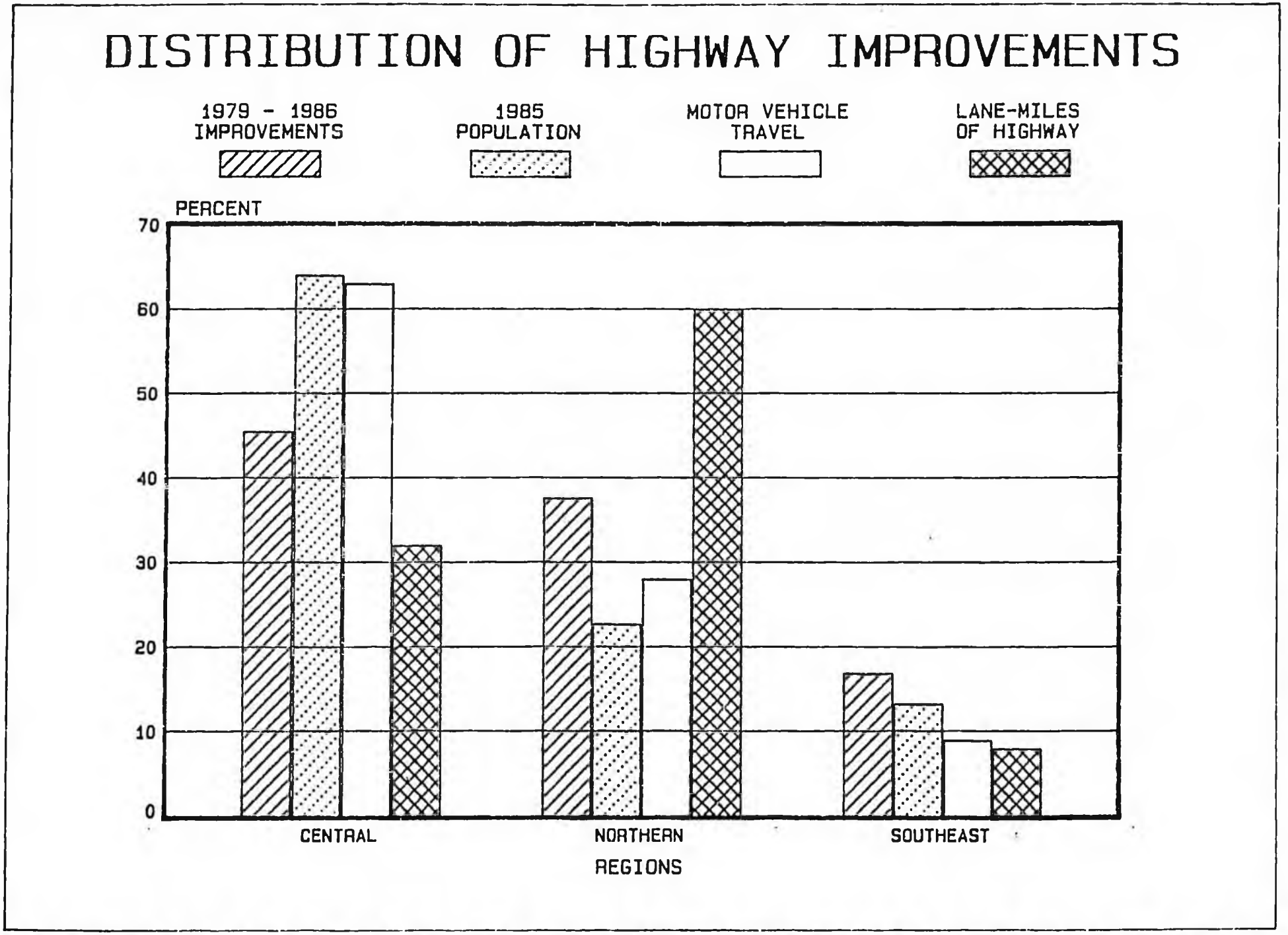


NOTE: 173 BRIDGES REPLACED OR REHABILITATED, 1977 - 1986.

$96 Million, 10 Year Bridge Program. Out of the 676 bridges that are on the State Highway System, 173 have been built, replaced or rehabilitated over the ten year, 1977-1986 period. A total of $96 million in bridge construction projects were awarded to contract -- an average of 17 per year.

Because of the specialized nature of the work, all bridge design and plan preparation, that is accomplished by ADOT&PF staff, is done in the Juneau headquarters office.

DISTRIBUTION OF HIGHWAY IMPROVEMENTS



Highways And Bridges Are Two Thirds Of Total ADOT&PF Capital Improvement Program. For the 1979 to 1986 period, the Central Region awarded the most capital improvement projects, that is for highways, bridges, harbors, ferries, ferry terminals, airports and state buildings. The highway and bridge share of the $1.5 billion in contract awards was $948 million or two thirds of the total.

The charts above show the distribution of the $1.5 billion of contract awards for the years 1979 through 1986, as well as how the distribution relates to population, motor vehicle travel and lane-miles of state highway in each Region.

Distribution of Improvements, A Hot Issue. One of the "hotest" issues in most state highway programs is the distribution of resources for capital improvements. In some states the distribution is based on formulas with factors such as population, miles of highway, lane-miles of highway, engineering appraisals of need or some combination of factors.

In some states either the legislature or the highway (or transportation) commission sets the distribution. And in some states – like Alaska – the chief executive officer of the department sets the distribution.

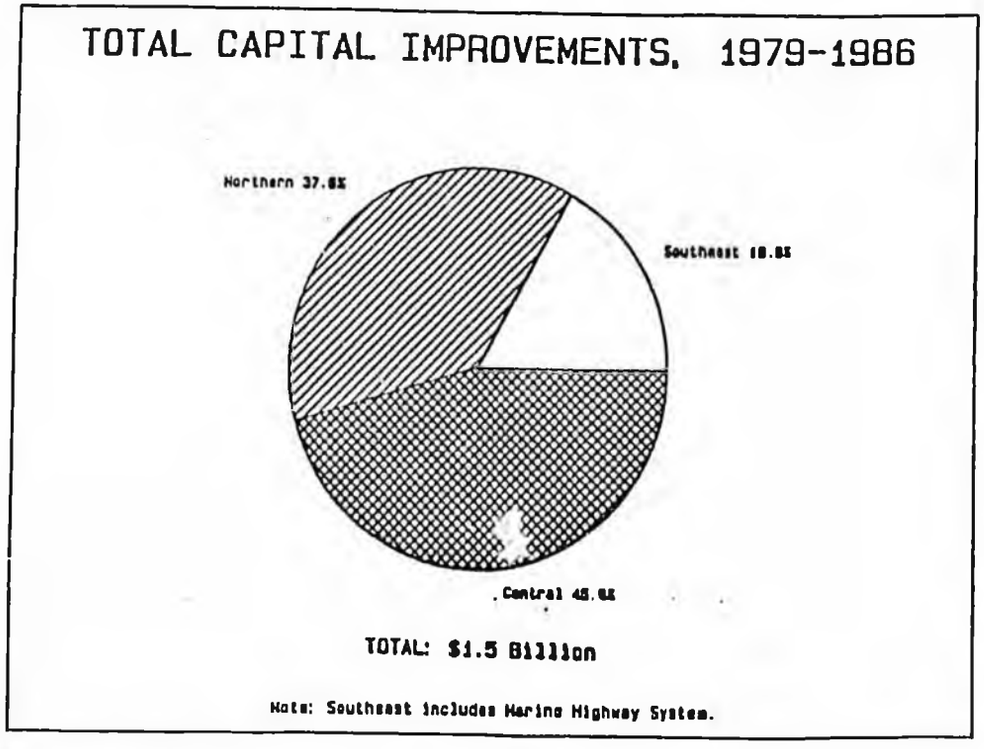
In no state is their complete agreement on who should set the formula or the factors that should be used in the formula for distributing the improvement program funds geographically. The best practice is to consider all possible factors and to make adjustments as new factors, or combinations of factors are agreed upon as more equitable bases for fund distribution.

Distribution Targets. The following are the distribution targets used by the ADOT&PF in recent years for the geographical distribution of highway improvements:

	Percent
Central Region	45.8
Northern Region	38.5
Southeast Region	9.7
Marine Highway System	6.0
	100.0

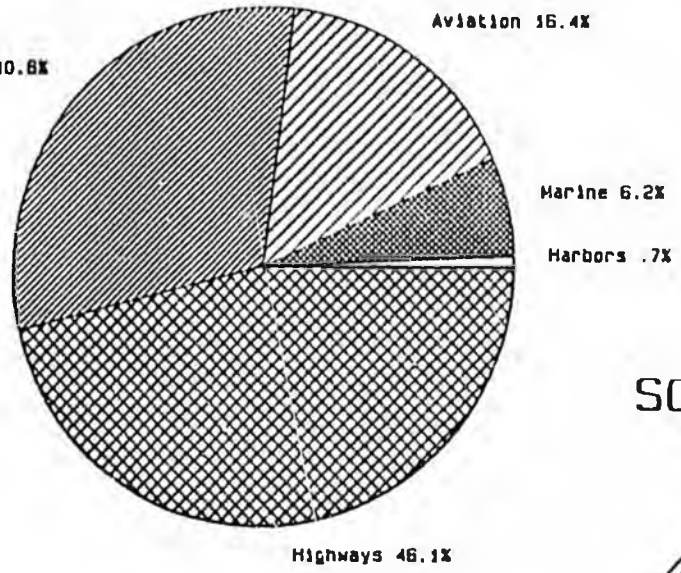
Note from the chart at right how close the total ADOT&PF capital improvement program for the 1979-1986 period has come to the highway distribution targets.

In recent years, the ADOT&PF has based the distribution of highway improvement funds on a formula that includes population, land area, paved lane-miles of highway, total lane-miles of highway and annual vehicle-miles of travel in each Region. However, the distribution process is currently under examination to ensure that it is promoting equity in the modernization or upgrading of the State Highway System.

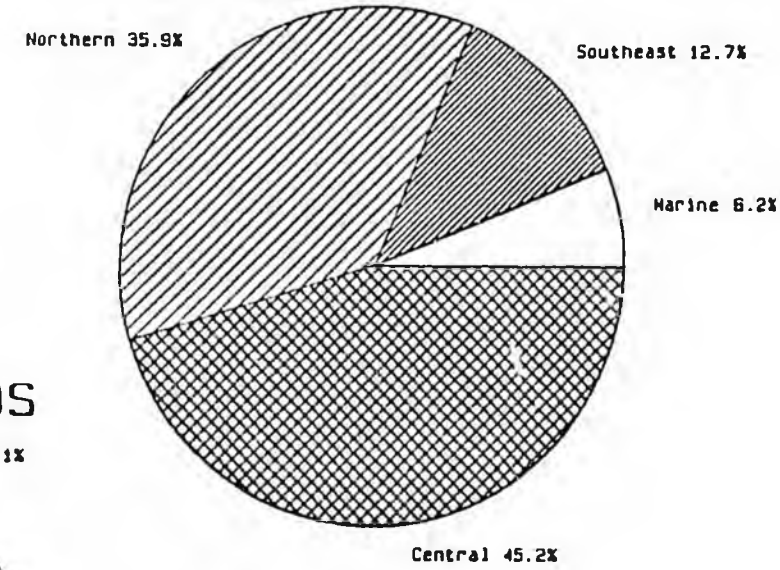


1986 CONTRACT AWARDS

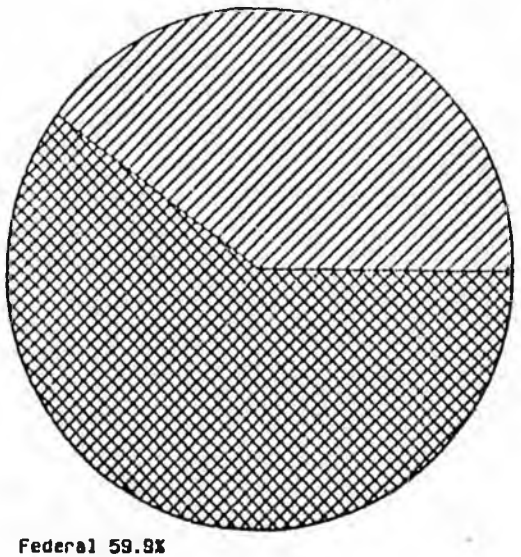
MODE



REGION



SOURCE OF FUNDS



$160.9 MILLION

In calendar year 1986 the ADOT&PF awarded $160.9 million in improvement contracts. Almost half (46.1 percent) were for highway and bridge improvements. The Central Region awarded 45.5 percent of the total projects, very close to the highway target (45.8 percent) for that Region.

Federal Participation. Six out of every ten dollars of the funds necessary to accomplish the improvements were federal dollars. In that the federal government does not ordinarily participate in building and harbor improvements, the federal participation was 87.2 percent of the $110.5 million in highway (and bridge), aviation and Marine Highway System improvements. $50.4 million of state funds were directed to buildings and harbor projects and $14.1 million directed to federal participation projects.

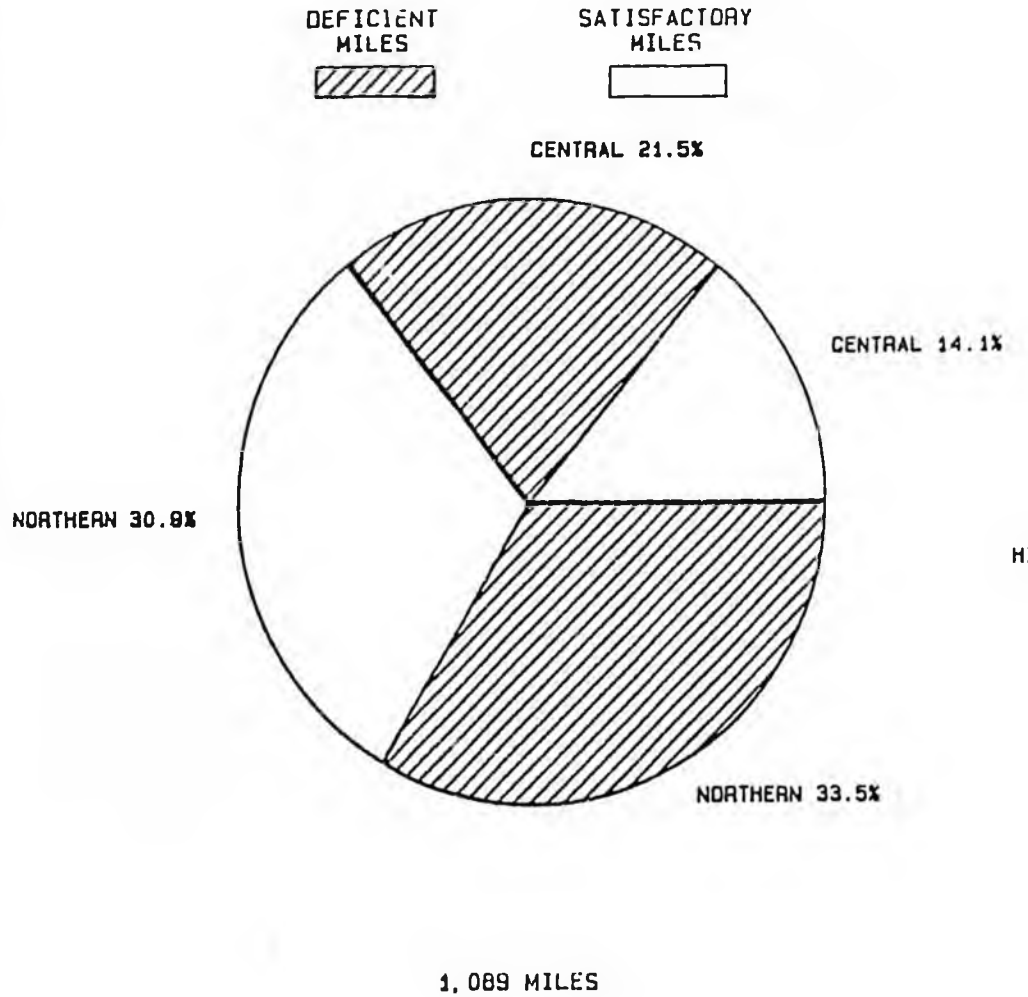
New Analytical Process Being Examined. With over $100 million of improvement projects being awarded to private contractors each year, it is important to closely monitor the contract prices being bid to both guard against possible fraud and collusion and to assist the designers in finding the most cost-effective of alternative designs. To aid the bid analysis process, the ADOT&PF is now examining a new computer-assisted procedure, sanctioned by the American Association of State Highway and Transportation Officials, that will provide faster review of construction project bids. Other states have found that the procedure has been helpful in speeding the bid analysis process and in detecting inconsistencies in the bids.

Decentralized Program Control Part Of The Problem. Alaska's decision to decentralize the management of the ADOT&PF Program in 1982 may be an inhibiting factor in gaining centralized information about many aspects of ADOT&PF Program – such as the construction contract bidding process. Without an ADOT&PF, department-wide model, each Region and Division has developed and employs their own set of processes. Analysis of all the various management techniques used by the decentralized management team is beyond the scope of this Review.

Need To Standardize Management Systems. Decentralized control of the ADOT&PF Program appears to be absolutely essential for a state as large as Alaska and with so much of its Program in remote areas. However, in order to facilitate the aggregation of essential information on how the Program is being carried out, it is recommended that the ADOT&PF's management systems be standardized. The progress being made in improving the accounting for capital expenditures (see Chapter IV) is an example of this suggested approach to improved management of the ADOT&PF Program.

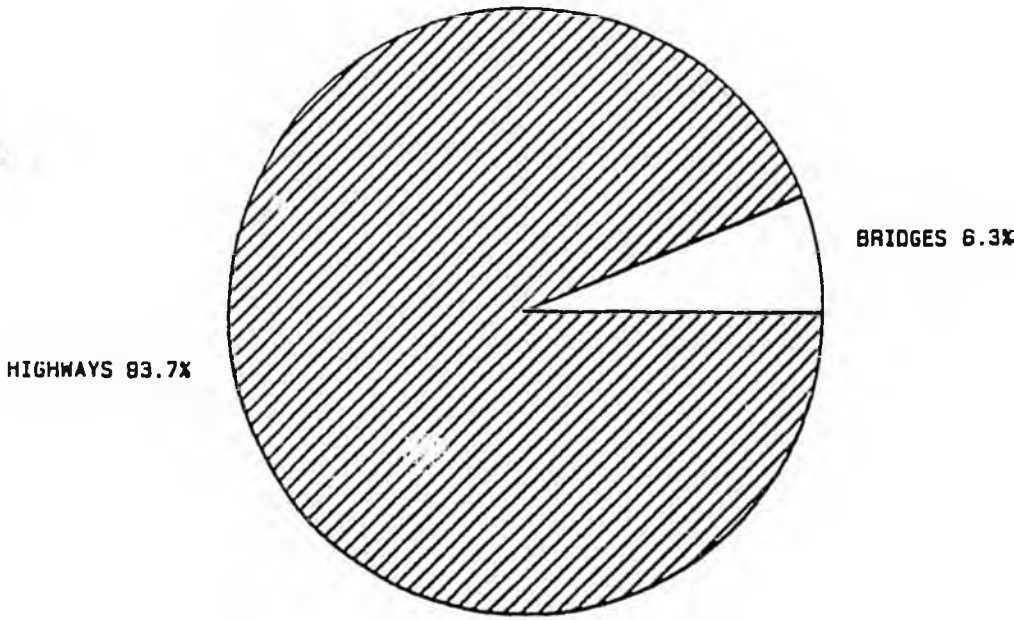
Need To Augment The Headquarters Staff. In order to develop a standard bid review process, as well as highway and airport maintenance management procedures, accounting procedures, construction practices, design standards, preconstruction and construction scheduling procedures, right of way purchase procedures, training procedures, career guidance practices, construction quality control procedures, improvement program goals and all the other systems and policies needed to effectively manage and monitor the ADOT&PF Program, it will be necessary to augment the ADOT&PF headquarters staff. The added staff should be employed to find the appropriate systems from the various techniques in use by the Regions and Divisions – or in other states, to document and test the systems and then to assist in their promulgation and application.

INTERSTATE HIGHWAY SYSTEM NEEDS



1,089 MILES

IMPROVEMENT COSTS



$976 MILLION

In 1987 the Department with the aid of a consulting firm completed a two year, $94,000, planning project to assess the needs of Alaska's 1,089 mile Interstate Highway System. The results show that 490 miles of this System currently meet reasonable standards of tolerability. However the results also show that 599 miles are deficient in one or more ways. Costs to upgrade the deficiencies were estimated to be $976 million.

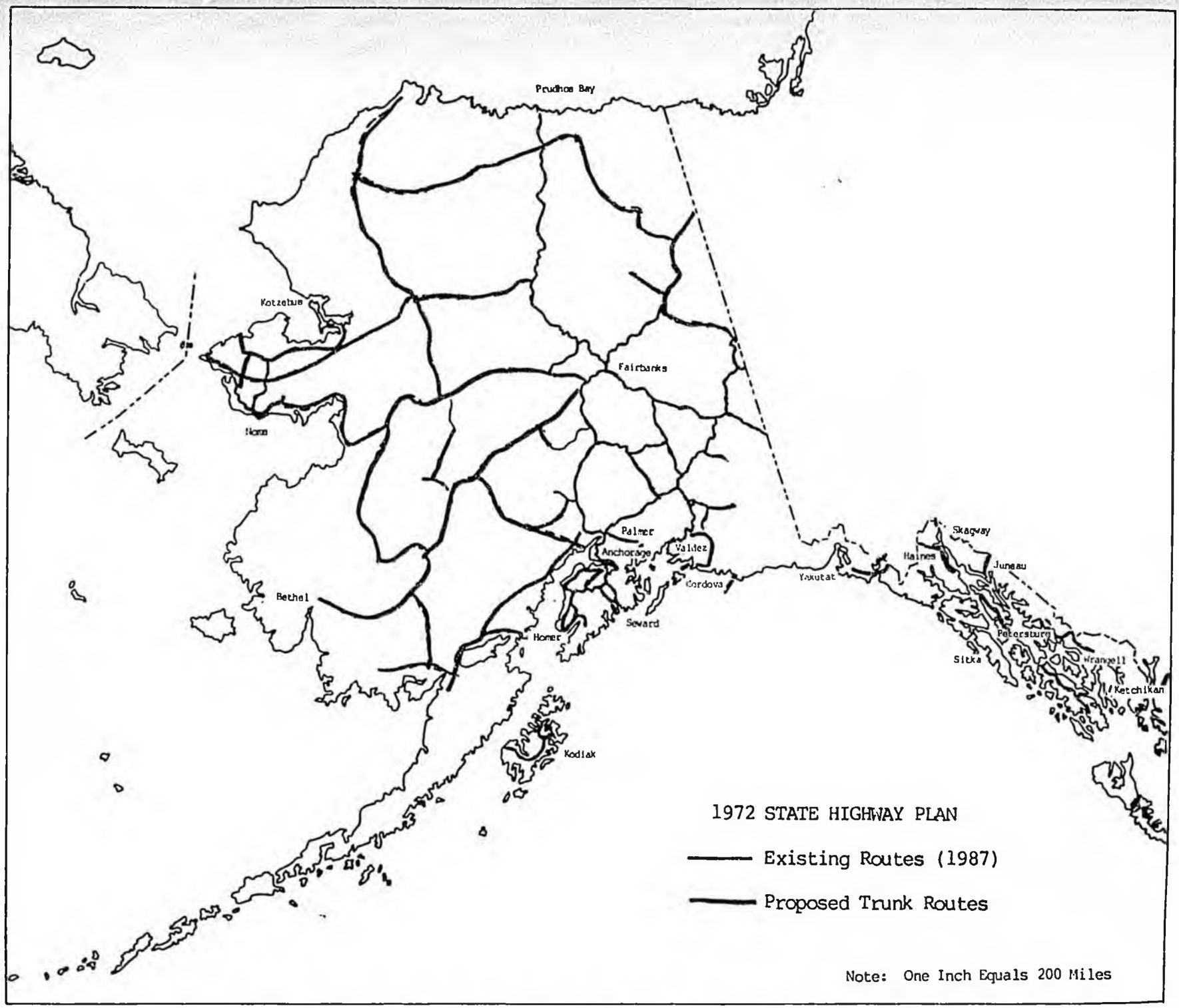
Exemplary Analysis. The team of engineers that carried out the needs analysis were made up of people with much former experience with the Washington Department of Transportation. The realistic approach to the analysis and the attention to detail prompt the note that this is a model analysis, one of the best of its kind. Great care was taken to relate pavement and bridge widths and curvatures and grades to the latest national standards of tolerability. To this was added assessments of accident experience, pavement condition and speed reductions.

Narrow Roadways A Critical Problem. Narrow roadways closely followed by poor pavement condition were the most critical elements. However 42 miles had curves and grades that were too sharp or too steep for safe, efficient driving. 40 of the 140 bridges on the system were found to be too narrow in terms of safe side clearances or not capable of carrying heavy truck loads (29 were both narrow and restrictive in load carrying capability).

Priorities Also Set. Another exemplary feature of the needs assessment is that it established a priority rating system and listed the improvement priority for each deficient section of Interstate Highway.

Recommendation: Set Goals For Interstate Upgrading. Based on the needs estimate and estimate of future availability of federal funds, it is recommended that a multi-year target be set for Interstate Highway System upgrading. If it is anticipated that Alaska will realize about $130 million each year in Federal Aid Highway Program funds, it is suggested at least half be devoted to Interstate modernization. At that rate and allowing for modest inflation, it would take 15 to 20 years to complete the effort. Other options of placing more or less resources into the Program should be investigated.

Also Recommended: Make Similar Needs Analyses Of Other Principal Arterials And Minor Arterials.


Prudhoe Bay
Kotzebue
Fairbanks
Nome
Palmer
Anchorage
Valdez
Bethel
Cordova
Yakutat
Haines
Skagway
Juneau
Seward
Homer
Petersburg
Sitka
Wrangell
Ketchikan
Kodiak
1972 STATE HIGHWAY PLAN
Existing Routes (1987)
Proposed Trunk Routes
Note: One Inch Equals 200 Miles

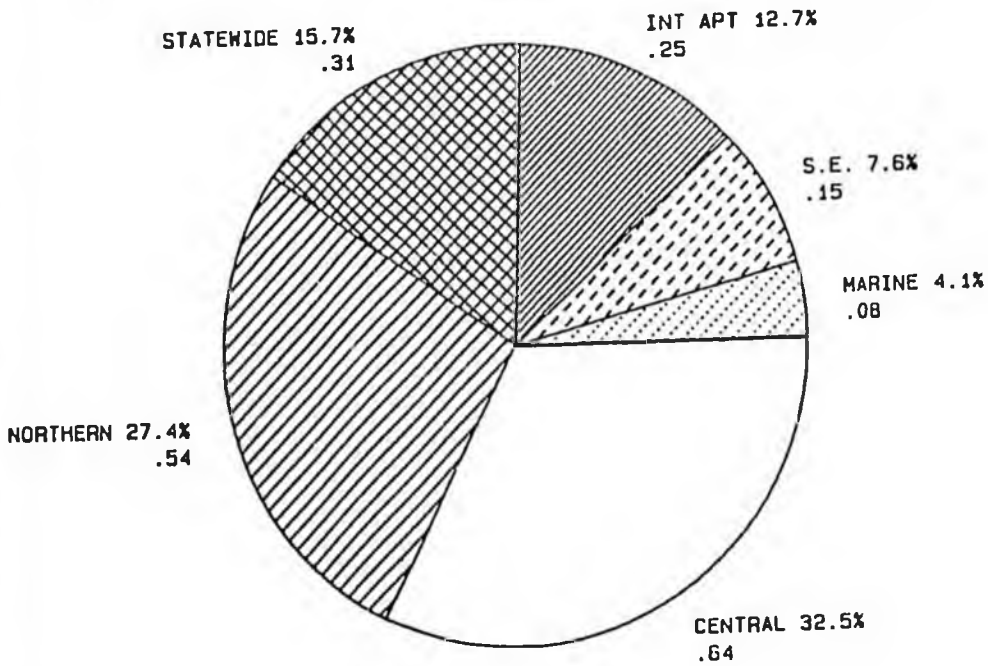
Expanding State Highway Service. The above plan for expansion of the State Highway System has no official status. It was developed in 1972 by the Alaska Department of Highways and is presented here to stimulate thinking about Alaska's future.

Many of the routes may not be feasible to build. The plan in its entirety is beyond the financial capability of Alaska. However, such routes as the Alaska Highway were probably once thought impossible. And a route to Prudhoe Bay was also beyond anyone's imagination. Is it time for Alaskans to again plan to open up more of their state by building first-phase, primitive roads? Should major communities such as Nome and Bethel be connected to the State Highway System? And should a highway be built north of Juneau to provide land access between the state capitol and Alaska's largest city? And what route or routes would be first priority?

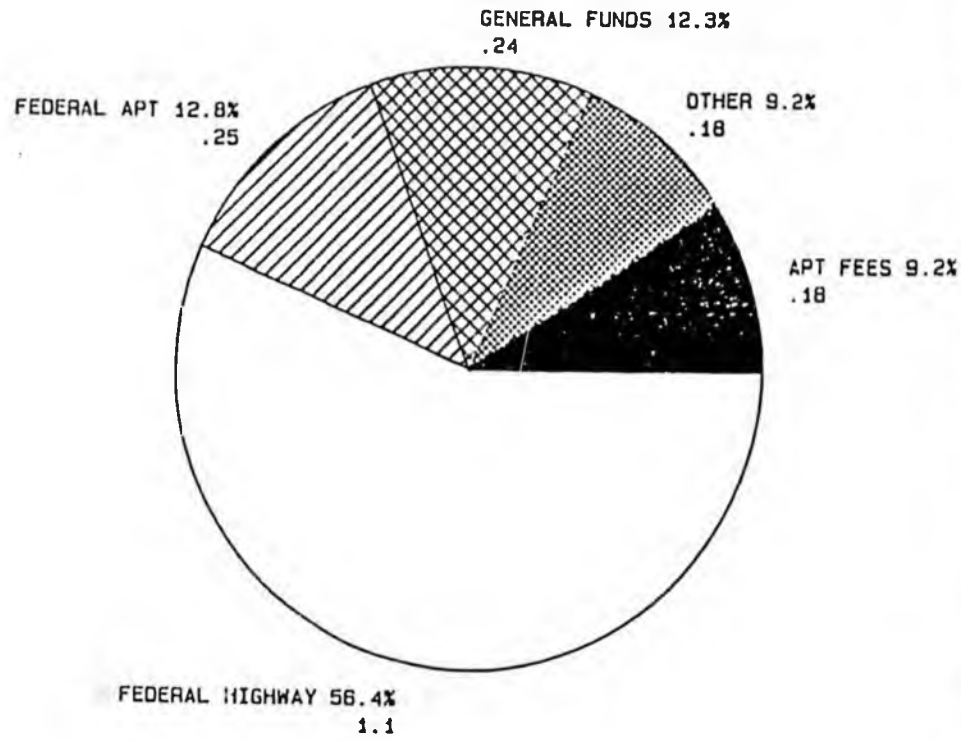
Alaska's Strategic Location. Just as the National Interstate Highway and Defense System was conceived to tie together strategic points in the United States, a basic road network for more of Alaska would also seem militarily important.

CAPITAL IMPROVEMENT PROGRAM, 1988-1993

DISTRIBUTION



$ SOURCE



TOTAL: $2.0 BILLION

Note: "Statewide" includes state matching $ for Federal Aid Highway Program Improvements and $ for state equipment fleet replacements.

Important Control Mechanism. Annually the ADOT&PF updates and publishes a six year capital improvement program. It is the source document for the scheduling of improvement projects' preconstruction engineering activities. Only those projects that are listed in the six year program can be let to contract. And only those listed projects can be advanced to the design stage. Annually the proposed improvement projects are studied and revisions made as project priorities change and year-to-year scheduling shifts are found necessary.

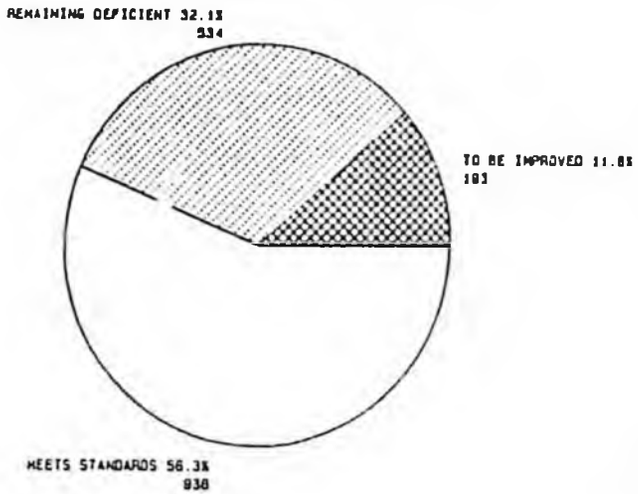
Stabilizing Influence. This master document of long range planning has been important in stabilizing the work activities of the Department. No longer is it justifiable for Region or Division officials to insert unlisted projects into their surveying, preliminary engineering or design work programs, without prior official application for a change in the capital improvement program.

Sources Of $2.0 Billion Program. The total dollar value of the projects listed in the 1988-1993 (including a seventh year, 1987, which was added due to the late date in receiving 1987 Federal Aid Highway Program funds) is $1.96 billion. The Program anticipates that 69 percent of the funds will come from federal sources, 12 percent from the State General Fund, 9 percent from the International Airport Revenue Fund and 10 percent from other sources. The other sources includes equipment lease fees accruing to the Highway Working Capital Fund for State Equipment Fleet replacements. Also in the other category are funds that will be reimbursed to the Department by other other agencies for both plan preparation and construction. Lastly the other source of funds includes International Airport Revenue bonds for Anchorage and Fairbanks airport improvements that are beyond that which can be financed by International Airport revenues.

Planned Distribution Of Funds. It is estimated that $1.2 billion or almost 60 percent of the total program of expenditure is for improvements in the Central and Northern Regions. However it should be noted that the $310 million (15.7 percent) that is listed for statewide expenditures includes all the state matches of federal funds (regarless of improvement project location), as well as planned expenses for State Equipment Fleet replacements, the funds for research and the funds for transportation planning.

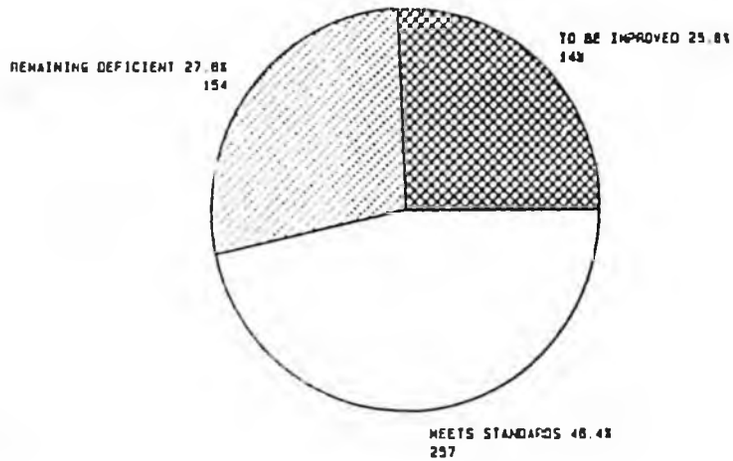
SIX YEAR PROGRAM OF HIGHWAY IMPROVEMENTS

NORTHERN REGION



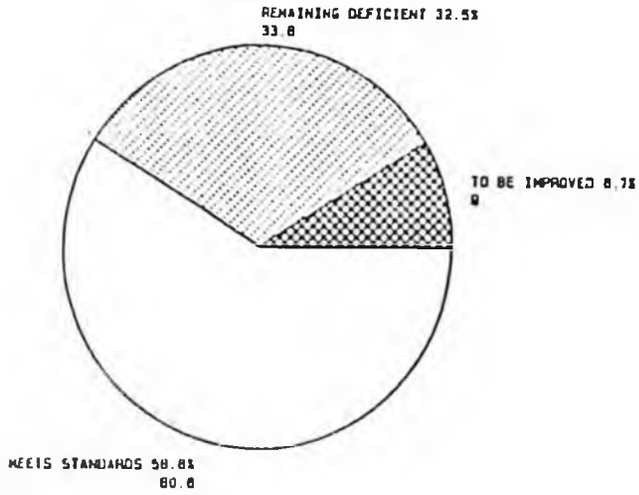
TOTAL: 1663 MILES

CENTRAL REGION



TOTAL: 554 MILES

SOUTHEAST REGION



TOTAL: 103 MILES

NOTE: IMPROVEMENTS INCLUDE UPGRADING & REHAB
FEDERAL AID INTERSTATE AND PRIMARY HIGHWAYS

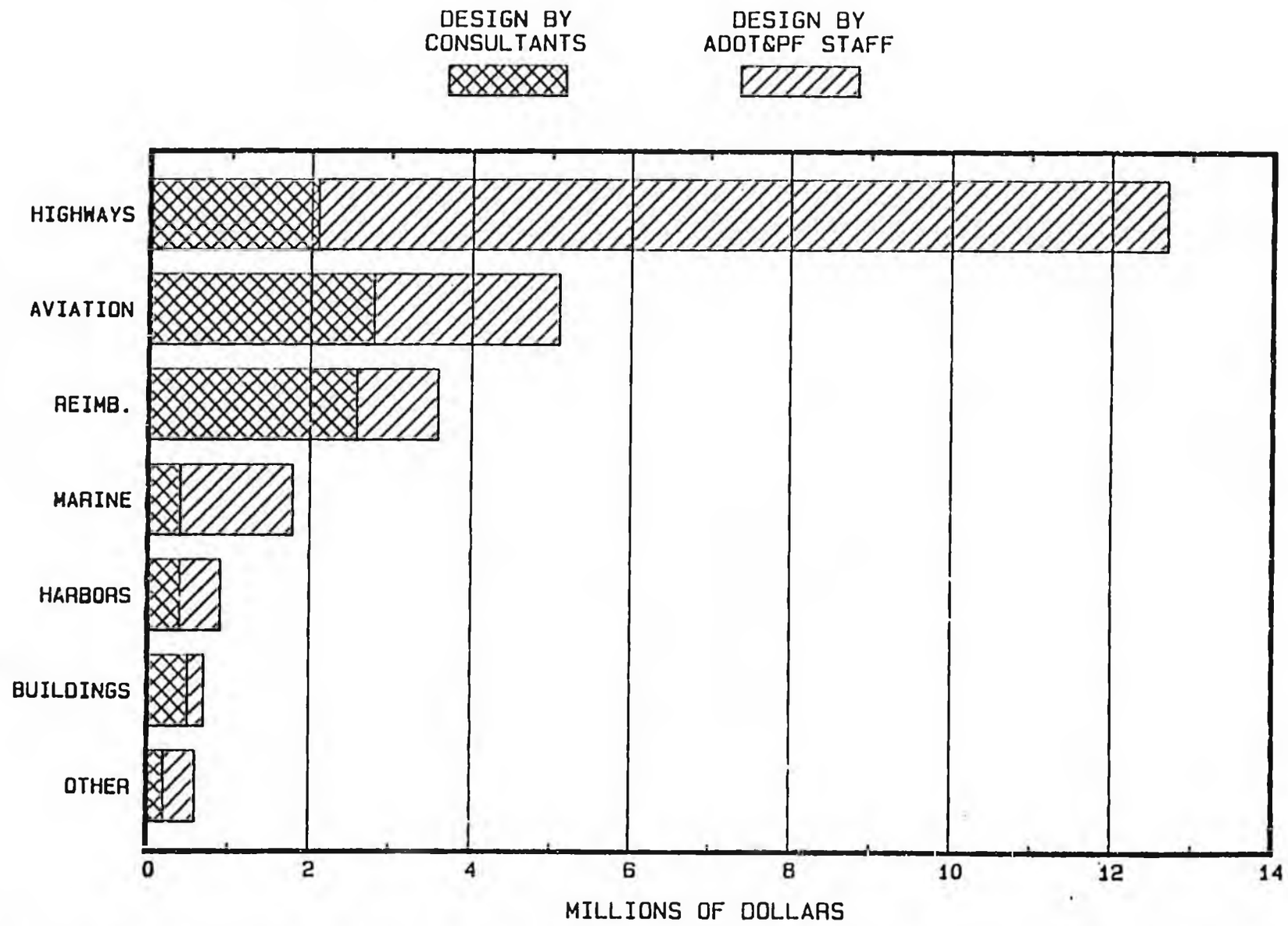
Planned Program Of Accomplishments. The charts indicate, in dark cross-hatched lines, the miles of Interstate, Other Principal and Minor Arterial improvements to be accomplished over the 1988 to 1994 period in each of the ADOT&PF Regions, that is as listed in the 1988-1994 Capital Improvement Program. Also shown are the miles of those most important highways that according to ADOT&PF officials now (1987) meet standards of tolerability as well as those highways that will remain deficient or must wait to be improved until beyond the 1988-1994 planning period.

Mileage Summary. In sum, 1,254 miles are currently performing satisfactorily or are in satisfactory condition, while 365 miles are to be awarded to contract for improvement by the end of fiscal year 1994. 722 miles will remain to be improved in ensuing years.

Impressive Goal. Assuming that these figures are correct and that 50 percent of the deficiencies on Alaska's most important highways can be corrected by 1995, Alaska will be in an enviable situation. It means that by July 1, 1994, 70 percent of Alaska's Interstate Highways, Other Principal Arterials and Minor Arterials and their urban extensions will be in satisfactory condition. Few states in the nation are in a position to indicate that state their highway improvement programs will yield such positive results.

To Be Sure Make Needs Evaluation And Implement The Pavement Management System. More accurate evaluation of the status of Other Principal and Minor Arterials is necessary to confirm the facts and figures. Furthermore since pavement is a never-ending challenge to keep in reasonably good condition, the ADOT&PF pavement management system, that is currently being developed, will be an excellent tool for accurately and continually monitoring progress or lack of progress in pavement status.

1986 DESIGN WORK BY STAFF AND CONSULTANTS

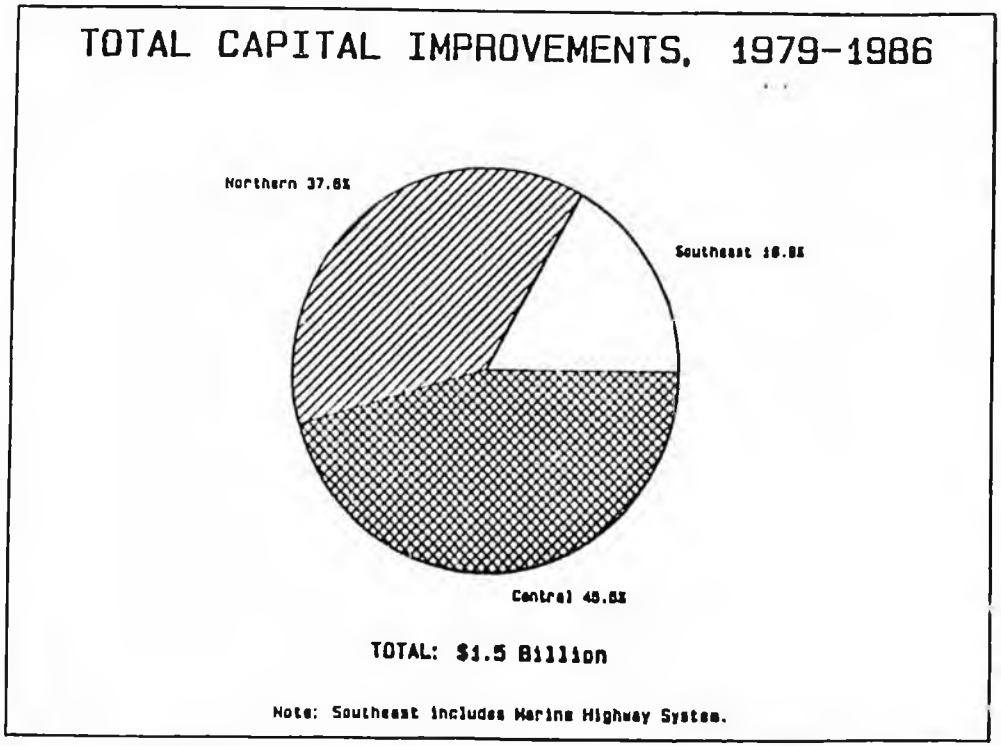


NOTE: 1986 TOTAL DESIGN COSTS WERE $25.4 MILLION; PAYMENTS TO CONSULTANTS WERE $8.9 MILLION OR 34.9%

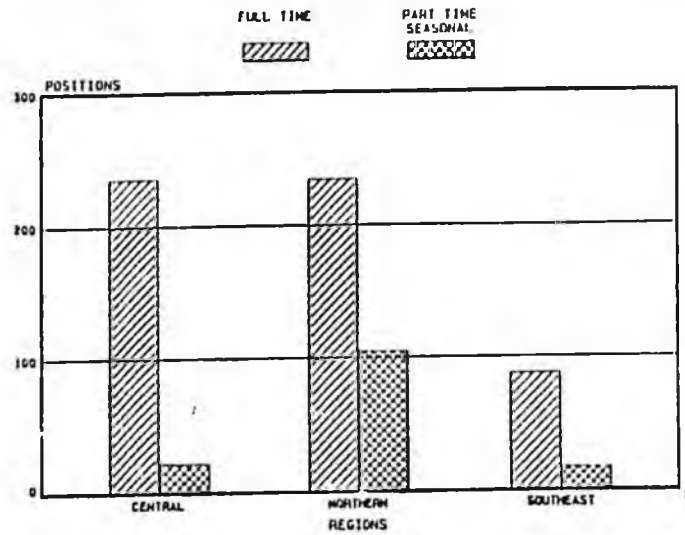
34.9 Percent Of Design Work By Private Firms. Of the $25.4 million spent on design in 1986, 34.9 percent was accomplished by private consulting engineering and architectural firms. Aviation, including the design of airports and ancillary facilities, led the way with over half (54 percent) accomplished by private enterprise. In second place was the $2.6 million in engineering analysis and design of buildings and facilities for other state and local government agencies. Only 16 percent of the combined highway and bridge designs in 1986 were accomplished by private engineering firms.

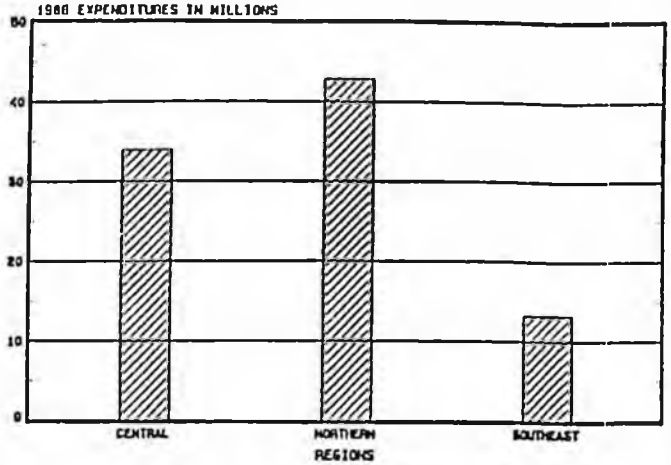
Most States Call On Outside Consultants. While some states, accomplish all design work with state staff, most states reserve some work for consulting engineering firms. In some states consultants help out with the very straight-forward designs where the chance of a communications problem between the state and the engineers is small. However most states reserve for private forces complex bridge or urban highway work, where specialized effort is required. While some states aim for a specified portion of all work to go to consultants, others reserve the "peaks" in design work load for consulting firms.

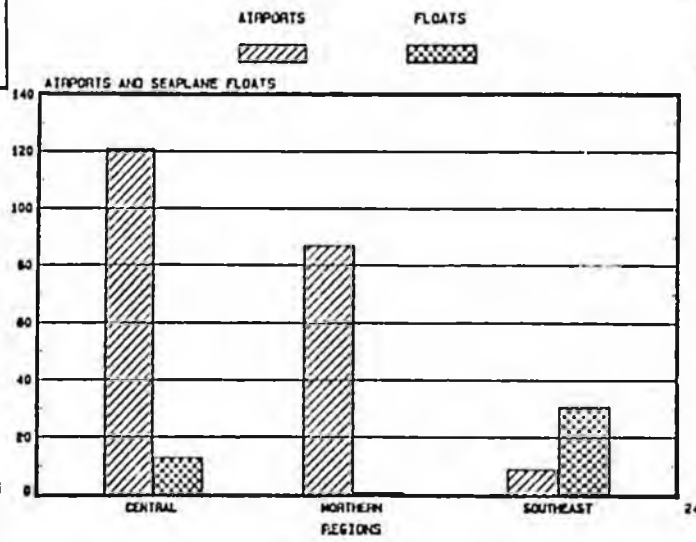
Recommendation: Set Consulting Engineering Policy. There is always the debate about which method, public or private engineering design and plan preparation, is most cost effective. Currently, the ADOT&PF lacks both the facts on public and private costs and a policy on the use of engineering firms based on such facts. It is therefore recommended that a consulting engineering policy be developed based on a cooperative effort by private and ADOT&PF engineers to find comparable, public and private design and plan preparation costs.

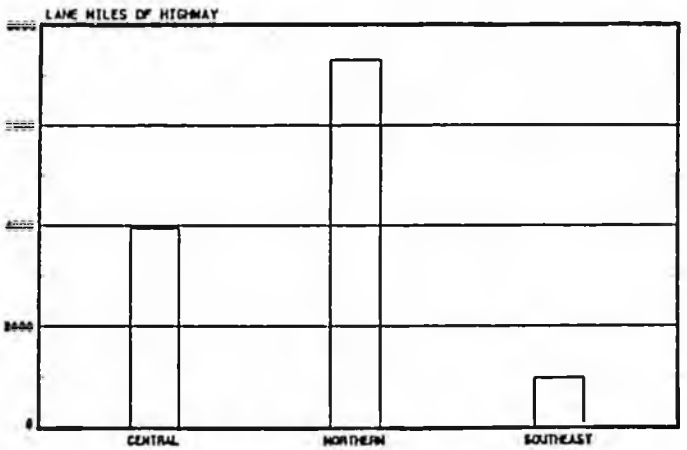


MAINTENANCE AND OPERATIONS

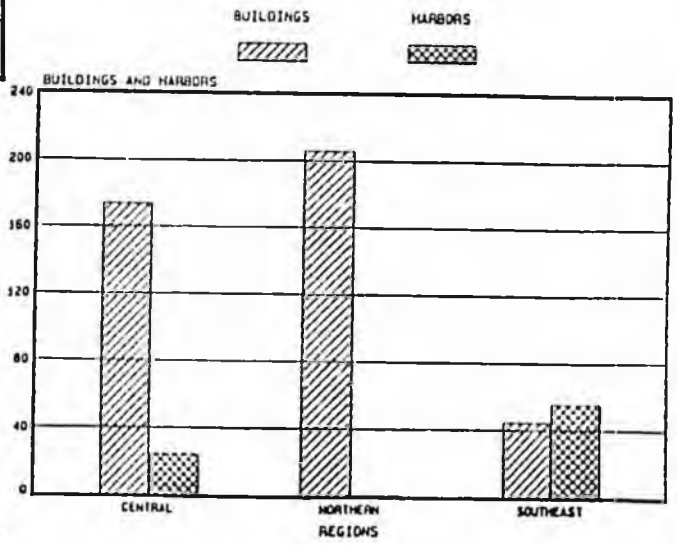








MARINE HIGHWAY AND INTERNATIONAL AIRPORTS EXCLUDED



MARINE HIGHWAY AND INTERNATIONAL AIRPORTS EXCLUDED

Maintenance And Operations. Perhaps the most unrewarding work in the highway industry is that of the people that are responsible for keeping our highways operable, safe and in as near to their as-built condition as resources allow. In fiscal year 1986 the ADOT&PF spent $91.3 million in maintenance and operation of highways, airports (excluding the International Airports and Marine Highway System maintenance and operations), harbors, ferry terminals and most state buildings.

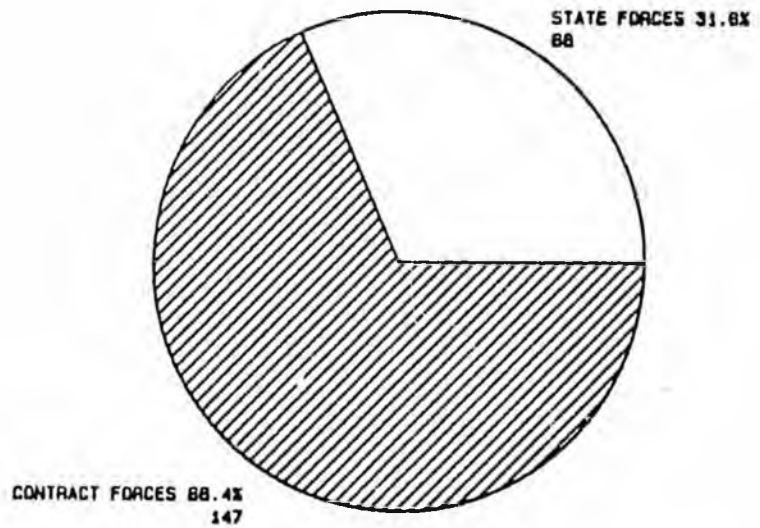
Responsibilities. The above charts indicate the relative maintenance manpower strengths of the three Regions and the split of maintenance and operations expenditures in fiscal year 1986. Also shown are the broad mix of maintenance and operations responsibilities, including lane-miles of highway, airports and seaplane floats, buildings and harbors.

Manpower. As of June 30, 1987, the Department employed 570 maintenance and operations people down from 661 people at the same point in time in 1985. Based on 1986 survey information from all state highway and transportation agencies in the nation, Alaska ranked 49th in the nation in maintenance personnel per lane-mile of state highway. Furthermore Alaska is the only state whose maintenance forces must not only maintain highways but also buildings and airports.

Major Airport Responsibility. With 215 state-owned and maintained, land airports and 45 seaplane floats, the ADOT&PF must not only ensure that the physical components of the airports are safe but also the operational equipment (landing lights, signs and wind indicators) of airports are in safe working condition. This is a major responsibility, especially where heavy snowfall may impede operations. Nevertheless, the ADOT&PF maintenance forces are responsible for advising pilots as to safe or unsafe landing conditions. To further compound the problem, most (68.4 percent) of the airport maintenance and operation function is contracted out to private individuals or corporations in remote areas where the supervision of work effort is difficult and costly.

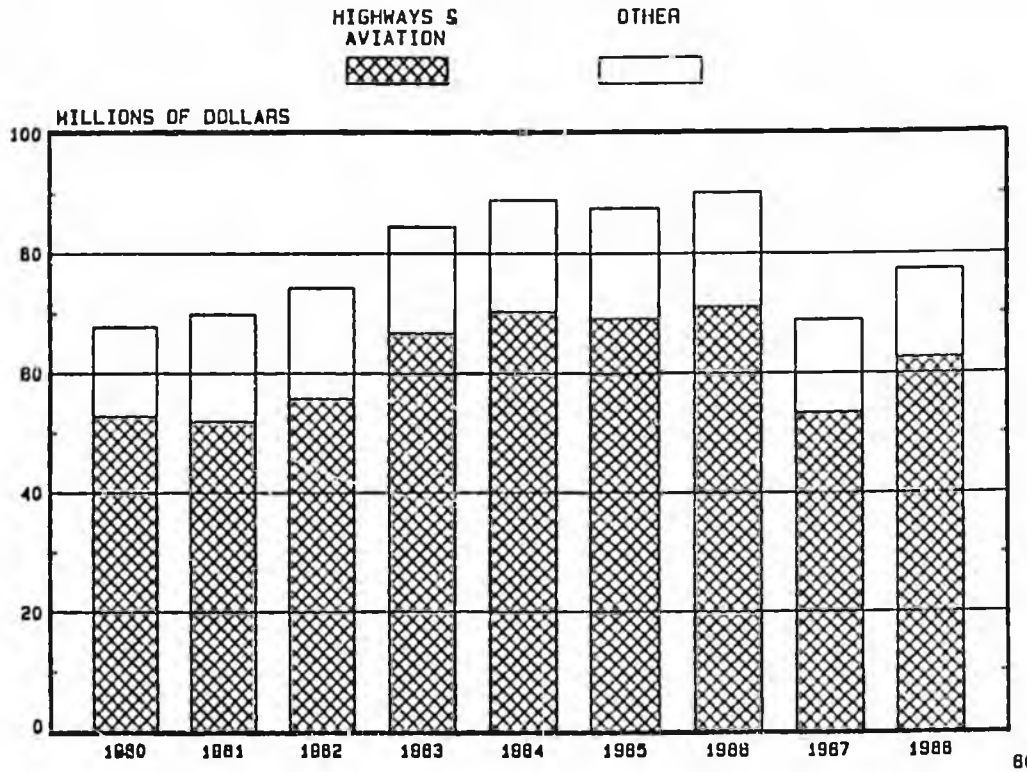
Force Spread Thin. The highway maintenance function is divided into maintenance districts. There are 85 maintenance stations, (one per area) each responsible for between 20 and 150 miles of road as well as the state airport or airports within the area. Manning has dropped to as low as two people at some maintenance stations making it difficult to schedule leave. Sickness or injuries sometimes mean snow removal operations must be stopped. Overtime is common. All leave must be scheduled in the frost-free months. Not only does the lack of flexibility hamper winter operations but summer crack sealing, mowing, brush cutting, seal coating and ditch and culvert clearance operations are affected.

MAINTENANCE OF LAND AIRPORTS



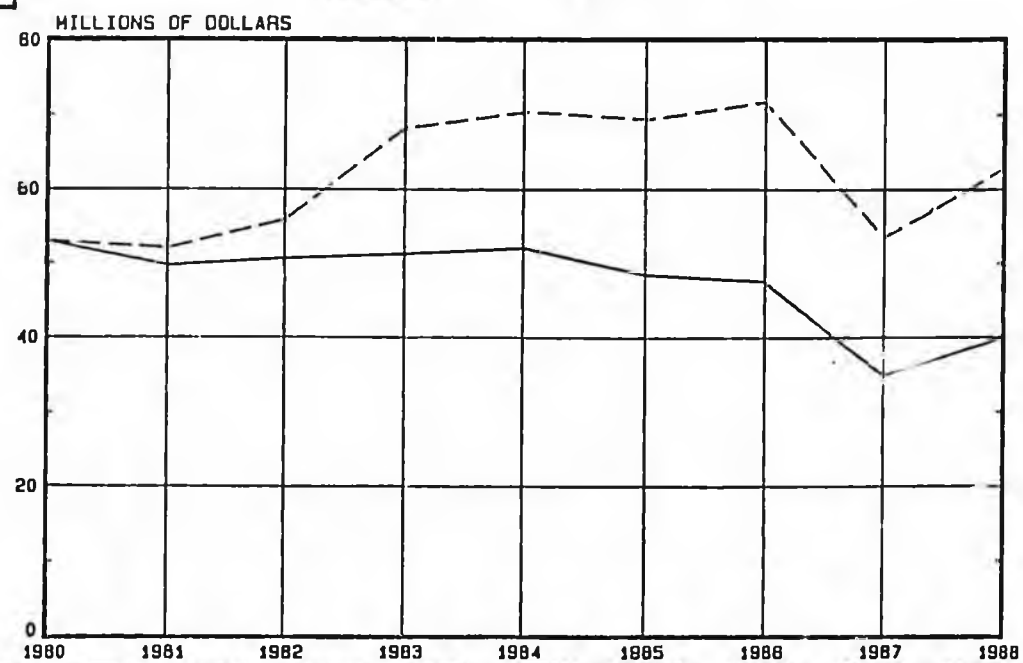
TOTAL: 215 AIRPORTS

MAINTENANCE & OPERATIONS TRENDS



Notes: 1) Actual fiscal year expenditures, 1980-1987.
2) FY 1988 is authorized expenditures.
3) Marine Highways and International Airports not included.

HIGHWAY & AVIATION M&O ONLY



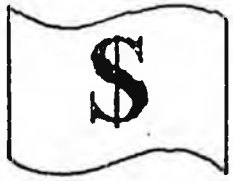
State Budget Constraints have Severely Impacted M&O. During the 1980 to 1988 period, maintenance and operations funds have varied from a low of $66.9 million in fiscal year 1980 to a high of $91.3 million in 1986. The highway and aviation portion (about 80 percent) of M&O expenditures varied from $52.0 million in 1981 to $71.2 million in 1986. Taking into account inflation and added lane-miles of highway responsibilities, fiscal year 1987 highway and aviation expenditures were 33 percent lower than seven years earlier. While fiscal year 1988 highway and aviation funds are up $8.8 million over 1987 expenditures, in terms of 1980 buying power and additional road responsibilities, 1988 budgeted funds are 25 percent less than spent in 1980.

Recommendation: Make A Highway And Aviation M&O Analysis. While Federation staff did witness highway maintenance problems in our cursory field checks, these visits and interviews were not sufficiently comprehensive to indicate the most cost-effective level of highway and aviation funding. However it is suggested that ADOT&PF staff establish a maintenance management procedure (with adequate monitoring of actual use) to henceforth gain accurate information on maintenance resource management. Furthermore it is suggested that optimal, minimum and several intermediate levels of service for all maintenance management activities be established and these service levels be used as a basis for public debate on the ADOT&PF service level to be provided. The analysis should provide estimates of the cost of each service level along with the benefits and consequences.

Maintenance Facilities Excellent. In the field evaluation of Alaska's roads it was noted that ADOT&PF maintenance stations were at least as good and in many cases better than others in the nation.

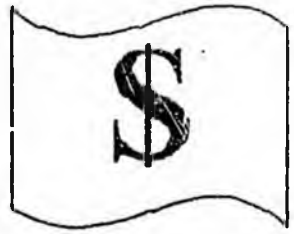
Federal Concern For Highway Maintenance. While federal aid highway funds are not available for highway maintenance, the Federal Aid Highway Act (Title 23) mandates that states adequately maintain all highways that were built or upgraded with federal aid highway funds. In fact the law stipulates a holdback of federal funds if it is found that a state highway or transportation department is not adequately maintaining such highways.

RESEARCH PAYS

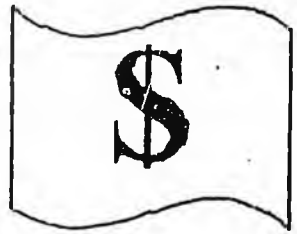


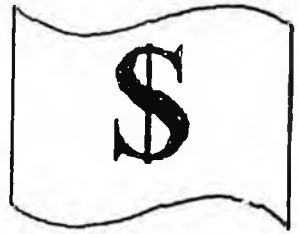
INVESTMENT

COST SAVINGS



INCREASED SAFETY





Highway Research A Must In Alaska. No where else in the nation is it as necessary as in Alaska to use materials on hand in road building. The cost to transport rock to remote places for the construction of highway subgrades is often prohibitive. Curing of bituminous pavement and concrete structures is difficult in the extreme cold of the Arctic as well as the extreme dampness of Southeast Alaska. Obtaining a stable, hard-surface highway over permafrost ice – that is subject to melting due to the heat-absorbing nature of bituminous materials – is a construction challenge. To meet these and many other problems, Alaska's highway designers must rely on research and researchers to find cost-effective solutions.

Research Program Less Than One Third Of One Percent Of 1986 ADOT&PF Program. In 1986 $1.7 million were appropriated for the ADOT&PF Research Program, or about 0.3 percent of the $525 million of ADOT&PF fiscal year 1986 expenditures. By private industry standards, the ADOT&PF research effort is extremely low.

Comparable To National Averages. Nevertheless, the proportion of transportation fund devoted to research is roughly comparable to the nationwide average. Total nationwide highway research spending in 1986 was 0.2 percent of nationwide highway spending.

Forty-four Percent Federal Funds. Two federal programs – Highway and Energy – provided 44 percent of 1986 ADOT&PF Research Program funds. The remaining 56 percent were appropriations of Alaska's General and Capital Funds.

Research Section Located At University of Alaska. The 14-person Research Section of the ADOT&PF is headquartered on the main campus of the University of Alaska in Fairbanks. Both the University's and the ADOT&PF Research Programs benefit from this association. Fourteen other states have similar joint transportation department and University research efforts.

Research Committee Sets Programs. While the Research Program is administered by the ADOT&PF Northern Region, representatives of each regional offices, the headquarters office and the Marine Highway System meet to monitor progress and to consider additional needed research.

Two Important Recent Contributions. After six years of investigation and testing by the Research Section, radioluminescent runway edge lighting has become operational. This is vitally important to Alaska's remote communities where lack of electric power has hampered safe airport operations.

The Falling Weight Deflectometer was tested by the Research Section and made available to designers in 1981. This machine simulates the impact upon pavement of a moving truck. The machine not only enhances the design of pavements and subgrade but is an important tool in assessing possible pavement damage due to heavy truck passage during spring thaw conditions.

Other Ongoing Research. As of January 1, 1988 there were 24 research projects going forward to improve: highway design, operations and maintenance; airport operations and design; building design and energy supply; harbor design; coastal navigation; ferry hull design; communication systems; and air quality measurement.

CHAPTER IV

HIGHWAY MANAGEMENT AND PRODUCTIVITY

CHAPTER IV

MANAGEMENT AND PRODUCTIVITY

A Review of the Alaska Department of Transportation and Public Facilities Organization as it Compares with other State Highway and Transportation Departments. The Size of the Staff as Compared with total State of Alaska Employees. Salary Comparisons with other Western States are shown. The Status of Capital Project Clean-up is reported, as is the Status of the Highway Equipment Working Capital Fund.

Major Milestones of Alaska Highway Program

1956: 1) Federal highway funds made available to Alaska

1959: 2) Statehood - transfer of public works (including highways) from federal to state jurisdiction.

1960: 3) Marine Highway System formed.

1962: 4) Alaska Department of Highways separated from Alaska Department of Public Works.

1964: 5) Extensive earthquake damage to roads.

1967: 6) Alaska Highway (ALCAN) completely paved (Alaska portion).

1970: 7) Federal Highway Act allows highway funds to be used for ferry upgrading.

1971: 8) Local Service Roads and Trails Program implemented.

1971: 9) Parks Highway completed.

1974: 10) Dalton Highway opened by oil companies.

1977: 11) Alaska Department of Transportation and Public Facilities formed.

1979: 12) Oil revenues generate major expansion in transportation capital expenditures.

1981: 13) High point in contract awards, $260.7 million (highways $157.2 million).

1982: 14) Regionalization of ADOT&PF.

1982: 15) Alaska Interstate Highway System designated.

1985: 16) Last appropriation for Local Service Roads and Trails Program.

1986: 17) High point in Highway and Airport Maintenance and Operations authorizations, $71.2 million.

Alaska's road program and its management has seen some dramatic changes over the past 30 years; more so than any state highway or transportation agency in the nation. From the perspective of this Review, the most significant milestones or events are shown above.

Two Important Management Decisions. The formulation of the Alaska Department of Transportation and Public Facilities in 1977 and the regionalization or decentralization of Program control in 1982 were most important changes. Bringing all state transportation agencies into one organization was certainly an important management decision from both the perspective of the Governor and the Legislative. Transferring much of the control to the Regional and Division Directors was a decision that lessened the Commissioner's and headquarters' staff roles and gave great latitude and flexibility to the Region and Division Directors.

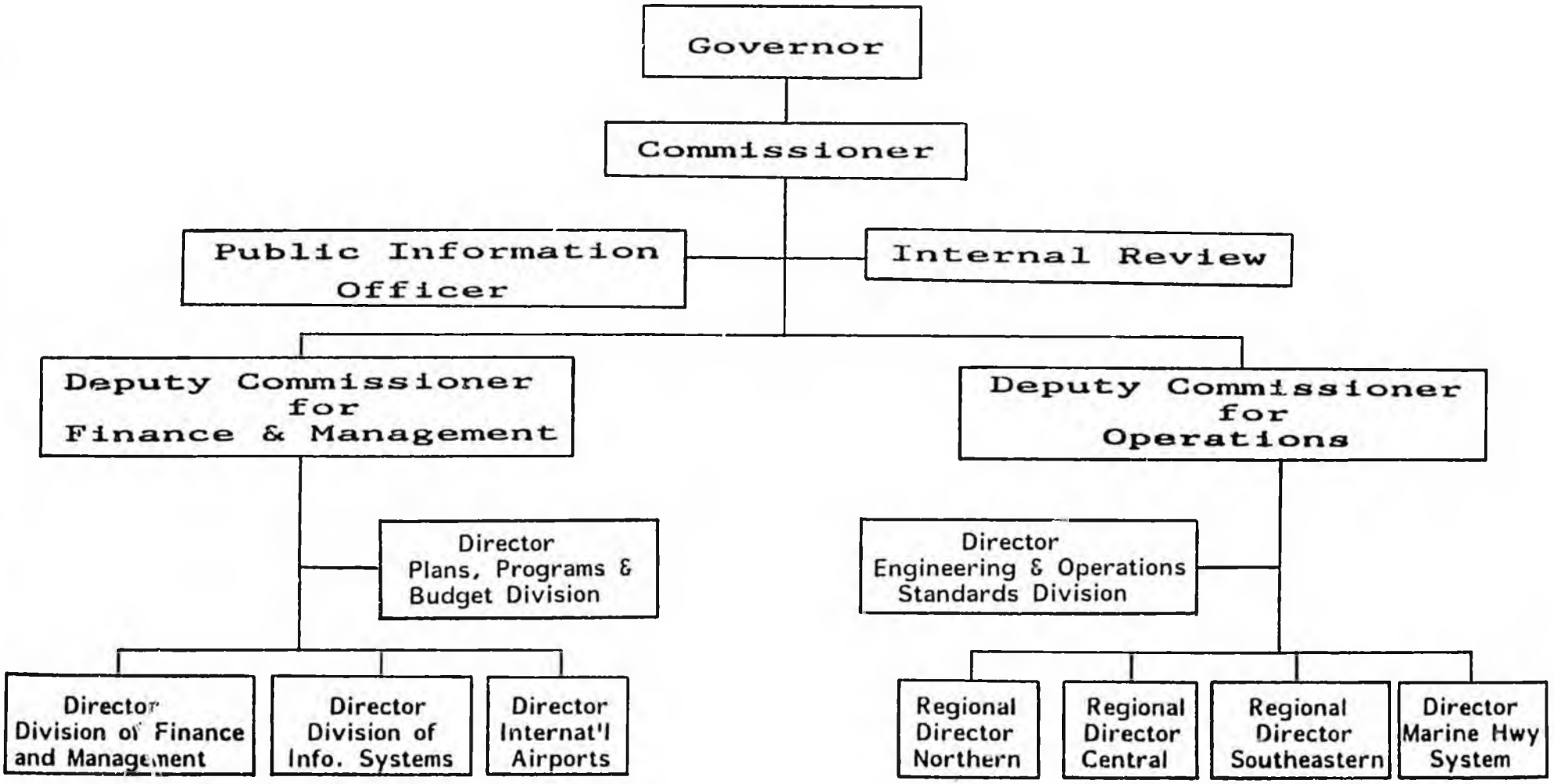
Highway Program "Weathers The Storm". Whenever a strong program such as the State Highway Program is combined with other efforts such as Public Facilities, the weaker program is usually strengthened and the strong program loses some of its stature.

While this has been the case in some states, we conclude that the State Highway Program has not suffered in Alaska. The improvement and maintenance of highways remains as one of the most important issues for the Commissioner, the ADOT&PF headquarters' staff and the Regional staff. The responsibility for public facilities, the International Airports, other state airports, harbors and the Marine Highway System has not eclipsed the highway responsibility. The decision to combine these agencies and functions with the Highway Department and the highway functions was a good one and it should stand.

Regionalization Also Sound Decision. The decision to allow the Regions and Divisions greater control over the ADOT&PF Program and particularly the State Highway Program was also logical and beneficial.

However, as discussed in Chapter II and III, the ADOT&PF headquarter staff needs to strengthen both its role of providing policy direction to the Regions and Divisions and its role of monitoring program status and progress. To accomplish this, the ADOT&PF budget should be increased to allow additional staff in the headquarters' offices.

ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES



Management Instability. One of the problems of the previous Department of Highways and now the Department of Transportation and Public Facilities is the rate of turnover at the top two levels of management. Since 1977, the ADOT&PF has had six chief executive officers. Communications, plans, programs and policies all go through transition as the new team of managers moves into their function and responsibilities over a large organization with a large budget.

Bright Future. For the first time in recent years, the Commissioner was selected in early 1987 from within the ranks of the ADOT&PF and this has tended to provide stability at a time when it was most needed. He has taken over with a minimum of confusion and has brought people with professional and technical experience to key positions.

Organization. The above organization chart depicts the lines of responsibility as they stood in late 1987. However, the Commissioner has a mandate to report to the Legislature in January 1988 on his recommendations for reorganization.

Differences Between ADOT&PF And Other State Highway And Transportation Agencies. The following are a list of notable differences between the ADOT&PF organization and the other state transportation and highway agencies:

1. Most states have appointed boards or commissions to advise and assist the departments' chief executive officers on policy matters.

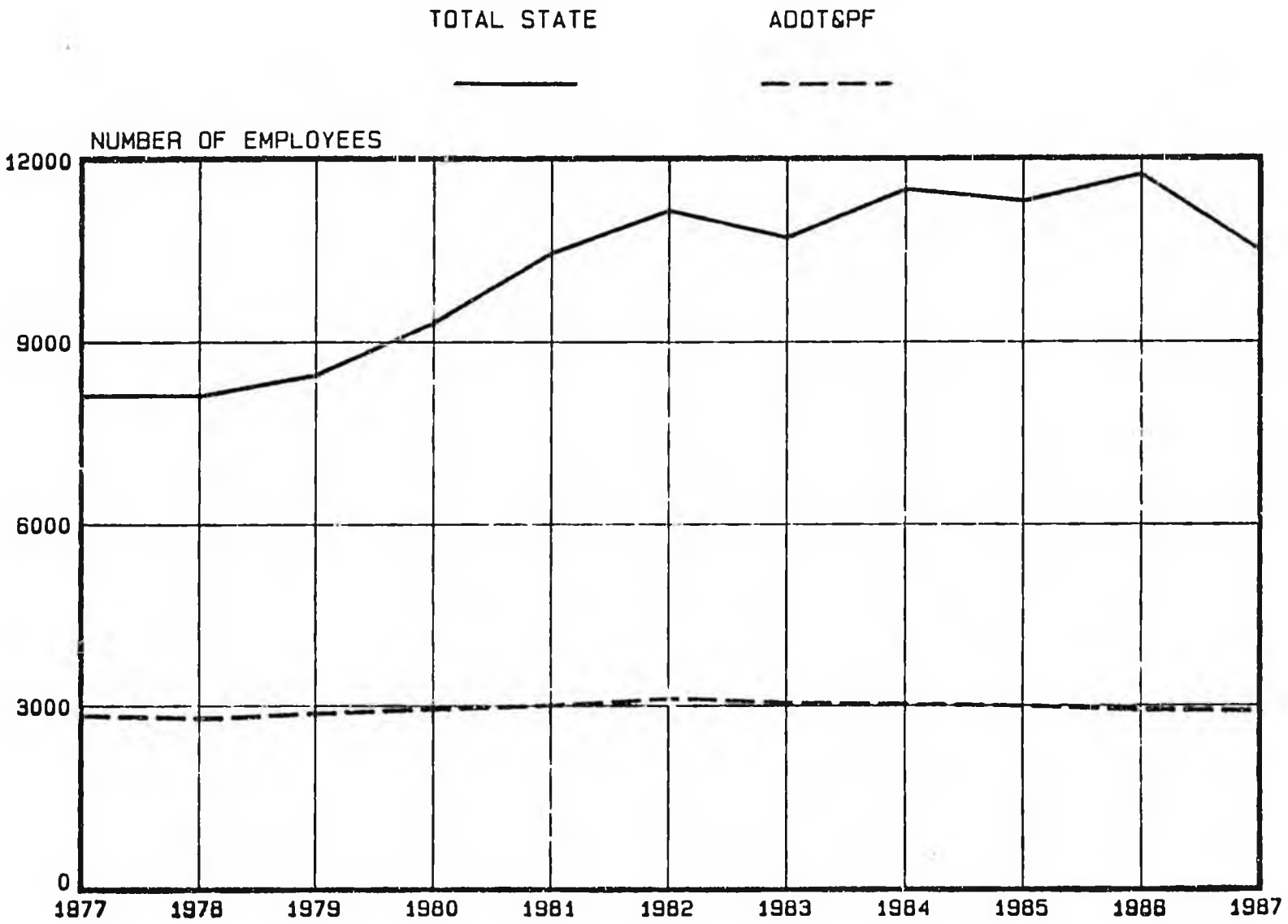
2. The ADOT&PF is the most comprehensive state transportation agency in the nation. Most state agencies are chiefly highway departments with only minor roles in administering federal and state grants for aviation, mass transportation, waterways and railroad improvements, with no construction, operational and maintenance responsibilities for the other-than-highway-transportation modes.

3. Most state agencies have a cadre of senior highway construction, maintenance and design engineers in the headquarters office that set policies and procedures to guide region, division or district staff. These people also monitor field activities and provide technical advice. The ADOT&PF lacks such headquarters' expertise in all areas.

4. The budget finance office is not normally at the deputy level. However, it is obvious with ADOT&PF's accounting problems why this office is positioned as it is.

5. In Alaska, each Region office operates similarly to an independent state highway agency with planning, contract letting, personnel, training functions, as well as the maintenance, construction inspection and design functions normally found in regional, division or district offices.

ADOT&PF STAFF COMPARED TO TOTAL STATE STAFF



NOTE: AS OF 2/87

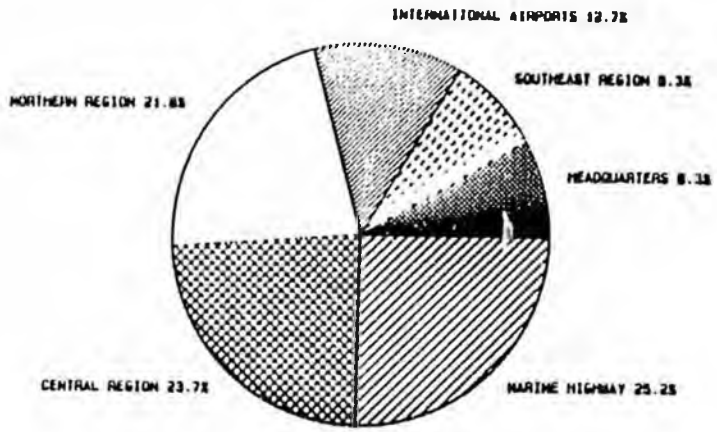
ADOT&PF Complement Has Remained Level While Other Agencies Are Up By 45 Percent. According to ADOT&PF personnel files and the files of the Alaska Department of Administration, the state had 10,303 employees on the payroll as of the end of January 1987 and the ADOT&PF 2,916, or 28 percent of the total State complement. However, while the total of the other state agencies is 45 percent above 1977 manpower levels, the ADOT&PF overall complement has remained virtually unchanged over the 1977 to 1987 period.

Overall ADOT&PF Productivity Up. Total employees have remained constant. Discounting the effects of inflation, ADOT&PF's 1987 funds were only marginally ahead of 1977 funds (see page I-8). At the same time, travel has greatly increased as has lane-miles of highway, both of which increase the workload, particularly of maintenance force. It is therefore concluded that ADOT&PF staff productivity has increased over the 1977-1987 period.

Engineering And Marine Highway Positions Most Prevelent. The charts at right indicate: 1) the location of the 1987 ADOT&PF authorized permanent complement and 2) the functions of 2,727 employees that were on the payroll as of April 1987, a point in time when very few temporary or seasonal employees were employed.

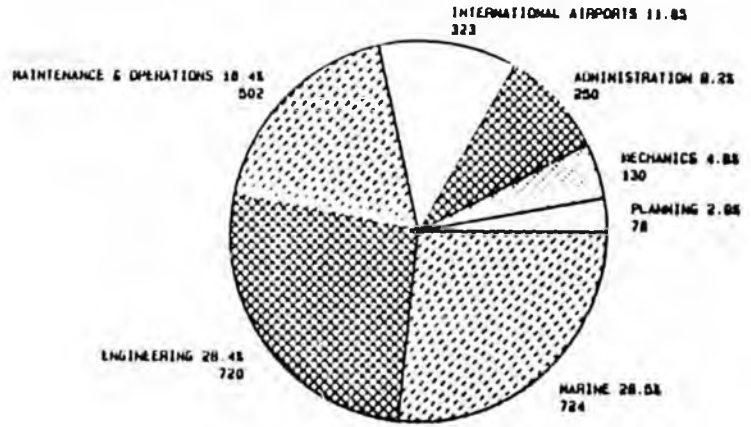
ADOT&PF PERSONNEL

LOCATION



2,801 PERMANENT POSITIONS

FUNCTIONS

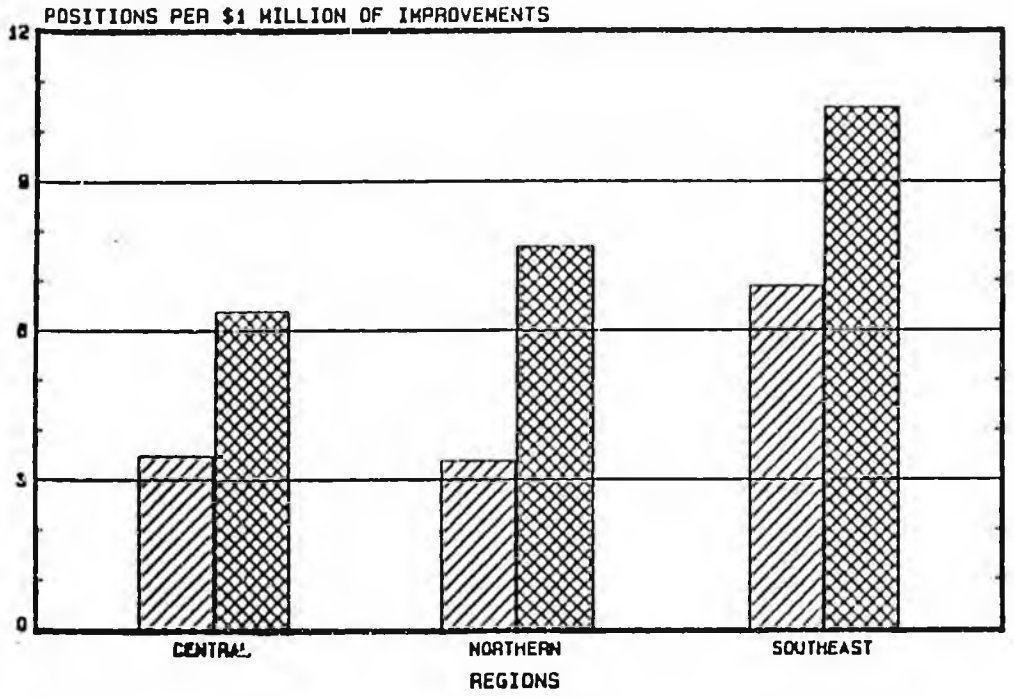


TOTAL 2,727 (AS OF 4/30/87)

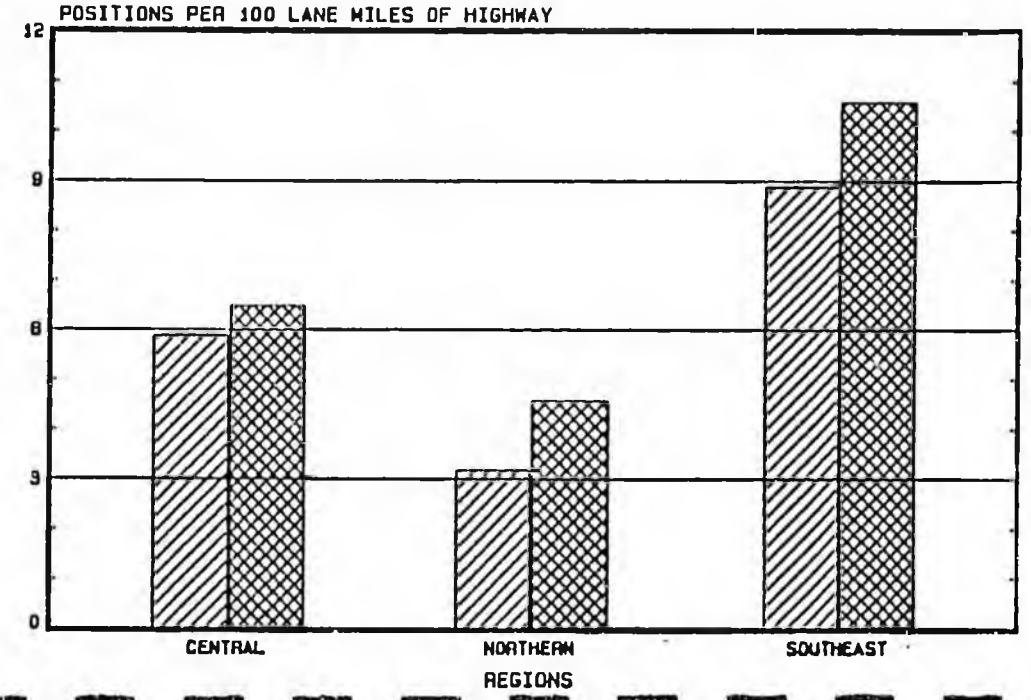
PERSONNEL ANALYSES

FULL TIME POSITIONS

TOTAL POSITIONS



DESIGN & CONSTRUCTION



MAINTENANCE & OPERATIONS

Preliminary Judgment: Productivity Highest in Central & Northern Regions. Preliminary judgments about region-to-region employee productivity can be judged by the two charts. However, other factors must be considered in making final judgments. With the fewest miles of highway to maintain and the lowest share of highway improvement funds, the Southeast Region must maintain, a minimum force that does not necessarily relate to workload.

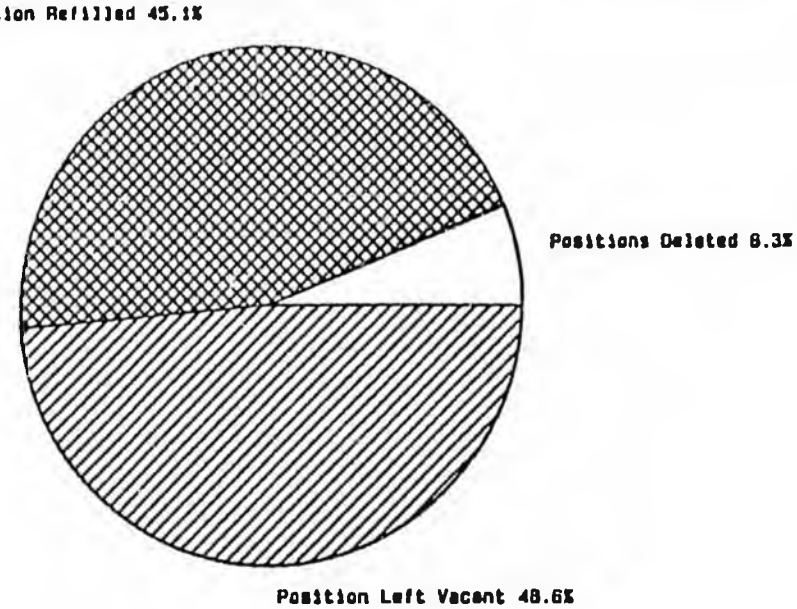
Impact of Retirement Program. As of January 31, 1987, the ADOT&PF had lost 142 people to the statewide retirement incentive program offered by the Legislature. Two early analyses of the effects of these retirements are shown at the right. Other conclusions are as follows:

1. 54 percent of the retirees' positions were left vacant or abolished.
2. $1.37 million of wages were saved in fiscal year 1987.
3. Costs to the State of Alaska for offering early retirement are spread over a four year period and amount to $4.2 million. This compares to four-year, wage savings of $5.4 million.

By the end of the fiscal year cutoff period, 355 ADOT&PF employees took advantage of the RIP program.

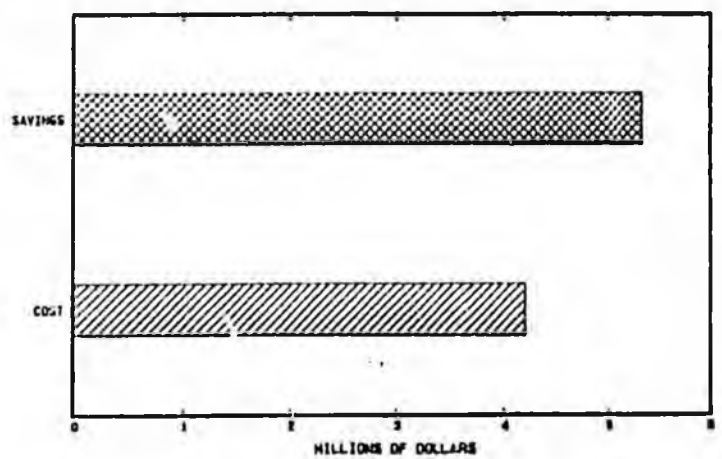
Young ADOT&PF Work Force. In part due to the reduction in personnel program and in part due to the generally youthful nature of Alaska's population, the ADOT&PF is judged to be the most youthful of the nation's state highway and transportation department employees. With a retirement program that allows full retirement after 55 years of age with at least five years of service, it was observed that very few people stay beyond age 55. Furthermore, no other state can boast a commission executive staff all under the age of 45.

RETIREMENT INCENTIVE PROGRAM



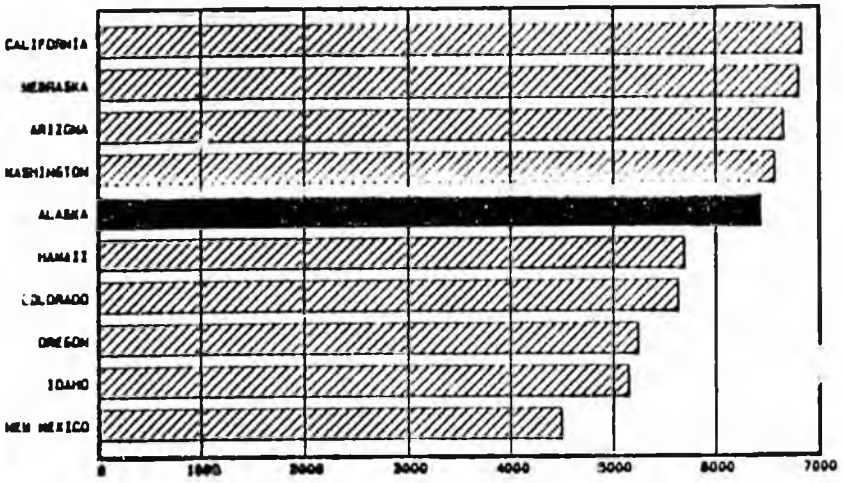
142 RETIRED NOTE: 7/1/86 TO 1/31/87;

FOUR YEAR IMPACT



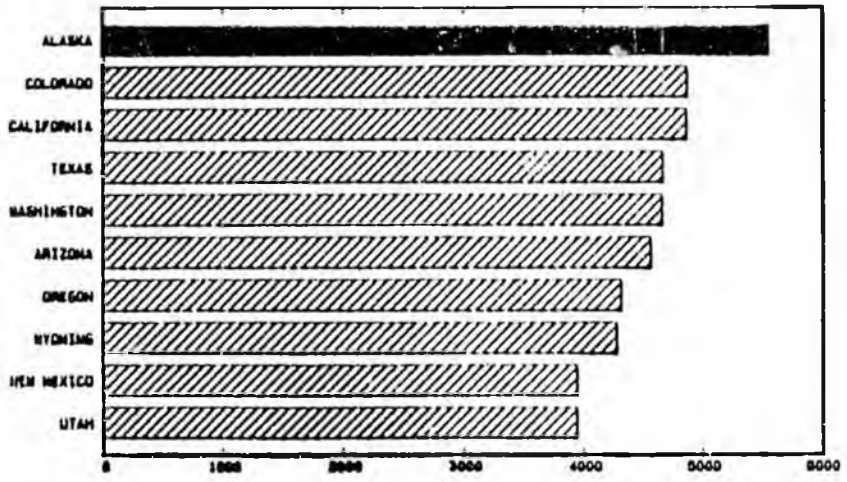
SALARIES COMPARED

COMMISSIONER/SECRETARY/ADMINISTRATOR OF TRANSPORTATION

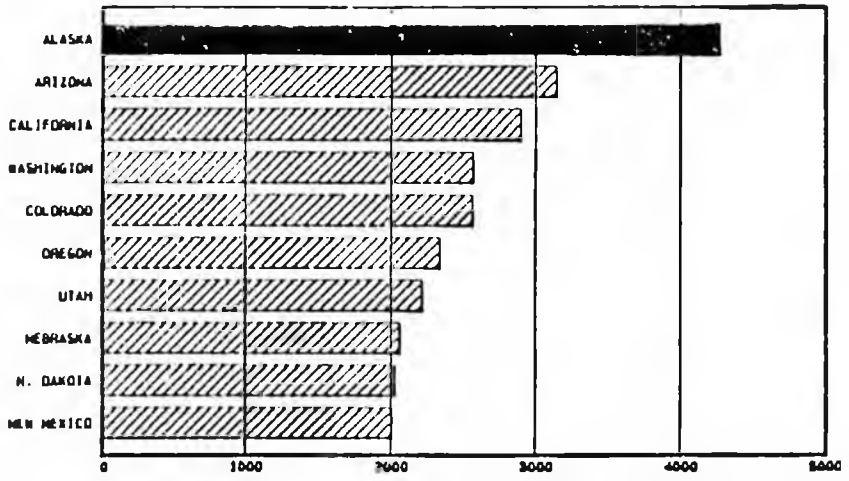


BRIDGE DESIGN ENGINEERS

(DIVISION CHIEF LEVEL)



TRANSPORTATION PLANNER'S



NOTES: 1) AVERAGE MONTHLY SALARIES, 1986.

2) HIGHEST 10 AMONG WESTERN STATES.

Salaries And Benefits Generous. While the incentives for retirement are good, the incentives for making the ADOT&PF a career are high. This page and the next show the 1986 average monthly salaries of seven categories of ADOT&PF staff as they compare to their counterparts in the other Western States. Note for each category of employee that the Alaska earned salary is compared with the 9 highest (only) of the other 17 Western States. The survey results are as reported by the American Association of State Highway and Transportation Officials.

Comparability. Note also that the categories were limited to those categories of ADOT&PF employees that had reasonable comparability with other states. Where it was deemed that ADOT&PF personnel of the same job title as their Western State counterparts had different functions, the category was eliminated.

Alaska Cost of Living Is Between 36 and 43 Percent Higher. Based on the January 1987, "Cost of Living Index" published by the American Chamber of Commerce Research Association, the cost of living in Alaska cities is between 36.4 percent and 43.5 percent higher than the average for all U.S. cities. These facts and Alaska's 1985-1987 economic transition should be considered when assessing the current applicability of ADOT&PF salaries.

Salary Issue Brought Forth Because Of The 1987 Debate. The facts are included in this review largely because of the debates in 1987 between government representatives that are trying to cope with Alaska's sudden drop in revenue resources and the public employee unions that are working hard to maintain current wages.

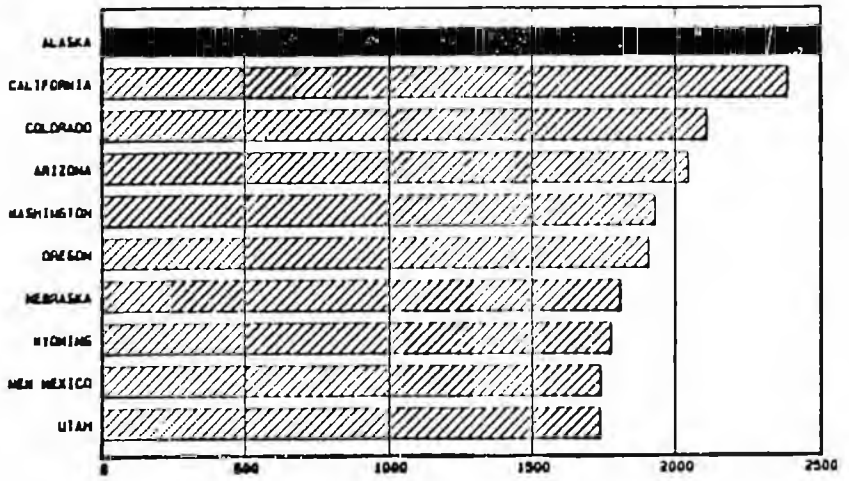
Federation's Position. In most of the other state highway programs reviewed to date, the Highway Users Federation found that salaries were low when compared with the responsibilities involved. In Alaska, however, we find the salaries consistent with the need to attract and retain capable people.

Highway Maintenance Workers. The group of ADOT&PF employees that appear to be most out of line with their counterparts in Western States, are the highway maintenance workers. However, in Alaska's case most highway maintenance employees are expected to be skilled heavy equipment operators, while for the most part the average highway maintenance employee in other states is not expected to have such skills. Furthermore, Alaska's salary differentials for remote locations have a considerable impact on maintenance worker salaries.

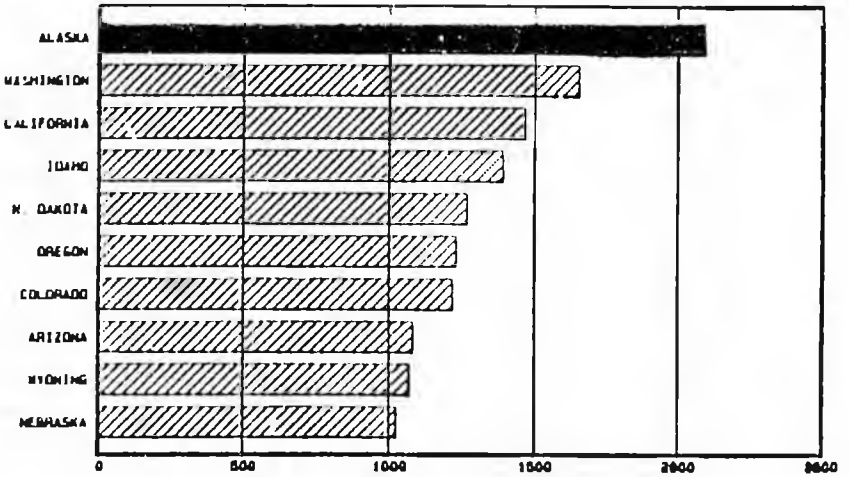
Transportation Planners. ADOT&PF's 12 transportation planners also appear to have abnormally high salaries in comparison with their counterparts in other Western States. However, in the context of Alaska's decentralized program and unlike other state highway and transportation programs, each ADOT&PF Region as well as the headquarters office, has a transportation planning staff that maintains important public liaison functions. As in all States, ADOT&PF transportation planners are the key group for pinpointing highway deficiencies, setting improvement needs and priorities, making environment assessments and accomplishing preliminary engineering functions.

SALARIES COMPARED

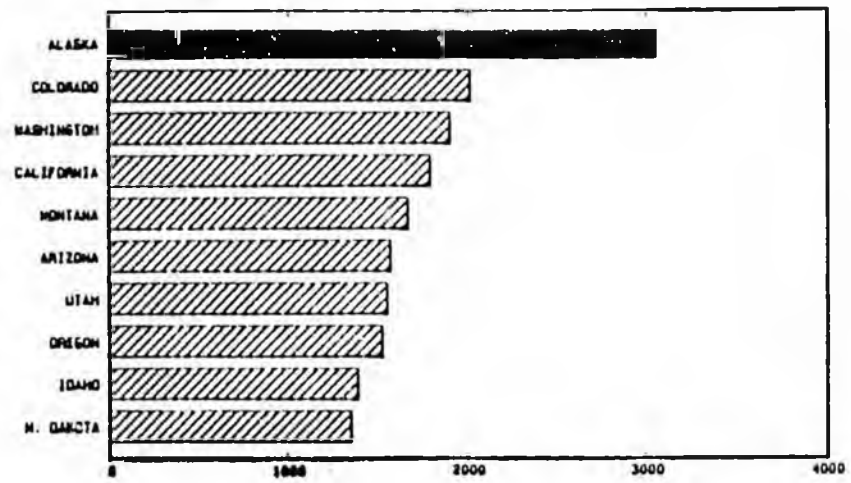
GRADUATE CIVIL ENGINEERS



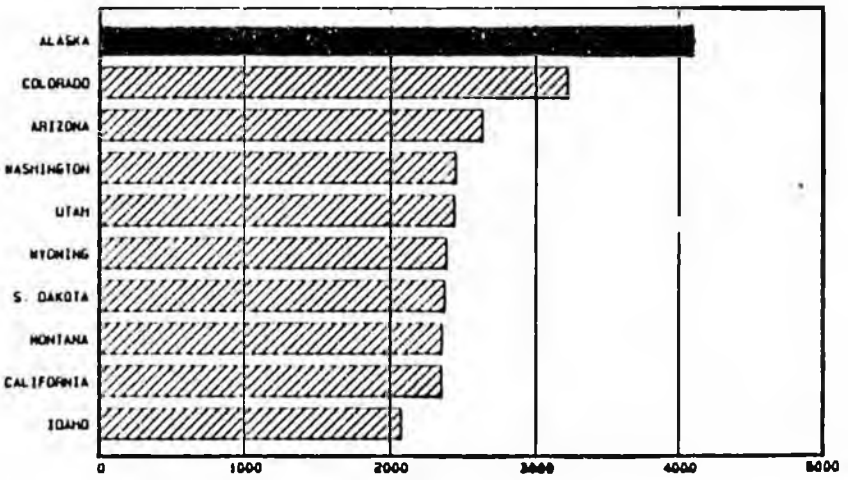
ENGINEERING AIDES



HIGHWAY MAINTENANCE WORKERS



HIGHWAY MAINTENANCE SUPERVISORS



NOTES: 1) AVERAGE MONTHLY SALARIES, 1986.
2) HIGHEST 10 AMONG WESTERN STATES.

Facilities. Not only are the salaries and benefits conducive to maintaining a highly trained and motivated staff, but the working conditions in shops, laboratories and offices appear to be an important asset to the Program, with some exceptions.

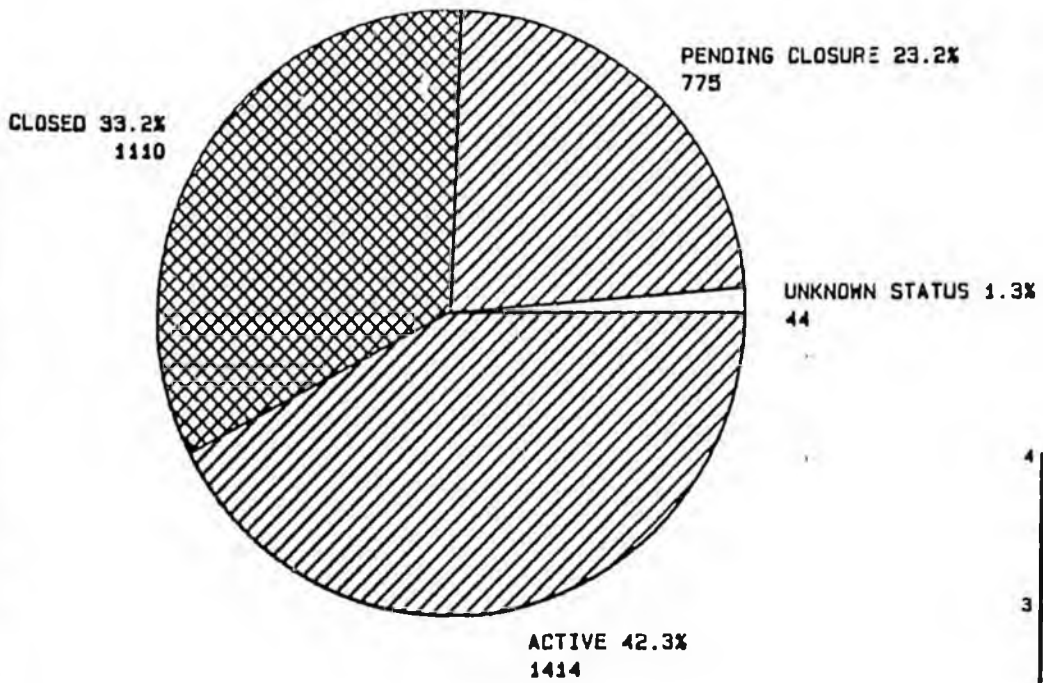
Regional and Headquarters Offices Good. The headquarters office facility as well as the regional offices in Fairbanks and Anchorage are excellent and provide good working conditions. The facilities in Nome and Valdez were viewed as adequate.

Southeast Region Headquarters Functions Need To Be Consolidated. The Southeast Region staff are divided between two offices, eight miles apart. In order to be effectively managed, the Southeast Region headquarters staff needs to be consoidated in a single building.

More Space Needed For Marine Highway System Staff. It was observed that among all the ADOT&PF offices visited, those of the Alaska Marine Highway System were most cramped for space. It is therefore recommended that a space allocation plan be developed for AMHS headquarters staff, and that either the existing AMHS building be expanded or that another suitable building be found to meet AMHS space allocation needs.

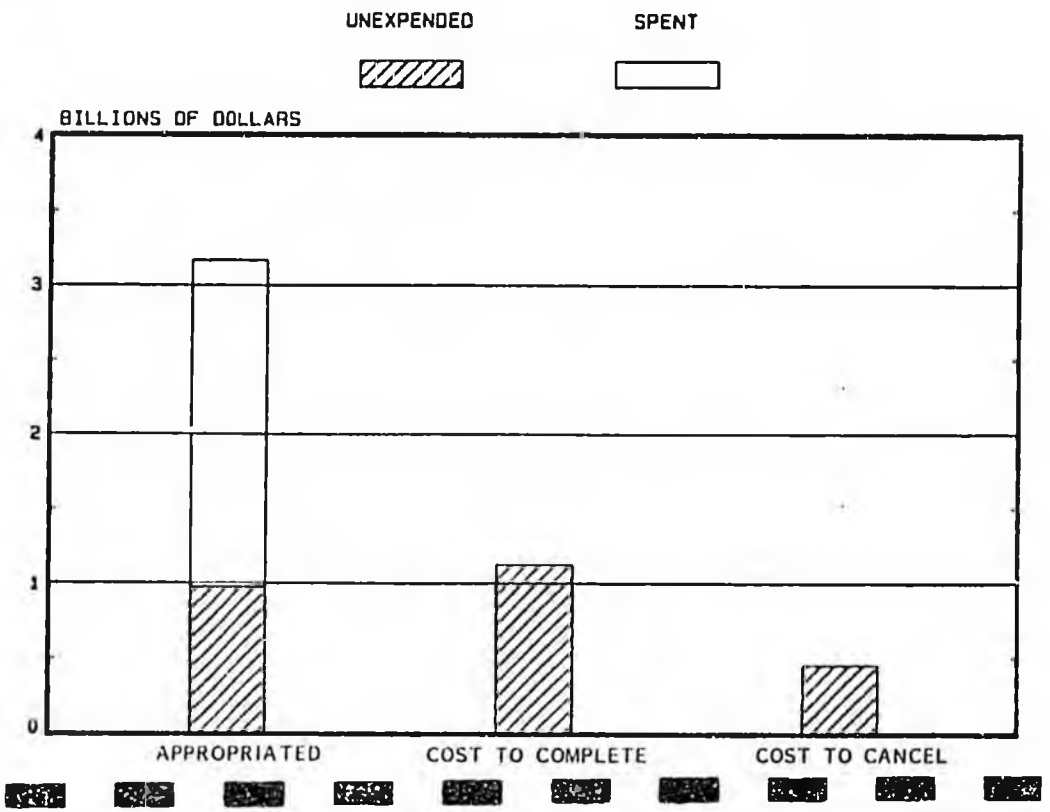
CAPITAL PROJECTS CLEAN-UP

PROJECT STATUS



TOTAL: 3,343 PROJECTS

FINANCIAL STATUS



NOTE: STATUS AS OF 3/10/87.

Capital Project Clean-up. For a number of years the ADOT&PF has found it difficult to accurately account for and report the financial status of its Capital Improvement Program (CIP). The increase in project appropriations during the early 1980's coupled with the then new decentralization policy, frustrated the Department's efforts to gain and retain accounting for the costs of preconstruction engineering activities, right of way costs, construction progress payments and the other elements of the CIP Program.

Objectives. The Capital Project Clean-up effort is designed to accomplish the following objectives:

1. Restore confidence in DOT&PF's ability to effectively manage capital improvement projects.

2. Use the State's accounting system (AKSAS) to control and accurately report the status of improvement projects.

3. Identify appropriation adjustments needed to correct the ADOT&PF's financial data base.

4. Develop a management reporting system for preconstructing engineering and construction projects.

5. Identify and develop needed policies, procedures and training.

Status. The original CPC effort (January 1984 through June 1985) produced an interim report to management based upon project and appropriation data as of June 30, 1985. This report revealed the current status of all ADOT&PF projects. However, the recommendations in the report were never implemented. Additionally, the accounting data base in AKSAS was not adjusted to reflect the proper financial balances as of that date.

In January of 1987, the Department gave its "highest priority" to the current CPC effort. In April the Department produced a preliminary status report of all of its capital improvement projects, as shown graphically above.

1987 Findings. The report identified over 3,343 projects with a authorized dollar value of $3.2 billion. 1,617 are highway projects with a $1.8 billion dollar value.

While the majority of these projects are cited in specific legislation, the remaining projects are authorized by agreements with other agencies and are composite, non-project-specific appropriations such as for highway planning and highway research. The report provides the current status of each project in terms of level of completion, the project budget, the unexpended balance, the cost to complete and the cost to cancel the project.

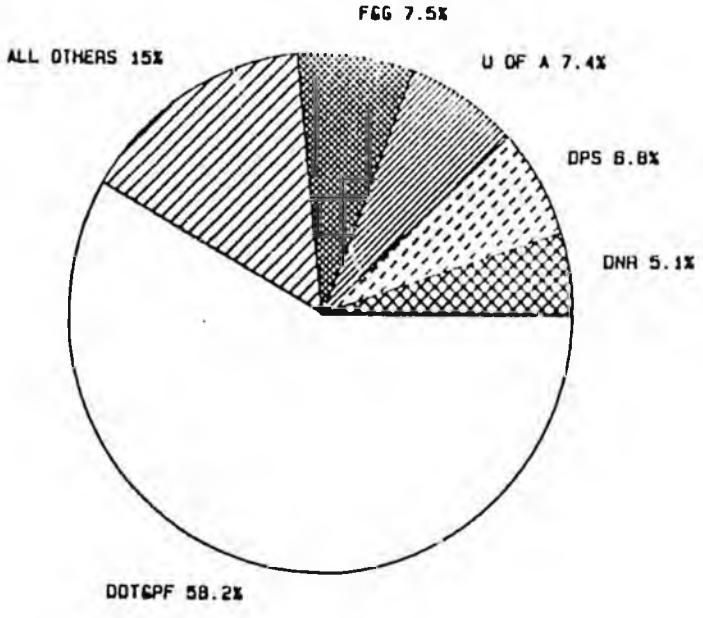
Overspending Found. The reported "cost to complete" (determined by project managers) exceeded the programmed balance by approximately $144 million indicating that an additional $144 million is needed to engineer and build the projects.. ADOT&PE officials anticipate that the final amount will be substantially less, following an accurate assessment of actual financial data.

The "cost to cancel" element includes reimbursement of Federal Aid Highway Program receipts for projects that were stopped before the improvement was awarded to contract.

The ADOT&PF indicates that the CPC effort will be completed in June 1988.

MANAGING STATE VEHICLES

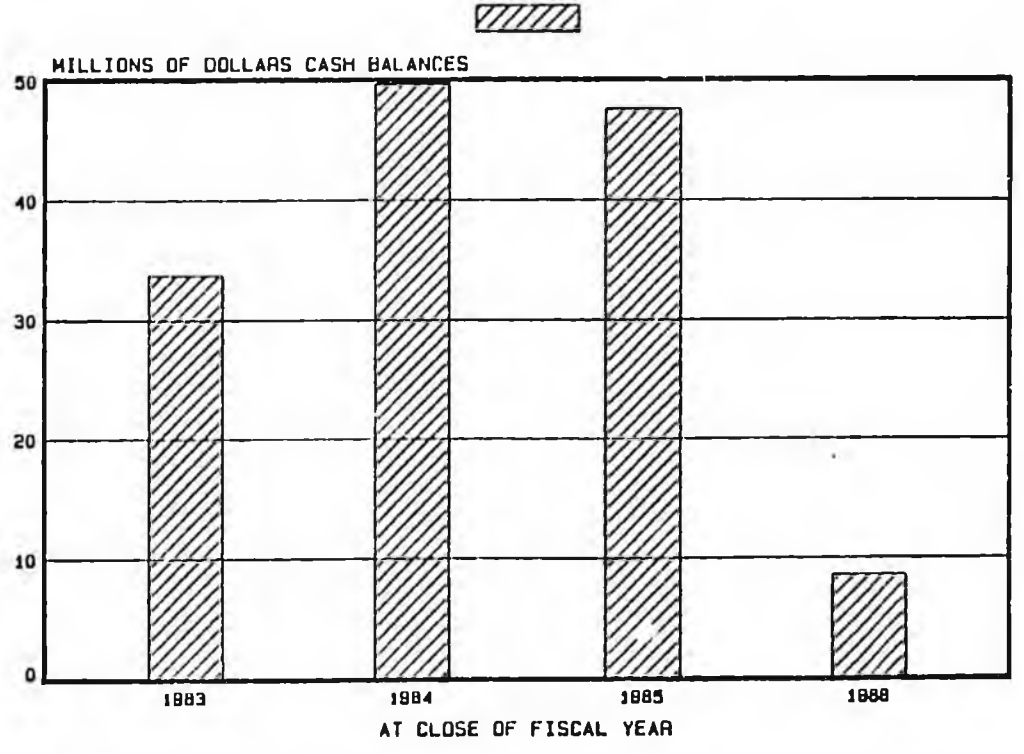
STATE EQUIPMENT FLEET



TOTAL VEHICLES & EQUIPMENT: 6,517

TOTAL REPLACEMENT VALUE: $117.7 MILLION

HIGHWAY EQUIPMENT WORKING CAPITAL FUND



Among the many responsibilities of the ADOT&PF is the management of the 6,517 vehicles and equipment that are leased to ADOT&PF forces and 18 other divisions of state government. Among the vehicles are cars, trucks, road graders, bulldozers, asphalt heating pots, sanders, snow plows and fire trucks. Alaska statutes state that the ADOT&PF shall "supervise and maintain all state automotive and mechanical equipment". A special Highway Equipment Working Capital Fund was established to receive leased funds and to expend appropriations from the Fund for maintaining, repairing and replacing the $117.7 million (1987 value) of vehicles and equipment.

HEWCF Low On Resources. The October 1987 draft of an audit of the state equipment fleet and ADOT&PF management procedures indicates the current HEWCF balance is inadequate to assure that needed vehicles can be replaced in order to sustain a modern and efficient fleet.

Main Problems Cited: Management Decisions To Reduce Lease Rates and Legislative Transfers Of HEWCF Funds To General Fund. Lease rates were set previous to 1986 to establish funds for replacements after careful analysis of expected future service lives of the vehicles and equipment. However, a steep reduction in the rates (49 percent) was made in FY 1987 to reduce state agencies' operating budgets in a time of fiscal crisis. Also because it was perceived that HEWCF fund balances were too high, the Legislature appropriated $62.7 million of HEWCF over the 1983 to 1987, five year period for other than State Equipment Fleet purposes.

Replacements Being Put Off. As of the audit report date, HEWCF balances have allowed only 75 percent of the scheduled fiscal year 1986 replacement to be made and almost none of the vehicles scheduled to be replaced in fiscal year 1987. The result: an aging fleet.

Recent ADOT&PF Steps. Two steps were taken in 1987 to resolve state equipment fleet problems. One, lease rates were again raised. And two the ADOT&PF appointed a task force to review and make recommendations regarding state equipment fleet problems.

Highway
Users Federation
FOR SAFETY AND MOBILITY
1776 Massachusetts Avenue, N.W.
Washington, D.C. 20036

Alaska State Legislature

House of Representatives

Committee on Transportation

Rep. Bette Cato, Chairman

Pouch V
State Capitol
Juneau, Alaska 9981
(907) 465-4858

(Press Release: Juneau, January 22, 1988)

ALASKA HIGHWAY PROGRAM REVIEWED

The Alaska Department of Transportation and Public Facilities continues to improve service to Alaskans, despite being the nation's most comprehensive state transportation department, according to a report released today by the Highway Users Federation.

Unlike most state transportation departments, which concern themselves mostly with highways, the report says Alaska's department maintains a system of 5,542 miles of state highways, two international airports, 215 regional airports, and a nine ship ferry system.

These special demands on the department are a major factor in the findings and recommendations included in the report titled "Alaska Highway Program Review."

Although Alaska is the nation's largest state, only three other states - Delaware, Hawaii and Rhode Island - have fewer miles of public road.

Alaska leads the nation in the ratio of Federal-aid Highway Program money received compared to actual highway user fees paid. Between 1956 and 1985, Alaska received $2.2 billion federal dollars while contributing $256 million, a nine to one ratio.

Yet state highway users taxes, such as trucking and state gasoline taxes, have remained extremely low in comparison with other states, the report says. While highway user taxes cover all of highway program costs in most states, Alaska's highway user taxes meet only one percent of its highway program costs.

Because the state maintains a higher proportion of minor roads than most states, roads of major significance must compete with local roads for scarce state highway funds. The analysis recommends that local governments increase their role in maintaining minor roads, so the state can concentrate its funds on more important routes.

Despite its tremendous dependence on transportation facilities, Alaska lags behind most states in the number of maintenance employees per lane-mile of highway.

The 59 page report also cited the need for more centralized planning and system analysis so that Alaskans can better manage their overall transportation priorities.

The department is essentially spit into three regional offices, which determine their priorities after a geographic apportionment of funds. This hinders the department from setting overall transportation policy directions.

The Highway Users Federation, a private sector road transportation organization with affiliated business coalitions in every state, is conducting highway program reviews throughout the county at the request of state transportation authorities and highway user groups.

The report is available from the House Transportation Committee of the Alaska State Legislature.

STATE OF ALASKA
THE LEGISLATURE

LEGISLATIVE AFFAIRS AGENCY

P.O. BOX Y, STATE CAPITOL
JUNEAU, ALASKA 99811
907 465-3800

CONTRACT BETWEEN

STATE OF ALASKA
LEGISLATIVE AFFAIRS AGENCY

AND

HIGHWAY USERS FEDERATION FOR SAFETY
AND MOBILITY
1776 Massachusetts Avenue, N.W.
Washington, D. C.

CONTRACT AMOUNT: $60,000

The parties to this agreement, made and entered into this 30th day of September, 1987, are the Legislative Affairs Agency, on behalf of the House Transportation Committee, (hereinafter referred to as the "Agency") and Highway Users Federation for Safety & Mobility, a nonprofit corporation, (hereinafter referred to as the "Consultant").

THE PURPOSE OF THIS AGREEMENT is to provide the House Transportation Committee with a review of the Alaska highway system.

CLAUSE I - STATEMENT OF WORK

The Consultant shall:

(A) review the Alaska highway system to study the manner in which the highway system of the State and its administration, maintenance and planned improvements meet and may continue to meet the needs of the highway using public in the State;

(B) work with the Alaska Department of Transportation and Public Facilities and a study advisory committee established for the contract by the House Transportation Committee, under the oversight of the House Transportation Committee; and

(C) prepare a detailed report of the Consultant's findings and recommendations for use by the legislative, administrative, and other public leaders of Alaska and a second report for distribution to the general public highlighting the findings and recommendations.

CLAUSE II - PERIOD AND DATES OF PERFORMANCE AND TERMINATION

The work under this contract shall be performed from November 17, 1986 through December 31, 1987.

CLAUSE III - PROJECT DIRECTOR

The Project Director shall be Representative Bette Cato, Chair of the House Transportation Committee.

CLAUSE IV - COMPENSATION AND METHOD OF PAYMENT

(A) For the work specified in this contract the Consultant shall be:

(1) compensated Forty Thousand and No/100 Dollars ($40,000.00) for the Consultant's services; and

(2) reimbursed for:

(a) travel expenses in the amount of Fifteen Thousand and No/100 Dollars ($15,000.00); and

(b) other expenses, including publication expenses, in the amount of Five Thousand and No/100 Dollars ($5,000.00).

(B) If payment is not made within 90 days after the payment becomes due under this contract, the Agency shall pay interest on the unpaid balance of the billing at the rate of 1.5 percent per month from the date payment becomes due to the date the payment is made. A payment is considered made on the date it is personally delivered or mailed to the Consultant.

(C) The payments under this clause are conditioned on the Consultant submitting billings with available receipts and the Project Director approving the payments.

(D) Total payments under this contract, including reimbursement for expenses, may not exceed Sixty Thousand and No/100 Dollars ($60,000.00).

CLAUSE V - RECORDS, DOCUMENTS, AUDITS

The Consultant shall maintain accurate records, including detailed time records, as may be required by the Project Director. The records are subject to inspection by the Agency or the Project Director at all reasonable times. All documents, reports and writings generated as a consequence of work done under this contract shall become the property of the State of Alaska and, upon completion of the work or at the termination of this contract, shall be delivered to the Project Director.

CLAUSE VI - WORKERS' COMPENSATION INSURANCE

During the life of this contract, the Consultant shall provide and maintain for all employees of the Consultant engaged in work under this contract, workers' compensation insurance as required by AS 23.30. The Consultant shall require any subcontractor to provide and maintain workers' compensation insurance for the Consultant's employees doing work under this contract.

CLAUSE VII - CERTIFICATION

Execution of this contract by the Executive Director or his designee hereby constitutes a certification that funds have been appropriated and encumbered for the amount of this contract.

CLAUSE VIII - INDEMNIFICATION

The Consultant shall indemnify, save harmless, and defend the State, its officers, agents and employees from liability of any nature or kind, including costs and expenses, for or on account of any and all legal actions or claims of any character whatsoever resulting from injuries or damages sustained by any person or persons or property as a result of any error, omission or negligence of the Consultant relating to its performance of this contract.

CLAUSE IX - ASSIGNMENT

This contract may not be assigned to another party unless in writing and signed by all the parties to the contract.

CLAUSE X - MODIFICATION AND PREVIOUS AGREEMENTS

This agreement replaces the 11-17-86 agreement between the Consultant and Representative Cato for the House Transportation Committee. This agreement contains all the terms and conditions agreed upon by the parties. No other understandings, oral or otherwise, regarding the subject matter of this agreement shall be deemed to exist or to bind either of the parties to this agreement. This contract may not be modified unless in writing and signed by all parties to the contract.

IN WITNESS WHEREOF, the parties have executed this agreement on the dates indicated below.

CONSULTANT

HIGHWAY USERS FEDERATION FOR SAFETY AND MOBILITY

Carlton C. Robinson

CARLTON C. ROBINSON 9/21/87 Date
Executive Vice President
Tax ID No. 53-018-6334
BL: 022985

Accepted:

Bette Cato 9-15-87

REPRESENTATIVE BETTE CATO Date
Chair, House Transportation Committee

Accepted:

Ben Grussendorf 9/25/87

REPRESENTATIVE BEN GRUSSENDORF Date
Speaker, House of Representatives

STATE OF ALASKA
LEGISLATIVE AFFAIRS AGENCY

Warren W Endicott 9/30/87

WARREN W. ENDICOTT Date
Executive Director

Approved as to form:

Theresa L. Bannister for 9-10-87

TAMARA COOK, Director Date
Division of Legal Services

item # 4

ALASKA HIGHWAY PROGRAM REVIEW

MAJOR FINDINGS -- PROGRAM STRENGTHS:

1. ALASKA RANKS AMONG THE BEST NATIONALLY IN BRIDGE CONDITIONS.

2. ALASKA'S TRAFFIC SAFETY RECORD IS ON A PAR WITH THE REST OF THE NATION.

3. ANCHORAGE'S ARTERIAL STREET AND HIGHWAY IMPROVEMENT RECORD IS IMPRESSIVE.

4. COOPERATIVE, PUBLIC/PRIVATE HIGHWAY FINANCE PLANS HAVE BEEN IMPORTANT TO ALASKA'S HIGHWAY DEVELOPMENT.

5. FEDERAL SUPPORT HAS BEEN AND REMAINS A VITAL FACTOR IN ALASKA'S HIGHWAY DEVELOPMENT.

6. A RECENTLY INITIATED 6 YEAR PROGRAM OF TRANSPORTATION MODERNIZATION HAS BROUGHT RELATIVE STABILITY TO STATE HIGHWAY PROGRAM MANAGEMENT.

7. THE MARINE HIGHWAY SYSTEM IS UNIQUE AND THE SERVICE GOOD.

8. ALASKA'S MAJOR AIRPORTS ARE IN EXCELLENT CONDITION, AND GOOD PROGRESS IS BEING MADE IN UPGRADING SMALL AIRPORTS.

9. THE ADOT&PF STAFF IS THE MOST YOUTHFUL IN THE NATION THEREBY PROVIDING AN EXCELLENT BASE FOR DEVELOPING FUTURE LEADERS.

10. THE PAY AND BENEFITS PLAN AS WELL AS THE OFFICES AND MAINTENANCE FACILITIES ARE AMONG THE BEST IN THE NATION, AND THESE FACTORS CONTRIBUTE TO A STABLE AND DEDICATED ADOT&PF WORK FORCE.

item #5

ALASKA HIGHWAY PROGRAM REVIEW

MAJOR FINDINGS -- CONCERNS:

1. ROADWAY PRESERVATION ACTIVITIES HAVE BEEN CUT TO THE POINT WHERE ALASKA MAY NOT NOW BE GAINING THE MAXIMUM SERVICE LIFE FROM HIGHWAY IMPROVEMENT INVESTMENTS.

2. THE ADOT&PF MAINTENANCE MANPOWER LEVEL HAS FALLEN TO THE POINT WHERE THE RESULTING REDUCTIONS IN SNOW AND ICE REMOVAL ACTIVITIES SOMETIMES CREATE HAZARDOUS CONDITIONS AND INCONVENIENCE MOTORISTS.

3. BECAUSE ALASKA'S STATE HIGHWAY PROGRAM LACKS A DEDICATED FUND SOURCE, IT IS DIFFICULT TO SET A LONG RANGE PLAN FOR SYSTEM MODERNIZATION, PAVEMENT UPGRADING, AND SYSTEM EXPANSION.

4. THE STATE IS LOOKED TO FOR THE FINANCE OF LOCAL ROAD NEEDS, THEREBY DILUTING THE EFFECTIVENESS OF THE STATE HIGHWAY PROGRAM IN MEETING MAINTENANCE AND MODERNIZATION NEEDS OF RURAL AND URBAN ROUTES OF STATEWIDE SIGNIFICANCE.

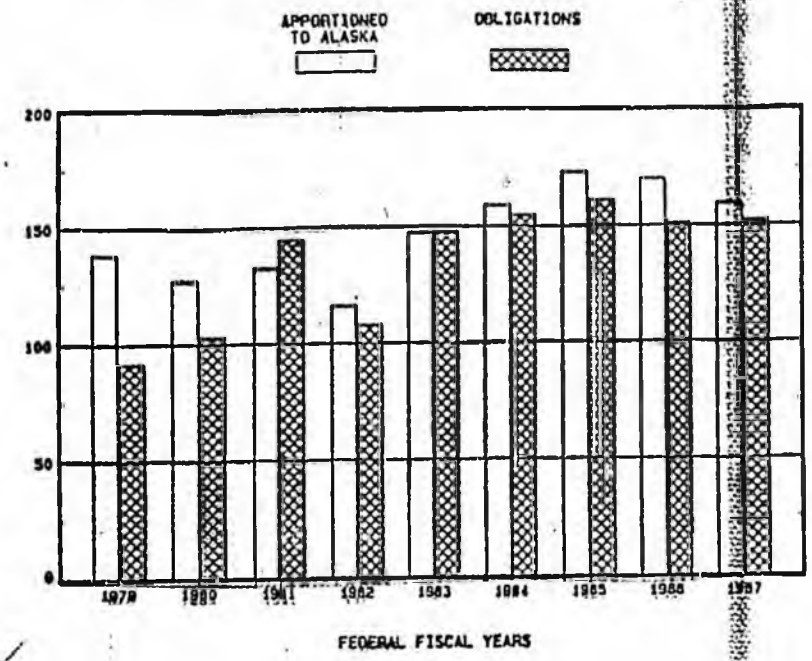
5. WHILE DECENTRALIZED CONTROL OF ALASKA'S TRANSPORTATION SYSTEM IS NECESSARY, THIS MAKES IT MORE DIFFICULT THAN IN OTHER STATES FOR ADOT&PF OFFICIALS TO DEVELOP AND APPLY UNIFORM POLICIES. THE PAUCITY OF TECHNICAL STAFF IN THE ADOT&PF HEADQUARTERS OFFICE FURTHER COMPOUNDS THE PROBLEM OF BOTH DEVELOPING SUCH POLICIES AS WELL AS THE MONITORING OF POLICY IMPLEMENTATION.

6. THERE IS A NEED TO DEVELOP BETTER INFORMATION ON THE CONDITION AND PERFORMANCE OF ALASKA'S TRANSPORTATION SYSTEMS AND THE ADEQUACY OF FUNDS TO MEET THE NEEDS.

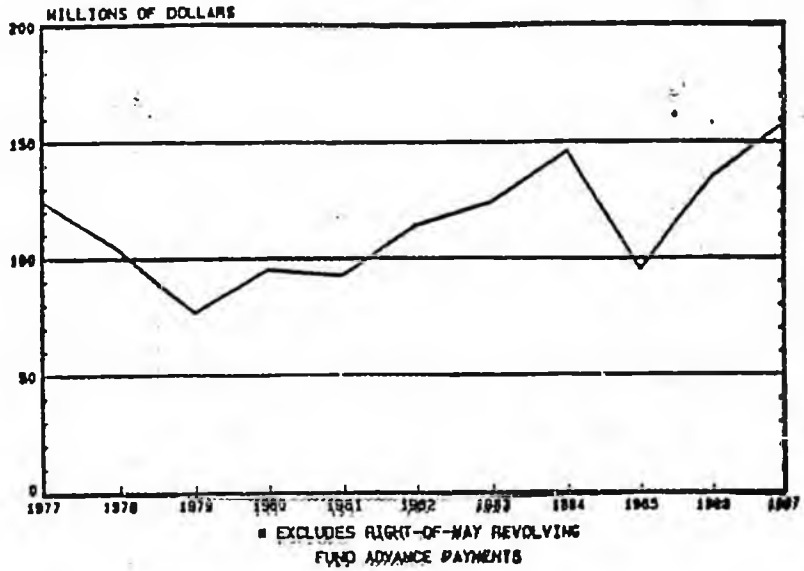
Item #6

I

FEDERAL AID HIGHWAY PROGRAM

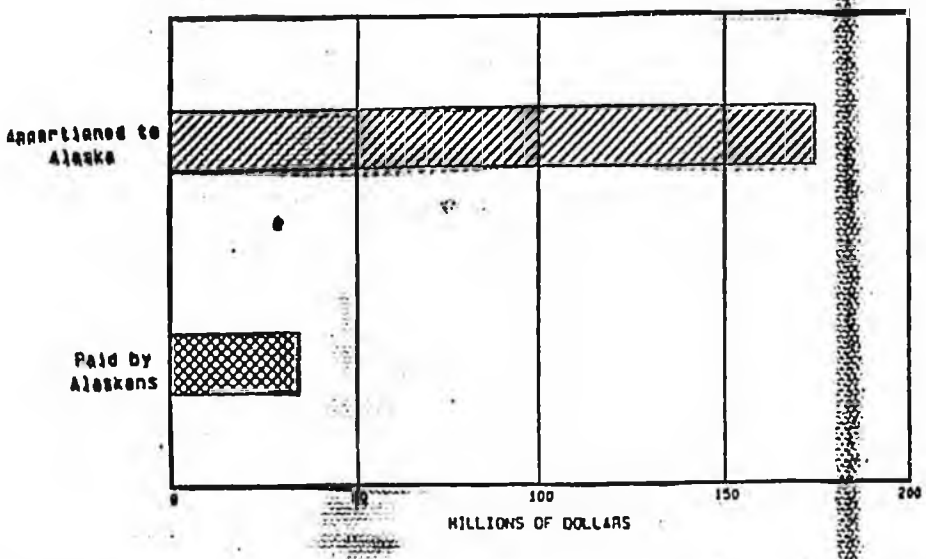


REIMBURSEMENTS

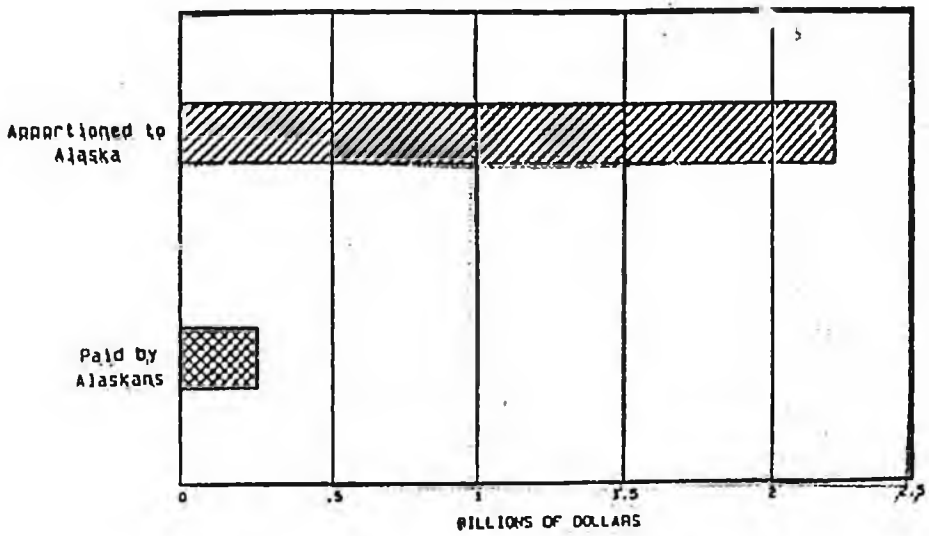


* EXCLUDES RIGHT-OF-WAY REVOLVING FUND ADVANCE PAYMENTS

FY 1985



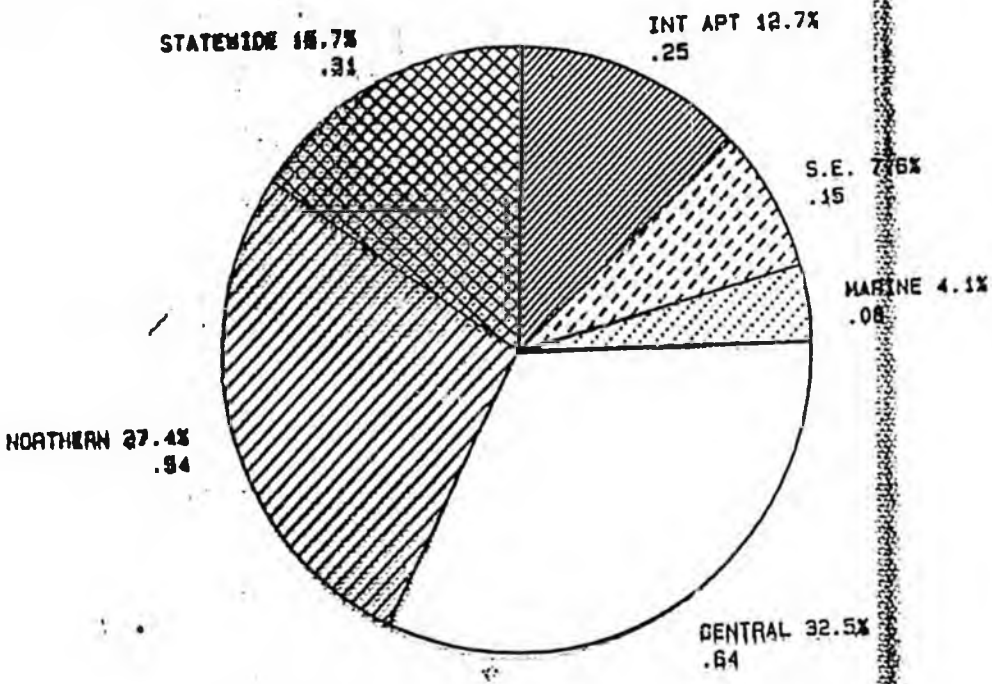
SINCE 1956



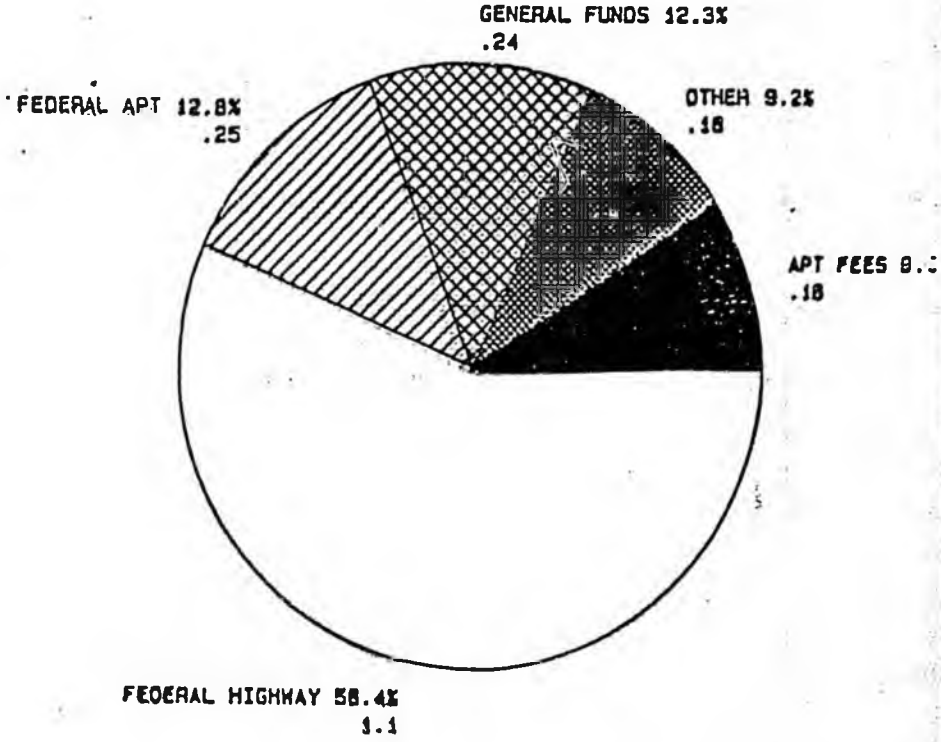
Item #7

CAPITAL IMPROVEMENT PROGRAM, 1988-1993

DISTRIBUTION



$ SOURCE



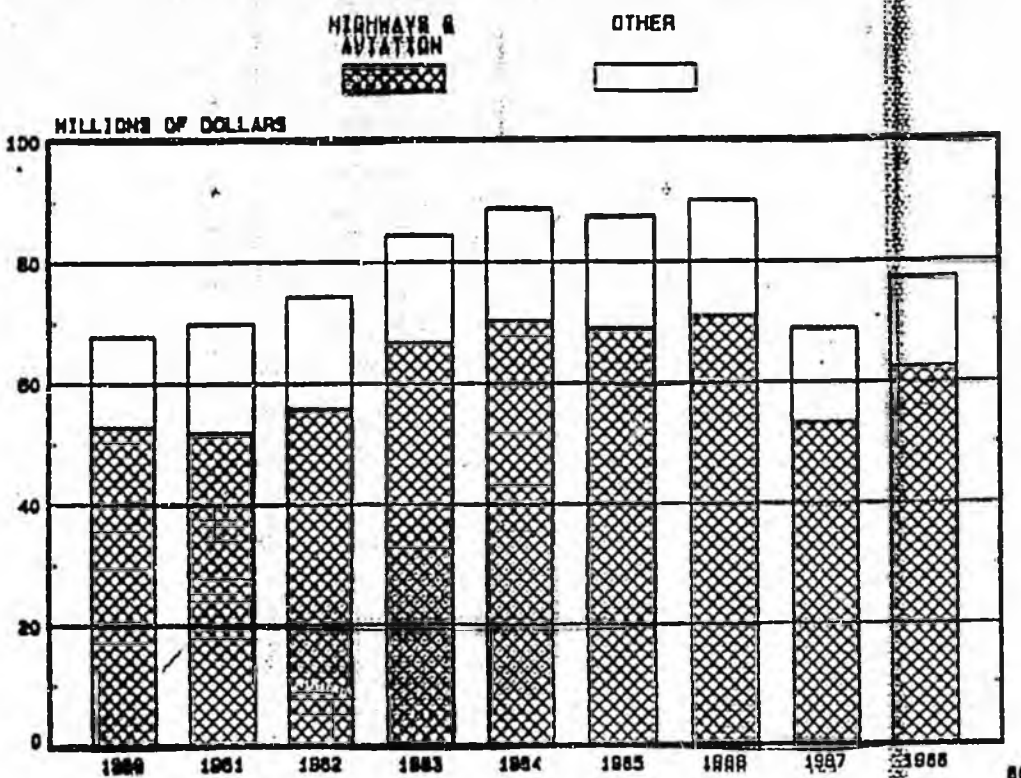
TOTAL: $2.0 BILLION

Note: "Statewide" includes state matching $ for Federal Aid Highway Program Improvements and $ for state equipment fleet replacements.

item #8

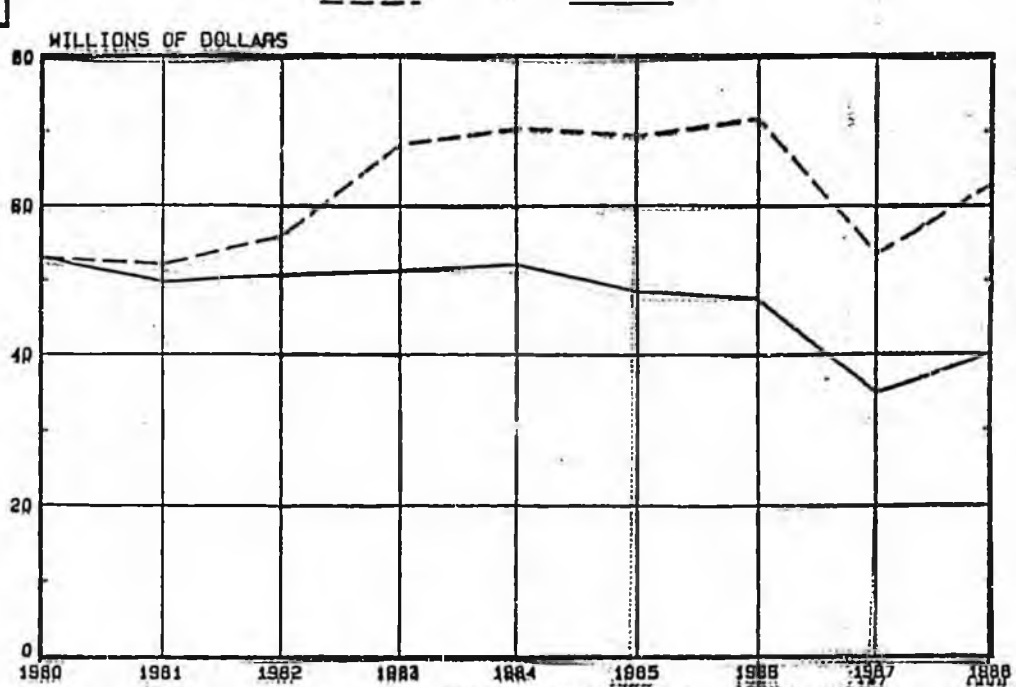
III

MAINTENANCE & OPERATIONS TRENDS



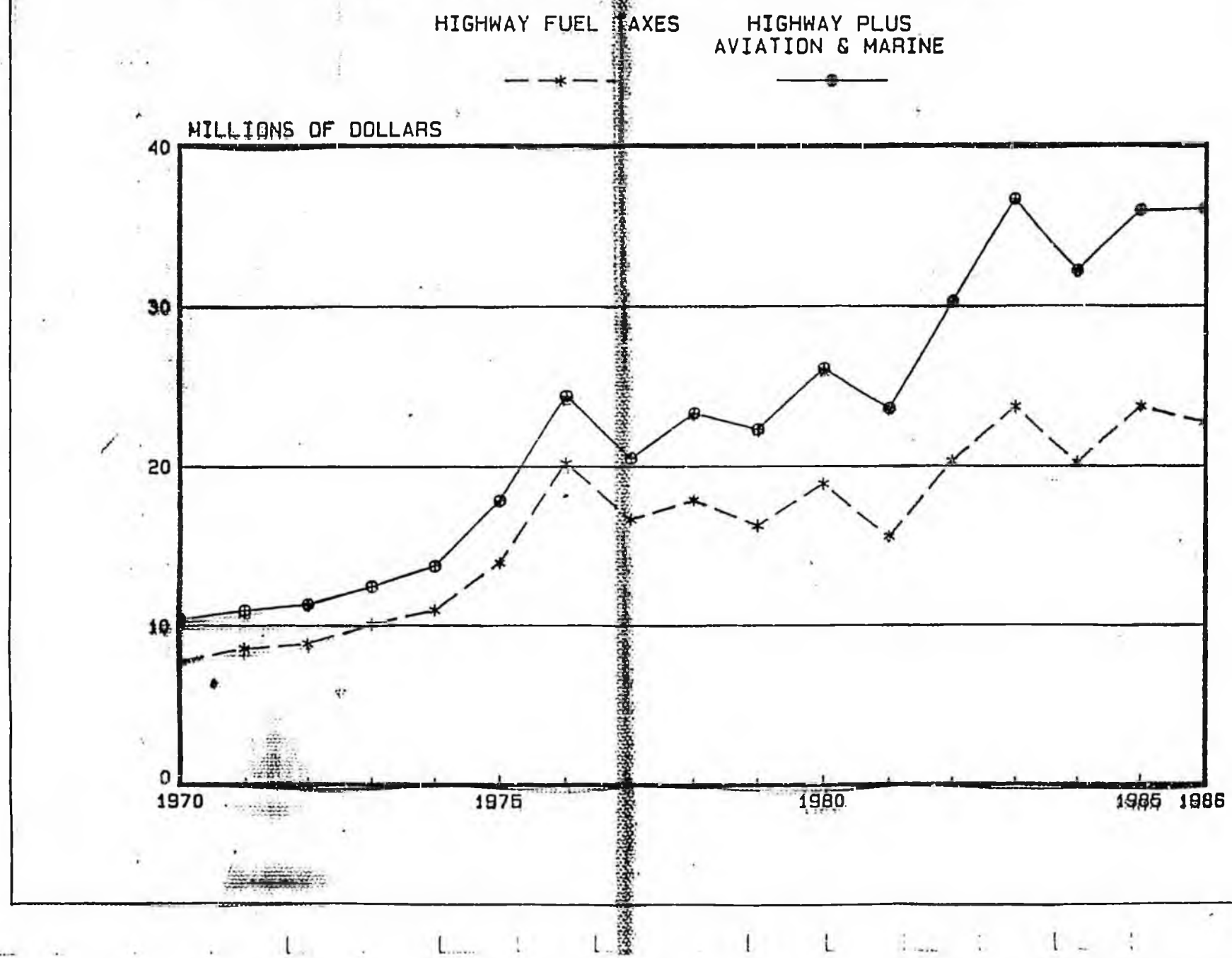
Notes: 1) Actual fiscal year expenditures, 1980-1987.
2) FY 1988 is authorized expenditures.
3) Marine Highways and International Airports not included.

HIGHWAY & AVIATION M&O ONLY



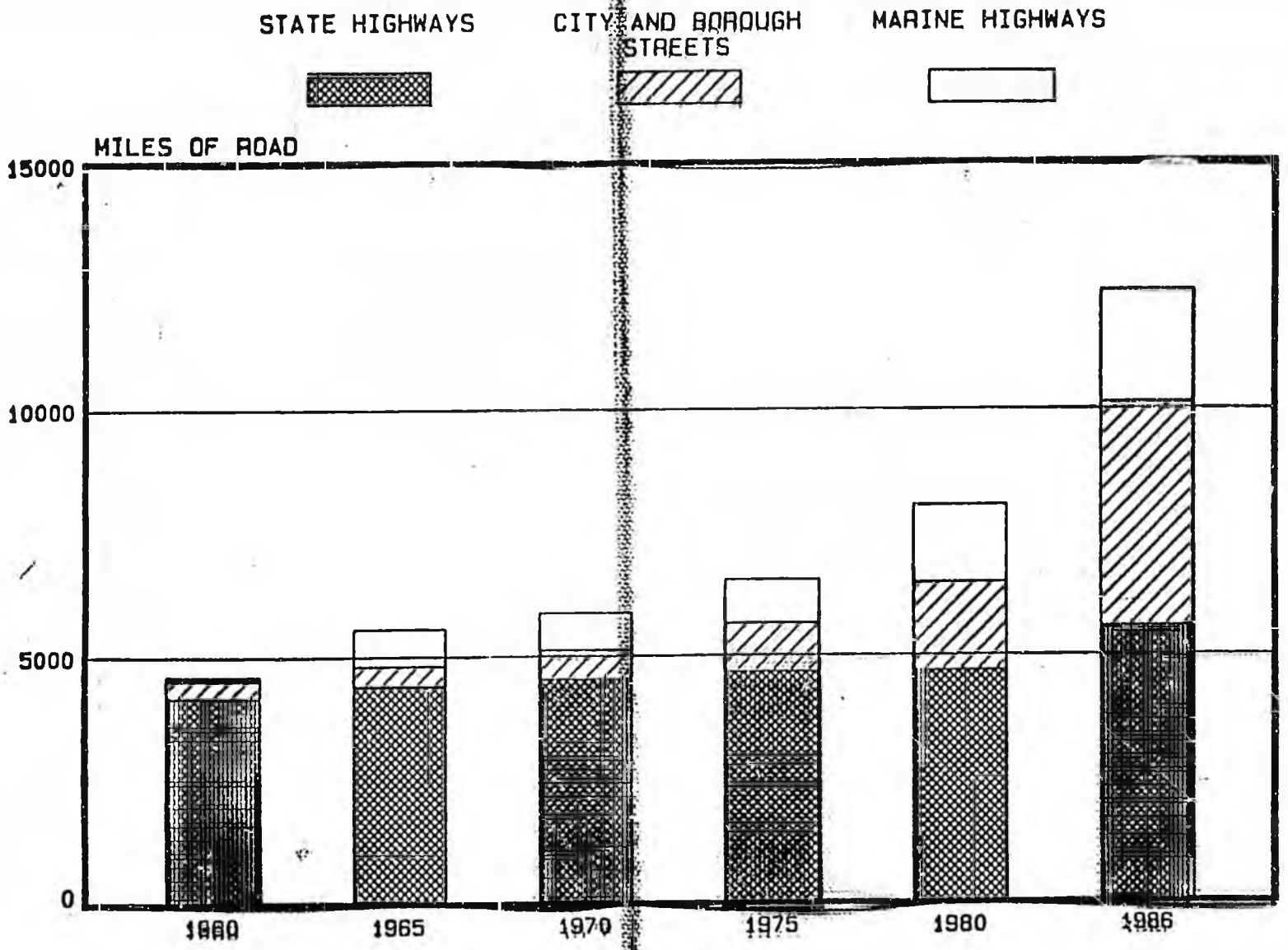
Item #9

MOTOR FUEL TAX TRENDS



Item # 10

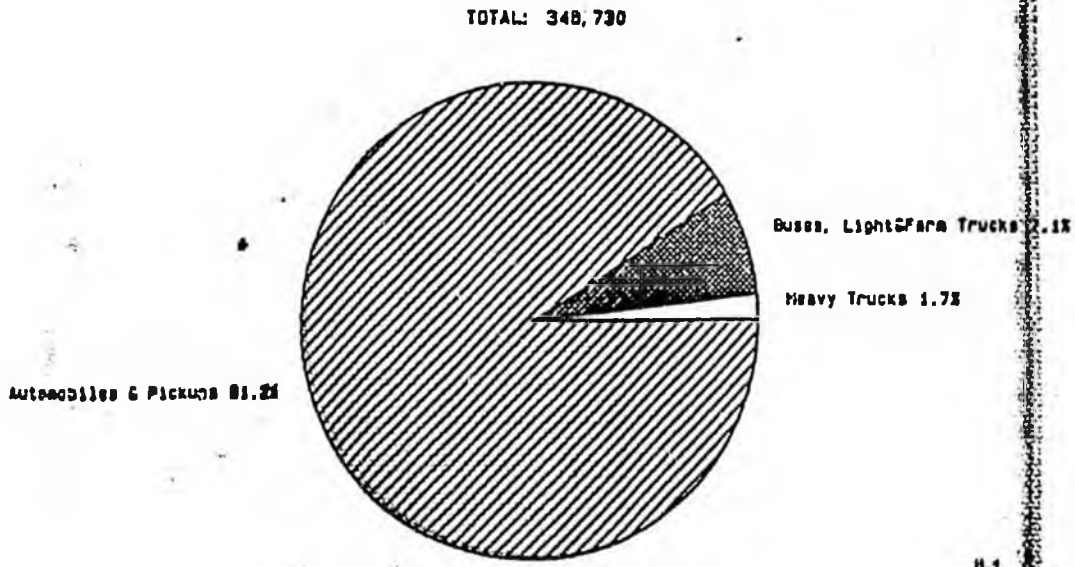
MILES OF ROAD



NOTE: EXCLUDING FEDERALLY OWNED ROADS.

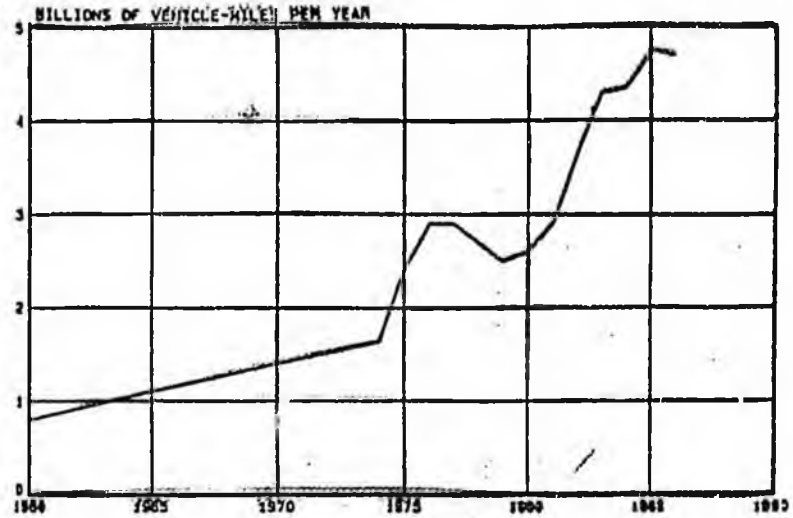
item # 11

1985 REGISTERED MOTOR VEHICLES



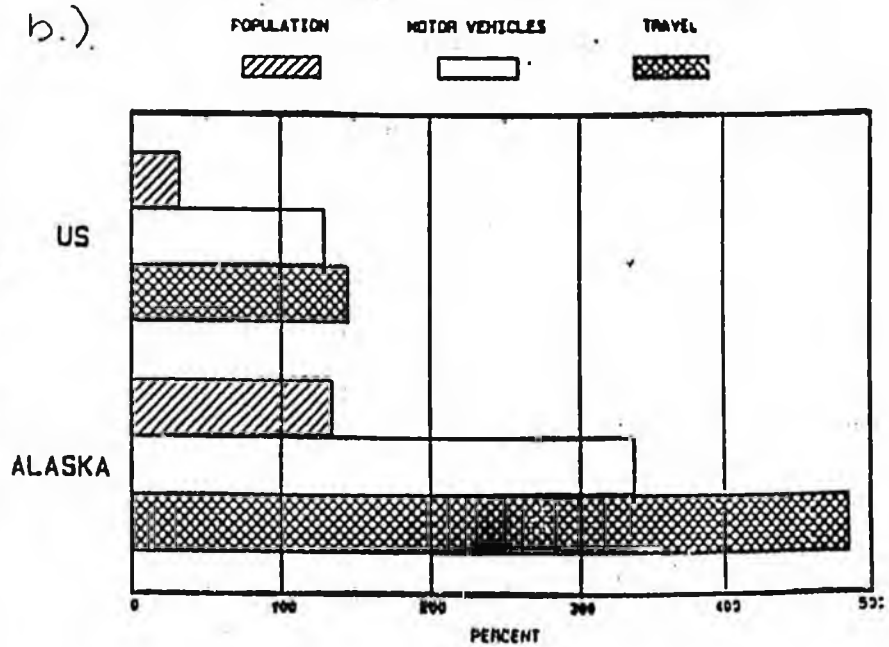
MOTOR VEHICLE TRAVEL TREND

a.)



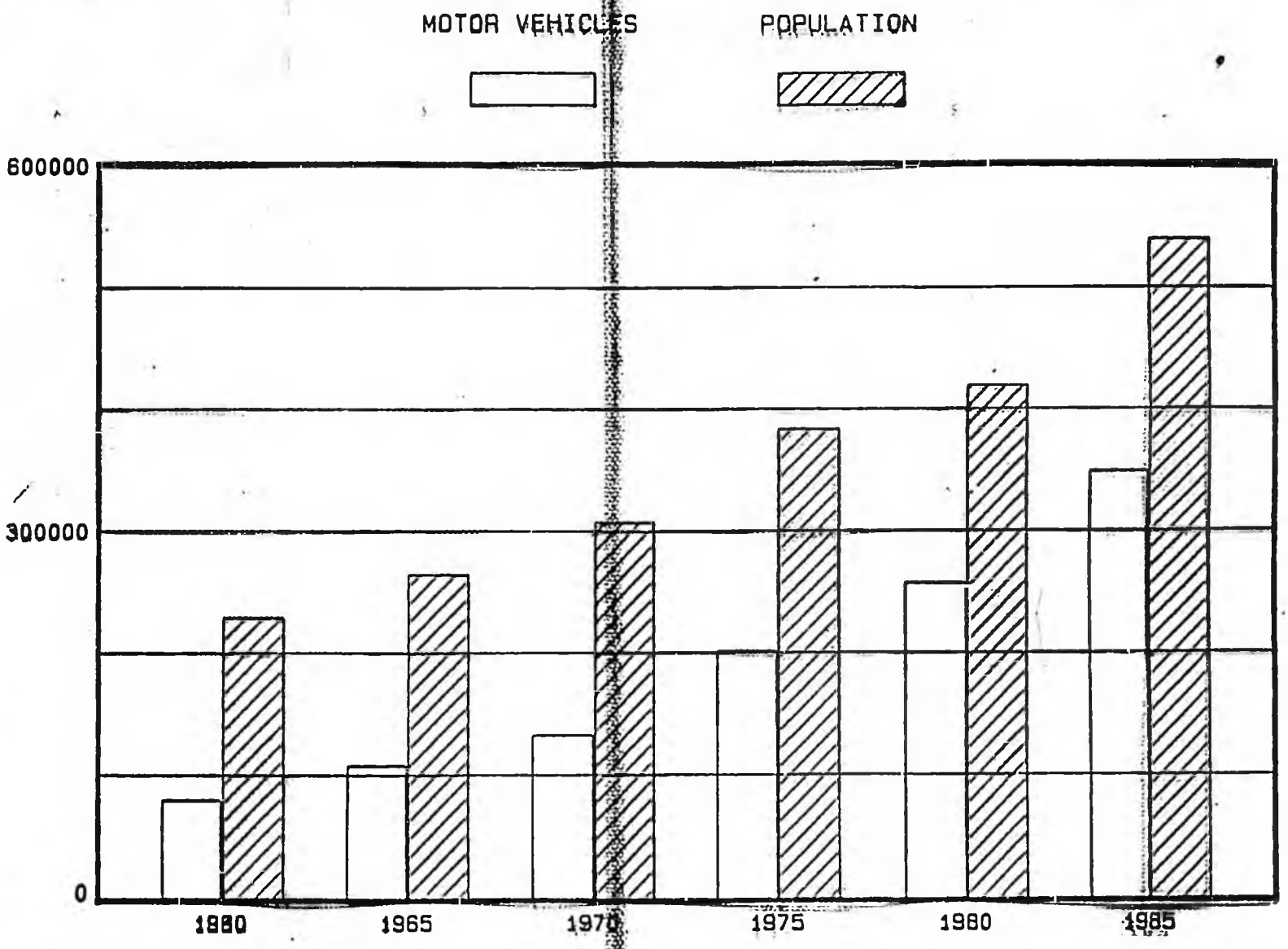
1960-1985 PERCENT INCREASES

b.)



Item #12

POPULATION AND MOTOR VEHICLE TRENDS

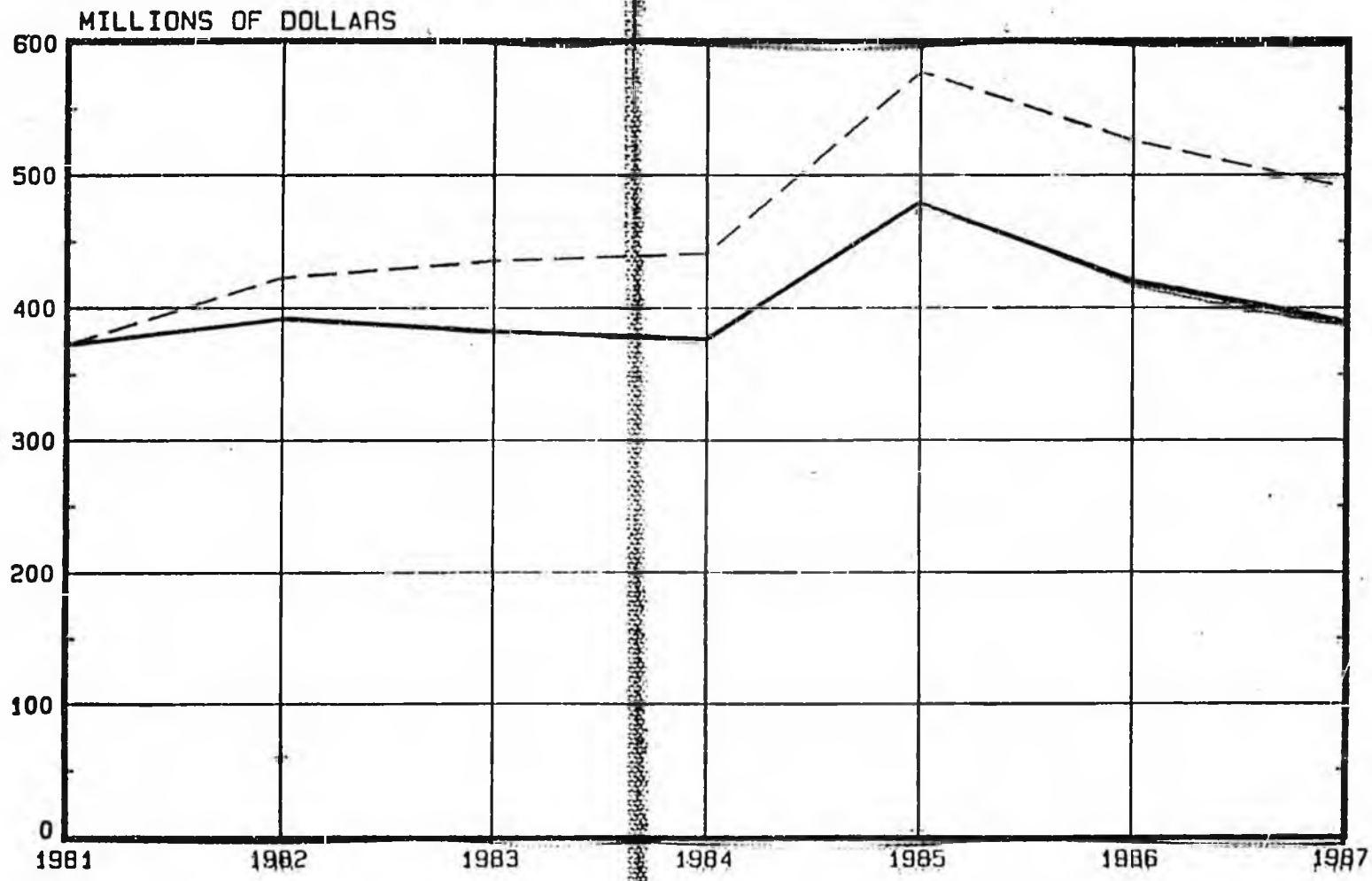


Item #13

ADOT&PF EXPENDITURE TRENDS

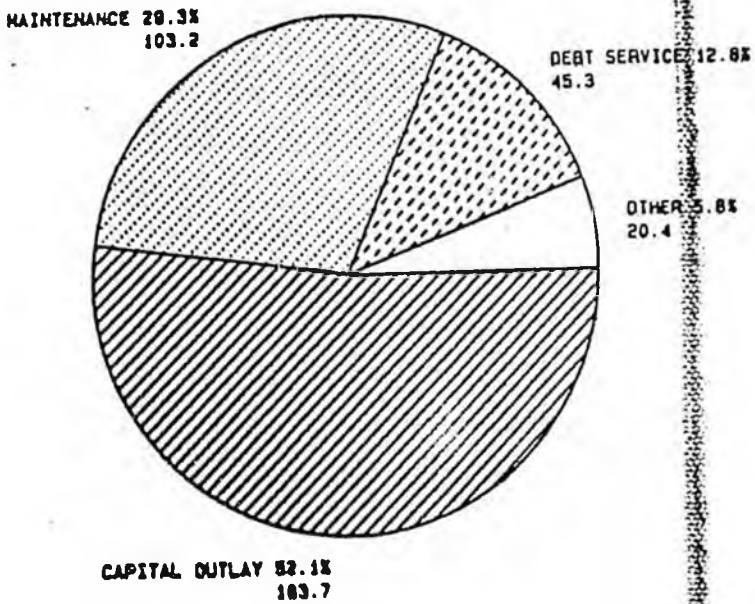
CURRENT $ — — —

CONSTANT 1981 $ ———

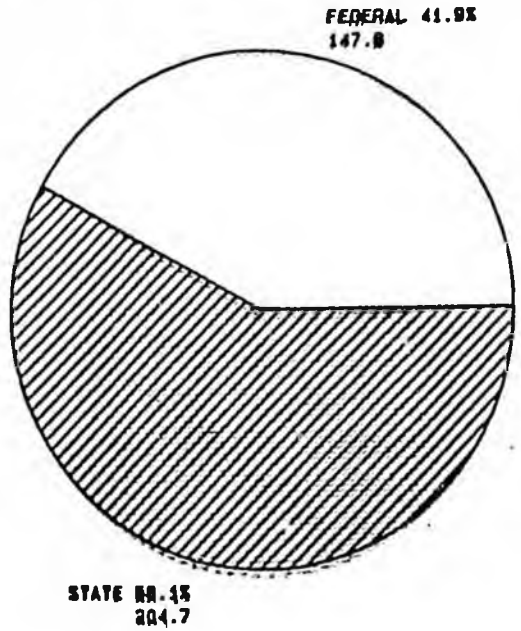


1986 STATE HIGHWAY PROGRAM

EXPENDITURES



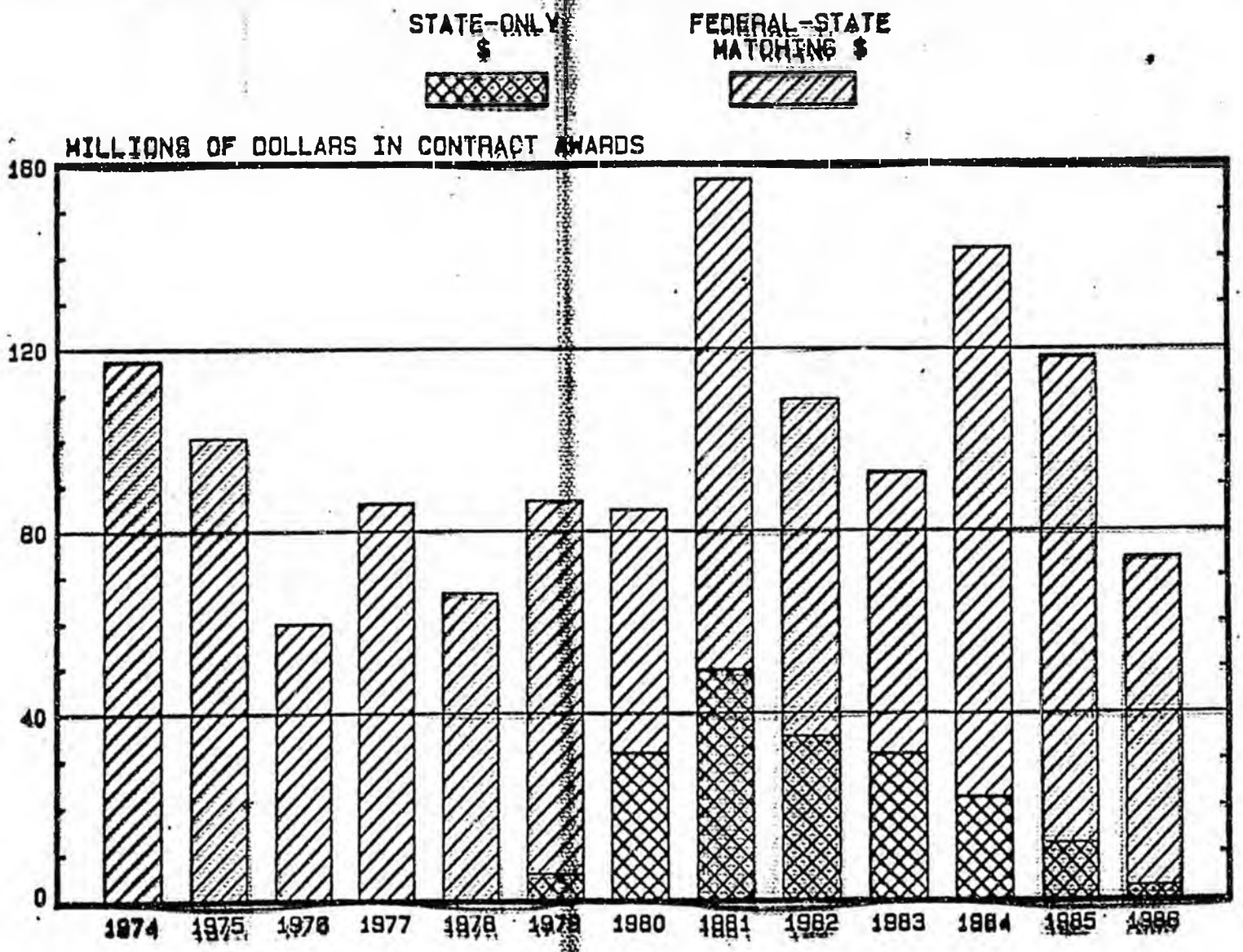
RECEIPTS



TOTAL: $352.6 MILLION

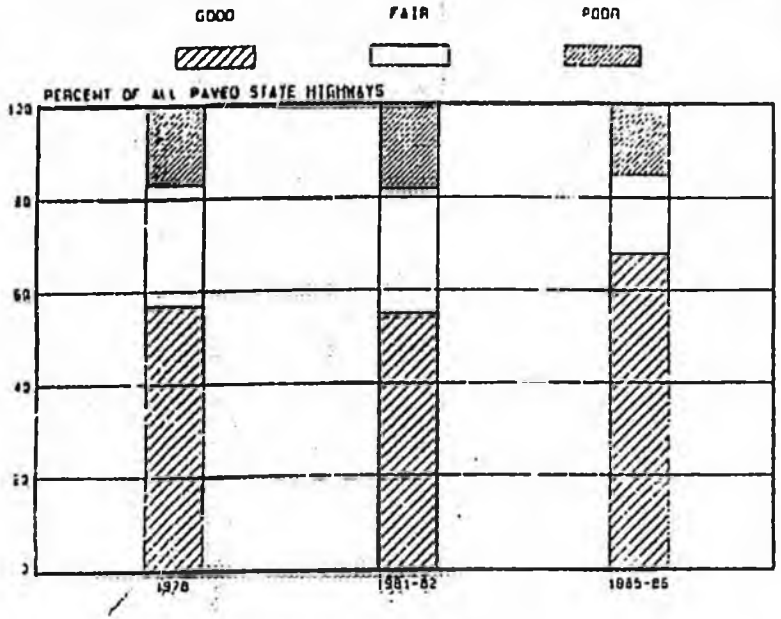
item #15

HIGHWAY IMPROVEMENT HISTORY

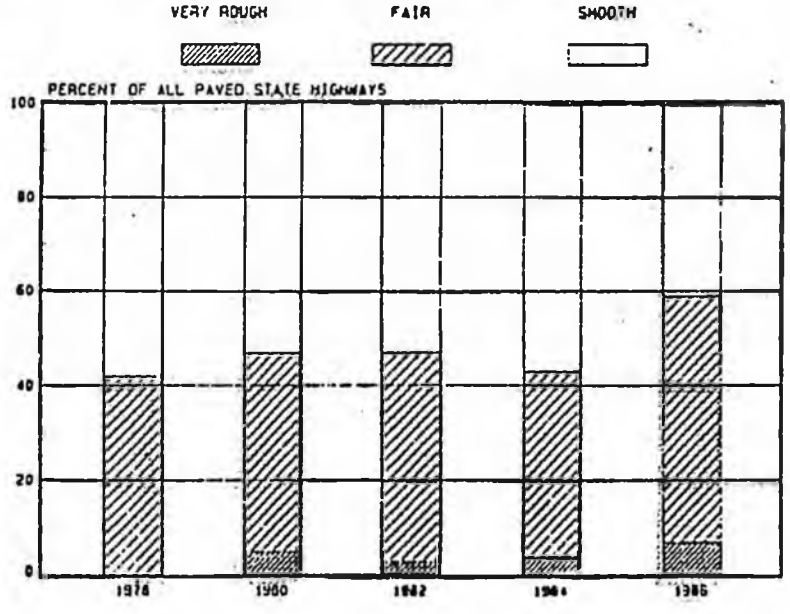


Item # 16

PAVEMENT STRUCTURAL CONDITION TREND



HIGHWAY RIDEABILITY TREND



Official Business

COMMITTEE:

House Transportation Committee

DATE: January 22, 1988

SIGN-IN

Subject of meeting:

A Presentation by Highway Users Federation President Mr. Les Lamb and HUF State Manager of Transportation Studies Mr. Marshall Reed

NAME Please include title	ADDRESS Please use full address. Please include zip.	PHONE	REPRESENTING	DO YOU WANT TO TESTIFY?
Marshall Reed Manager State Transp Studies Highway Users Federation	1776 Massachusetts Ave Washington, D.C. 20036	202 857 1227	Highway Users Federation	
Lester Lamm President Highway Users Federation	1776 Massachosetts Ave Washington, D.C. 20036	202 857 1200	Highway Users Federation	