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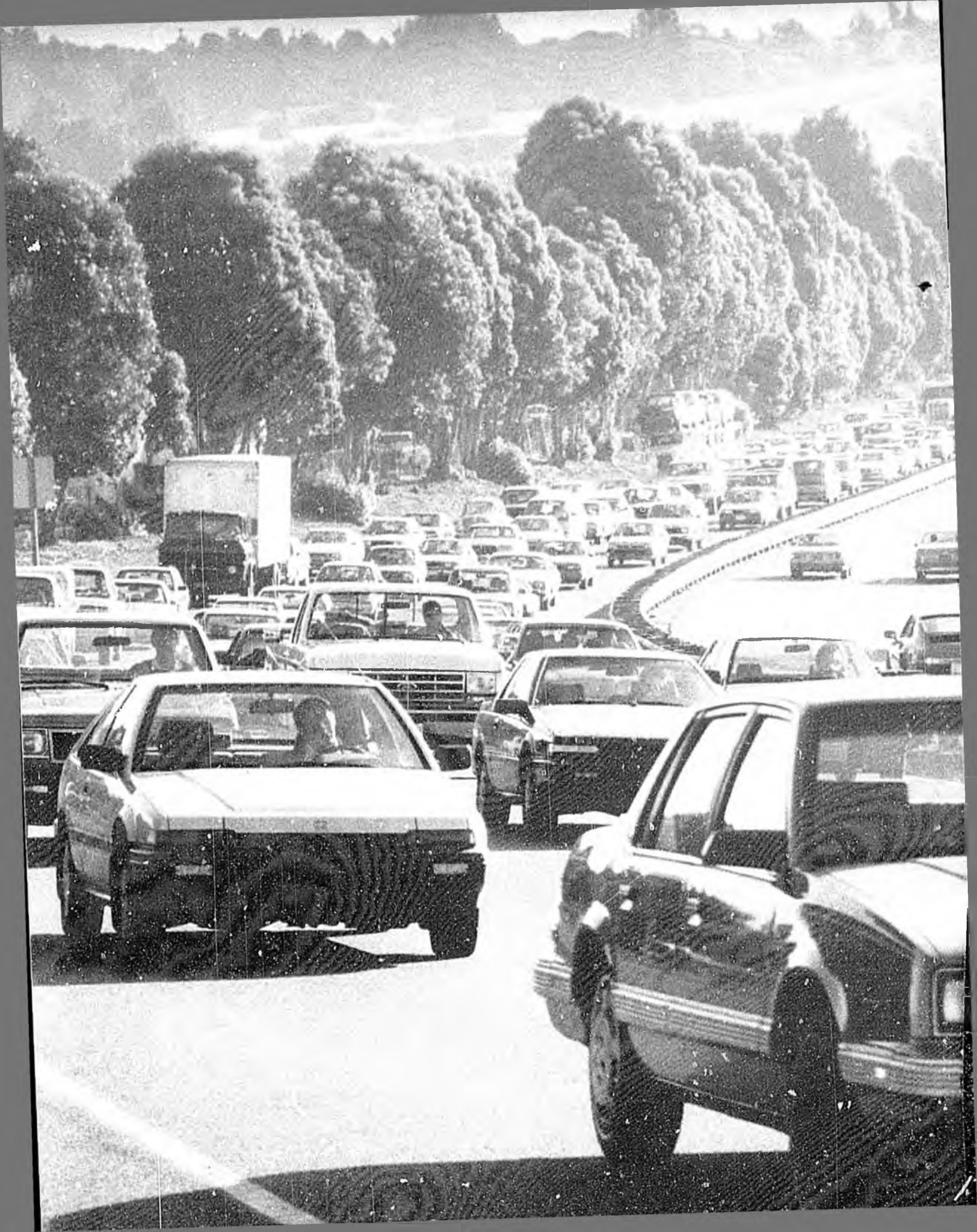
Transportation: Key to a Better Future

The Relationship of Transportation Investments to Economic Growth

A Special Committee Report

American Association of State Highway and Transportation Officials
December, 1990



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Foreword

This report was prepared by Apogee Research, Inc., under the direction of the AASHTO Special Committee on Economic Expansion and Development, and was approved for publication by a mail ballot of the Committee on November 8, 1990.

The case studies in this report which demonstrate the relationship of transportation investment and economic productivity are drawn from more than a hundred identified by a survey of the AASHTO member departments, and the Federal Highway Administration.

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The U.S. and the New Economy of the 1990s

As we rapidly approach the 21st Century, the U.S. faces new economic challenges at home as well as abroad. Our economy is no longer self sufficient. Rather we now depend on a global economy, w! ere foreign trade in goods and services totals some one-fourth of our economic activity.

Too often we lag in the competitive battles with our largest economic rivals. Our annual trade deficit exceeds $100 billion a year—larger than the economy of many countries. New rivals appear regularly, such as a united Germany and the new economic strength of the European Community when trade barriers fall in 1992.

At home, growth in consumption continues to outpace savings, making it difficult to increase investment in new capacity and technology. Growing concern over quality of life issues, such as the environment, divert attention and resources from traditional economic answers.

At the same time, the United States has become a debtor nation, dependent on a steady flow of cash from other countries to finance government spending as well as much of our domestic investment.

Answers to these challenges are beginning to appear in the form of an economy that emphasizes practical innovation, attention to quality, renewed investment, and recognition of the global marketplace. Indeed, these same watchwords are used by our most direct competitors.

Not surprisingly, many business leaders and economists are calling for more effective use of our labor and capital resources—in other words, improved economic productivity—as the key to future economic growth. Unlike the past when rapid labor growth or access to new raw materials were the economic forces that drove growth, productivity gains now generate some 80 percent of the nation's economic growth.

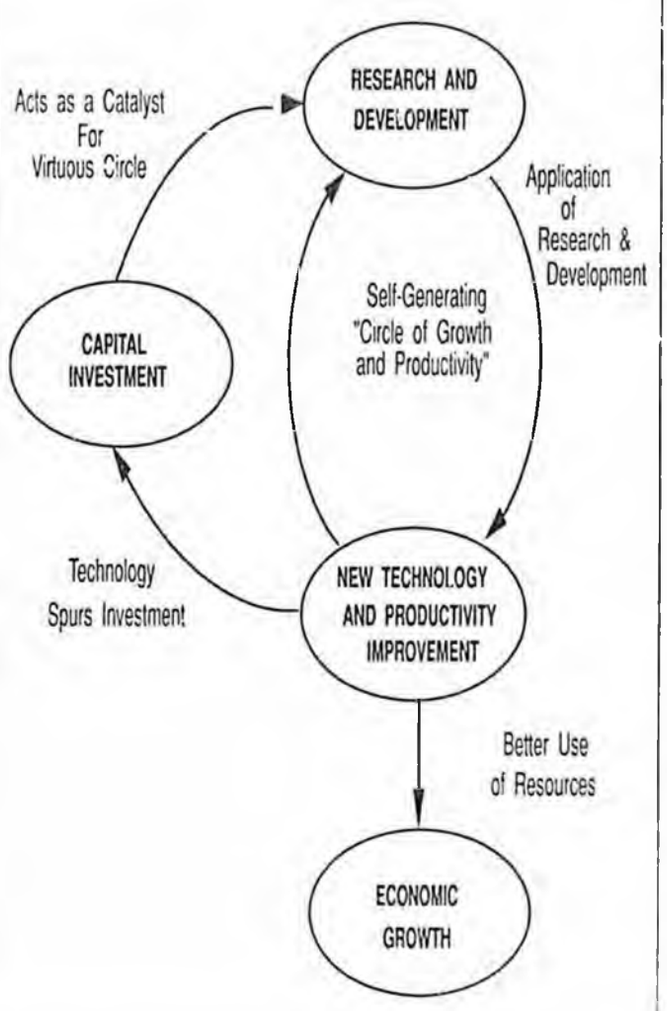
The key role played by improved productivity in a modern economy can be seen through what may be called the "circle of economic growth and productivity". Very simply, new capital investment serves as a catalyst for research and development and a series of improvements in new technology and management techniques (Figure 1). As described on page 3, new evidence shows the vital role

Figure 1

CREATING ECONOMIC GROWTH

Growth in Productivity is Key to Economic Growth

Capital investment is Key to Productivity Growth



played by investment in transportation in stimulating this "circle of growth".

Given the clear importance of productivity, it is disturbing to note that our rate of growth in economic productivity has fallen to half what it was just 20 years ago— only 1.4 percent a year versus 2.8 percent annually in the 1960s. A drop of 1.4 percent a year sounds minuscule, but even small changes have dramatic effects on a five trillion dollar economy.

Lower productivity affects everyone—workers, managers, and consumers alike. For example, twenty years of productivity gains at 2.8 percent a year, rather than 1.4 percent, means a more than 40 percent increase in output per worker. Such gains translate directly into higher wages, higher profits, and a better standard of living.

Transportation and Economic Growth

"Less than one percent of the nation's economic resources (0.75 percent) are invested in transportation each year, about half that of just 25 years ago . Recent findings show that it is probably not a coincidence that the nation's rate of growth in productivity has been cut in half at about the same time that the level of national resources devoted to investment in infrastructure has dropped sharply."

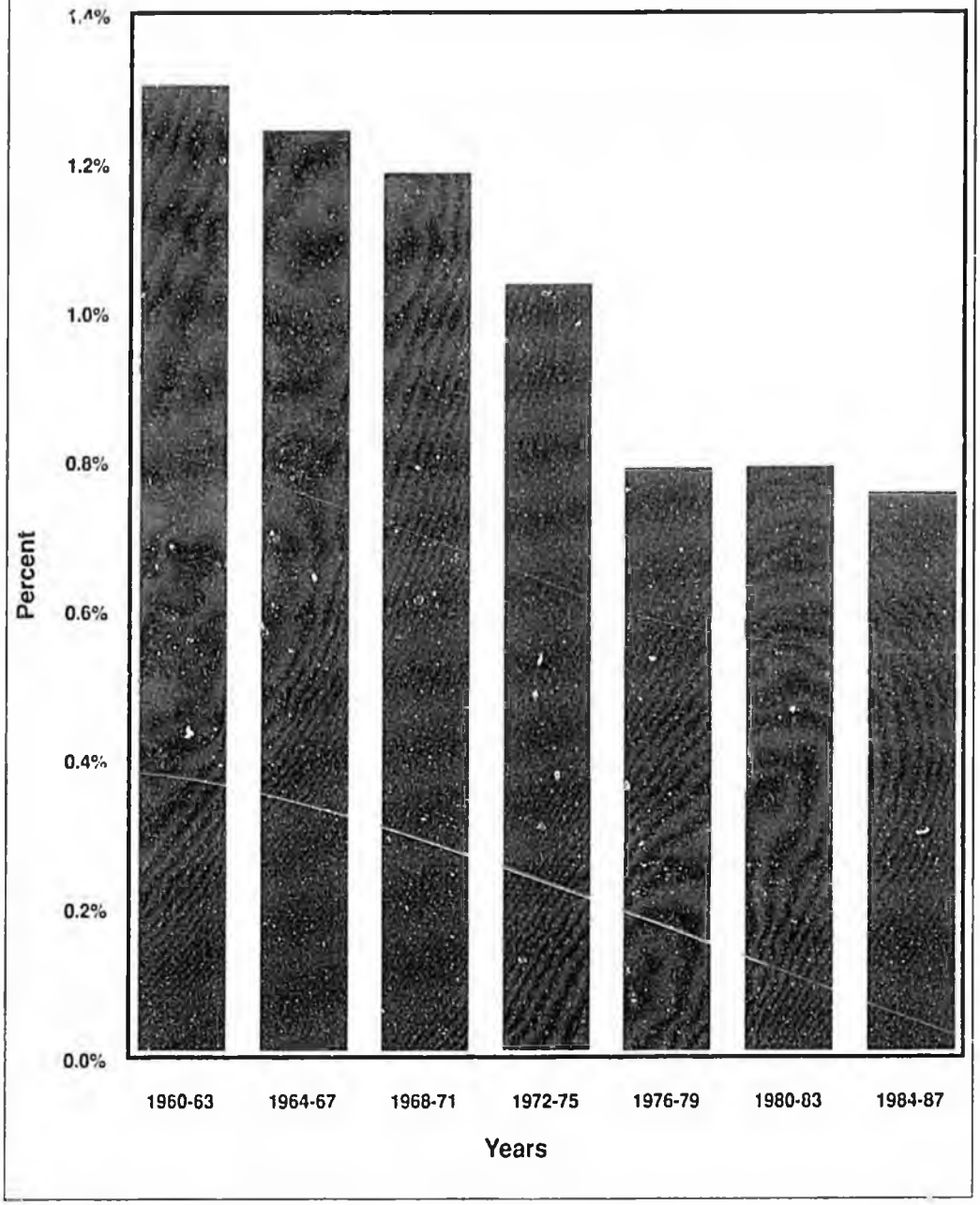
Just as we search for new answers to this broad array of challenges, there is growing recognition that traditional tools such as investment in transportation and other public works can once again provide a powerful force for stimulating economic growth and productivity.

Less than one percent of the nation's economic resources (0.75 percent) are invested in transportation each year, about half that of just 25 years ago (Figure 2). Recent findings show that it is probably not a coincidence that the nation's rate of growth in productivity has been cut in half at about the same time that the level of national resources devoted to investment in infrastructure has dropped sharply. Indeed, reversing the recent national trend toward *dis*investment in public works appears likely to help solve far broader economic problems.

Transportation affects our daily lives more than almost any other public service. It determines how we get to work and where we live; it affects the cost of what we buy and the profitability of our local businesses; it makes it possible to compete in world markets just as it provides access to products from distant points; it is a major force in our quality of life, making it easier to visit friends and to enjoy leisure activities.

Good transportation obviously has more lasting importance as well. This link between transportation and future economic strength was most obvious in earlier times when shipping lanes, post roads, and canals connected the

Figure 2
GOVERNMENT INVESTMENT IN TRANSPORTATION
HAS DECLINED AS A PERCENTAGE OF GNP



colonies. Later in the 19th Century, the transcontinental railroads became a conscious national tool used to speed the development of the West.

In the 20th Century, a national and regional network of roads and bridges became the leading force for economic growth. Starting more than 70 years ago, the federal government, in partnership with the states, built a high quality national road system including the Interstate and Defense Highway System. Of course, today's transport system is more than just

"Inadequate government infrastructure can impede improvements in productivity growth."

"Taking advantage of productive opportunities to maintain and improve the infrastructure is an important part of federal, state, and local government policies to raise economic growth."

Michael Boskin, Chairman of the Council of Economic Advisors
Economic Report of the President, 1990

roads and bridges. It includes an inter-connected network of airports and control towers, urban mass transit, inter-city railroads, and ports and harbors.

But transportation is not just a tool for opening up new regions for economic development. Indeed, an effective transport system may play an even more critical economic role in a modern, time-sensitive economy than it did 100 years ago.

Transportation will always play a leading role in helping business to reduce the costs to produce and distribute goods and services. With new production methods such as "just-in-time" (JIT) manufacturing, however, failure to deliver a part on time can shut down an entire factory. Because of their geographic dispersion and high-value shipments, the rapidly expanding service and high-tech industries are surprisingly dependent on transportation as well.

Productivity: The Key to Economic Growth

Economic productivity is more than a watchword for the U.S. Given the limited extent of new natural resources to be discovered and exploited and the predictable growth in our available labor force, productivity remains the one key determinant of economic growth that we can influence. It also provides a yardstick to measure our success relative to that of our major economic competitors.

Not only has the rate of U.S. productivity growth fallen in recent years, it remains low relative to our major competitors. For example, between 1965 and 1985, Japan achieved a labor productivity growth rate in excess of 3 percent per year and West Germany's labor productivity grew at an annual rate of more than 2 percent while the U.S. has lagged at close to one percent.

This low growth in U.S. productivity, coupled with persistently high consumption growth, helped to change our position during the 1980s from the world's largest creditor to the world's largest debtor nation.

Figure 3 compares the recent trends in productivity for each of the seven major industrialized nations with the rate at which they have invested in public capital. The estimates of public capital spending exclude depreciation and are shown as a percent of gross national product. Spending by other countries has been adjusted downward to reflect the fact that some activities that are private in the U.S. (telecommunications and airlines, for example) are public in some countries.

"Very simply, public investment improves the effectiveness of the overall economy."

Even after recognizing the major differences in the economic and social structures of each country, the data imply a striking relationship between the ability and willingness of countries to invest in public capital and the productiveness of their overall economy. Very simply, *public investment improves the effectiveness of the overall economy.*

Just as future economic growth depends on increased economic productivity, so does our domestic standard of living. Declining productivity means that our future consumption opportunities will rise more slowly than

Figure 3

Higher Public Investment Implies Higher Productivity

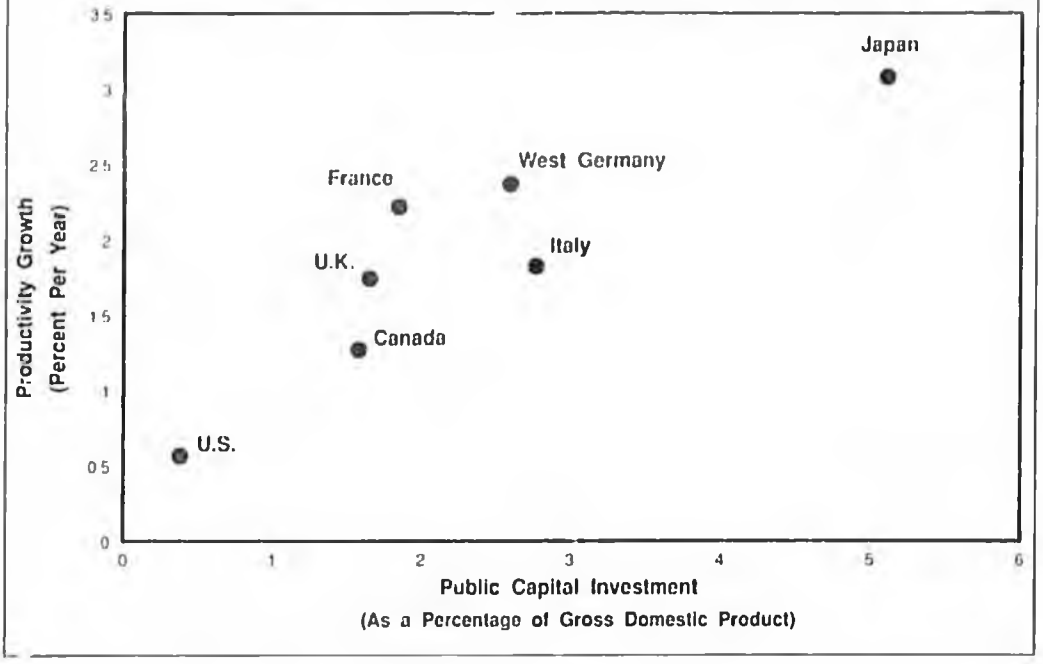
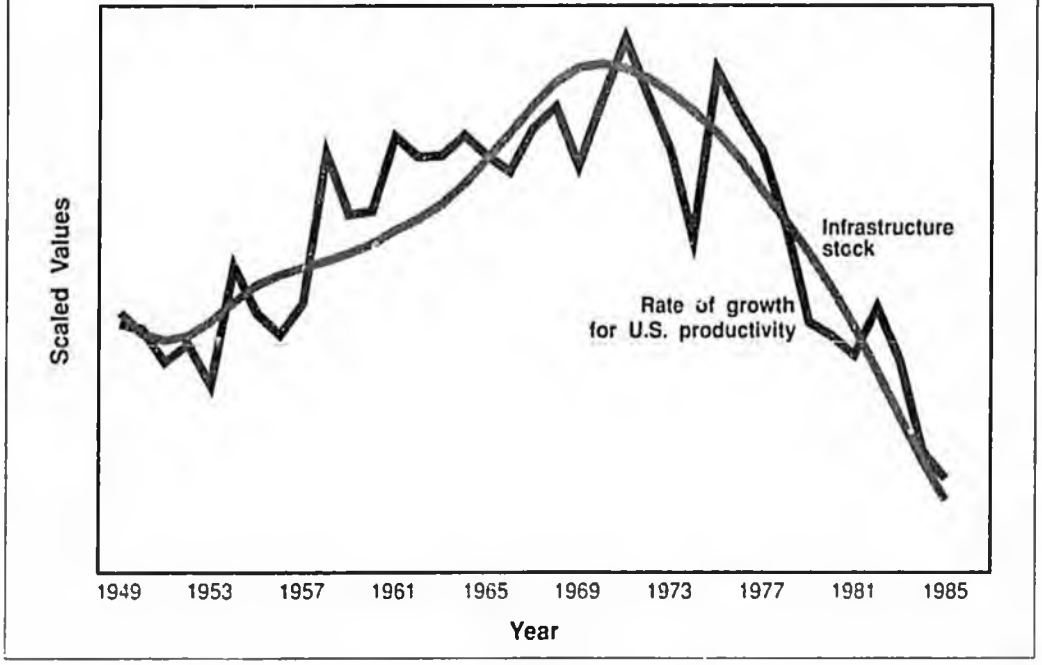
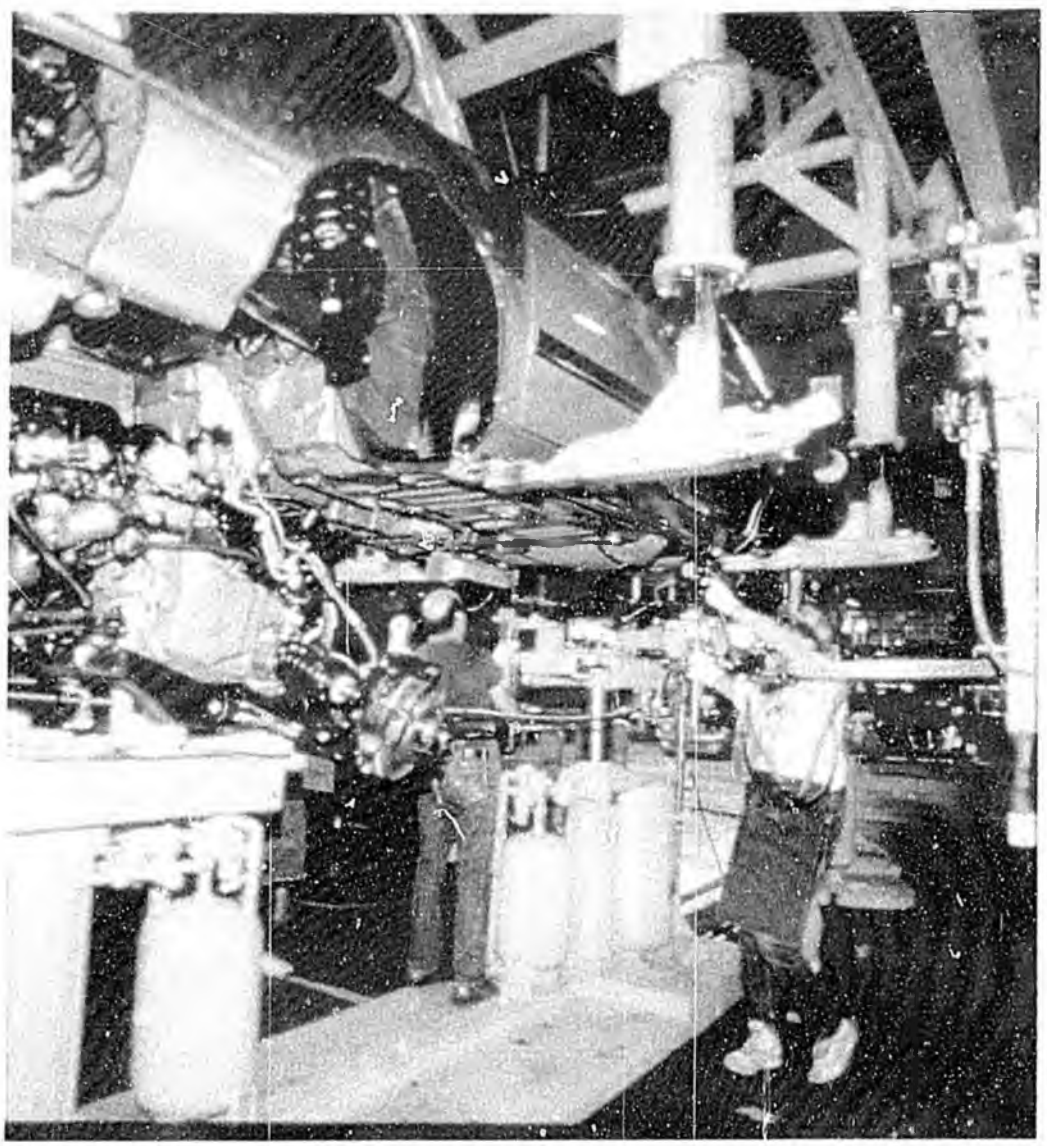


Figure 4

Link Between Public Infrastructure Stock and Growth in Productivity





otherwise. This means that people must work harder and longer to obtain the same basket of goods or must live at a lower standard of living than they could achieve if the economy were more productive. Over time, even small percentage changes in productivity can add up to large sums.

From 1950 to the mid-1980s, there has been a close relationship between the trend in U.S. productivity and the trend in the nonmilitary public capital stock (Figure 4). Increases and decreases in public capital stock have changed along with increases and decreases in productivity.

The Need for Public Investment: The Evidence Is In

New research shows that public capital can be just as important as private capital investment in stimulating a more productive economy. Indeed, after two decades of reduced public investment, it should not be surprising that many public investments may even provide higher rates of return than some private investments.

Dr. David Aschauer, while with the Federal Reserve Bank of Chicago, and Dr. Alicia Munnell, Director of Research for the Federal Reserve Bank of Boston, have quantified the link between public infrastructure investment and long-term economic productivity. Their nation-wide findings provide persuasive statistical evidence that the slowdown in public works investment over the past two decades may well be the most significant single force behind the relative decline in U.S. productivity. A later section provides real-world examples of how firms have taken advantage of transportation to improve their productivity.

This research shows that:

There is a robust, positive linkage between public capital—particularly infrastructure capital—and private sector productivity,

There exists a positive linkage between public capital and private sector profitability, and

There is a long-run positive relationship between public, nonmilitary investment and business investment.

Aschauer estimates that more than half of the total fall-off in productivity growth from the 1950s to the mid-1980s can be attributed to insufficient public infrastructure investment. Just as potholes in the streets would have jarred many fewer motorists had our nation invested more in infrastructure, our

"New research shows that public capital can be just as important as private capital investment in stimulating a more productive economy."

productivity slump would have been much less noticeable for the nation's economy.

While the statistical results vary depending on data used and specific assumptions, the effect is strong, with each 1 percent increase in public capital stock improving overall national productivity by between 0.15 percent and 0.35 percent.

Aschauer finds that each 1 percent increase in the nation's capital stock should raise the rate of return to private capital by about one-tenth of 1 percent. At current rates, a one-tenth of a percent increase in profit rates translates into more than $4 billion a year in profits. This, in turn, means higher private sector investment in plant and equipment—one of the classic ways to improve productivity. Over time, this same increase in public investment will stimulate private investment in plant and equipment, having the net effect of raising the national investment rate by a substantial amount.

Even at the state and local level, where economic gains can be disbursed through neighboring states, Munnell finds that each additional dollar of public capital stimulates private investment by 45 cents. Her research also shows that productivity is not an abstract concept, with an additional $1,000 per capita in infrastructure assets adding roughly 0.2 percent to the average annual rate of employment growth—or about 230,000 new jobs per year.

Such an increase in public investment raises the growth rate of labor productivity directly by allowing the available private capital stock to be utilized more efficiently—and indirectly by promoting private investment, making more private capital available per worker. The effect on productivity is substantial.

The basic idea linking infrastructure and private economic activity is simple. An adequate and well maintained public stock of infrastructure capital is essential to the profitable and efficient production and distribution of private sector goods and services.

Without question, a limited, or inefficient transportation network acts as a drag on overall private economic activity. Private business relies heavily on public infrastructure capital, such as roads, bridges, and airports, to support productive activity. Consider, for example, how the Interstate Highway System provides truck access to virtually every large- and medium-sized market and major port in the United States.

How does this link between transportation investment and economic productivity work in practice? The next section provides a sample of real-world examples taken from more than a hundred identified by state DOTs and the Federal Highway Administration. This report presents these examples for the first time.

"An adequate and well maintained public stock of infrastructure capital is essential to the profitable and efficient production and distribution of private sector goods and services."

Transportation: A Partner in Business Productivity

As with our daily lives, business decisions are continually influenced by the nature and quality of available transportation services. Improved transportation facilities, however, often act as a catalyst in business decisions, allowing and encouraging firms to change their internal operations to take advantage of new production and marketing opportunities. These changes have effects well beyond the loading dock and influence how firms organize their production activities.

Firms today operate in a complex economy, with suppliers and markets disbursed throughout the country and even the world. Corporate decisions regarding location, capital investment, production methods, relationships with suppliers and customers, and overall organization must be based on the constant need to improve profitability.

Underlying these decisions are concerns with costs, production efficiency, labor productivity, and market demand. Transport changes affect each of these factors, not just those associated with the obvious concerns with reduced transport costs. Thus, transportation has leverage throughout the firm, creating a *cascade of benefits* to the firm, its customers, its employees, and its suppliers.

The following table provides a summary of the case studies presented here. A brief review of these examples, reveals three major findings:

•First, there is a clear *interaction between high technology and transportation*. Electronic

communication plays just as important a role in an effective supply chain as does the timely movement of goods. Indeed, the case studies show that private firms have already taken the lead in using technology to maximize the gains from improved transportation;

•Second, the success stories show a *chain-reaction type of effect* that links transport improvements to a series of productivity gains that can even affect the structure of how firms do business. For example, in addition to cost savings, "just-in-time" inventory systems improve quality and make it easier for the firm to react to market forces. These, in turn, generate new sales and make greater cost savings possible.

•Third, the large number of examples identified illustrate that the relationship between transportation and productivity is robust and widespread and covers most major industries, every region of the country, and all modes of transportation.

Summary of Case Studies of the Link Between Transportation and Economic Productivity

Name of Case Study	Industry	Type of Productivity Effect
Koley's Medical Supply, Inc., Omaha, NE	Wholesale Distribution	Productivity improvements achieved by their hospital customers through stockless purchasing depend on good transportation access
Coca-Cola Midwest Eagan, MN	Soft Drink	High quality highways facilitate the use of rolling warehouses, creating productivity gains by reducing product handling costs and allowing the elimination of remote warehouses
James River Corporation Berlin, NH	Paper	Improvements to Route 115 increased transportation reliability and encouraged more carriers to come to the plant, allowing the plant to increase production and operate more efficiently
Campbell Soup Company Camden, NJ	Food	Higher productivity achieved through JIT deliveries by suppliers depends on reliable transportation
Dole Fresh Fruit Wilmington, DE	Food	Improved access roads to the Port of Wilmington improved truck traffic flow to port facilities, leading to more effective operations at their banana importing terminal
Aladdin Mills Dalton, GA	Carpet	An effective highway network helps make the company more competitive and facilitates labor access from adjacent communities
R.D. Werner Company Mercer County, PA	Metal Parts	Relocation of State Route 4017 allowed more efficient organization of production and also will allow expansion of plant
General Motors Corporation	Auto	Production system based on JIT shipping of components substantially increased dependence on effective highway transportation
Xerox Corporation Rochester, NY	Copier	The Interstate highway network facilitates nationwide shipping of its product by long haul trucking from a single manufacturing site
Hewlett Packard Palo Alto, CA	Computer	Because of high housing costs, employees must commute longer distances making good highways essential for labor access
Digital Equipment Corporation, MA and NH	Computer	An effective transportation network between their headquarters in MA and NH, allowed cost-effective expansion into NH
Wal-Mart Stores, Inc. Bentonville, AR	Discount Retail	Productivity gains and improved customer service achieved through its quick response program are facilitated by the Interstate Highway network
Federal Express, Ltd. Memphis, TN	Small Package	Good ground access to airports is essential to efficient operation of its "hub and spoke" system
Bank of Boston Canton, MA	Financial	Construction of Route 128 and access to commuter rail allowed the bank to increase efficiency by locating its back office activities away from the bank headquarters in downtown Boston

Four general types of changes in firm operations, all of which improve productivity, can be induced by improvements in transportation facilities:

Reducing bottlenecks in production and management,

Adding flexibility to what gets produced and how this is accomplished,

Improving access to labor, and

Permitting greater specialization of corporate functions.

Each category of productivity enhancements is discussed in more detail below with selected case studies illustrating the effect that transportation improvements can have on firms' productivity.

Reducing bottlenecks in production and management

Bottlenecks, usually limited production inputs or product flows, are a natural occurrence in every production process. Firms strive to avoid and overcome bottlenecks, with their decisions dependent on whether the limitation is short-term or long-term in nature. Short-term problems require adjustments to the production process, such as increasing inventories or beginning over-time production. Longer term bottlenecks often have to be solved with more dramatic changes, including capital investments, a new location, or a new set of suppliers.

Either type of bottleneck reduces a firm's productivity by decreasing the efficiency or increasing the cost of a production process. Transportation improvements can remove some bottlenecks, creating productivity gains.

A typical short-term bottleneck is a shortage of certain inputs at the right time and place. To overcome such bottlenecks, firms maintain inventories or require suppliers to make more frequent and smaller deliveries (which simply shifts the burden of inventories elsewhere). Maintaining inventories is expensive—there are costs of purchasing inputs before they are needed, costs to plan and manage inventories, and costs of any facilities or production processes resulting directly from having to hold large inventories (such as nearby warehouses). An increase in transportation reliability along with a better structured logistics system may remove input shortages, allowing firms to reduce inventories. Reducing inventories frees up money, manpower, and space, increasing the productivity of a firm's production process.

General Motors—Just-in-Time (JIT) Production

An efficient, effective transportation system is vital to the production and distribution of GM's vehicles and service parts. GM has 141 facilities in the U.S. that ship or receive component parts, raw materials, and/or finished vehicles. Of GM's 141 facilities, 29 are car and truck assembly plants located throughout the U.S. Based on its estimates for a typical assembly plant, described below, GM estimates approximately 7,000 trucks provide daily support to its 29 assembly plants. Also, GM estimates another 7,000 trucks are involved daily for its manufacturing and stamping plants.

According to GM, approximately 240 trucks are required to support the daily activity of a typical assembly plant (materials and supplies inbound and finished vehicles outbound). A typical plant receives and unloads an average of 120 truckloads of component parts and supplies daily. The plant then ships approximately 480 vehicles (one-half of its daily production) directly to dealers using 60 trucks. The other 480 vehicles are shipped from the plant on railcars to rail unloading ramps located in major market areas. Upon arrival, the railcars are unloaded and the 480 vehicles are delivered to dealers using another 60 trucks.

GM's dependence on effective highway transportation has increased substantially in the past decade. According to GM, much of its increased dependence upon highway transportation is the result of efforts to remain competitive. Operational changes to meet this goal revolve around GM's quality network production system that facilitates just-in-time (JIT) shipping of components to meet very precise production schedules. Smaller, more frequent shipments of components using JIT are also a method to control and reduce in-plant inventory. Likewise, in-transit inventory can be minimized by reducing the time that component shipments are in transit. Generally, truck transportation is faster than rail and GM consequently transports more of its component shipments over the highways.

General Motors
Efficient transportation system allows GM to institute a "just-in-time" delivery system: Inventories are reduced and production efficiencies increased.

To stay competitive, firms today are increasingly differentiating their product lines and shortening the life cycle of individual products. In order to achieve this, firms require a wider variety of inputs from a wider variety of suppliers. In addition, firms increasingly market their product to more diverse consumers over a larger area. As a result, both the amount of inputs and products being transported and the importance of speed and reliability of deliveries has increased.

The availability of an effective transportation network provides firms with better and more reliable access to both suppliers and consumers. Productivity gains often arise from more efficient internal operations made possible, in part, by good access through an effective transportation network.

Increasing flexibility in what gets produced and how

To compete in today's rapidly changing business environment, firms increasingly depend on their ability to make rapid transformations among products, suppliers, and markets. This flexibility increases productivity by allowing firms to take advantage in changes in both input and product markets. Transportation can play an important, but perhaps less obvious role in enhancing the flexibility of a firm.

James River Corporation
Road improvements allow year-round shipments: Efficient use of equipment is increased

James River Corporation—Increased Manufacturing Productivity

James River Corporation in Berlin, New Hampshire, manufactures paper rolls, paper towel products, and wood flour. Eighty percent of its products are shipped by truck. Recent improvements to Route 115 encouraged more carriers to come to the plant. Widening the road allowed bigger trucks to use Route 115, which offers more direct access to the plant from the interstate than alternative routes. The road improvements also allowed trucks to use Route 115 year-round, where previously it could not be used for several months in the spring.

With improved transportation access and reliability, the company decided to increase production at the plant by picking up the speed of existing machinery. Consequently, the company began making more efficient use of its equipment leading to increased productivity at the plant. With higher production, the company also increased sales.

In addition to productivity gains achieved at James River's plant, the improvements to Route 115 allow James River's customers to achieve inventory savings. Their customers generally do not want to keep large inventories of paper products. Improved transportation access and reliability allows carriers to make more frequent, smaller deliveries to James River's customers. As a result, their customers can reduce inventories, lowering their inventory carrying costs.

Improving access to labor

Labor is an essential input to virtually every product or service, and so access to cost-effective labor is a major consideration for private businesses. Good ground transportation is essential for access to a workforce. If transportation access is poor, the labor costs may increase or firms may have to relocate.

Many types of businesses, such as research and development firms, require access to highly skilled labor. Attracting these employees may bring "quality of life" considerations into play. In terms of transportation, these considerations include ground transportation quality (comfort, length of commute), as well as proximity or access to high-frequency air services, good schools, and attractive communities. Inadequate or

congested transportation systems may serve to raise the cost of highly skilled workers, thus reducing the productivity of the firms that rely on them.

Hewlett Packard—Labor Access

Labor access is an important concern at some Hewlett Packard (HP) facilities. In the San Francisco Bay area, high housing costs cause many HP employees to commute long distances to work. The long-distance commuters, as well as many short-distance commuters, depend on good highways to get to work. Forty-eight percent of HP employees in the San Francisco Bay area commute over 10 miles one way, with 6 percent travelling over 30 miles one way to get to work.

"Quality of life" considerations are important to HP's employees. HP's highly skilled employees often place great importance on their residential environment. While some employees prefer an urban environment, other employees prefer a rural environment. Some employees are willing to commute long distances to be able to live in their preferred residential environment. To attract and retain highly skilled labor, HP locates its facilities where a highway network allows good access from both urban and rural environments. At HP's facility in Roseville, California, for example, employees can commute on Interstate 80 from Sacramento, California or from smaller, rural communities in the Sierra Nevada Mountains.

Hewlett Packard
Road access is important to firm's siting decisions because employees commute long distances

Permitting greater specialization of corporate functions

Transportation improvements, along with improvements in telecommunications, may allow firms to become more specialized in the location of different corporate activities. Firms can locate certain activities, such as corporate headquarters, away from production centers to reduce costs. Specializing the location of different firm functions also allows firms more flexibility to remain competitive in a national or international market.

Specializing functions in different locations may require inputs to be moved over greater distances during the production process, leading to an overall increase in traffic. In many cases, it also causes an increase in individual travel because of management needs to travel more to monitor production and marketing activities. Even when the major transportation mode affected by this increase in travel is aviation, there are significant inputs of highway facilities in order to provide ground access to airports.

Digital Equipment
Easy transportation access allows firm to expand manufacturing away from headquarters: Production costs are reduced

Digital Equipment Corporation—Corporate Expansion

Digital Equipment Corporation (DEC) has its headquarters in Massachusetts. Further expansion in Massachusetts was not possible because of high real estate costs and traffic congestion. DEC looked for an area with lower property values but easy access to its headquarters, both in terms of employee travel and ease of installing fibre optic cables between that location and its headquarters.

DEC purchased a large parcel of land in southern New Hampshire along the F.E. Everett Turnpike. An interchange was constructed on the turnpike for easy access to the site. DEC installed underground fibre optic cables from the new site to its headquarters. Both good highway access and telecommunications allowed DEC to expand its operations into New Hampshire.

Productivity Case Studies

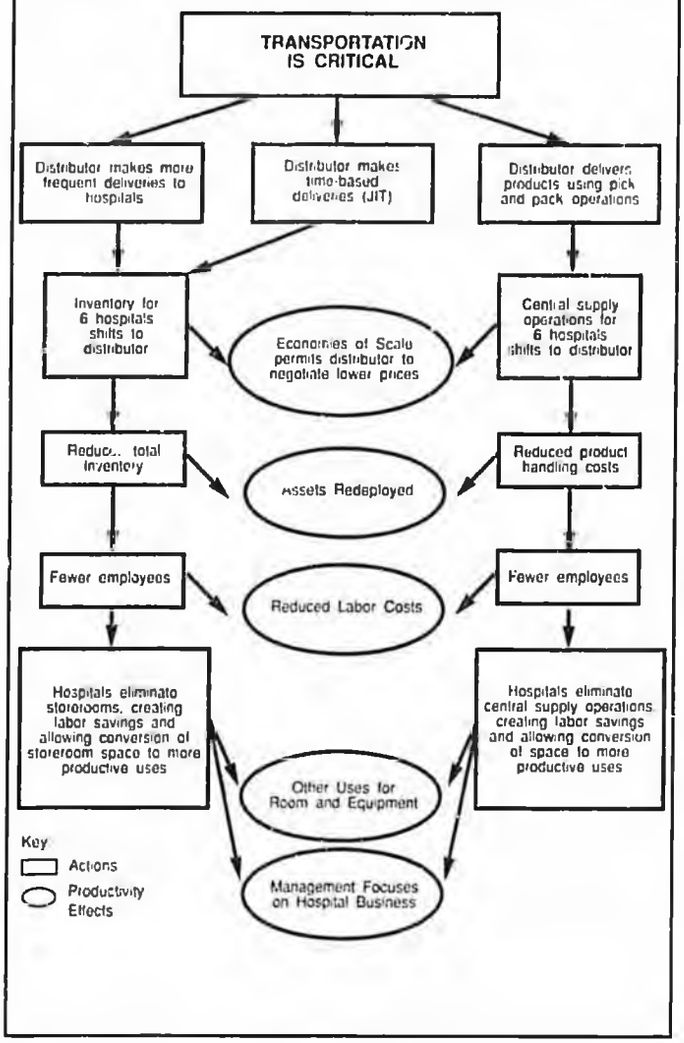
Koley's Medical Supply, Inc. *Stockless Purchasing for Hospital Customers*

Koley's Medical Supply, Inc. is the wholesale distributor for a coalition of six hospitals in Omaha, Nebraska and southwest Iowa that have converted to a stockless purchasing system. In the hospital industry, stockless purchasing goes further than just-in-time by offering pick-and-pack operations in addition to frequent deliveries of medical products to hospitals. The distributor packages medical products for delivery directly to hospital carts or supply closets in hospital departments. In the Omaha area, Koley's packs items in their proper units of issue and delivers them in bins several times a day to user departments in the hospitals. Koley's makes daily deliveries to the smaller hospitals in Iowa.

Transportation access is critical to meeting the

Figure 5

Productivity Gains for Hospitals Using Stockless Purchasing



frequent order cycles of a stockless purchasing system. Generally, the distributor must be no more than three hours by truck from the hospital. Adequate access makes such frequent deliveries efficient and reduces costs over the whole hospital materials supply chain from manufacturer to patient. Completion of the Storz Freeway improved Koley's access to its more distant customers in Iowa.

Through streamlining operations, stockless reduces inventory storage and handling costs for the hospitals (Figure 5). With very frequent deliveries, hospitals can eliminate inventory storerooms and central supply operations. Although these costs shift to the distributor, a distributor often can manage those operations at a lower overall cost through economies of scale not possible in an individual hospital. Stockless also lowers the costs of product flow by reducing the number of times the product is handled.

Labor savings can be significant as fewer employees can achieve faster, more efficient distribution of hospital supplies. Hospitals can eliminate labor involved in warehouse and central supply functions and the distributor can leverage labor for those functions over many hospitals. In addition, hospitals often can convert space previously used for inventory storage to more productive use.

Other savings are achieved through standardization of high-volume items among participating hospitals. Inter-hospital standardization of materials can achieve cost savings beyond the already common standardization of materials among various departments within a hospital. Koley's negotiates for all six hospitals collectively to get lower prices from manufacturers.

At Bishop Clarkson Memorial in Omaha, stockless purchasing allowed the hospital to reduce inventories, reduce its receiving and distribution staff by 12 full-time employees, eliminate trucks and drivers associated with their off-site warehouse, and streamline payment schedules. Bergan Mercy Hospital in Omaha eliminated its storeroom, converting it and other space formerly used for receiving and warehousing to more productive uses. Mercy Hospital in Council Bluffs, Iowa, reduced inventory and purchasing costs through its stockless system.

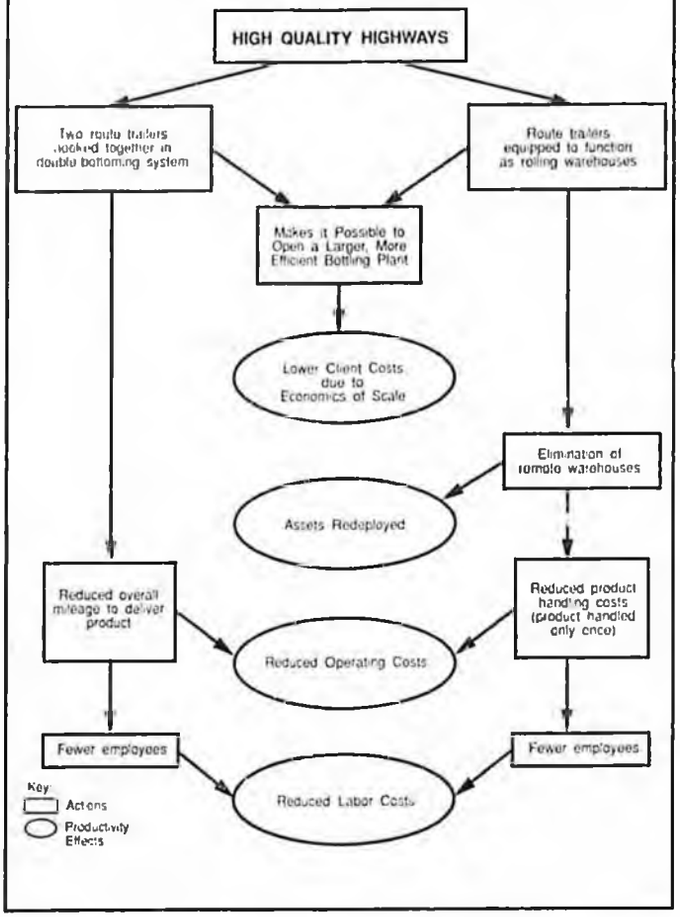
Coca-Cola Midwest *Rolling Warehouse*

The Coca-Cola Midwest bottling plant, part of Johnston Coca-Cola Bottling Group, serves a market area covering Minnesota, Wisconsin, eastern North Dakota, and the upper peninsula of Michigan. Among its strategies to achieve higher efficiencies, Coca-Cola Midwest ships their product using a transportation system the company developed called "double-bottoming." Midwest Coca-Cola also consolidated its production at a larger, more efficient bottling plant in Eagan, Minnesota.

Double-bottoming involves using two route trailers that are hooked together to transport the product from the bottling plant to distribution points within its

Figure 6

Productivity Gains for Bottling Companies Using the Rolling Warehouse Concept



market area. Such tandem trailers require high quality highways to operate efficiently and safely. In fact, current regulations restrict tandem trailers to Interstate highways, specified distances from Interstate highways, and to certain state highways.

Orders for route drivers already are loaded onto route trailers when they leave the production plant. At the distribution point, the route drivers pick up a trailer and drive their routes with their own tractors. Because the trailers are insulated and have a self-contained heating system, they also serve as rolling warehouses. The route trailers are picked up after retail deliveries are completed and brought back to the bottling plant.

The efficiencies from double-bottoming derive from reduced product handling costs, reduced overall mileage, and increased route driver productivity (Figure 6). The product is handled only once, instead of loading the product onto trucks at the bottling plant, unloading it at a warehouse or distribution center, and reloading it onto route trucks for delivery to retail outlets. Using tandem trailers on deliveries to distribution points creates savings on total mileage the product is transported. Route drivers can immediately begin deliveries and no longer incur the waiting time previously necessary for loading route trucks at warehouses. Other savings arise from the ability to eliminate remote warehouses and their associated costs, including inventory and labor costs as well as property taxes.

Campbell Soup Company *Supply Chain*

Over the last four-five years, Campbell has embarked on a just-in-time (JIT) delivery program for its food production operations. Part of a wider corporate program to improve quality and productivity, the goal of JIT is to receive incoming materials just prior to production in appropriate quantities and meeting quality standards. Accompanying the JIT program is Campbell's Select Supplier program, whereby Campbell works with vendors to achieve quality assurance from its ingredient and packaging suppliers.

Optimizing productivity gains from JIT deliveries requires reliable transportation. Because rail transportation did not provide the needed reliability, Campbell gradually switched from rail to truck. Much of the incoming supplies to Campbell's production plants are now delivered by truck and some plants actually have eliminated rail deliveries. Because most of Campbell's production plants are not located in urban areas, highway congestion has not been a serious problem for its JIT delivery program.

Together, Campbell's JIT and Select Supplier programs have reduced costly inventories, waste, and handling costs. The greater reliability and reduced travel time achieved with truck transportation allowed Campbell plants to achieve faster turnover of inventory and as a result, carry less inventory. Previously, Campbell's quality control program involved repetitive inspections of supplies after delivery, with rejections that could disrupt production and necessitate large inventories. Now JIT delivery of quality assured supplies contributes to overall productivity gains in the production process. Campbell also believes that using fresher raw materials results in the highest quality product and increases customer satisfaction.

Dole Fresh Fruit
Highway Access to a Port

Because the Port of Wilmington, Delaware, has excellent highway access, the majority of all general cargo moves in and out of the port by truck. Improvements to secondary roads serving the port have complemented the growth of banana importing operations at Wilmington. As a result, Wilmington is now the largest banana port in the world.

There are two access roads to the port. Terminal Avenue connects to Interstate 495 within 1/4 mile of the port and Christina Avenue provides truck access via local roads. These access roads have been widened to accommodate truck traffic, regraded, and resurfaced. Smoother traffic flow because of these improvements leading to more efficient operations for all companies using the port. Dole Fresh Fruit is the major commercial enterprise at the port. Improved truck traffic flow led to more effective operations at their banana importing terminal.

Aladdin Mills
Effective Transportation Network

Aladdin Mills is a carpet manufacturer in Dalton, Georgia. Dalton has excellent access to a major Interstate (I-75), nearby railyards in Chattanooga, Tennessee, air services in Atlanta, Georgia, and ports in Savannah, Georgia, and Charleston, South Carolina. Because of its highly developed transportation infrastructure and high manufacturing base, Dalton also has a very competitive trucking market with unrivaled freight rates.

Aladdin takes full advantage of the dependable transportation system available to the company. Aladdin owns its own warehouses (mini-distribution centers) in New Jersey, Ohio, Illinois, and Florida. Most of the carpet produced by the company is shipped long distance by truck to these warehouses. The Interstate highway network is very important to making Aladdin's carpet competitive in its U.S. market. Aladdin recently increased its exports of

carpet. Excellent highway access to the ports of Savannah and Charleston via the Interstate highway network also helps make the company competitive in its overseas market. Highway access to railyards (Norfolk-Southern and CSX) and air services in Atlanta is also excellent, when needed by the company.

Although not as obvious as these other transportation advantages, the good highway system allows labor access from adjacent communities. This gives the company, which employs roughly 1,700 at the Dalton mill, access to a wide labor pool.

R.D. Werner Company *Reduce Bottlenecks in Production*

R.D. Werner Company is located in Mercer County in northwest Pennsylvania. The company manufactures metal extrusions for ladders, radios, and car alternators, among other products. With the relocation of State Route 4017 (Werner Road), Werner will be able to increase efficiency in production and expand its operations to producing finished products (ladders). Previously, orders for finished products had to be contracted to other companies.

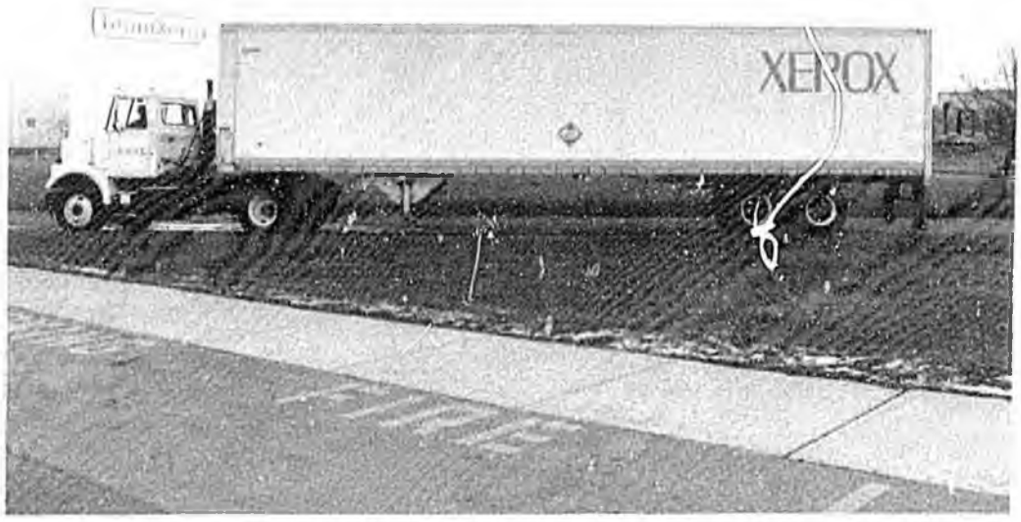
Werner receives raw materials at the north end of the plant and ships products from the southern end. Until one year ago, State Route 4017 ran through the middle of the quarter mile long, two building plant. As Werner's production increased, the limited space restricted options for efficiently organizing production and caused bottlenecks in production.

Bottlenecks in production occurred when an extrusion was completed at one end of the plant and had to be transported the long distance of the plant to the southern end to be shipped. This wasted labor and machinery hours as large extrusions were moved with fork lifts to the other end of the plant to get them out of the way, while other parts scheduled for the same shipment had to be transported later when they were finished. With State Route 4017 now rerouted around the side of the plant, Werner will be able to increase its plant size by 30 percent—a 140,000 square foot increase. This will enable them to organize production in a more efficient manner. Expansion of the plant also will add flexibility to what gets produced by allowing Werner to begin production of finished products.

Xerox Corporation *Long Haul Trucking*

Xerox manufactures photocopiers in Rochester, New York. To serve a nationwide market, Xerox has three distribution centers in Rochester, New York, Dallas, Texas, and Sante Fe, California. Xerox ships copiers from its manufacturing plant to the two outlying distribution centers by long haul trucking. The Interstate highway network makes it possible for Xerox to ship its copiers by truck over long distances on time and in undamaged condition.

Because customer satisfaction is a high priority for Xerox, the efficiency and reliability of long haul trucking over the Interstate highway network contributes to more productive operations for the company.



Wal-Mart Stores, Inc. *Quick Response*

Wal-Mart currently operates its discount retail stores (Wal-Mart stores, and its newer Hypermarts and Supercenters) in 29 states. The company is aggressively expanding its discount store business into new markets, with plans to be in 36 states at the end of 1990. Wal-Mart's legendary success derives from delivering better quality merchandise at lower prices and providing customers better in-stock conditions than competitors.

Wal-Mart's superior merchandise in-stock conditions depend on its distribution system to deliver merchandise to the stores. The Interstate highway network is a strategic part of Wal-Mart's distribution system. Most of Wal-Mart's merchandise moves through its regional distribution centers. Wal-Mart sites its distribution centers based on the availability of good north-south and east-west access in the nation's Interstate highway network. Merchandise is shipped from the distribution centers to the stores by truck, using the company's private fleet.

Wal-Mart's quick response program involves partnerships with suppliers to manage inventory levels in the distribution centers and stores. The goal is to electronically exchange forecasting and sales information to keep a model stock inventory in the store by using automatic merchandise replenishment. Quick response also allows the supplier to better schedule production and reduce its inventory. Although quick response can hold down inventory costs, it increases distribution costs because it requires making more frequent deliveries. Overall, the most important benefit is higher sales from better customer service.

Federal Express, Ltd. *Ground Access to Airports*

Federal Express operates on a "hub and spoke" system, which the company developed. Express mail is carried—usually by truck—from its local stations to a local or regional airport, and flown to a "hub," where the mail is sorted. When sorted mail leaves the hub, it is carried in the same fashion along the "spokes" to its destination. The major hub for Federal Express is Memphis, Tennessee, where the company originated. In addition, there are three "sub-hubs" in Newark, New Jersey; Indianapolis, Indiana; and Los Angeles, California.

Federal Express offers two types of deliveries: the P1 or overnight service, and the P2 service that promises delivery by the day after. Delivery times at hub airports are staggered or "pulsed" to make unloading and sorting at the hub more efficient. Therefore, closing times for drop-off points are also staggered, first regionally and then at stations within a given region. With so many stations throughout the nation, precise planning and arrival times are of utmost importance to the company.

Because timing is crucial, traffic congestion and ground access to airports have a major effect on efficient operation of the "hub and spoke" system. Where traffic congestion is a problem, Federal Express has trucks make fewer stops in order to arrive at stations or hub airports on time. This adds costs in terms of using more trucks and drivers as well as increasing fuel and truck maintenance costs. Where ground access to airports is inadequate, Federal Express must close its stations early to make timely truck deliveries to the airport from those stations. As such, the delivery of a Federal Express package depends on good highway access to airports.

Bank of Boston *Relocation of Back Office Activities*

With construction of Route 128 around Boston, the Bank of Boston was able to increase productivity by relocating its back office activities away from its headquarters in downtown Boston. Because of the size and nature of its financial operations, the Bank of Boston has a large number of back office employees doing paperwork. Before construction of Route 128, the bank's back office operations were scattered throughout the City of Boston because it was not possible to find affordable office space of the size required.

Construction of Route 128 and access to a commuter rail station allowed the bank to relocate its back office activities (and a few hundred employees) to Canton, a suburb of Boston. A new building is able to accommodate the entire back office operations in one location, increasing productivity by making it easier for employees to communicate with each other. In addition, office space at the new location is much less expensive than the previous downtown locations. Lower costs also result from office supplies being delivered to one location, rather than all over the city. Finally, the new location allows employees easy access by auto along Route 128 or by commuter rail.

Selected References

Measuring the effect of transportation on economic productivity is a dynamic field of research with few analytic studies older than two or three years. As a result, there are a limited number of published papers on the subject and the number grows at a rapid pace. Reports used as a source for this report are listed below.

Apogee Research, "Case Studies of the Link Between Transportation and Economic Productivity," draft report prepared for the Federal Highway Administration, (September 1990).

Apogee Research, "Enhancing U.S. Competitiveness Through Highway Investment: A Strategy for Economic Growth," prepared for The American Road and Transportation Builders Association, (June 1990).

David A. Aschauer, "Does Public Capital Crowd Out Private Capital," ***Journal of Monetary Economics,*** (October 1989), pp. 171-188.

David A. Aschauer, "Is Public Expenditure Productive?" ***Journal of Monetary Economics***, (March 1989), pp. 177-200.

Alicia H. Munnell, "How Does Public Infrastructure Affect Regional Economic Performance?" ***New England Economic Review,*** (September/October 1990), pp. 11-32.

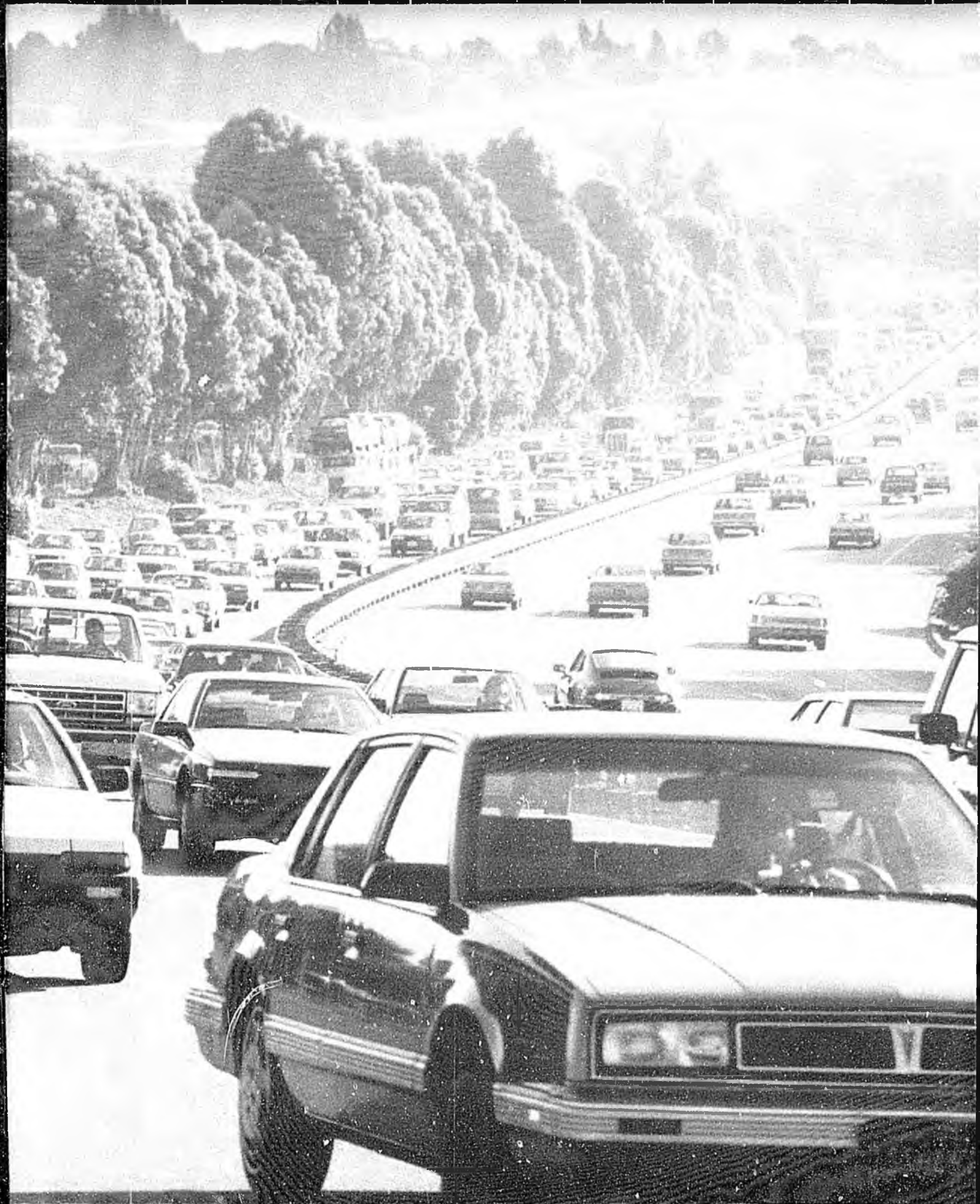
Alicia H. Munnell, "Why Has Productivity Growth Declined? Productivity and Public Investment," ***New England Economic Review,*** (January/February 1990), pp. 3-22.

Policy Implications

The link between transportation and economic productivity examined in this report has two important policy implications. First, it shows the potential gains that can be obtained by redressing the two decades of underinvestment in the nation's highways and bridges. Secondly, it shows that an effective transportation network has economic importance well beyond the immediate benefits of improved transportation services. As a result, significant increases in the overall level of investment (federal, state, local, and private) in the nation's transportation infrastructure is likely to produce high economic returns.

The report shows the importance of focusing America's transportation infrastructure policy on the long-term economic impact of an adequate national transportation infrastructure. The short-term effects of infrastructure investment already are well known. Spending on infrastructure leads to new jobs or new business locations, spreading ripple effects throughout the economy. However, because much of the nation's future economic growth will depend on using its existing resources more efficiently, providing an adequate transportation system to support gains in productivity will become increasingly important. Indeed, the effect on productivity, and in turn, long-ter: :onomic growth are the ' reasons Americans should be concerned about infrastructure investment.

More importantly, the report highlights the need to understand the importance of public capital for the profitability of private firms. Good highways serve multiple functions, allowing for access to labor and other key inputs, just-in-time inventory management, as well as reliable shipment to local, national, and international customers. Without good public infrastructure, private business would be a difficult —in some cases, impossible —task. The case studies presented in this report illustrate how an effective highway network plays and important role in private economic activity.



DEVELOPING A STATE TRANSPORTATION PLAN

Office of Strategic Management, Planning and Policy
April 30, 1991

OVERVIEW

Over the course of the last few months, department staff has been working on preparation of the State Transportation Plan. The plan is not intended to replace the capital improvement program, nor is it to be project specific. The plan is meant to be a brief, concise summary of where the department is headed and how it intends to deal with the major issues facing it in the years ahead. More importantly, what is being proposed is as much a new process as it is a written plan or product. In this respect, the project to develop the State Transportation Plan can be viewed as an effort to change the culture of the organization to be more forward looking.

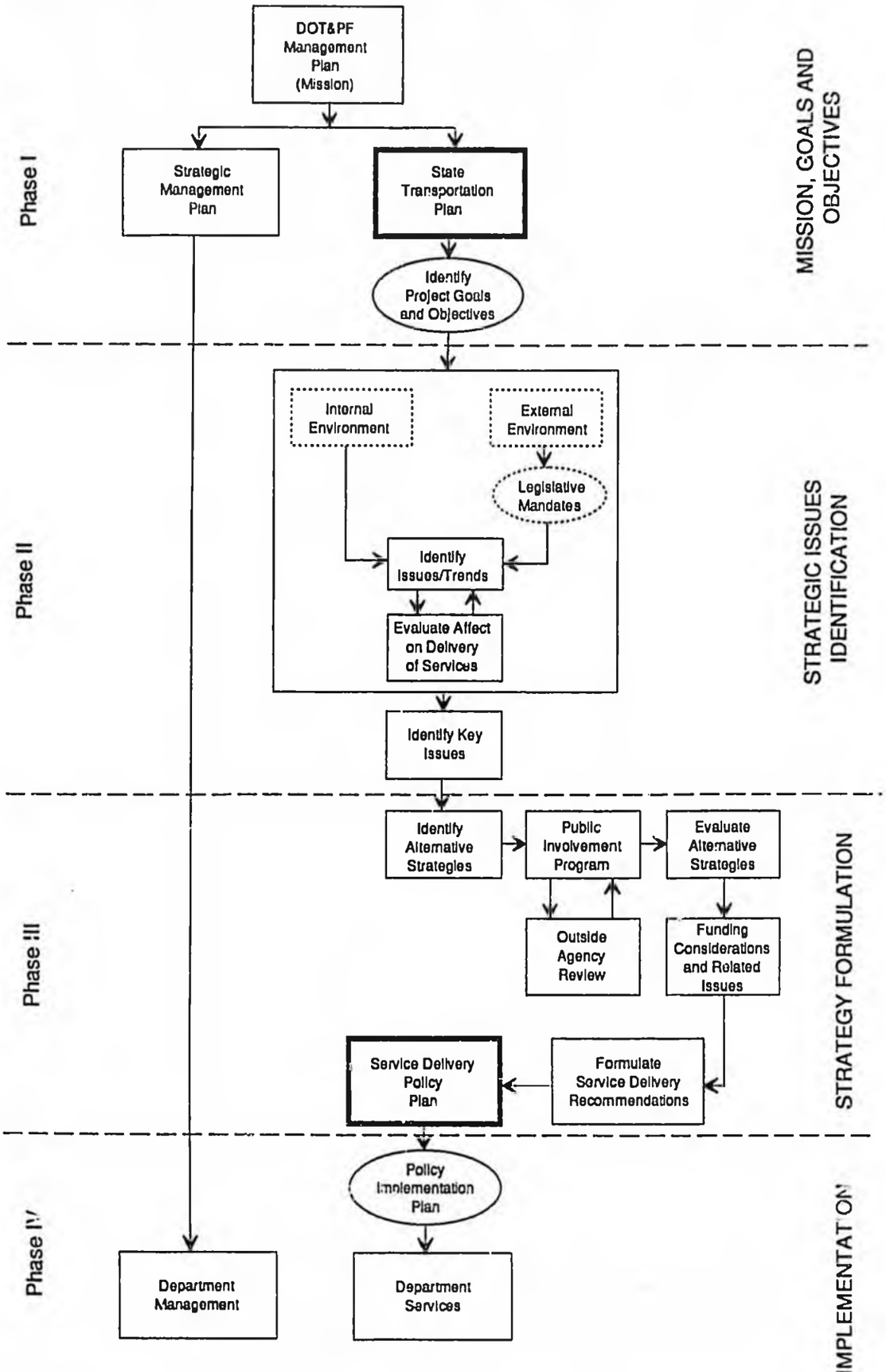
The process that is being used to build the State Transportation Plan began last June. The first task in the initial planning effort was to focus efforts on the issues expected to have the greatest impact on development of the transportation system. Four critical issues were identified: 1) What should be done to support economic development and diversification of our state's economy; 2) How can a stable and adequate funding source for capital development, replacement, and operations be created; 3) What is "appropriate" state responsibility and what can be done to facilitate the transfer of transportation facilities in which there is "no compelling state interest;" and, 4) What actions can be taken to minimize the impact of state and federal laws and regulations?

As part of the process, a strong public involvement effort was initiated. During February and March, the department solicited comments from consumers, the transportation industry, labor, business, government agencies, elected officials, environmental groups and many others to help identify options to address the four key issues. This was done by:

- Publication of a newsletter distributed to more than 300 community leaders and organizations throughout the state.
- A series of open houses held at various locations throughout the state.
- Establishment of an Inter-agency Review Committee.

Using information gathered during the outreach effort strategies will be identified to deal with each of the key issues. It is important that the plan be a document that responds to these issues with specific recommendations for action. The issuance of the plan will not mark the end of this process. The plan will become an integral part of the department's strategic management process.

STRATEGIC MANAGEMENT PROCESS
STATE TRANSPORTATION PLAN



STATE TRANSPORTATION PLAN
STRATEGIC MANAGEMENT PROCESS/NARRATIVE

Phase I/Goals and Objectives

"What is the goal of the plan?

Identify project mission, goals and objectives. This will establish the strategic direction for the development of the policy plan.

The mission statement, goals and objectives will be prepared by the Project Manager and submitted to the Strategy Managers for a preliminary review. The document will then be transmitted to the Policy Committee.

Phase II/Strategic Issues Identification

"What is going on that affects the delivery of transportation services."

Identify issues/trends important for the department if it is to meet its service delivery mission. This involves taking a quick look at what is going on in the state. This initial review will be accomplished by the Technical Review Committee. The list will be consolidated according to service delivery objectives by the Project Manager and resubmitted to the Technical Review Committee for subsequent analysis.

"How do the issues affect us?"

This task will use the Technical Review Committee to **evaluate the short-list of issues and how they affect the department's ability to deliver transportation services.** This process will analyze and forecast which of the issues/trends will be challenges and which will be opportunities, as well as assess internal strengths and weaknesses of the department in addressing these issues.

"What things are the most important?"

On the basis of the analysis conducted by the Technical Review Committee, the Policy Review Committee will then **identify a few key (strategic) issues** whose successful resolution are critical to the mission of the department.

Phase III/Identify Alternative Strategies and Formulate Recommendations for Policy Plan

"What are we going to do about it?"

The Technical Review Committee will **identify alternative strategies** for each of the key issues. This discussion will include development of criteria (brainstorming) and then some analysis of each alternative strategy using the approved criteria. This process will help define what can be achieved with respect to each key issue and how it can be achieved (strategy).

The alternative strategies will then be distributed for **outside agency review and public comment.** Review comments will be

consolidated by the Project Manager and transmitted to the Policy Review Committee.

The Policy Review Committee will **evaluate the alternative strategies.** During this review the committee will identify funding constraints and related issues needed to successfully implement the strategies. The Policy Review Committee will then **formulate service delivery recommendations** and transmit the draft document to the Policy Committee.

The recommendations will be transmitted to the Policy Committee. The final result will be release of a **policy plan** to guide the delivery of transportation services in the Alaska. The time horizon to be encompassed is long-term (i.e. the next fifteen to twenty years), but is intended to be reviewed and revised remain flexible so that shorter-term changes can be addressed.

Phase IV/Implementation Plan

"Who does what when, and what will it cost?"

Finally, an **implementation plan** will be prepared for the department. As a supplement to the transportation policy plan, this document will identify recommendations that require legislation, funding, or further study. This document will be specific about timelines, resources, and responsibilities for carrying out actions recommended in the policy plan. This document is not intended to take the place of the capital improvement program but rather guide its development. This plan will provide an initial guide for future legislative and agency actions.

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
STATE TRANSPORTATION PLAN
INTERNAL DEVELOPMENT AND REVIEW COMMITTEES

Policy Committee

Frank G. Turpin, Commissioner
M. Clyde Stoltzfus, Chief, Office of Strategic Management, Planning and Policy
Kit Duke, Regional Director, Central Region
Jim Ayers, Director, Alaska Marine Highway System

Policy Review Committee

David Hawes, Office of Strategic Management, Planning and Policy
John Martin, Chief, Planning, Research & Administrative Services, Northern Region
Mike McKinnon, Chief, Planning, Southeast Region
John Tolley, Chief, Planning & Administrative Services, Central Region
Helvi Sandvik, Manager, Statewide Aviation

Technical Review Committee

Sandy Anderson, Transportation Planner, Office of Strategic Management Planning & Policy
Bob Boyd, Maintenance and Operations, Central Region
John Campbell, Technical Services, Central Region
Dawn Mach, Transportation Planner, Plans, Programs and Budget
Stanley McAlister, Planner, Alaska Marine Highway System
Tom Middendorf, Transportation Planner, Alaska International Airport System
Jenny Olendorff, Planner, Statewide Aviation
Jerry Rafson, Transportation Planner, Northern Region
Jonathan Widdis, CIP Planning Chief, Northern Region

Alaska Department of Transportation and Public Facilities

State Transportation Plan Notes

Issue No. 3 January, 1991

WHAT IS IN STORE FOR THE FUTURE FOR OUR ROADS, AIRPORTS, AND HARBORS?

Providing a safe and efficient transportation system to serve Alaskans in the future is a priority. But limited funding, combined with the addition of a significant number of miles to the road network, and increased aviation and marine traffic are placing increasing demands on the transportation system. Unless action is taken now, our transportation system will not meet the demand.

WHAT ARE THE MOST CRITICAL ISSUES WE MUST FACE?

Four important issues related to transportation need to be addressed by state policymakers.

Support of Economic Development and System Expansion

As Alaska works to diversify its oil-dependent economy, we look to our other natural resources and how we can make our strategic Pacific Rim location work for us. Well-planned harbors, docks, roads, and airports will help us toward that diversification.

However, experience has shown that, in the absence of other economic incentives, the presence of infrastructure alone does not lead to development. We must plan for a transportation system that targets market opportunities, allows for growth and flexibility, and most importantly, one that isn't based on wrong assumptions. The state can't afford to build transportation infrastructure on speculation any more--we can't afford the financial risk.

What actions should the department take to support economic growth in Alaska given the number and variety of available transportation improvements associated with economic development opportunities and competing demands for public funding to support those improvements?

Stable and Adequate Funding for Capital Development, Replacement and Operations

Unlike most states where user taxes and fees--motor fuel taxes, motor vehicle registration fees and other special taxes--are the funds used to support transportation system improvements, Alaska's user taxes and fees meet only a small fraction of the cost. The state receives approximately 85 percent of its general revenue from petroleum taxes and royalties.

Alaska's good fortune resulting from the oil finds of recent years is well-known. The wealth was so great at one time that the state eliminated personal income taxes. In early 1986, however, the price of oil dropped. Oil industry employment declined rather than increased, and state government was in a tenuous financial situation. Then, in August, 1990, Iraq invaded Kuwait and oil prices soared once again.

The department is limited to funds from general appropriations to finance on-going investment in capital improvements as well as maintenance and replacement of facilities. The repeated episodes of "boom and bust", as the price of oil moves up and down, do not provide stability of resources to meet this need.

What actions should the department take to pursue stable and adequate funding for capital development, replacement and operation of the transportation infrastructure?

State and Federal Laws and Environmental and Regulatory Impacts

Several important environmental and regulatory issues continue to be of concern to transportation, including: failure to meet air quality standards in urban areas; clean-up of surface contamination and leaks from submerged tanks and containers in transportation rights-of-way; and wetlands preservation activities.

What actions should the department take to minimize the impact of state and federal laws and regulations on the cost of development of the transportation system while still maximizing the benefits of an efficient transportation system?

Appropriate State Responsibility for Transportation Services

In July, 1988, the Governor's Task Force on Transportation Facilities compiled a report on the delivery of transportation services in Alaska. The task force recommended a realignment of responsibility, clarification of areas of responsibility and transfer of some transportation facilities from the state to local governments.

What actions should the department take to define "appropriate state responsibility" for the provision of transportation services and what can be done to facilitate the transfer of transportation facilities in which there is "no compelling state interest" to local government?

STATE GOVERNMENT ALONE CAN NOT SOLVE THE PROBLEMS

Leadership and vigorous action at the state level are necessary, but state government cannot and should not be expected to shoulder the full responsibility for development and implementing a plan of action. A partnership of the public sector at all levels of government and private enterprise will be needed.

YOU CAN HELP IDENTIFY A FUTURE COURSE OF ACTION

We become so familiar with our job that what used to be done, tends to become a fixed procedure. We keep doing things the same way, over and over. But with your help, we can explore new solutions to our problems.

It is our goal over the next two months to identify a range of options that might be appropriate and select a future course of action that will best improve the quality of service to you.

We will solicit the views of many groups to help identify alternatives for the future--alternatives that might take us in new directions. Plans call for a number of meetings to be conducted in a variety of locations around the state in February.

A calendar will be mailed to you soon with meeting dates and locations. If you have questions regarding the meetings, please write or call Janet George, Project Manager, at (907) 266-1442.

NEW DIRECTIONS AND NEW OPPORTUNITIES

There is no simple, permanent solution to the problems that we face. To manage a department so complex, an endless series of choices must be made. This is why your participation in helping us set our future direction is so important.

No matter how much money the state has, resources will always be limited. As a consequence, the state should always do "the most important things" first. Adhering to this principle confers on the department the responsibility for developing ways to choose wisely among possible alternatives.

There is no simple permanent solution to the problems we face. However, unless we plan now with vision and enduring commitment to provide for the needs of future generations, the benefits of the transportation system that we now enjoy will be gone forever.

Frank G. Turpin
Commissioner

Alaska Department of Transportation
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Alaska Department of Transportation and Public Facilities

State Transportation Plan Notes

Volume 1, No. 2 December 1, 1990

ALASKA IS UNIQUE

One of the greatest differences between Alaska and the rest of the nation is that the majority of Alaska's communities are not connected by a road system. The remoteness of some places, the water barriers and the difficulty of crossing the terrain have made road connections either impossible or too expensive to construct. Instead, Alaska has come to rely on a system of ferry routes and an extensive system of airports to help meet transportation needs.

While service needs and statutory mandates to provide services have continued to expand, revenues to support this diverse system have declined. The challenge is to find ways to ensure the provision of high quality services in an era characterized by continuing cost increases and declining revenues.

STATE TRANSPORTATION PLAN TO FOCUS ON FUTURE NEEDS

To meet this challenge, the department has initiated preparation of a State Transportation Plan. The intent is to focus actions on the fundamental responsibilities of the department so that investments are made wisely in the future.

This project is being undertaken in an effort to anticipate and better understand the significant issues which are likely to impact the delivery of services and performance of the system in the future. An understanding of these issues is essential if the department, and state government as a whole, is to identify a strategy that meets transportation needs in the future.

In this period of change, perhaps the worst mistake that can be made is assuming that things will stay as they are. Limited resources require careful choices to be made. New directions may be necessary.

STRATEGIC PLANNING PROCESS

Developing and implementing a plan will not be an easy job. It will require the cooperation of all levels of government, business, labor, and transportation users.

Above all, in developing the plan, we must think *strategically*. Strategic planning is a technique which focuses resources on a handful of things that are most important to future success. This type of planning also requires one to examine resource use and economics regionally, nationally, and even internationally. Business has long used strategic planning to prepare for the future. Government planning--transportation planning, in particular--can benefit by strategic thinking as well.

The strategic planning process we are using to build the State Transportation Plan consists of a variety of activities:

Identify Key Transportation Issues

The first step, which the department has already begun, involves taking a look at what is going on in the state that affects the delivery of transportation services. Our first product, *Challenges Facing The Delivery of Transportation Services in Alaska: An Identification of the Issues* is an overview of the current situation. There is considerable diversity in the issues affecting the department: system expansion needs; environmental concerns; safety concerns; stable funding sources; support to economic development activities; and preservation needs.

The second step is to evaluate how these issues affect the department's ability to deliver transportation services. This step will identify opportunities as well as challenges facing the department in the delivery of services. It is important to examine economic trends within the state, trends in the regulatory environment, as well as numerous other factors. This type of analysis provides a realistic look at the relationship between opportunities and challenges facing the department.

On the basis of the evaluation, a few key (strategic) issues will be identified. The key issues will become the focus of the plan. This focus will help set priorities so efforts can be concentrated on those issues thought to have overriding importance and which the department can affect.

Solicit the Views of Transportation Users and Providers to Identify Alternative Strategies

The private sector as well as local governments are essential partners in building a State Transportation Plan. Consumers, the transportation industry, labor, business, government agencies, elected officials, environmental groups and many others have valuable knowledge and perspectives to contribute to this effort. So does the State Legislature, its key transportation committees, and other state agencies.

It is our goal, by reaching out to all transportation users and providers, to broaden the department's knowledge and heighten our awareness to the needs that our statewide transportation system must serve.

During the late fall and winter, the department will solicit the views of these groups to help identify alternative strategies to address each of the key issues. Various outreach efforts, such as this newsletter, will be used to reach as many people as possible. In addition, a series of meetings will be held at various locations around the state. Meeting dates and locations will be announced later.

Formulate Recommendations for the State Transportation Plan

Using the information gathered from the agencies, transportation users and providers, and other groups the department will prepare a draft State Transportation Plan for presentation to the new Governor and the Legislature early in 1991. The draft document will be used to help facilitate the transition to the new administration.

Alaska Department of Transportation
& Public Facilities
P.O. Box Z
Juneau, Alaska 99811

The plan is viewed as a begining step more than an end product. Our goal is to lay the groundwork so that the new administration will have a headstart on the difficult job ahead.

Implement the Strategies and Plans

The final phase of the project will be to prepare an Implementation Plan. It will identify specific recommendations that require legislation, funding or further study to complement the department's capital improvement program. The Implementation Plan will serve as a guide to identify actions for addressing the transportation strategies developed in the plan.

WHAT YOU CAN DO TO PARTICIPATE

You are invited to participate in this effort. You can: **Attend a community meeting; provide written comments to the department (see address below); or, write or call Janet George, Project Manager, at (907) 266-1442.**

There will be difficult trade offs in the future allocation of our limited transportation resouces. It is important that the resources available to the department be directed to meet the department's mission **"to cost effectively provide, operate and maintain safe, environmentally sound and reliable transportation systems and public facilities for the State of Alaska".**

I hope that all interested groups and individuals will take advantage of this opportunity to contribute their views on the future of transportation in Alaska.

Mark S. Hickey,
Commissioner

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

STATE TRANSPORTATION PLAN NOTES

Volume I, No. I September, 1990

The Alaska Department of Transportation & Public Facilities is one of the most comprehensive transportation agencies in the United States. The state has responsibility for 5,500 miles of roads, two international airports, 270 smaller airports, a fleet of ferry vessels, 80 ports and harbors, and more than 500 public buildings.

You cannot pick up a newspaper today without some reference to the crumbling, deteriorating condition of our highways, airports, ports and harbors. The host of issues that has been laid on the table is mind-boggling: environmental concerns; system expansion needs; safety concerns; stable funding; reconstruction; and so on.

In Alaska, issues relating to our transportation system are becoming so complex and so costly that we must face up to the situation if we are to survive economically. It is no longer a matter of trying to get "a little more for a little less". Economic growth and a stable quality of life will rely upon the existence of an adequate transportation system.

Too often in the past we have looked at airport or highway development separately from their relationships to other modes. We have dealt with our transportation system and our public facilities as if they were all operating in isolation. That is clearly short-sighted. The relationships are very intricate. They must be recognized and built upon.

The published *State Transportation Policy Plan* has not been revised for almost a decade. This causes an unfortunate lapse in communication with the legislature and the public. There are two major activities in which the department has recently engaged to overcome this problem.

NEW UNIT ESTABLISHED AT DOT&PF

First, a new unit has been established within the Commissioner's Office by reassigning existing department resources. Major duties of the Office of Strategic Management, Planning and Policy will be to oversee and coordinate statewide planning, and provide policy development support for the department.

TRANSPORTATION POLICY PLAN INITIATED

Second, development of a multimodal state transportation policy plan has been initiated. The intent in this strategy is to focus on the fundamental responsibilities of the department so that investments and resource allocation decisions are made wisely in the future.

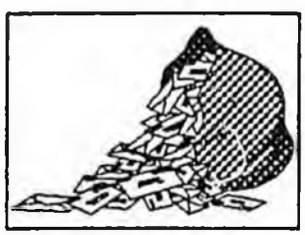
Overall responsibility for preparation of the state transportation plan is being shared by Clyde Stoltzfus (465-3900) and Kit Duke (266-1440). Clyde is the Chief of the new Office of Strategic Management, Planning and Policy, and Kit is the Regional Director, DOT&PF Central Region. Preparation of the document is to be aided by the help of a technical committee of department personnel. Janet George is the Project Manager (266-1442).

A draft of the plan is to be available in December. This first phase is viewed as a beginning step more than an end product. Our concentration is in laying the groundwork so that the new administration and legislature will have a framework for stating their own transportation policy.

Publication of the statewide transportation plan will not end with this effort. The plan is to become a biennial activity of the department, better communicating information on development needs to the Governor, the Legislature, and the public.

An effective transportation plan is more than bricks and mortar. It is more than airports and highways, or ports and harbors. It is more than railroads and pipelines. A balanced transportation system is one that recognizes the relationship between transportation facilities, land use, economic development, urban and rural development and environmental protection. A healthy transportation system contributes greatly to the quality of our lives.

A long-range plan is important since it can identify priorities for funding so that in future years the department can focus limited state and federal financial resources where state government responsibility is most appropriate, and where the greatest public benefit can be achieved.



Over the course of the next four months there will be a variety of opportunities to exchange information and discuss issues regarding future transportation policy planning.

There will be difficult trade-offs in the future allocation of our limited transportation resources. It is important that the resources available to the department be directed to help meet the department's mission ***"to cost effectively provide, operate and maintain safe, environmentally sound and reliable transportation systems and public facilities for the State of Alaska".***

Over the course of the next few months we will use this newsletter format to inform you of our progress.

Mark S. Hickey
Commissioner

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OFFICE OF THE COMMISSIONER

July 30, 1990

TO: Local Elected Officials

FROM: Mark S. Hickey, Commissioner MSH

RE: State Transportation Plan

You cannot pick up a newspaper today or a major weekly or monthly magazine without some reference to the crumbling, deteriorating infrastructure of our highways and airports. The host of issues that has been laid on the table is mind-boggling: environmental concerns; safety concerns; funding; restoration, and so on. But I do not need to say this to you. As community leaders you are well aware of the problems.

In Alaska, problems relating to our transportation system are becoming so complex and so costly that we must face up to the situation if we are to survive economically. It is no longer a matter of trying to get "a little more for a little less". The state has responsibility for 5,500 miles of roads, two international airports, 270 smaller airports, a fleet of ferry vessels, 80 docks and harbors, 500 public buildings, and a railroad. If you look 20 years from now in transportation, hundreds of millions of dollars are at stake.

Too often in the past we have looked at airport or highway development, or facility construction separately. Rarely have we taken into account their interrelationships. We have dealt with our transportation system and our public facilities as if they were all operating in isolation. That is clearly short-sighted. The relationships are very intricate. We need to recognize and build on these relationships.

To put "our house in order", especially on a tight budget, we need a plan. We can't simply go in and replace the plumbing, electricity, and the boiler. We don't have the resources to do everything we want right away. So like any family on a budget, we must identify our needs carefully and make prudent investments. Only by operating in this way will our transportation policy promote long-term efficiency and better management of the transportation system.

The published State Transportation Policy Plan has not been revised for almost a decade. This is an unfortunate lapse in

communication with the legislature and the public. There are two major activities in which the department has recently engaged to overcome this problem. First, a new unit has been created within the Commissioner's Office by reassigning existing department resources. Major duties of the Office of Strategic Management, Planning and Policy will be to manage the department's strategic management process, oversee and coordinate planning statewide, and provide policy development support for the department. I believe this change will result in a more focused and responsive organization.

Second, I have identified the need to develop a multi-modal state transportation plan as a high priority. Overall responsibility for preparation of the state transportation plan is being shared by Clyde Stoltzfus, Chief, Office of Strategic Management, Planning and Policy and Kit Duke, Director, Central Region. Janet George, DOT&PF Central Region Planning, has been selected to act as Project Manager for preparation of the initial document.

One goal of the effort is to devise a systematic means whereby the general public have the opportunity to provide input into the department's planning and policy processes. A draft of the plan is to be available in December. The draft document will be used to help facilitate the transition to the new administration. This first phase is viewed as a beginning step more than an end product. Our concentration is in laying the groundwork so that the new administration will have a head-start on the effort.

We must recognize that an effective state transportation plan is more than bricks and mortar. It is more than airports and highways. It is more than ports and harbors. It is more than railroads and pipelines. A healthy transportation system makes possible the efficient exchange of products and services, allows greater opportunities for tourism and recreation, boosts economic activity, and affords an important source of existing and new jobs. A specific goal of the new plan will be to provide policy guidelines on the role of transportation in economic development activities.

Public participation, as any elected or appointed government official can tell you, is absolutely key to the success of such an effort. As policymakers and transportation officials we cannot ignore the importance of the public in this effort. I believe that you, locally elected officials, can be especially helpful in informing the public about this transportation planning effort and encouraging their participation.

Over the course of the next six months there will be a variety of opportunities to exchange information and discuss issues regarding future transportation policy planning. Your support in this effort is important to me and to the future of the state. I hope you will give some thought to the difficult trade-offs we must face in the allocation of our limited transportation resources. The decisions ahead will not be easy to make and many people will be affected by what we do today to solve our problems.

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CHALLENGES FACING THE DELIVERY OF TRANSPORTATION SERVICES IN ALASKA: AN IDENTIFICATION OF THE ISSUES

GENERAL CATEGORIES	SPECIFIC CATEGORIES	ISSUES
GEOGRAPHY	Geographic Diversity	Should the department establish guidelines or standards to determine the minimum level of service required to adequately serve these diverse communities?
		Can the department afford to provide multimodal transportation services to each of these communities in the future?
	Global Location	How can the department ensure that there is adequate and adequately maintained infrastructure to meet transportation needs, including the need to connect with the global marketplace and the evolving world economy?
		How can the transportation system support national security goals and emergency transportation requirements in the event of armed conflict?
	Intermodal Demands	How can the department improve intermodal connections?
DEMOGRAPHIC AND ECONOMIC GROWTH	Population Growth	What are the impacts of population and economic growth on the delivery of services?
LAND OWNERSHIP AND USE	Federal Ownership	What are the most effective ways of dealing with land use conflicts on federal inholdings?
	ANCSA	To what extent do the ANCSA provisions stimulate or impair development of the rural transportation network?
	Adequate Title Interest	Should the department reevaluate the need for fee title acquisition of lands for transportation infrastructure?
	Surveying, Mapping & Monumentation	How does the department ensure that there is adequate surveying, mapping and monumentation of public rights of way?
	Real Property Management	Should the department promote a system of real property management? And, how can this be done fairly?
	Public Land Order and Other Right-of-Way Reservations	To what extent do these reservations impact the development of the transportation system?

	Reserved Estates	What role should the department take in securing these estates? And, at what cost?
	Local Platting & Zoning Compliance	How can the department improve coordination with local governments in the course of project development?
	DNR/DOT&PF Land Management Responsibilities	How can this duplication of service be minimized?
JURISDICTIONAL RESPONSIBILITY	Transfer of Responsibility	How should the financing responsibility be allocated between local and state government and the private sector?
	Functional Classification and Administrative Jurisdiction	Should there be a more active department role in standardizing functional classification of the transportation system to identify more important facilities or more critical needs?
FINANCIAL RESOURCES	Budget Crisis	Should the department pursue a stable funding source?
		What are the barriers to establishment of such a funding source?
	Federal Program Receipts	Should the state augment its current improvement capabilities through the establishment of a state funded transportation improvement program?
	Federal Program Criteria	How does the department ensure that there is an adequate operating budget to maintain the federally-funded capital improvements and meet our grant obligations?
	Design Standards	How much flexibility is available to the department to apply innovative design solutions to construction?
		How would any deviation from standards affect liability?
	User Costs	Are user charges applied appropriately?
		How should costs of transportation services be assigned between users and non-users?
		To what extent could innovative financing techniques, including developer's fees, contribute to infrastructure financing?
	Tax Policy	To what extent should the department

		lobby for changes in state tax policy to finance capital and operating costs of the transportation system?
		To what extent do existing policies stimulate or impair competition between and within modes?
	Deferred Maintenance/Infrastructure Disinvestment	How do the department ensure that there is adequate and adequately maintained infrastructure to meet transportation needs?
	Distribution of Resources Within the State for Construction of Capital Improvements	How can the department ensure that investment is directed wisely and that financing decisions balance competing priorities—capacity expansion versus rehabilitation, urban highways versus village airports?
	Local Service Roads & Trails Program	Should the department pursue reestablishment of the LSR&T program?
	Alaska Constitution	Should the department propose a constitutional amendment that dedicates transportation revenues solely for transportation purposes?
	System Expansion	What are the barriers to expanding the existing systems, and how might those barriers be overcome?
	Provision of Emergency Transportation Services	How can the development of the transportation system help meet the needs of emergency transportation service providers?
	Provision of Transportation Services to Major Recreation Facilities	Should the department enter into cooperative agreements with other agencies to provide specialized services, such as maintenance of park roads and parking areas, etc?
ENGINEERING AND ENVIRONMENTAL CONSTRAINTS	Climate	What further research is needed to meet the climatic challenges of this state?
	Permafrost	How should the department use its resources to promote innovation in ways to deal with this engineering hurdle?
	Global Warming	What is the effect of global warming on performance of the transportation system?
	Earthquakes	How can the department mitigate the risks associated with this phenomenon?

	Construction Camps	How can the department best balance the concerns of labor and the work place?
REGULATORY POLICIES	National Environmental Policy	How can the department balance the conflicting demands for a quality environment with the need for responsive, inexpensive transportation?
	FAA Security/Safety Programs	If the department is forced to comply with the more stringent regulatory requirements, our operating costs at many airports would increase substantially. What course of action should the department pursue in complying with this regulation? And, at what cost?
	Disadvantaged Business Enterprise/External EEO Programs	How can the department fairly meet DBE/ExEEo goals in the future?
	Encroachments/Trespass	What are the most effective means of dealing with violations?
	Utility Relocation	Should the department continue to bear the entire financial burden for utility relocation within state right-of-way? And, at what cost to other transportation improvements?
	Motor Carrier Regulation	Given the differences among modes and their user fees (taxes), how can enforcement be don fairly, without inappropriate competitive advantages for one mode over another?
POLITICAL ENVIRONMENT	Short Time Horizons for Decision making	What strategy is available to the department to minimize this shortcoming?
	Rights-vs-Responsibilities	A key transportation issue is what level of transportation service is a public sector respensibility, and how should that responsibility be divided among local and state government?
	Environmental Activism	How can the department work cooperatively with environmental activists in achieving environmental goals?
ORGANIZATIONAL ENVIRONMENT	Leadership Turnover	How can the length of this transition period be minimized?
	Strategic Management Process	What innovative techniques are available through this process to improve the organizational management?

	General Efficiency	To what extent should management information system be used to improve planning, design and construction management?
	Program Development Cycle	What changes might be accomplished in the budget or management process to reduce this lengthy development cycle?
	Training and Productivity	How can the department meet the manpower loss of the RIP program?
	System Management	Are there significant other gaps in current data resources that hamper research and development efforts and innovations?
	Accountability to the Public through Improved Reporting	How can the department improve the assembly, management, transmission, and analysis of transportation-related data to make it more understandable too the public?
	DOT&PF Legal Services	What are the barriers to overcoming the fragmentation between the two departments?
AVAILABILITY OF ENERGY FOR TRANSPORTATION		How should the department address the need to conserve the use of transportation energy within the state in the next decade?
SPECIAL TRANSPORTATION NEEDS		How can the transportation network better respond to the special needs of elderly, disabled and low-income travellers? Who should bear the cost of such service?
TECHNOLOGY		How can the department better prepare itself to be responsive to technological innovation and impact on the transportation system?

STATE TRANSPORTATION PLAN

Background Report

CHALLENGES FACING THE DELIVERY OF TRANSPORTATION SERVICES IN ALASKA: AN IDENTIFICATION OF THE ISSUES

Department of Transportation & Public Facilities
Mark S. Hickey, Commissioner

Revised
November, 1990

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CHALLENGES FACING THE DELIVERY OF TRANSPORTATION SERVICES IN ALASKA: AN IDENTIFICATION OF THE ISSUES

The first half of the 1980's brought Alaska a tremendous economic boom. Alaska's state government created that boom by pumping tens of billions of dollars in oil revenues into the economy within a few years. High North Slope oil production and high oil prices made the State of Alaska wealthy during the first part of the decade, and it spent its oil wealth in ways that reached throughout the economy. During that time, the transportation infrastructure grew at an unprecedented rate.

By late 1985 Alaska's economic picture was changing. Oil prices had been drifting down since 1982, and by mid-decade a drop in state spending had already started an economic slowdown. In particular, construction began a steep decline. In the spring of 1986 oil prices crashed, and the slowdown quickly became a recession as state revenues and spending dropped.

The 1990's have produced a clearly different environment for the state. Service needs and demands have continued to grow, while revenue increases have declined in absolute and real terms. At the same time, statutory mandates to provide services have increased. Management's present challenge has been to find creative ways to ensure the provision of high quality services in an era characterized by continuing cost increases and stable or declining revenues.

The effort to maintain and expand the transportation infrastructure is complicated by the impact of a growing number of complex issues. As a result, the department has initiated the preparation of a State Transportation Plan that will provide a comprehensive, multimodal policy review of Alaska's transportation system from a statewide perspective. This is being done in an effort to anticipate and better understand significant issues which are likely to impact services and performance in the near future.

An understanding of these issues is essential if the Department of Transportation and Public Facilities (DOT&PF) and state government as a whole are to identify a realistic strategy to meet its total transportation

needs in the future. These issues will influence the development and implementation of state policies, plans, and programs, extending far beyond the transportation system.

1982 STATE TRANSPORTATION POLICY PLAN

The 1982 State Transportation Policy Plan identified a number of major issues affecting the development of Alaska's transportation system. Those issues are identified in Table 1.

The issues, as identified in the 1982 Policy Plan, still exist. What has changed--the economic climate, energy and environmental concerns, demographic trends and population distribution--does not mandate wholesale adjustments because of those changes. They do indicate, however, a need to reexamine the previous analysis, and perhaps to redirect, expand, or change emphasis.

ISSUE IDENTIFICATION PROCESS

The function of forecasting the future is often less a matter of scientific precision than of human judgment and intuition. To aid in the issue identification process the department has established both a Technical and Policy Review Committee. This multiple team approach is intended to build on the knowledge of many people within the department who can bring a variety of points of view to the process.

The first step in the issue identification process is to review previously published reports (i.e., system and regional planning studies, Transition Report, Management Plan, Crossroads Report, etc.). Numerous issues have been identified in the reports that impact the department's ability to deliver transportation services. This report is a compilation of that material.

Next, the Technical Review Committee will review the background report and identify and describe any issues that should be incorporated in the document. To develop a workable list, the "long-list" will be narrowed by the Project Manager to concentrate on those issues that relate to the service delivery objectives which frame the project's goals and objectives. The "short-list" will be returned to the Technical Review Committee for subsequent analysis.

The Technical Review Committee will identify the forces affecting these issues and identify strengths and weaknesses (internal), along with opportunities and challenges (external). The Technical Review Committee evaluation will be transmitted to the Policy Review Committee. On the basis of the information presented in the evaluation, the Policy Review Committee will identify a few *key issues*. The key issues will become the focus of the plan.

Table One

STATE TRANSPORTATION POLICY PLAN, 1982
Major Issues

State Transportation Related Issues: Regional and local issues were identified in the modal, regional and local planning studies and reports.

Development of an Integrated Transportation System in Alaska: Many cases have been identified where the service between communities in Alaska is not convenient, not available on an equal basis, or otherwise lacks high quality.

Role of the Public and Private Sectors in Providing Transportation: Which roads should be state highways or which airports should be financed by the federal government.

Distribution of Transportation Development Resources Between Rural and Urban Areas: Most of Alaska's population growth is expected to occur in the metropolitan areas. Yet, tourism, agriculture, mining, forest products, fisheries and other industries vitally important to Alaska's economy are largely located in rural areas.

Energy Considerations: Alaska's transportation system consumes about thirty-eight percent of the total energy used in the state. This suggests a fertile area for energy conservation.

Economic Development and Land Use: Population growth, economic development and land use patterns are primary determinants of future travel. Because of these interrelationships, public policies and statutes concerning growth and land use are extremely important in providing future directions for the transportation system.

Consideration for Transportation Access Across Federal Lands: Access is a legal right to use certain lands for a specific purpose and access across federal to state, native and privately held lands is a prominent issue.

Transportation for the Disadvantaged: Disadvantaged persons include the handicapped, elderly, young and those with low incomes. Many of these persons are unable to use automobiles and do not have alternative forms of transportation available to them.

Socio-Economic Considerations: With vast areas of undeveloped and unsettled lands, many Alaskans follow a lifestyle that includes varying degrees of subsistence. The movement of people and goods needed to compliment this lifestyle must be considered when evaluating transportation demands.

State Transportation Policy Plan, 1982, pp. 8/1-7.

This process will help set priorities so efforts can be concentrated on those issues thought to have overriding importance and which the department can affect. The issue agenda is expected to evolve and change with time but this initial effort offers a framework to begin work.

CURRENT ISSUES/AN OVERVIEW

Will today's transportation policies and infrastructure meet tomorrow's needs? Indeed, how well are we meeting today's needs? Transportation plays a vital role in advancing Alaska's future economic development. A responsive, well-maintained, and efficient transportation system can further economic growth and increase the state's competitiveness in the global market place. The desired goal "the department is committed to achieve in the future" was described in the FY'90 & '91 Management Plan:

MISSION STATEMENT

To cost effectively provide, operate and maintain safe, environmentally sound and reliable transportation systems and public facilities for the State of Alaska.

Alaska needs a transportation policy that will help meet this goal. The policy must be a strategic approach based on cooperative public and private action. Businesses rely on strategic planning to think ahead, to identify priorities, and to position themselves for the future. Government policy--transportation policy--must be driven by strategic thinking as well.

Strategic management focuses attention on the recognition and resolution of "strategic issues." Strategic issues include "actual or anticipated conditions, internal or external to the department, that have or will have a significant influence on the department in terms of its functioning or its ability to achieve a desired goal in the future." This document provides an overview of the trends and factors that shape transportation in Alaska both now and in the future. The issues are arranged according a few broad categories to stimulate and focus discussion:

- Geography
- Demographic and Economic Growth
- Land Ownership and Use
- Jurisdictional Responsibility
- Financial Resources
- Engineering/Environmental Constraints
- Regulatory Policies
- Political Environment
- Organizational Environment

- Availability of Energy for Transportation
- Special Transportation Needs
- Technology

☑ ISSUE AREA: GEOGRAPHY

Adequate transportation services are essential for the residents of Alaska to maintain and expand the economy of the state. Providing adequate transportation services in Alaska is more difficult than in most areas of the United States, or even the world, because of the geographic diversity of the state and the impacts of its strategic global location.

Geographic Diversity

The total land area of Alaska is 586,412 square miles--approximately one fifth the total area of the 48 contiguous states. Its 33,000 miles of coastline is half again that of the continental United States. Alaskan coasts face two oceans (North Pacific and Arctic) and two major seas (Bering and Chukchi). The state stretches out between latitudes of 51 degrees and 72 degrees north and meridians 130 degrees west and 173 east--an east-west span of 2,400 miles and a north-south span of 1,400 miles. Because of this subcontinental size, Alaska is not a single homogenous region but several distinct regions.

Thousands of acres of forest and tundra, miles and miles of rivers and streams, valleys, bays, coves and mountains, are spread across a vast area. Current assessments indicate that approximately 160,000 acres of Alaska have been cleared, built on or otherwise directly altered by man, either by settlement or resource development, including mining, pipeline construction and agriculture. In comparison to the 365 million acres of land which comprise the total of the state, the settled area currently amounts to less than 1/20th of a percent.

The remoteness of some places, the water barriers and the difficulty of traversing the terrain have made overland connections between communities either impossible or inordinately expensive. To meet this diverse need the department has developed a comprehensive transportation network, including 5,500 miles of roads, two international airports, 270 smaller airports, a fleet of ferry vessels, 80 ports and harbors, and more than 300 public buildings.

Should the department establish guidelines or standards to determine the minimum level of service required to adequately serve these diverse and distant communities? Can the department afford to provide multimodal transportation services to each of these communities in the future?

Global Location

Foreign air carriers have traditionally used Alaskan international airports when they fly between Europe and Asia. While the political climate of the past forty years has caused the major countries of Europe and East Asia to avoid Soviet airspace, recent political changes within the USSR have resulted in a revised airspace policy which allows foreign airlines to consider overflying that country as a viable alternative to operating through Alaskan airports. How can the department ensure that there is adequate and adequately maintained

infrastructure to meet transportation needs, including the need to connect with the global marketplace and the evolving world economy?

In addition to the civilian use of Alaska as a center of operations, the military has developed a number of strategic bases in the state to support critical missions. The location of these bases has provided opportunities for the development of the civilian transportation network. However, combined operations create additional demands on the department to maintain 24-hour service. How can the transportation system support national security goals and emergency transportation requirements in the event of an armed conflict?

Intermodal Demands

No matter how good the individual parts of the transportation system may be, the effectiveness of the overall system depends on the effectiveness of the connections a traveler or a carrier can make in getting from origin to destination. Intercity passenger travel frequently involves use of air or rail service in combination with a shorter trip by automobile, taxi, or local bus. For freight, many shipments are picked up and delivered by truck, but piggybacked onto the railroad for the long-distance journey. Millions of shipping containers each year are moved on linerships across the ocean and transferred to rail or truck to get between a port and other points in the state.

The transportation system that serves this diverse state cannot work effectively if critical segments in the system are not connected. When trips involve transfers from one form of transportation to another, good connections between modes are essential from local streets and arterials to the interstate highways, from air travel to shorter distance ground transportation, from truck to rail, from rail to ship. Too often in the past we have looked at airport or highway development separately from their relationships to other modes. We have dealt with our transportation system and our public facilities as if they were all operating in isolation. How can we improve intermodal connections?

☑ ISSUE AREA: DEMOGRAPHIC AND ECONOMIC GROWTH

The strategic planning process must also start with a review of factors affecting the state's future mobility needs. Many of these trends are demonstrated in the changing patterns of people and the movement of goods. The state has a history of rapid growth, both in population and the economy, punctuated by periods of short, but severe declines. Major population shifts are often associated with these cycles, both within the state and into and out of the state. Possible consequences of these changes include increases in the growth of personal travel and tourism and growth in demand for specialized transportation services and improved transportation amenities

Population Growth

In the last fifteen years, the population of Alaska has grown at an average annual rate of 4 percent (Alaska Department of Labor). Alaska's rate of increase during the decade was the third highest among all states, but with a population of just over half a million people (537,800), it still ranks fiftieth among all states in total population.

Natural Increase (Births and Deaths)

Alaska has had and continues to have, a crude rate of natural increase (births minus deaths per thousand persons) greater than any other state in the U.S. This reflect both the highest crude birth rate (births per thousand persons) and the second lowest crude death rate (deaths per thousand persons) in the U.S. The low crude death rate is primarily due to the unusual age distribution in Alaska--a concentration of population in ages fifteen to thirty-four where death rates are low.

In 1987, the birth rate for Alaska Natives was 32.6 per 1000; the death rate in that same year was 6.7 per 1000; together these rates made for a natural increase of 2.6 per year. The birth rate for white Alaskans in 1987 was 19.6 per 1000; the death rate was 3.4 per 1000; together this made for a natural increase of 1.6 percent. Nationwide the birthrate is 16 per 1000 and the death rate is 9 per 1000 making a natural increase of .7 per year.

Over the period since 1960, the major trends and differentials in vital rates in Alaska can be summarized as follows:

- General declining fertility among all groups and all regions of the state, with non-white fertility (particularly Native) declining faster, but still staying at a higher level than white.

- Mortality declines of modest proportions among most groups and regions.

- Slowing rates of natural increase, as birth rates fall faster than death rates, for Natives and whites, and for all regions of Alaska.

Migration

Patterns of migration within Alaska and between Alaska and the Lower 48 can be summarized as follows:

- Although the gross migration flows were very large, Alaskan population growth during the last twenty years was not primarily the result of net migration to the state. Net migration accounted for less than one-fourth of the total population change.

- Alaskan mobility is characterized by the Native population migrating within the state and the white population moving between states. More Alaska Natives now live in Anchorage that in any other borough or census areas in the state. This area held 57 percent of the state's total population in 1987, compared to 48 percent in 1960. Young adults have been the most mobile, as is true elsewhere.

- The pattern of intrastate and interstate migration during the last twenty years has markedly changed the regional distribution of

population, with both non-whites and whites concentrating in the Anchorage/Southcentral urbanized regions.

- This pattern of growth and mobility took place during a continued decline of the highly mobile armed forces population. In 1980, the military accounted for 15.7 percent of the total population. While the military gradually increased during the early 1980's, the non-military population in Alaska grew so rapidly that by 1985 the military represented only 12.5 percent of the total population.

  In the past decades, military migration to Alaska was an important component of both net migration and total population increase. The decreasing proportion of military population to total population reflects the relative decline in the role of the military in the Alaska economy, though the size of the military population is still substantial.

Regional and urban growth patterns will play a significant role in influencing future travel trends and determining transportation investment requirements.

Trends in Employment

The general economy of Alaska reflects its vast federal, state and native land holdings, government employment, military importance, natural resources, construction, tourism and agriculture. There is very little manufacturing in Alaska. Most finished products must be transported to the state from the other states or foreign markets. Therefore, the condition of Alaska's transportation delivery system is a critical factor in enhancing the state's productivity and Alaska's ability to compete and survive in today's demanding economic environment.

The greatest number of jobs in 1989 was in the government sector (66,000) followed by seafood processing (9,000) and oil and gas mining (8,100). Employment is but one measure of activity within the state. In terms of labor force, there are some prominent patterns. Since 1950, the labor force participation rate of females has increased substantially. The retail trade and service sectors of the economy have high relative growth rates, and women comprise a relatively large part of employment in these sectors. There has been a trend toward early retirement. And, the unemployment rate has fluctuated seasonally and annually.

Other Economic Trends

Development of Alaska's natural resources--fuel, energy, and minerals--take on national importance not only because of the energy crisis but also relative to unstable international markets and the international balance of payments deficit. While the availability of transportation does not assure development, it is a necessary condition and consideration for resource development.

Alaska's potential for petroleum production has been recognized for a long time. Exploration activities began early in this century, and in 1923, a large area in northern Alaska was designated Naval Petroleum Reserve #4. It was in the late 1950's and early 1960's that the first significant production began on the Kenai Peninsula in southcentral Alaska, and in adjacent waters of Cook Inlet. These developments were of moderate size and although they caused a flurry of local activity, had only a minor influence on the growth of the state as a whole. Then,

with the discovery of oil on the North Slope and the Prudhoe Bay lease sale in 1969, Alaska entered fully into the age of petroleum. The state was catapulted into an entirely new phase of economic growth.

There are many natural resources in Alaska beyond oil and gas. According to the Mineral Industry Research Laboratory at the University of Alaska in Fairbanks, there are two "World Class" mineral deposits in the United States and both of them are in Alaska. One is found in the Kobuk Region east of Kotzebue, and the other is in a large band on the north side of the Alaska Range extending generally east from the Usibelli Coal Mine toward Delta Junction. A resurgence in the minerals market continues to impact Alaska's mining industry.

In recent years, some of the most significant transportation improvements have involved the development of public/private sector partnerships (e.g. the 360-mile Dalton Highway built by oil interests, the 52-miles of Red Dog Mine Access Road being financed by the Alaska Industrial Development and Export Authority, and the $1.3 million contribution by a trucking firm for the upgrade of the Klondike Highway to allow heavy-laden ore trucks to gain access from Canadian mines to the port of Skagway).

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. International commerce and travel are growing at unprecedented rates. Tourism brought in $800 million in 1987.

In general, Alaska's employment, labor force and population will grow very slowly between now and the year 2000, more slowly than the U.S. as a whole. Also, the population and labor force will grow older and more female. Higher levels of economic activity will mean more jobs, more goods to be shipped, higher incomes, and greater demand for travel. Even under a slow-growth forecast, Alaska's needs for transportation services is likely to continue expanding. Higher incomes, growth in the active elderly population, and global economic interdependence will also generate greater demands for transportation services.

☑ ISSUE AREA: LAND OWNERSHIP AND USE

The issue of land ownership is an important key to the development of the state's transportation infrastructure. Specifically, if transportation systems are to be extended in Alaska, provision must be made for access and rights-of-way through various use classifications of federal and native lands.

Federal Ownership

In most places, the free market affects patterns of land ownership, but in Alaska, all land ownership patterns until recently were the result of a century-long process of a single landowner, the United States government. Since the purchase by the United States of Alaska from Russia in 1867, the federal government has exerted a predominant influence on the territory and the state.

Prior to statehood, about 99 percent of Alaska was federally-owned. With the passage of the Statehood Act, the new state was given the authority to select 104 million acres of lands from the public domain of some 365 million acres. The Statehood Act also gave Alaska title to submerged offshore lands to the limits of the territorial sea.

The 1980 Alaska National Interest Lands Conservation Act (ANILCA) or (d)(2) provision authorized the Secretary of the Interior to withdraw up to 80 million acres of land for possible inclusion in the National Park, Forest, Wildlife Refuge, and Wild and Scenic Rivers Systems. Under these systems, the development of the natural resource potential of the land would be prohibited or restricted to varying degrees. Thus, the possibility for land use conflicts arise. What are the most effective means of dealing with this issue?

Alaska Native Claims Settlement Act

The Statehood Act did not deal with the territorial claims of Alaska's natives. In 1966, the Secretary of Interior ordered a halt to further state land selections until the native claims could be resolved by Congress. In 1971, Congress passed the Alaska Native Claims Settlement Act (ANCSA), giving natives the right to select 44 million acres of land.

ANCSA recognized the rights that the Alaska Natives had to the lands they traditionally occupied. Village corporations, comprised of village residents, were entitled to the lands around their villages. The village corporations could not select lands which had already been transferred by patent from the federal government to people or to the state of Alaska.

Section 14(c)(3) of ANCSA requires that the village corporations obtain their land they are to transfer some of it to individuals, non-profits organizations and cities or the state in trust for future cities and federal, state and municipal governments. Typically, such lands are the remaining improved lands in the village, additional community expansion lands, appropriate village rights-of-way and lands for other foreseeable community needs.

The Section 14(c)(4) provision requires the reconveyance of land used for airports and air navigation and related purposes as such existed on December, 1971 to the present airport operator. In most cases, DOT&PF has been the recipient of 14(c)(4) land since it is the leading operator of Alaska airports. To what extent does this policy stimulate or impair development of the rural transportation network?

Adequate Title Interest

In order that the department may properly perform its functions, and to protect the public investment, it is essential that an adequate title interest be acquired and retained not only to construct but to operate and/or maintain transportation facilities. It has been the traditional view that the department will always acquire a fee simple interest. This view often conflicts with the expectations of land owners. Should the department reevaluate the need for fee title acquisition of lands for transportation infrastructure?

Surveying, Mapping & Monumentation

Existing facilities including highway rights of way, airport boundaries, and public facilities are inadequately surveyed, mapped, and monumented. The result is that airport and highway property managers cannot effectively control encroachments and trespass, adjoining

property owners cannot define their boundaries, and M&O forces are unable to determine the limits of their operation. How does the department ensure that there is adequate surveying, mapping and monumentation of public rights of way?

Real Property Management

There are a growing number of unresolved issues related to property management that should not be addressed on a piecemeal, case-by-case, emergency basis as problems erupt (e.g. RS 2477, section line easements, fee vs. less-than-fee acquisitions, surface/subsurface estates, lack of easement document records, etc.). So long as the department lacks a uniform property management system, the state will suffer from inconsistent decision making, the loss of potential revenue and unnecessary litigation expenses. Should the department promote a system of real property management? And, how can this be done fairly?

Public Land Orders and Other Right-of-Way Reservations

Many rights of way for existing facilities throughout the state were initially created by federal Public Land Orders (PLO), or by other Patent Reservations. These rights of way are utilized, as valid existing rights, by the department in its efforts to both improve existing transportation facilities and to develop new ones. To what extent do these reservations impact the development of the transportation system?

Reserved Estates

This is a variation on the issue of whether sand and gravel are part of the surface estate or part of the subsurface estate. It is an issue in national Wildlife Refuges were the department owns a surface interest while subsurface interests are reserved to a federal agency. In cases currently being debated, the federal agency contends that sand and gravel are automatically part of the subsurface estate and, even when such materials are extracted to support the dedicated use of the surface estate, the maximum practically revenue should be generated. What role should the department take in securing these estates? And, at what cost?

Local Platting & Zoning Compliance

Various Alaska Statutes require the department to comply with local platting and zoning authorities in the course of project development. The statutes generally require that the state be treated in the same manner and extent as other land owners. The statutes do not consider the fundamental differences between the process of acquiring right of way for public facilities and the concept of land subdivision and development as addressed by the local ordinances. Local compliance without special consideration can have the effect of limiting the use of eminent domain proceedings for acquisitions, substantially increasing project costs, delaying schedules, and limiting the department's ability to efficiently manage airport facilities and lease lots. How can the department improve coordination with local governments in the course of project development?

DNR/DOT&PF Land Management Responsibilities

DNR takes an excessively active role in the management of DOT&PF airport properties, material source permitting and highway rights-of-way. This requires an inordinate

amount of administration by both agencies which does not efficiently serve the interests of the state. How can this duplication of service be minimized?

☑ ISSUE AREA: JURISDICTIONAL RESPONSIBILITY

In Alaska, local road needs are not easily separated from state needs. Unlike many other states where local taxes pay for local roads, in Alaska state dollars routed to local governments have paid for roads at this level, too. The reason for this is that an inconsistency exists between accepted responsibility among municipalities, organized boroughs, the unorganized boroughs and among private ventures. For the local government entities, the range of powers granted under the Municipal Code (AS 29.35) for duties related to transportation issues vary significantly from one local government type to another. Governments across Alaska have a difficult time meeting their transportation responsibilities because current program arrangements ignore the relationship between funding and responsibility.

Transfer of Responsibility

In 1987 the Alaska Legislature set forth the following directive to begin dealing with the issue of road control:

> "It is the intent of the legislature that DOT&PF establish a road responsibility task force comprised of representatives of DOT&PF, local governments, unorganized areas, and user groups. The task force is to evaluate the feasibility of transferring the responsibility of direct maintenance on certain transportation facilities 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 issue of road ownership, liability, and the transfer of equipment and employees."

In July, 1988, the Governors' Task Force on Transportation Facilities compiled a report on the delivery of transportation services in Alaska. The task force recommended a realignment of responsibility, clarification of areas of responsibility and transfer of some transportation facilities from the state to local governments to enable DOT&PF to more clearly focus on strategic statewide planning. In addition to the benefits gained, the task force determined that the delivery of transportation services could be more efficiently and equitable provided if the continued care of some of Alaska's transportation facilities would be more widely distributed among various private and governmental entities. How should the financing responsibility be allocated between local and state government and the private sector?

Functional Classification and Administrative Jurisdiction

The classification of highways, airports, and harbors into systems provides a basis for assigning responsibility for administration and finance at the level of government most directly concerned with the service provided. Inherent in the functional classification process is the

implication of differing levels of importance based on service function. Without a classification system it is difficult to compare facilities fairly.

Importance is based on economic and social values which are measured in a variety of ways. However, the basic idea is the same regardless of the system: more important facilities or more critical needs deserve the most attention which usually means more funding. Some of the uses of functional classification are to: 1) provide a basis for assigning jurisdictional responsibility according to overall importance of the facility; 2) provide for appropriate design standards according to service function; 3) provide a basis for evaluating present and future needs; and, 4) provide a basis for the apportionment of scarce fiscal resources. Should there be a more active department role in standardizing functional classification of the transportation system to meet these uses?

☑ ISSUE AREA: FINANCIAL RESOURCES

There will be increasing demands for investment in transportation to keep up with rising costs and emerging needs, and the necessary funding will have to come from a variety of sources. The state needs a more rational, systematic approach for meeting its transportation responsibilities. It is important that the necessary funds be identified to support the transportation system.

Budget Crisis

Unlike most states where user taxes and fees--motor fuel taxes, motor vehicle registration fees and other special taxes--are the funds used to support transportation system improvements, Alaska's user taxes and fees meet only a small fraction of the cost. The state receives approximately 85 percent of its general revenue from petroleum taxes and royalties.

Alaska's good fortune resulting from the oil finds of recent years is well-known. The wealth was so great at one time that the state eliminated personal income taxes. In early 1986, however, the price of oil dropped. Oil industry employment declined rather than increased, and the state government was in a tenuous financial situation. And then, in August, 1990, Iraq invaded Kuwait and oil prices soared once again.

Presently, it looks as if the latest price spike will balance the budget for the coming year. But in FY'91 it appeared the state would be hundreds of millions of dollars short, causing the Governor to veto $325 million from the $2.9 billion budget enacted earlier in the year by the legislature. Transportation suffers from the inability of the current budgeting process to provide a stable source of funding for maintenance and capital improvements. The lack of stable funding hinders long-range planning and interferes with the delivery of transportation services to Alaskans. Should the department pursue a stable funding source? What are the barriers to establishment of such a funding source?

Federal Program Receipts

In addition to the volatile state revenue picture, the state faces a potential decline of unknown magnitude in the federal contribution to the highway and aviation capital construction program. The statute that authorizes federal highway dollars expires in October, 1991 and it is recognized that the program as it exists today may be greatly changed. At the same time, reauthorization of the federal aviation construction program in 1992 could have a similar impact on the aviation construction program.

Dedicated trust funds have provided the foundation for federal transportation programs for highways since 1956, for aviation since 1971, and for transit since 1982. Taxes on motor vehicles fuels and on heavy vehicles go into the Highway Trust Fund are disbursed to the States, with a specific matching level of funds contributed by the states themselves. Aviation users contribute to the Airport and Airways Trust Fund. These funds are disbursed in much the same way.

The federal highway program is paid for by federal gasoline taxes that are channeled into the Federal Highway Trust Fund. This tax is now 9 cents a gallon, with one cent dedicated to mass transit. There are donor states like California, that get only 80 cents back on every dollar their motorists pay. Then there are states like Alaska that in 1985 received $5.50 for every dollar spent at the pump.

This is primarily due 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 a disproportionate share of federal highway program receipts. Alaska currently receives approximately a seven to one return on its tax payments. The national direction, however, is toward a program directed toward congestion relief and tax refund, or "turnback", which would relate each state's funding return to the levels the state deposited in the trust fund.

The federal Airport Improvement Program (AIP) is financed by several aviation user taxes (airline ticket tax, fuel tax, freight waybill tax) that are channelled into the Aviation Trust Fund. The State of Alaska receives between $35-40 million in AIP funding annually, divided into specific funding categories. In addition to funding earned by airports enplaning >10,000 passengers annually, the state also receives approximately $13 million in AIP funding based on the state's area and population. Another $10.1 million in "Alaska Supplemental" funding is apportioned to the state annually. No other state receives a similar, special apportionment.

Should the state augment its current improvement capabilities through the establishment of a state funded transportation improvement program? Such a program could broaden the state's capability to meet transportation improvement needs by supplementing and complementing our current improvement efforts which are typically restricted to facilities eligible for federally-funded improvements.

Federal Program Criteria

Federal highway funds are restricted by federal mandate for capital improvements as well as planning, research and safety activities. Federal highway funds cannot be directed to maintenance activities. Airport improvement funds are available for airport development, airport planning and noise compatibility project. Like highways, routine maintenance work is not eligible for federal reimbursement. How do we ensure that there is an adequate operating budget to maintain the federally-funded capital improvements and meet our grant obligations?

Design Standards

Rigid design standards directly govern project financing and feasibility. These standards can impose unnecessary costs and prevent the state and local governments from pursuing the most cost-effective options. Standards also impact user costs and maintenance

costs. How much flexibility is available to the department to apply innovative design solutions to construction? How would any deviation affect liability?

User Costs

An important principle of allocating development responsibilities is that the users of services or infrastructure should pay their costs. Users may include a development company, subsequent developers attracted by the initial infrastructure investment, or the residents of the community who benefit from the improvements to the airports, road or harbors. Are user charges applied appropriately? How should costs of transportation services be assigned between users and non-users? To what extent could innovative financing techniques, including developer's fees, contribute to infrastructure financing?

Tax Policy

Tax policies can have a considerable effect on transportation financing. For example, fuel taxes affect freight rates that in turn affect modal choices and freight volumes. If highway fuel taxes are increased but rail fuel taxes are not, there would be an immediate shift in competitive advantage from trucking to the rail mode. To what extent should the department lobby for changes in state tax policy to finance capital and operating costs of the transportation system? To what extent do existing policies stimulate or impair competition between and within modes?

Deferred Maintenance/Infrastructure Disinvestment

There is a vast inventory of transportation facilities that require constant maintenance and periodic rehabilitation. Current inadequate funding, combined with the addition of a significant number of lane miles to the road network, increased traffic, and expanded state maintenance responsibilities, have placed increased demands on the maintenance budget.

Responsibility for 270 airports and 5,500 miles of state highway is now spread among a maintenance force of 570 people (6/30/87) as compared to 661 people at the same point in time in 1985. Furthermore, the highway and aviation portion of the maintenance and operations expenditures dropped 24 percent from $71.2 million in FY'86 to $53.9 million in FY'87. How do we ensure that there is adequate and adequately maintained infrastructure to meet transportation needs?

Distribution of Resources Within the State for Construction of Capital Improvements

Most of Alaska's population growth is expected to occur in the metropolitan areas. This fact underscores the need to focus major transportation investments in these areas. Nevertheless, urban areas do not exist in isolation. Many of the goods consumed in the urban areas are not produced there, and vice versa. City dwellers travel to rural areas or other cities for recreation and other purposes. Tourism, agriculture, mining, forest products, fisheries and other industries vitally important to Alaska's economy are largely located in rural areas.

In recent years, the DOT&PF has based the distribution of highway capital improvement funds within the state 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. The total highway capital improvement program closely matches the highway

distribution targets. The distribution process may not be promoting equity in the modernization and upgrade of the transportation system.

The distribution of aviation funding with the state has essentially been according to the number of airports in each geographic region. However, because AIP funding is received in separate funding categories, which restricts use to certain airport facilities, some of the higher priority project must be delayed because of funding limitations. How can we ensure that investment is directed wisely and that financing decisions balance competing priorities--capacity expansion versus rehabilitation, urban highways versus village airports?

Local Service Roads & Trails Program

The Local Service Roads and Trails Program provided for construction of local roads and trails which were not included in the federal-aid primary, urban or interstate highway systems. Local labor and equipment were utilized wherever practical in the construction of these projects. Not only was this beneficial to the economy of the communities, but it normally reduced the overall cost of the project. A side benefit was the training of local residents who did, in many cases, maintain the completed project. Loss of funding for this program has meant a loss of flexibility for the department in meeting local community needs. Should the department pursue reestablishment of the LSR&T program?

Alaska Constitution

Alaska's Constitution precludes strict dedication of any tax. Under the Alaska Constitution, tax revenues may be dedicated for a specific purpose only if a constitutional amendment to that effect is approved by the voters. While it is possible to earmark a portion of a particular tax stream for a special purpose, it is not possible to bind the actions of future legislatures to that dedication with a constitutional amendment.

As has been the experience of state transportation program managers in other states, the earmarking of user taxes and fees for the transportation program or distinct parts of the program, such as highway and airport maintenance, harbor development, etc., has enabled program managers to better plan efficient and effective long-term programs. Should the department propose a constitutional amendment that dedicates transportation revenues solely for transportation purposes?

System Expansion

Alaska is at a time in its development when diversification of the economy is becoming critical. Each opportunity must be examined and fairly valued for its contribution potential immediately and in the future. Mining, timber industries, fishing, tourism, the oil industry, and others can fit into a system that supports this development.

Most of Alaska's Interstate Highways, Principal Highways, Minor Arterials and Major Collectors that link together Alaska's economic centers were built over the past 50 years. To meet long-term transportation needs, the state must anticipate and plan for expansion in the current system. The Western Access Road from the Interior to the Seward Peninsula, completion of the road to Cordova (Copper River Highway), and new access to Kantishna (Stampede Road) are among the most prominent. The Bradfield Canal Road and the Taku

Highway could prove a valuable asset for tourism, recreation and international commerce (Canadian access to seaport).

In the aviation system, though its is not expected that a great number of new facilities will be constructed, it is anticipated that some resource development areas may require new airports. Further, as demand for more economical air service in the villages increases, there will be a need to expand existing facilities to accommodate that demand.

Some important needs for transportation improvements are being ignored because our budget process discourages attention to statewide needs and programs. In particular, careful analysis of economic justification will lead to the conclusion that some extensions to our existing transportation system are warranted. What are the barriers to expanding the existing systems, and how might those barriers be overcome?

Provision of Emergency Transportation Services

Probably one of the most critical services offered by any transportation system is emergency transportation. Whether it is for the transport of persons in need of emergency health care unavailable in their community or for the movement of emergency cargo such as medical equipment, food or special tools or equipment. How can the development of the transportation system help meet the needs of emergency transportation services?

Provision of Transportation Services to Major Recreation Facilities

Alaska's outdoor recreation-oriented residents and the increasing numbers of out-of-state visitors desire and expect accessible outdoor recreation opportunities. Accessible public recreation areas are important to the state. To that end, should the department enter into cooperative agreements with other agencies to provide specialized services, such as maintenance of parks roads and parking areas, etc?

☑ ISSUE AREA: ENGINEERING/ENVIRONMENTAL CONSTRAINTS

The annual cost of administering, maintaining and improving the Alaska transportation system is above comparable national averages. 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.

Climate

There are four climate zones in Alaska. The maritime climate zone includes Southeast, the northern gulf coast and the Aleutian Chain. Temperatures are mild--relatively warm in the winter and cool in summer. Precipitation is heavy, 50 to 200 inches annually along the coast and up to 400 inches on mountain slopes. The transition zone is the area between the coastal mountains and the Alaska Range. Summer temperatures are warm, with cold winter temperatures and less precipitation than the maritime zone.

The continental climate zone covers the majority of Alaska except the coastal fringes and the arctic slope. It has extreme high and low temperatures and low precipitation. Precipitation is light because air masses affecting the area lose most of their moisture crossing the mountains to the south. The Arctic, north of the Brooks Range, has cold winters, cool summers and desertlike precipitation. Prevailing winds are from the northeast off the arctic ice pack, which never moves far offshore. What further research is needed to meet this challenge?

Permafrost

Permafrost, perennially frozen ground, is defined as ground which remains frozen for two or more years. In its continuous form, permafrost underlies the entire arctic region to depths of 2,000 feet. Discontinuous permafrost occurs south of the Brooks Range and north of the Alaska Range. Much of the Interior and some of Southcentral are underlain by discontinuous permafrost. How should the department use its resources to promote innovation in ways to deal with this engineering hurdle?

Global Warming

The global warming theory has enormous implications in Alaska. Many roads and airports are built over permafrost that will become unstable if the climate warms. A series of warmer than normal winters has already had an effect in marginal permafrost areas. What is the effect of global warming on performance of the transportation system?

Earthquakes

Between 1899 and mid-1989, ten Alaska earthquakes occurred that equaled or exceeded a magnitude of 8 on the Richter scale. During the same period, more than 70 earthquakes took place that were of magnitude 7 or greater. Alaska is the most seismic of all the 50 states. How can we mitigate the risks associated with this phenomenon?

Construction Camps

The issue of construction camps or campgrounds on remote state construction projects was raised in the 16th Legislature. It was a high priority of organized labor groups, as they lost this benefit in labor agreements several years ago. It would require the state mandate camps and food service for construction workers on projects meeting the definition of "remote." The department responded administratively by requiring full-service campgrounds for such projects, which addresses the basic sanitation and living condition problems typically used to support the legislative initiative. How can we best balance the concerns of labor and the work place?

☑ ISSUE AREA: REGULATORY POLICIES

State and federal laws and regulations describe established national and state policy for transportation. These laws and regulations stipulate requirements to be met in transportation planning and, therefore, they form

an important basis for the planning program. A significant issue that must be addressed is how can we best balance environmental concerns and what role should the department play in doing so?

National Environmental Policy

Spurred by policies set forth in the National Environmental Policy Act and other environmental legislation, federal, state, and local policy makers have become increasingly concerned with the effects of their decisions on environmental quality. The problems receiving the most attention today relate to the environmental damage associated with the use of transportation facilities. These issues, ranging from air and noise pollution to tanker spills, are like to continue to shape the future of transportation.

An important concern in developing and operating transportation systems is the contribution of vehicles with internal combustion engines to urban air pollution, acid rain, and potential global climate changes. Transportation activities generate noise and congestion. Transportation is a major contributor to air pollution, including emissions of carbon monoxide and a variety of other poilutants, even in Alaska. Transportation cannot avoid affecting the environment, but a major goal must be to minimize the negative side effects.

Existing laws already require assessment of the effects of significant actions on the environment, special attention to air pollution, and protection of wetlands and coastal zones. The Clean Air Act requires the EPA to enforce vehicle and equipment maintenance standards to preserve emission control performance.

The Environmental Protection Agency (EPA) is intensifying its enforcement of wetlands regulations, and transportation agencies are required to mitigate wetland losses by creating new wetlands, often in substantially greater amounts than are lost in taking of the rights-of-way. The Corps of Engineers and the USDOT also exercise regulatory responsibilities relating to wetland preservation. The USDOT, in coordination with other agencies, is developing guidelines for carrying out the "no net loss" goal with respect to the effects of transportation on wetlands.

How can the department balance the conflicting demands for a quality environment with the need for responsive, inexpensive transportation?

FAA Security/Safety Programs

FAA regulations require that the state maintain a specified level of security at state-owned and operated airports which receive scheduled service by aircraft having a passenger seating configuration of more than 30 seats. Amendments to 14 Code of Federal Regulations (CFR) Part 107, the regulation governing airport security, are resulting from an increased national emphasis on the need to improve security at airports. The requirements of the revised regulations, together with stricter interpretation by the FAA of existing regulations, will continue to result in increased operating and capital costs at many rural airports throughout the state. These include, for example, Part 107 fencing and access control requirements and law enforcement officer (LEO) response requirements.

In addition, Part 139, the federal regulation which governs airport certification and operation for airports served by aircraft having a seating capacity of more than 30 seats, may

be expanded by Congress to apply to airports receiving service by aircraft with 10 passenger seats or more. This could potentially impact an additional 48 state-owned airports and would result in increased capital and operating costs for ARFF vehicles and associated personnel costs, safety fencing, etc.

The State of Alaska has, in the past, received waives from the FAA for many of the more stringent regulatory requirements. Current efforts to extend these waivers to apply to the revised regulations have been unsuccessful. If the department is forced to comply with the more stringent regulatory requirements, our operating costs at many airports would increase substantially. What course of action should the department pursue in complying with this regulation? And, at what cost?

Disadvantaged Business Enterprise/External EEO Programs

Current short-term issues within the Disadvantaged Business Enterprise and External Equal Employment Opportunity (DBE/ExEEo) office are as follows: 1) complete new Title VI Plan; 2) complete DBE Procedure Manual; 3) eliminate backlog of DBE certifications and recertifications; 4) prepare procedure manual for EEO/DBE Contract Compliance Reviews; 5) fill DBE and Supportive Services Coordinator positions; 6) develop Supportive Services Program to assist DBE's; 7) review and revise methodology for setting DBE utilization goals for construction projects; and 8) write policies and procedures. How can the department fairly meet DBE/ExEEo goals in the future?

Encroachments/Trespass

Under Alaska Statutes, the department has the responsibility for the protection and control of highways and airports. The control of trespass and unauthorized encroachments are included in that responsibility. Trespass is an illegal activity that can increase the state's liability exposure and jeopardize federal-aid funding. To what extent should the department rely on regulatory authority to overcome this problem?

Placement of political signs or other outdoor advertising in the right-of-way and, in many cases, adjacent to, is in violation of both state and federal law. The signs create roadside obstacles to sight distance along the roadways. Statutes currently require a 30-day notice prior to requiring removal of illegal signs. What are the most effective means of dealing with this problem?

Utility Relocation

Currently the state pays to relocate utilities within the state right-of-way that are in conflict with construction projects. Alaska is the only state that entirely funds the cost of utility relocation with highway construction funds. Should the department continue to bear this financial burden? And, at what cost to other transportation improvements?

Motor Carrier Regulation

Regulation of the trucking industry has an impact on the transportation system of the state and the delivery of goods. The state imposes registration requirements on motor carriers operating within the state, and requires various billing and reporting requirements. The state also issues permits for oversize and overweight truck movements.

Under the established domestic weight limits for moving freight on state highways, significant numbers of overweight containers are being shipped over those roads, causing additional wear and safety concerns, without adequate contribution in highway user fees to compensate. Stricter enforcement of weight limits could alleviate the problems somewhat, but questions of incentives and liability for overweight shipments would still remain. Given the differences among modes and their user fees (taxes), how can this be done fairly, without inappropriate competitive advantages for one mode over another?

☑ ISSUE AREA: POLITICAL ENVIRONMENT

Transportation is vitally important to the social and economic well-being of Alaskans. The public side of the Alaska transportation system--highways, airports, ferries and harbors--is a fragile network and the public responsibility to keep the system up and operating safely and efficient is great.

Short Time Horizons for Decision Making

The department is subject to scrutiny from the mass media and from a wide array of interest groups that have a stake in the decisions which it makes. Probably the most important difference in the time frame of public and private sector managers is related to the political cycles of government. The appropriation process generally operates on an annual basis. Governors often serve only one or two terms (two-term limit) and support for a specific policy may turn into a liability when the next governor takes over. This leads to constant pressure to achieve quick results. What strategy is available to the department to minimize this shortcoming?

Rights-vs-Responsibilities

Alaskans have grown accustomed to low state and local taxes. Even though individual Alaskans carry the lightest state and local tax burden in the nation, many Alaskans believe they are already paying more than enough for government services. Just about everyone is convinced that he's already paying his fair share of taxes, and that if taxes have to be raised somebody else should pay.

Despite these arguments against taxes, in the "typical state" taxes and user fees paid by individuals and businesses necessarily represent the cost of public services the government provides. But in the past decade, when petroleum revenues paid for almost everything, Alaska lost the link between what residents pay in taxes and what they receive in services. When citizens aren't aware of the cost of services, public spending is no longer restrained by a sense of the value of services provided.

The psychological and symbolic nature of government and political authority create significant expectations on the part of the public. Once the state budget is moved to a higher level, the political and economic realities of the situation make it difficult to later reverse. The individual comes to assume that the provision of basic services is a "right" and that it is the "responsibility" of government to continue to provide these services. To regain the balance between taxes and spending, citizens must gradually shoulder more of the cost of government.

A key transportation issue is what level of transportation service is a public sector responsibility, and how should that responsibility be divided among local and state government?

Environmental Activism

Alaska is a focal area for both local and national protection and conservation efforts. How can the department work cooperatively with environmental activist in achieving environmental goals?

☑ ISSUE AREA: ORGANIZATIONAL ENVIRONMENT

If an issue related to organizational goals has managed to reach a point where formal action is required, then it is reasonable to assume that it is a strategic issue.

Leadership Turnover

The department has experienced a high rate of turnover at the top two levels of management. Since 1977, the DOT&PF has had six chief administrative 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. How can the length of this transition period be minimized?

Strategic Management Process

A key development from the Management Plan is the commitment to develop a strategic management process. One part of the strategic management process is the continuation of the management plan. However, the strategic management process goes further in that it also links department planning resources, department policy development and the department's priority strategies into one cohesive effort. What innovative techniques are available through this process to improve the organizational management?

General Efficiency

In the previous era of the 1980's, there was a greater emphasis on the department getting work done quickly rather than getting work done in the most efficient manner. One of the legacies of the oil boom years is the perception that the department's design and construction staff grew significantly in response to increased capital spending in the beginning of the decade, but has not reduced its staff as those general funded projects disappeared toward the end of the decade.

Measurements of comparative efficiency of in-house work-vs-contracted work have been extremely difficult to quantify. Efforts are in progress to develop systematic methods for capture of reliable data for comparative analysis of efficiency. To what extent should this information be used to improve planning, design and construction management?

Program Development Cycle

All but the simplest capital projects take from three to seven years from initial funding to completion. Major urban highway projects can take ten years or more to begin construction. Issues of local, state and national significance have increasingly made the project development process more complex and more controversial.

Land acquisition has been more contentious in urban areas due to declining land values and in rural areas due to changing and new interrelationship of federal and native land interest. The preservation of wetlands, the discovery of hazardous waste sites and a greater emphasis on public involvement have added time and expense to the project development process.

These factors, combined with an annual allocation of federal highway capital funds, which for the most part must be used within a fiscal year or lost, yield an inelastic process within a fixed funding cycle. With the exception of AIP discretionary funding, all other categories of AIP funding have a three year life.

What changes might be accomplished in the budget or management process to reduce this lengthy development cycle?

Training and Productivity

Ultimate success by the department in achieving its goals and basic mission is dependent on the abilities and dedication of its employees more than any other single factor. The department has traditionally had a well-trained and competent work force. The first retirement incentive program (RIP) resulted in a considerable loss of knowledge and experience within a relatively short period of time. The new RIP will exacerbate this situation. How can the department meet this manpower loss?

System Management

The department has developed a number of methods to manage its vast transportation system. It is strengthening its data collections and information management activities in order to provide more accurate monitoring and description of the system. Are there significant other gaps in current data resources that hamper research and development efforts and innovation?

Accountability to the Public through Improved Reporting

One of the major strategies identified in the FY'90-91 DOT&PF Management Plan was the need to prepare a Management Reporting System to provide easily understandable presentations (report, graphs, etc.) which may be used by the managers to support their strategic and operational decision-making. How can we improve the assembly, management, transmission, and analysis of transportation-related data to make it more understandable to the public?

DOT&PF Legal Services

Department managers are convinced that relations between the department and its attorneys within the Department of Law (DOL) are too fragmented to allow a good attorney-client relationship. Because of this fragmentation, the state has increased legal exposure,

especially for tort liability, but also believes the department has a less than optimal operational arrangement for public contracts and condemnation cases. In the latter two situations, the fragmented system does little to capture or utilize the collective expertise established in either agency. What are the barriers to overcoming this issue?

☑ ISSUE AREA: AVAILABILITY OF ENERGY FOR TRANSPORTATION

The future of transportation is tightly linked to the future of world energy markets, particularly petroleum. Although there have been significant gains in energy efficiency in transportation, consumption continues to grow. Reliance on petroleum persists.

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 energy consumption. Although improvements in fuel efficiency have made an important contribution to energy conservation in transportation, the overwhelming reliance on petroleum for meeting the demands of the transportation sector is expected to continue into the foreseeable future.

The role of the department to resolve energy concerns is limited. However, priorities established and actions taken in the planning and development of transportation facilities and services by the state can have a sizeable impact upon use of available transportation energy use within the state. How should the department address this issue in the upcoming decade?

☑ ISSUE AREA: SPECIAL TRANSPORTATION NEEDS

Some Alaskans--especially the elderly, disabled, and low-income--have special transportation needs that are unmet. Many of these persons are unable to use automobiles and do not have alternative forms of transportation available to them. Various programs have been implemented in some areas to make facilities more useable and provide specialized services to more adequately meet the needs of these individuals. Significant architectural barriers remain that have an affect on their mobility.

The U.S. Congress recognized the need for public transportation for physically and mentally disabled persons in the 1970 and 1974 amendments to the Urban Mass Transportation Act of 1964. Additional Congressional interest in improving the travel environment for persons with disabilities was expressed in the Rehabilitation Act of 1973, which prohibits discrimination on the basis of handicap in federally assisted and administered programs. The Air Carrier Access Act of 1986 requires the U.S. Department of Transportation to issue regulations prohibiting discrimination in air travel on the basis of handicap.

How can the transportation network better respond to the special needs of elderly, disabled, and low-income travellers? Who should bear the cost of such services?

ISSUE AREA: TECHNOLOGY

There are countless technological possibilities for the transportation system of the future. Technological advances along with population and economic development patterns, all are contributing to growth and change in transportation demand. Use of computers has changed the automobile by reducing emissions, increasing fuel efficiency, and improving operating safety. Technological progress will continue to change transportation in many ways.

An issue which relates to flights via the USSR concerns aircraft technology advancements and the ability of airlines to fly non-stop between Europe and Asia. As airlines explore the profitability of operating between Asia and Europe, non-stop service will become more attractive as a competitive tool. On the other hand, passenger comfort demands for an enroute stop may prove continued incentives to maintain an Alaskan presence for passenger aircraft.

How can the department better prepare itself to be responsive to technological innovation and impact on the transportation system?

CHALLENGES FACING THE DELIVERY OF TRANSPORTATION SERVICES IN ALASKA: AN IDENTIFICATION OF THE ISSUES

The first step in the issues identification process was to review previously published reports (i.e. system and regional planning studies, Transition Reports, Management Plans, Crossroad Report, etc.). Numerous issues were identified in the reports. Next, The Technical Review Committee identified any additional issues to incorporate in the issues paper. Now, the "long list" must be narrowed to concentrate on those issues that relate directly to the delivery of transportation services. This process will distinguish service delivery issues from those issues that relate to the management of the department.

Service delivery issues generally deal with the different modes; their physical and service properties; the way people, vehicles, and freight move over different systems; how well they function; and how they can be improved. Management issues generally deal with procedures for implementation, communications, detailed programming of projects, and monitoring system performance.

Please take a few minutes to read through the list of issues and check the category which you think the issue area affects most greatly: Service Delivery ("What We Do") or Management ("How We Do Things"). There is a large gray area into which many issues will fall. Please select the category you feel "best" represents the issue. Add short definitions under the "Rationale" column if you feel it is necessary to illustrate the reason for your choice. Your comments will be used by the strategy managers to help in the final selection of issues for this project.

ISSUE AREA	WHAT WE DO	HOW WE DO IT	RATIONALE
Geographic Diversity			
Global Location			
Intermodal Demands			
Population Growth			
Federal Ownership			
ANCSA			
Adequate Title Interest			
Surveying, Mapping & Monumentation			
Real Property Management			
Public Land Order and Other Right-of-Way Reservations			
Reserved Estates			
Local Platting & Zoning			
DNR/DOT&PF Land Management Responsibilities			
Transfer of Responsibility			

Functional Classification and Administrative Jurisdiction			
Budget Crisis			
Federal Program Receipts			
Federal Program Criteria			
Design Standards			
User Costs			
Tax Policies			
Deferred Maintenance/ Infrastructure Disinvestment			
Local Service Roads & Trails			
Alaska Constitution			
System Expansion			
Provision of Emergency Transportation Services			
Provision of Transportation			
Services to Major Recreation Facilities			
Climate			
Permafrost			
Global Warming			
Earthquakes			
Construction Camps			
National Environmental Policy			
FAA Security/ Safety Programs			
Disadvantaged Business Enterprise/External EEO			
Encroachments/Trespass			
Utility Relocation			
Motor Carrier Regulation			

Short Time Horizons for Decision Making			
Rights-vs-Responsibilities			
Environmental Activism			
Leadership Turnover			
Strategic Management Process			
General Efficiency			
Program Development Cycle			
Training and Productivity			
System Management			
Accountability to the Public Through Improved Reporting			
DOT&PF Legal Services			
Availability of Energy for Transportation			
Special Transportation Needs			
Technology			

TRANSPORTATION SERVICE DELIVERY: AN IDENTIFICATION OF THE KEY (STRATEGIC) ISSUES

GENERAL CATEGORIES	SPECIFIC CATEGORIES	ISSUES
GEOGRAPHY	Geographic Diversity	Should the department adopt minimum service guidelines for implementing its programs?
	Global Location	What action is needed to ensure Alaska's infrastructure supports participation in the global marketplace?
	Intermodal and Multimodal Demands	What actions need to be taken to improve intermodal connections?
		What actions need to be taken to improve capital choices between modal investments?
JURISDICTIONAL RESPONSIBILITY	Transfer of Responsibility	What criteria defines appropriate state responsibility for transportation services?
		Should the service life (life expectancy) and jurisdictional responsibility be determined before construction financing is approved?
DEMOGRAPHIC AND ECONOMIC GROWTH	Population Migration and Growth	What actions will be needed to accommodate population migration and population change?
	Economic Development	What actions should the department take to promote economic growth in Alaska?
LAND OWNERSHIP AND USE	Access	What action does the department need to take to preserve access corridors across federal lands?
	Surveying, Mapping & Monumentation	What level of surveying, mapping and monumentation should the department provide to adequately manage and operate facilities?
FINANCIAL RESOURCES	Transportation Budget	What actions should the department take to pursue stable and adequate funding for capital development, replacement and operations?
	Federal Program Receipts	What state programs are needed to complement federal program receipts, particularly if they decline in the future?

GENERAL CATEGORIES	SPECIFIC CATEGORIES	ISSUES
	Federal Program Criteria	What action does the department need to take to ensure that there is an adequate operating budget to maintain federally-funded capital improvements?
	User Fees	What role should user fees play in paying for state transportation services?
	Deferred Maintenance	What should be the department's standards for asset management--(replacement-vs-reconstruction)?
	User Costs	What actions does the department need to take to provide a cost effective transportation network that minimizes both user costs and infrastructure costs?
	System Expansion	What process should the department recommend to help determine the system expansions needed?
	Provision of Emergency Transportation Services	What changes should be made to department programs to identify short-term and long-term emergency transportation requirements, and to assure that the transportation system can fulfill its role in meeting those requirements in the event of a catastrophic disaster?
	Provision of Transportation Services to Major Recreation Facilities	What transportation services should be provided by the department to support the recreation industry?
ENGINEERING AND ENVIRONMENTAL CONSTRAINTS	Global Warming	What alternatives need to be considered to accommodate trends in global warming?
	Design Standards	What design standards should change to encourage innovative solutions to Alaska's special transportation needs?
REGULATORY POLICIES	National Environmental Policy	What can the department do to balance the conflicting demands for a quality environment with the need for an efficient transportation system?

GENERAL CATEGORIES	SPECIFIC CATEGORIES	ISSUES
	FAA Security/Safety Programs	What course of action should the department pursue to comply with the more stringent federal regulatory requirements at certificated airports?
	Utility Relocation	What responsibility does the department have for the financial burden of relocating utilities in state right-of-way?
	Motor Carrier Regulation	What position should the department take regarding heavy vehicle usage on highways?
POLITICAL ENVIRONMENT	Public-Private Partnership	What transportation responsibilities in the state are better borne by the private sector and improve the efficiency with which we use our transportation system?
AVAILABILITY OF ENERGY FOR TRANSPORTATION	Energy Use	What programs should the department develop to help conserve energy used for transportation within the state?
SPECIAL TRANSPORTATION NEEDS	Special Travellers Needs	What can the department do to better respond to the special needs of elderly, disabled and low-income travellers?

STATE TRANSPORTATION PLAN

Background Report

TRANSPORTATION SERVICE DELIVERY: AN IDENTIFICATION OF THE KEY (STRATEGIC) ISSUES

Policy Review Committee

Department of Transportation & Public Facilities
Mark S. Hickey, Commissioner

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TRANSPORTATION SERVICE DELIVERY: AN IDENTIFICATION OF THE KEY (STRATEGIC) ISSUES

The first phase of this project involved taking a look at what is going on in the state that affects the delivery of transportation services. The first product, *Challenges Facing the Delivery of Transportation Services in Alaska: An Identification of the Issues*, represented an overview of the existing situation. The Technical Review Committee assisted in this task.

The next task was to divide these issues into two broad categories. The Task Managers (Kit and Clyde) were responsible for sorting the list of issues between service delivery functions-vs-management functions (*what we do-vs-how we do it*).

In this phase of the study the objective is to select the key (strategic) issues. The key issues will become the focus of the plan. This focus will help set priorities so efforts can be concentrated on those issues thought to have overriding importance and upon which the department can affect change.

☑ ISSUE AREA: GEOGRAPHY

Adequate transportation services are essential for the residents of Alaska to accommodate the movement of people and goods. Providing adequate transportation services in Alaska is more difficult than in most areas of the United States, or even the world, because of the geographic diversity of the state and the impacts of its strategic global location.

Geographic Diversity

The total land area of Alaska is 586,412 square miles--approximately one fifth the total area of the 48 contiguous states. Its 33,000 miles of coastline is half again that of the continental United States. Alaskan coasts face two oceans (North Pacific and Arctic) and two major seas (Bering and Chukchi). The state stretches out between latitudes of 51 degrees and 72 degrees north and meridians 130 degrees west and 173 east--an east-west span of 2,400 miles and a north-south span of 1,400 miles. Because of this

subcontinental size, Alaska is not a single homogenous region but several distinct regions.

Thousands of acres of forest and tundra, miles and miles of rivers and streams, valleys, bays, coves and mountains, are spread across a vast area. The remoteness of some places, the water barriers and the difficulty of traversing the terrain have made overland connections between communities either impossible or inordinately expensive to construct. To meet this diverse need the department operates and maintains a comprehensive transportation network, including 5,500 miles of roads, two international airports, 270 smaller airports, a fleet of ferry vessels, 80 ports and harbors, and more than 500 public buildings.

Given the number and variety of available transportation modes in Alaska and competing demands for public funding to support those improvements, **should the department adopt minimum service guidelines for implementing its programs?** Minimum service guidelines would establish criteria that would distinguish between those transportation facilities that are, at a minimum, needed to provide basic access and those facilities that go beyond minimum service levels and provide a more efficient and convenient service.

Global Location

In business and industry, domestic companies that span the country and multinational corporations that span the globe require long-distance passenger travel and also change the patterns for movement of freight around the world. Because of its global location, Alaska has become a *transportation crossroads* for Europe, Asia and the Soviet Union. Airlines have seen huge growth in the number of passengers moving between Alaska and Europe, Asia, and other continents.

Future transshipment of cargoes by sea between Europe and Asia may require port development along Alaska's Bering Sea coast. Support of activities which complement or augment marine commerce and which contribute to the state's economic development will be important in the future. As the global economy requires more interconnections, the ability of people and products to transfer from one mode of transportation to another in moving across the state or the ocean will become even more essential.

In addition to the civilian use of Alaska as a center of operations, the military has developed a number of strategic bases in the state to support critical missions. The location of these bases has provided opportunities for the development of the civilian transportation network.

What action is needed to ensure Alaska's infrastructure supports participation in the global marketplace?

Intermodal and Multimodal Demands

No matter how good the individual parts of the transportation system may be, the effectiveness of the overall system depends on the effectiveness of the connections a traveler or a carrier can make in getting from origin to destination. Intercity passenger travel frequently involves use of air or rail service in combination with a shorter trip by automobile, taxi, or local bus. For freight, many shipments are picked up and delivered by truck, but piggybacked onto the railroad for the long-distance journey. Millions of shipping containers each year are moved on linerships across the ocean and transferred to rail or truck to get between a port and other points in the state.

The transportation system that serves this diverse state cannot work effectively if critical segments in the system are not connected. When trips involve transfers from one form of transportation to another, good connections between modes are essential from local streets and arterials to the interstate highways, from air travel to shorter distance ground transportation, from truck to rail, from rail to ship.

An additional set of problems must be faced to determine the extent of state financial support to the multimodal system. The difficulty is to determine what is adequate access. The state continues to provide financial assistance to support facilities on the basis of fundamental need. This includes facilities needed to assure transportation service for the delivery of goods required to support community life. All communities in Alaska are now served by some form of transportation.

In the past, uneconomic but needed service has had to compete for state dollars with projects that could clearly demonstrate greater economic feasibility. Direction is needed to help separate out the pursuit of social goals (access) from economic development goals. In the future, it will be necessary to make difficult choices between modes. The state may no longer be able to construct multiple transportation modes for each

community. An economic test to determine least-cost alternatives may need to be applied to justify state investment in any project over and above minimum service needs (access).

What actions need to be taken to improve intermodal connections in Alaska? And, what actions need to be taken to improve capital choices between modal investments?

☑ ISSUE AREA: JURISDICTIONAL RESPONSIBILITY

In Alaska, local access needs are not easily separated from statewide needs. Unlike many other states where local taxes pay for transportation improvements, in Alaska state dollars routed to local governments have paid for improvements at this level, too. The reason for this is that an inconsistency exists between accepted responsibility among municipalities, organized boroughs, the unorganized boroughs and among private ventures. For the local government entities, the range of powers granted under the Municipal Code (AS 29.35) for duties related to transportation issues vary significantly from one local government type to another. Governments across Alaska have a difficult time meeting their transportation responsibilities because current program arrangements ignore the relationship between funding and responsibility.

Transfer of Responsibility

In 1987 the Alaska Legislature set forth the following directive to begin dealing with the issue of road control:

> "It is the intent of the legislature that DOT&PF establish a road responsibility task force comprised of representatives of DOT&PF, local governments, unorganized areas, and user groups. The task force is to evaluate the feasibility of transferring the responsibility of direct maintenance on certain transportation facilities 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 issue of road ownership, liability, and the transfer of equipment and employees."

In July, 1988, the Governors' Task Force on Transportation Facilities compiled a report on the delivery of transportation services in Alaska. The task force recommended a realignment of responsibility, clarification of areas of responsibility and transfer of some transportation facilities from the state to local governments to enable DOT&PF to more clearly focus on strategic statewide needs.

What criteria defines appropriate state responsibility for transportation services? And, should the service life (life expectancy) and jurisdictional responsibility be determined before construction financing is approved?

☑ ISSUE AREA: DEMOGRAPHIC AND ECONOMIC GROWTH

The strategic planning process must also start with a review of factors affecting the state's future mobility needs. Many of these trends are demonstrated in the changing patterns of people and the movement of goods. The state has a history of rapid growth, both in population and the economy, punctuated by periods of short, but severe declines. Major population shifts are often associated with these cycles, both within the state and into and out of the state. Possible consequences of these changes include increases in the growth of personal travel and tourism and growth in demand for specialized transportation services and improved transportation amenities

Population Migration and Growth

In the last fifteen years, the population of Alaska has grown at an average annual rate of 4 percent (Alaska Department of Labor). Alaska's rate of increase during the decade was the third highest among all states, but the population remains at just over half a million people (537,800).

Alaskan mobility is characterized by population migration within the state and population migration between the states. Anchorage held 57 percent of the state's total population in 1987, compared to 48 percent in 1960. Young adults have been the most mobile, as is true elsewhere. The pattern of intrastate and interstate migration during the last twenty years has markedly changed the regional distribution of population, with the population concentrating in the Anchorage/Southcentral urbanized region.

Net migration flows are difficult to predict, but clearly are related to the relative growth rates of employment opportunities in Alaska compared to the other states. The average absolute value of net migration as a percentage of population was 2.94 percent from 1974 to 1987. The gross migration flows represent an even larger percentage of population, but net flows amounting to almost 3.0 percent per year can have a significant impact on the size of the population by the year 2000.

For the past 25 years, there has been a rising trend in the United States and in Alaska of the ratio of total employment to total population. Some of the reasons for this upward trend are the increased entry into the labor market of women, the rapid growth of the labor force due to the aging of the "baby boom" generation, and the changing structure of the United States economy.

It is expected that Alaska's population will grow very slowly between now and the year 2000, more slowly than the United States as a whole. Based on a total employment estimate of 294,829, the estimated population in 2000 is 575,100. That is a 1987-2000 annual growth rates of 0.52 percent. By comparison, the U.S. Bureau of Labor Statistics projected national population annual growth rate (moderate case) for the years 1986-2000 is 0.75 percent.

Growth rate comparisons are slightly distorted by the fact that, unlike the Unites States, Alaska was in a deep recession at the beginning of the forecast period (1987). The Alaska population fell in 1987 from 547,600 to 537,800. This situation has since reversed itself and Alaska continues to recover, while the rest of the nation enters a period of economic recession. Population changes in response to economic conditions generally lag economic changes because most people are not immediately mobile. But this reversal could have significant impact on the future population growth. A high growth scenario estimates an Alaskan population of 621,000 by the year 2000 a growth rate of 1.11 percent.

What actions will be needed to accommodate population migration and population growth?

Economic Development

The general economy of Alaska reflects its vast federal, state and native land holdings, government employment, military importance, natural resources, construction, tourism and agriculture. There is very little

manufacturing in Alaska. Most finished products must be transported to the state from the other states or foreign markets. Therefore, the condition of Alaska's transportation delivery system is a critical factor in enhancing the state's productivity and Alaska's ability to compete and survive in today's demanding economic environment.

The greatest number of jobs in 1989 was in the government sector (66,000) followed by seafood processing (9,000) and oil and gas mining (8,100). Employment is but one measure of activity within the state. In terms of labor force, there are some prominent patterns. Since 1950, the labor force participation rate of females has increased substantially. The retail trade and service sectors of the economy have high relative growth rates, and women comprise a relatively large part of employment in these sectors. There has been a trend toward early retirement. And, the unemployment rate has fluctuated seasonally and annually.

Development of Alaska's natural resources--fuel, energy, and minerals--take on national importance not only because of the energy crisis but also relative to unstable international markets and the international balance of payments deficit. While the availability of transportation does not assure development, it is a necessary condition and consideration for resource development.

Alaska's potential for petroleum production has been recognized for a long time. Exploration activities began early in this century, and in 1923, a large area in northern Alaska was designated Naval Petroleum Reserve #4. It was in the late 1950's and early 1960's that the first significant production began on the Kenai Peninsula in southcentral Alaska, and in adjacent waters of Cook Inlet. These developments were of moderate size and although they caused a flurry of local activity, had only a minor influence on the growth of the state as a whole. Then, with the discovery of oil on the North Slope and the Prudhoe Bay lease sale in 1969, Alaska entered fully into the age of petroleum. The state was catapulted into an entirely new phase of economic growth.

There are many natural resources in Alaska beyond oil and gas. According to the Mineral Industry Research Laboratory at the University of Alaska in Fairbanks, there are two "World Class" mineral deposits in the United States and both of them are in Alaska. One is found in the Kobuk Region east of Kotzebue, and the other is in a large band on the north side of the Alaska Range extending generally east from the Usibelli Coal Mine

toward Delta Junction. A resurgence in the minerals market continues to impact Alaska's mining industry.

In recent years, some of the most significant transportation improvements have involved the development of public/private sector partnerships (e.g. the 360-mile Dalton Highway built by oil interests, the 52-miles of Red Dog Mine Access Road being financed by the Alaska Industrial Development and Export Authority, and the $1.3 million contribution by a trucking firm for the upgrade of the Klondike Highway to allow heavy-laden ore trucks to gain access from Canadian mines to the port of Skagway). In spite of these ...r capital improvements, future expansion of the transportation infr... ...ture for strategic economic development is in danger of stagnation ...ecause of the declining funds available for new capital construction.

Given the number and variety of available transportation improvements associated with economic development opportunities and competing demands for public funding to support those improvements, **what actions should the department take to promote economic growth in Alaska?**

☑ ISSUE AREA: LAND OWNERSHIP AND USE

The issue of land ownership is an important key to the development of the state's transportation infrastructure. Specifically, if transportation systems are to be extended in Alaska, provision must be made for access and rights-of-way through various use classifications of federal lands.

Access

Transportation throughout much of Alaska is not adequate for anticipated needs in the future. Numerous corridors have been proposed to improve existing capabilities to move people, goods, forest and agriculture products, minerals, crude oil, natural gas, electricity and other commodities within Alaska. Each transportation and utility development has special requirements for location and a compulsion to take the shortest, more direct route possible. New corridors for public access across federal lands will be essential to development of resources.

What actions does the department need to take to preserve access corridors across federal lands?

Surveying, Mapping & Monumentation

Existing facilities including highway rights of way, airport boundaries, and public facilities are inadequately surveyed, mapped, and monumented. The result is that airport and highway property managers cannot effectively control encroachments and trespass, adjoining property owners cannot define their boundaries, and M&O forces are unable to determine the limits of their operation.

What level of surveying, mapping and monumentation should the department provide to adequately manage and operate facilities?

☑ ISSUE AREA: FINANCIAL RESOURCES

Many of the facts about high state spending have become obscured by where the money has gone. Alaska conditions--huge area, small population, and harsh climate--do increase government costs in Alaska. Yet, those factors account for a relatively modest share of Alaska's higher spending. More important are the realities that Alaska has a number of unique transfer payment programs. Much of the increased state spending in recent years has been in transfer payments to individuals and local government--the Permanent Fund dividend program, the Longevity Bonus program, the Power Cost Equalization program, Revenue Sharing, Municipal Assistance Program, School Foundation, School Debt Reimbursement, Pupil Transportation, Aid to Families with Dependent Children, and Adult Public Assistance, among others.

Between 1981 and 1988 $34 billion passed through the state general fund. Two-thirds of the total $34 billion went for purposes other than state agency spending. This shift in government spending priorities--away from investment in the future and toward public consumption in the present--is at the root of some of our most important long-term economic difficulties. This is particularly true for "core" infrastructure development--streets and highways, mass transit, airports, ports and harbors, water and sewer systems, and gas and electrical facilities.

National economic experts agree there is a clear and compelling linkage between the amount of infrastructure investment and an economy's ability to increase its level of productivity. The state needs a rational, systematic approach for meeting its basic infrastructure responsibilities. More attention must be paid to the composition of government's expenditures, and particularly the effects various spending patterns may have on the state's private sector productivity. The private sector needs a good infrastructure to be competitive.

Transportation Budget

Unlike most states where user taxes and fees--motor fuel taxes, motor vehicle registration fees and other special taxes--are the funds used to support transportation system improvements, Alaska's user taxes and fees meet only a small fraction of the cost. The state receives approximately 85 percent of its general revenue from petroleum taxes and royalties.

Alaska's good fortune resulting from the oil finds of recent years is well-known. The wealth was so great at one time that the state eliminated personal income taxes. In early 1986, however, the price of oil dropped. Oil industry employment declined rather than increased, and the state government was in a tenuous financial situation. And then, in August, 1990, Iraq invaded Kuwait and oil prices soared once again.

Alaska has been through repeated episodes of exhilaration and anxiety as the price of oil moved up and down. Oil prices fluctuate because they are controlled by the Organization of Petroleum Exporting Countries (OPEC) cartel. The cartel assigns production quotas to each member, but when prices are high OPEC members exceed their quotas and when prices fall they cut production. So there is no stable price, but rather an endless cycling.

Transportation investment suffers from the inability of the current budgeting process to provide a stable source of funding for maintenance, replacement and capital improvements. The lack of stable funding hinders long-range planning and interferes with the delivery of transportation services to Alaskans.

What actions should the department take to pursue stable and adequate funding for capital development, replacement and operations?

Federal Program Receipts

In addition to the volatile state revenue picture, the state faces a potential decline of unknown magnitude in the federal contribution to the highway and aviation capital construction program. The statute that authorizes federal highway dollars expires in October, 1991 and it is recognized that the program as it exists today may be greatly changed. At the same time, reauthorization of the federal aviation construction program in 1992 could have a similar impact on the aviation construction program.

What state programs are needed to complement federal program receipts, particularly if they decline in the future?

Federal Program Criteria

Federal highway funds are restricted by federal mandate for capital improvements as well as planning, research and safety activities. Federal highway funds cannot be directed to maintenance activities. Airport improvement funds are available for airport development, airport planning and noise compatibility project. Like highways, routine maintenance work is not eligible for federal reimbursement. As a federal-aid recipient, it the responsibility of the state to preserve the transportation infrastructure through sound management of our capital assets.

What action does the department need to take to ensure that there is an adequate operating budget to maintain the federally-funded capital improvements?

User Fees

The psychological and symbolic nature of government and political authority create significant expectations on the part of the public. Once the state budget is moved to a higher level, the political and economic realities of the situation make it difficult to later reverse. The individual comes to assume that the provision of basic services is a "right" and that it is the "responsibility" of government to continue to provide these services. In the past decade, when petroleum revenues paid for almost everything, Alaska lost the link between what residents pay in taxes and what they receive in services. When citizens aren't aware of the cost of services, public spending is no longer restrained by a sense of the value of services provided.

An important principle of allocating responsibilities is that the "users" of services or infrastructure should pay their costs. Users may include a development company, subsequent developers attracted by the initial infrastructure investment, or the residents of the community who benefit from the improvements to the airports, road or harbors.

Currently, there is no clear view of who should pay for services at what level or what revenue sources should be tapped. Moreover, this results in major differences between the support that government subsidized transportation services provide to some users and the impacts that these users have on the system.

What role should user fees play in paying for state transportation services?

Deferred Maintenance

Responsibility for 270 airports and 5,500 miles of state highway is now spread among a maintenance force of 570 people (6/30/87) as compared to 661 people at the same point in time in 1985. Furthermore, the highway and aviation portion of the maintenance and operations expenditures dropped 24 percent from $71.2 million in FY'86 to $53.9 million in FY'87.

Since Alaska does not build the cost of operating and maintaining new and improved capital stock into the cost of construction, it is not surprising that operation and maintenance costs are not accurately reflected in the state budget. Current inadequate funding, combined with the addition of a significant number of lane miles to the road network, and increased traffic have placed increased demands on the maintenance budget. Alaska cannot continue to add to the transportation infrastructure without recognizing the need to add to the costs of government.

What should be the department standards for asset management--(replacement-vs-reconstruction)?

User Costs

While government's cost of maintaining a quality transportation system may seem high, the direct transportation costs to the user are also much higher. Last year, there were 4 billion vehicle-miles driven on

Alaskan roads. That represents $1.3 billion spent annually by the public on highway transportation.

Data collected by the department indicates that 48 percent of Alaska's roads are in good condition, 42 percent are in fair condition, and 10 percent are in poor condition. A study by the World Bank shows that a poor road increases the user costs by 25 percent and a fair road increases the user costs by 10 percent. That means that poor roads are costing Alaskan motorists about $30 million per year in vehicle operating costs.

Poor roads also mean slower driving speeds. Assuming $10/hour for vehicle occupant costs, these slower speeds result in another $12 million cost to the user. There are other sources of delay. About 8 percent of Alaska's roads are under construction each year. The estimated cost of delays on construction projects is about $10 million annually.

Highway quality transportation infrastructure can easily reduce the user costs by 10 to 15 percent. Ideally, the department should manage its transportation systems to minimize the total costs (user costs and government's infrastructure costs) while maximizing the overall benefits. Too often, the cost of building and maintaining our transportation facilities is the sole decision-making criteria.

How actions does the department need to take to provide a cost-effective transportation network that minimizes <u>both</u> user costs and infrastructure costs?

<u>System Expansion</u>

Most of Alaska's Interstate Highways, Principal Highways, Minor Arterials and Major Collectors that link together Alaska's economic centers were built over the past 50 years. To meet long-term transportation needs, the state must anticipate and plan for expansion in the current system. The Western Access Road from the Interior to the Seward Peninsula, completion of the road to Cordova (Copper River Highway), and new access to Kantishna (Stampede Road) are among the most prominent. The Bradfield Canal Road and the Taku Highway could prove a valuable asset for tourism, recreation and international commerce (Canadian access to seaport).

In the aviation system, though it is not expected that a great number of new facilities will be constructed, it is anticipated that some resource

development areas may require new airports. Further, as demand for more economical air service in the villages increases, there will be a need to expand existing facilities to accommodate that demand.

Some important needs for transportation improvements are being ignored because our budget process discourages attention to statewide needs and programs. In particular, careful analysis of economic justification will lead to the conclusion that some extensions to our existing transportation system are warranted.

What process should the department recommend to help determine the system expansions needed?

Provision of Emergency Transportation Services

Probably one of the most critical services offered by any transportation system is emergency transportation. Whether it is for the transport of persons in need of emergency health care unavailable in their community or for the movement of emergency cargo such as medical equipment, food or special tools or equipment in the event of a disaster. Many of the state's transportation facilities and transportation providers have a role in mobilization and deployment of personnel and equipment in the event of emergency medical transport or natural disaster.

What changes should be made to department programs to identify short-term and long-term emergency transportation requirements, and to assure that the transportation system can fulfill its role in meeting those requirements in the event of a catastrophic disaster?

Provision of Transportation Services to Major Recreation Facilities

Alaska's outdoor recreation-oriented residents and the increasing numbers of out-of-state visitors desire and expect accessible outdoor recreation opportunities. Accessible public recreation areas are important to the state. 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 continue to attract residents and visitors alike.

The Alaska Department of Natural Resources/Division of Parks and Outdoor Recreations is devising a number of strategies to reduce costs and increase revenue, maintaining the level of recreation opportunities and

serving as a catalyst for the outdoor recreation industry. One of the objectives proposed by the Alaska State Park System to increase the efficiency of state park system management is to enter into a cooperative agreement with the department to maintain park roads and parking areas.

What transportation services should be provided by the department to support the recreation industry?

☑ ISSUE AREA: ENGINEERING/ENVIRONMENTAL CONSTRAINTS

The annual cost of administering, maintaining and improving the Alaska transportation system is above comparable national averages. 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.

Global Warming

The global warming theory has enormous implications in Alaska. Many roads and airports are built over permafrost that will become unstable if the climate warms. A series of warmer than normal winters has already had an effect in marginal permafrost areas.

What alternatives need to be considered to accommodate trends in global warming?

Design Standards

Rigid design standards directly govern project financing and feasibility. These standards can impose unnecessary costs and prevent the state and local governments from pursuing the most cost-effective options in construction. At the same time there is a need to introduce innovative techniques in construction and maintenance to build a system which lasts longer with less maintenance.

What design standards should change to encourage innovative solutions to Alaska's special transportation needs?

☑ ISSUE AREA: REGULATORY POLICIES

State and federal laws and regulations describe established national and state policy for transportation. These laws and regulations stipulate requirements to be met in transportation planning and, therefore, they form an important basis for the planning program. A significant issue that must be addressed is how can we best balance environmental concerns and what role should the department play in doing so?

National Environmental Policy

Spurred by policies set forth in the National Environmental Policy Act and other environmental legislation, federal, state, and local policy makers have become increasingly concerned with the effects of their decisions on environmental quality. Many aspects of transportation have adverse effects on the environment. The need to clean up toxic conditions on or near transportation properties and to replace leaking fuel tanks is posing more concerns for the health and safety of the public. The astronomical cost to clean up hazardous wastes and the need to meet fuel storage and monitoring requirements could adversely affect the future development of the transportation system.

The problems receiving the most attention today relate to the environmental damage associated with the use of transportation facilities. These issues, ranging from air and noise pollution to tanker spills, will continue to shape the future of transportation. Transportation activities generate noise and congestion. Transportation is a major contributor to air pollution, including emissions of carbon monoxide and a variety of other pollutants, even in Alaska. Transportation cannot avoid affecting the environment, but a major goal must be to minimize the negative side effects.

Existing laws already require assessment of the effects of significant actions on the environment, special attention to air pollution, and protection of wetlands and coastal zones. The Clean Air Act requires the EPA to enforce vehicle and equipment maintenance standards to preserve emission control performance.

The Environmental Protection Agency (EPA) is intensifying its enforcement of wetlands regulations, and transportation agencies are required to mitigate wetland losses by creating new wetlands, often in

substantially greater amounts than are lost in taking of the rights-of-way. The Corps of Engineers and the U.S. Department of Transportation (USDOT) also exercise regulatory responsibilities relating to wetland preservation. The USDOT, in coordination with other agencies, is developing guidelines for carrying out the "no net loss" goal with respect to the effects of transportation on wetlands.

What can the department do to balance the conflicting demands for a quality environment with the need for an efficient transportation system?

FAA Security/Safety Programs

FAA regulations require that the state maintain a specified level of security at state-owned and operated airports which receive scheduled service by aircraft having a passenger seating configuration of more than 30 seats. Amendments to 14 Code of Federal Regulations (CFR) Part 107, the regulation governing airport security, are resulting from an increased national emphasis on the need to improve security at airports. The requirements of the revised regulations, together with stricter interpretation by the FAA of existing regulations, will continue to result in increased operating and capital costs at many rural airports throughout the state. These include, for example, Part 107 fencing and access control requirements and law enforcement officer (LEO) response requirements.

In addition, Part 139, the federal regulation which governs airport certification and operation for airports served by aircraft having a seating capacity of more than 30 seats, may be expanded by Congress to apply to airports receiving service by aircraft with 10 passenger seats or more. This could potentially impact an additional 48 state-owned airports and would result in increased capital and operating costs for Airport Rescue & Firefighting (ARFF) vehicles and associated personnel costs, safety fencing, etc.

The State of Alaska has, in the past, received waivers from the FAA for many of the more stringent regulatory requirements. Current efforts to extend these waivers to apply to the revised regulations have been unsuccessful. If the department is forced to comply with the more stringent regulatory requirements, our operating costs at many airports would increase substantially.

What course of action should the department pursue to comply with the more stringent federal regulatory requirements at certificated airports?

Utility Relocation

Currently the state pays to relocate utilities within the state right-of-way that are in conflict with construction projects. Alaska is the only state that entirely funds the cost of utility relocation with highway construction funds. This expense often represents a significant financial burden to the overall construction cost.

What responsibility does the department have for the financial burden of relocating utilities in state right-of-way?

Motor Carrier Regulation

Regulation of the trucking industry has an impact on the transportation system of the state and the delivery of goods. The state imposes registration requirements on motor carriers operating within the state, and requires various billing and reporting requirements. The state also issues permits for oversize and overweight truck movements.

Under the established domestic weight limits for moving freight on state highways, significant numbers of overweight containers are being shipped over those roads, causing additional wear and safety concerns, without adequate contribution in highway user fees to compensate. Stricter enforcement of weight limits could alleviate the problems somewhat, but questions of incentives and liability for overweight shipments would still remain.

What position should the department take regarding heavy vehicle usage on highways?

☑ ISSUE AREA: POLITICAL ENVIRONMENT

Transportation is vitally important to the social and economic well-being of Alaskans. The public side of the Alaska transportation system--highways, airports, ferries and harbors--is a fragile network and the responsibility to keep the system up and operating safely and efficient is great. Changes in the relative technical and financial capabilities of state and local governments and private interest, and competing priorities for resources have altered people's expectations and focused attention on the roles of the private and public sectors.

Public-Private Partnership

State and local governments provide the major share of public sector transportation financing. They also build and maintain facilities such as roads, and airports, in addition to operating and managing ports and rail services.

The private sector has responsibility for providing most transportation services--operating the trucks and airlines, intercity buses, pipelines, marine vessels, and other commercial vehicles carrying people and goods. Cargo terminals and piers generally are owned and operated by private firms. Private companies also own and maintain the extensive network of gas, oil, and chemical pipelines. There are additional areas in which private capital investment in transportation would be both profitable and in the public interest.

The mixed system of ownership and financial and operating responsibility in transportation is complicated. But this mix of public and private sector participants can contribute to the state's ability to use resources efficiently and respond quickly and effectively to ever-changing demands.

State and local governments across the country are working with the private sector to build new highways as toll roads, with private sector involvement that ranges from financing and managing construction to owning and operating the roads. Integration of trucking companies, shipping lines, and air carriers has improved the productivity and attractiveness of many services. Innovative approaches to managing and financing transportation are emerging that can attract additional investment to transportation.

What transportation responsibilities in the state might be better borne by the private sector and improve the efficiency with which we use our transportation system?

☑ ISSUE AREA: AVAILABILITY OF ENERGY FOR TRANSPORTATION

The future of transportation is tightly linked to the future of world energy markets, particularly petroleum. Although there have been significant gains in energy

efficiency in transportation, consumption continues to grow. Reliance on petroleum persists.

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 energy consumption. Although improvements in fuel efficiency have made an important contribution to energy conservation in transportation, the overwhelming reliance on petroleum for meeting the demands of the transportation sector is expected to continue into the foreseeable future.

The role of the department to resolve energy concerns is limited. However, priorities established and actions taken in the planning and development of transportation facilities and services by the state can have a sizeable impact upon use of available transportation energy within the state.

What programs should the department develop to help conserve energy used for transportation within the state?

☑ ISSUE AREA: SPECIAL TRANSPORTATION NEEDS

Some Alaskans--especially the elderly, disabled, and low-income--have special transportation needs that are unmet. Many of these persons are unable to use automobiles and do not have alternative forms of transportation available to them. Various programs have been implemented in some areas to make facilities more useable and provide specialized services to more adequately meet the needs of these individuals. Significant architectural barriers remain that have an affect on their mobility.

The U.S. Congress recognized the need for public transportation for physically and mentally disabled persons in the 1970 and 1974 amendments to the Urban Mass Transportation Act of 1964. Additional Congressional interest in improving the travel environment for persons with disabilities was expressed in the Rehabilitation Act of

1973, which prohibits discrimination on the basis of handicap in federally assisted and administered programs. The Air Carrier Access Act of 1986 requires the U.S. Department of Transportation to issue regulations prohibiting discrimination in air travel on the basis of handicap.

What can the department do to better respond to the special needs of elderly, disabled and low-income travellers?

A Test for Defining Strategic Issues

QUESTION	INTUITIVE TEST			COMMENT
	L	M	H	
GEOGRAPHY				
Should the department adopt minimum service guidelines for implementing its programs?				
What action is needed to ensure Alaska's infrastructure supports participation in the global marketplace?				
What actions need to be taken to improve intermodal connections?				
What actions need to be taken to improve capital choices between modal investments?				
JURISDICTIONAL RESPONSIBILITY				
What criteria defines appropriate state responsibility for transportation services?				
Should the service life (life expectancy) and jurisdictional responsibility be determined before construction financing is approved?				
DEMOGRAPHIC AND ECONOMIC GROWTH				
What actions will be needed to accommodate population migration and population change?				
What actions should the department take to promote economic growth in Alaska?				
LAND OWNERSHIP AND USE				
What action does the department need to take to preserve access corridors across federal lands?				
What level of surveying, mapping and monumentation should the department provide to adequately manage and operate facilities?				
FINANCIAL RESOURCES				
What actions should the department take to pursue stable and adequate funding for capital development, replacement and operations?				
What state programs are needed to complement federal program receipts, particularly if they decline in the future?				
What action does the department need to take to ensure that there is an adequate operating budget to maintain federally-funded capital improvements?				
What role should user fees play in paying for state transportation services?				
What should be the department's standards for asset management—(replacement-vs-reconstruction)?				

What actions does the department need to take to provide a cost effective transportation network that minimizes both user costs and infrastructure costs?				
What process should the department recommend to help determine the system expansions needed?				
What changes should be made to department programs to identify short-term and long-term emergency transportation requirements, and to assure that the transportation system can fulfill its role in meeting those requirements in the event of a catastrophic disaster?				
What transportation services should be provided by the department to support the recreation industry?				
ENGINEERING AND ENVIRONMENTAL CONSTRAINTS				
What alternatives need to be considered to accommodate trends in global warming?				
What design standards should change to encourage innovative solutions to Alaska's special transportation needs?				
REGULATORY POLICIES				
What can the department do to balance the conflicting demands for a quality environment with the need for an efficient transportation system?				
What course of action should the department pursue to comply with the more stringent federal regulatory requirements at certificated airports?				
What responsibility does the department have for the financial burden of relocating utilities in state right-of-way?				
What position should the department take regarding heavy vehicle usage on highways?				
POLITICAL ENVIRONMENT				
What transportation responsibilities in the state are better borne by the private sector and improve the efficiency with which we use our transportation system?				
AVAILABILITY OF ENERGY FOR TRANSPORTATION				
What programs should the department develop to help conserve energy used for transportation within the state?				
SPECIAL TRANSPORTATION NEEDS				
What can the department do to better respond to the special needs of elderly, disabled and low-income travellers?				

STRATEGIC ISSUES

I. ECONOMIC DEVELOPMENT

What actions should the department take to support economic growth in Alaska?

a. What action is needed to ensure Alaska's infrastructure supports participation in the global marketplace?
b. What actions does the department need to take to preserve access corridors across federal lands.
c. What process should the department recommend to help determine the system expansions needed?
d. What transportation services should be provided by the department to support specific development (e.g., recreation)?

II. FINANCIAL RESOURCES

What actions should the department take to pursue stable and adequate funding for capital development, replacement and operations?

a. What state programs are needed to complement federal program receipts, particularly if they decline in the future?
b. What actions does the department need to take to ensure that there is an adequate operating budget to maintain capital improvements?
c. What role should user fees play in paying for state transportation services?
d. What actions does the department need to take to provide a cost effective transportation network that minimizes both user costs and infrastructure costs?
e. What design standards should change to encourage innovative solutions to Alaska's special transportation needs (i.e. demands of heavy vehicle usage on highways, etc.)?

III. TRANSPORTATION RESPONSIBILITY

What criteria defines appropriate state responsibility for transportation services?

a. Should the service life (life expectancy) and jurisdictional responsibility be determined before construction financing is approved?
b. What transportation responsibilities in the state are better borne by the private sector and improve the efficiency with which we use our transportation system?
c. What responsibility does the department have for the financial burden of relocating utilities in state right-of-way?
d. Should the department adopt minimum service guidelines for implementing its programs (e.g., not only capital improvements but maintenance and operations, as well).

IV. ENVIRONMENTAL AND REGULATORY POLICY

How should the department respond to the changing federal and state regulatory environment?

a. What can the department do to balance the conflicting demands for a quality environment with the need for an efficient transportation system?
b. What course of actions should the department pursue to comply with the more stringent federal regulatory requirements at certificated airports?
c. What programs should the department develop to help conserve energy used for transportation within the state?
d. What can the department do to better respond to the special needs of elderly, disabled and low-income travellers?

WHY PLAN FOR THE FUTURE?

The difference between Alaska and the rest of the nation is that the majority of Alaska's communities are not connected by a road system. Remoteness, water barriers and difficulty traversing the terrain have made road connections either impossible or inordinately expensive. As a result, Alaska relies on a multi-modal system of ferries, airports and roads to meet its needs.

While service needs and statutory responsibilities have continued to increase, revenues to support this diverse system have declined in both absolute and real terms. The department's challenge is to find ways to ensure the provision of high quality services in an era characterized by continuing cost increases and declining revenues.

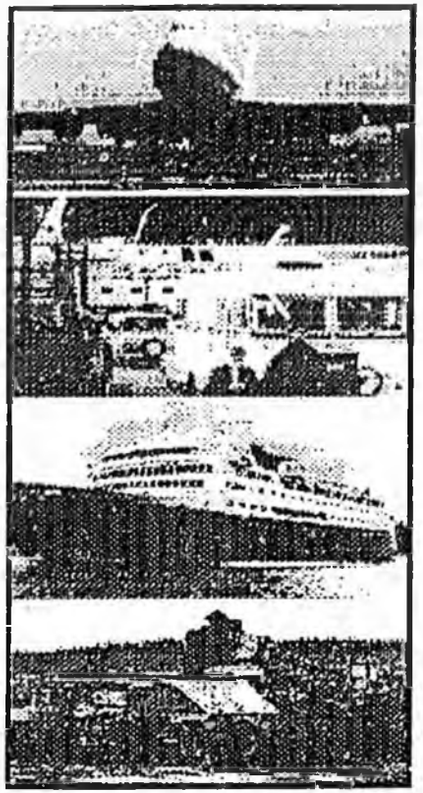
To meet this challenge the department initiated preparation of a State Transportation Plan. This project is being undertaken to identify the key issues which are likely to impact services and performance in the near future. This action is essential if the department is to identify a strategy that meets transportation needs in the future.

For more information contact:
M. Clyde Stoltzfus
Chief, Strategic Management, Planning and Policy
Department of Transportation and Public Facilities
P.O. Box Z
Juneau, Alaska 99811
(907) 465-3900

February 1991

Department of Transportation and Public Facilities

State Transportation Plan



PUBLIC & AGENCY PROCESS

What is in store for our Roads, Airports, and Harbors?

Frank G. Turpin
Commissioner

DOT&PF
State Transportation Plan

NEW DIRECTIONS
NEW OPPORTUNITIES

The Alaska Department of Transportation and Public Facilities is one of the most comprehensive transportation agencies in the United States. The department has responsibility for 5,500 miles of roads, two international airports, 270 smaller airports, a fleet of ferry vessels, 80 docks and harbors and 500 public buildings.

In Alaska, problems relating to our transportation system are becoming so complex and so costly that we must face up to the situation if we are to survive economically. It is no longer a matter of trying to get "a little more for a little less". We must plan for the future.

A long-range plan is important since it can identify priorities for funding so that in future years the department can focus limited state and federal financial resources where state government responsibility is most appropriate, and where the greatest public benefit can be achieved.

WHAT ARE THE MOST CRITICAL ISSUES WE MUST FACE?

There is no simple, permanent solution to the problems that we face. To manage a department so complex, an endless series of choices must be made. There will be difficult tradeoffs in the future allocation of our limited transportation resources.

Four areas have been identified by the department as key to the development of the future transportation system. The goal in preparation of a State Transportation Plan is to identify a range of options that might be appropriate to deal with these issues.

ECONOMIC DEVELOPMENT

What should we do?

What actions should the department take to support long-term economic growth, development and to help diversify our oil-dependent economy?

ENVIRONMENTAL AND REGULATORY POLICY

How do we proceed?

What actions should the department take to minimize the impact of state and federal laws and regulations on the cost of development of the transportation system while still maximizing the benefits of an efficient transportation system?

FINANCIAL RESOURCES

How do we pay?

What actions should the department take to create stable and adequate funding sources so that a sound financial base for transportation capital improvement programming, as well as maintenance and replacement of facilities can be developed?

TRANSPORTATION RESPONSIBILITY

Who should do what?

What actions should the department take to define "appropriate state responsibility" for transportation services and what can be done to facilitate the transfer of transportation facilities in which there is "no compelling state interest" to local government?

WHAT IS IN STORE FOR
OUR ROADS, AIRPORTS AND HARBORS

OPEN HOUSE

Sponsored by the Alaska Department of Transportation and Public Facilities

WELCOME!

This is an informational open house. There is no scheduled activity. This time is provided for you to talk, listen, read, review, write comments, and look around as long as you wish. Representatives from the Department of Transportation and Public Facilities have on name tags. They are here to provide you with information and answer your questions.

The department is interested in receiving your comments regarding four important questions:

"WHAT SHOULD WE DO?" What actions should the department take to support economic growth in Alaska given the number and variety of available transportation improvements associated with economic development opportunities and competing demands for public funding to support those improvements?

"HOW DO WE PAY?" What actions should the department take to pursue stable and adequate funding sources so that a sound financial base for transportation capital improvement programming, as well as maintenance and replacement of facilities can be developed?

"HOW TO PROCEED?" What actions should the department take to minimize the impact of state and federal laws and regulations on the cost of development of the transportation system while still maximizing the benefits of an efficient transportation system?

"WHO SHOULD DO WHAT?" What actions should the department take to define "appropriate state responsibility" for the provision of transportation services and what can be done to facilitate the transfer of transportation in which there is "no compelling state interest" to local government?

It is our goal to identify a range of options that might be appropriate and select a future course of action that will best improve the quality of transportation services provided to you. With your help we can explore new solutions to our problems.

YOUR COMMENTS

A table is set up with a "COMMENT FORM". You may complete the form here, or you may take your form home and mail it to Janet George, Project Manager, Department of Transportation and Public Facilities, P.O. Box 196900, Anchorage, AK 99519-6900. Please return your comments by March 15, 1991. If you prefer, call Janet at 266-1442 with your comments.

STATE TRANSPORTATION PLAN
COMMENT FORM

Name: _____

Address: _____

City: _____

"WHAT SHOULD WE DO?"

ECONOMIC GROWTH: What actions should the department take to support economic growth in Alaska given the number and variety of available transportation improvements associated with economic development opportunities and competing demands for public funding to support those improvements?

"HOW DO WE PAY?"

FINANCIAL RESOURCES: What actions should the department take to pursue stable and adequate funding sources so that a sound financial base for transportation capital improvement programming, as well as maintenance and replacement of facilities can be developed?

"HOW TO PROCEED?"

ENVIRONMENTAL AND REGULATORY POLICY: What actions should the department take to minimize the impact of state and federal laws and regulations on the cost of development of the transportation system while still maximizing the benefits of an efficient transportation system?

"WHO SHOULD DO WHAT?"

TRANSPORTATION RESPONSIBILITY: What actions should the department take to define "appropriate state responsibility" for the provision of transportation services and what can be done to facilitate the transfer of transportation in which there is "no compelling state interest" to local government?

(Please use additional pages if necessary)

Janet George, Project Manager
Alaska Department of Transportation and Public Facilities
P.O. Box 196900
Anchorage, AK 99519-6900

STATE TRANSPORTATION PLAN
Meetings & Open Houses

Community	Date	Time	Meeting
Unalaska	January 31	10:30 a.m.	Meeting with Paul Fuhs, Mayor, City of Unalaska and Polly Prchal, City Manager/DOT&PF Conference Room
Mat-Su Borough	February 7	2:00 p.m.	Meeting with Dorothy Jones, Mayor, Don Moore, Manager, and Roy Carlson, Public Works Director
Nome	February 11	7:30 p.m.	Presentation to the Nome City Council/Nome City Council Chambers
	February 12	10:00 a.m.- 1:00 p.m.	Open House for the Nome Area/Nome City Council Chambers
Kotzebue	February 12	6:00 p.m.- 8:00 p.m.	Open House for the Kotzebue Area/Kotzebue City Council Chambers
	February 13	9:00 a.m.- Noon	Open House for the Kotzebue Area/Kotzebue City Council Chambers
Kodiak	February 14	Noon	Presentation to the Kodiak Chamber of Commerce/RESCHEDULED DUE TO WEATHER
	February 14	2:00 p.m.- 5:00 p.m.	Open House for the Kodiak Island Borough/RESCHEDULED DUE TO WEATHER
Ketchikan	February 19	2:00 p.m.	Presentation to the Ketchikan Area Transportation Study Committee including Mayors from the City of Ketchikan, City of Saxman, and Ketchikan Borough
	February 19	5:30 p.m.	Presentation to the Ketchikan Borough Assembly
Bethel	February 21	Noon	Presentation to the Bethel Chamber of Commerce
	February 21	2:00 p.m.	Meeting with City of Bethel: Manager, Public Works Director, Chief of Police, Fire Chief, Harbormaster
	February 21	5:00 p.m.- 7:00 p.m.	Open House/Bethel City Conference Room
Alaska State Chamber of Commerce	February 22	Noon	Distribute Open House Meeting Notice following presentation by Dennis Nottingham, Alaska Highway Users Federation
Anchorage	March 4	11:00 a.m.- 6:00 p.m.	Open House/DOT&PF Main Conference Room
Barrow	March 6	3:00 p.m. 7:00 p.m.	Open House/North Slope Borough Chambers
Fairbanks	March 7	7:00 a.m.	Presentation to the Fairbanks Chamber of Commerce/Transportation Committee
	March 7	3:00 p.m.- 7:00 p.m.	Open House/North Star Borough Chambers
Southwest Cities	March 13	11:00 a.m.	Presentation to the Southwest Municipal Conference/Transportation Committee (in Anchorage)
Anchorage	March 20	2:00 p.m.	Presentation to the Anchorage Metropolitan Area Transportation Study Technical Committee
Kodiak	March 21	Noon	Presentation to the Kodiak Chamber of Commerce (Rescheduled)
	March 21	3:00 p.m.- 7:30 p.m.	Open House for the Kodiak Island Borough (Rescheduled)
Juneau	April 9	7:00 p.m.	Presentation to the Juneau Planning Commission

STEVE COWPER, GOVERNOR

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

P.O. BOX Z
JUNEAU, ALASKA 99811-2500
PHONE: (907) 465-3900

OFFICE OF THE COMMISSIONER

September 21, 1990

Mr. Frank Turpin, President & CEO
Alaska Railroad Corporation
421 W. 1st Avenue
Post Office Box 107500
Anchorage, AK 99510-7500

Dear ~~Mr. Turpin~~ FRANK:

The Alaska Department of Transportation and Public Facilities (DOT&PF) is one of the most comprehensive and diverse transportation agencies in the United States. Yet, it has been almost a decade since we have taken a look at a state transportation plan.

The department has responsibility for planning, constructing and operating roads, the international airports, most regional and feeder airports, a fleet of ferry vessels, ports and harbors, public buildings, and rail and transit system support. In the past, we have dealt with our transportation system and our public facilities too often as if they were all operating in isolation. However, the relationships are very intricate. We need to recognize these relationships and enhance opportunities for state development and economic growth.

The 1989-90 DOT&PF Management Plan redefined the overall mission of the department and identified the need to develop a long-range, multimodal state transportation plan as a high priority. The intent is to focus on the fundamental responsibilities of the department so that investments and resource allocations are made wisely in the future. The plan will include all transportation modes (aviation, highway, marine, pedestrian, public transportation, pipelines, and railroad services).

A long-range plan is important since it can identify priorities for funding so that in future years the department can focus limited state and federal financial resources where state government responsibility is most appropriate, and where the greatest public benefit can be achieved. We feel it is important that we involve other agencies in this effort, since the relationship between transportation facilities, land use, economic development, urban and rural development and environmental protection is so significant.

25A-T1LH

Overall responsibility for preparation of the state transportation plan is being shared by M. Clyde Stoltzfus, Chief, Office of Strategic Management, Planning and Policy, and Kit Duke, Regional Director, Central Region. The preparation of the document is to be aided by the help of a technical committee of department personnel. Sandi Anderson, DOT&PF Alaska Railroad Coordinator, has been appointed a member of the technical committee. A draft of the plan is to be available in January. The draft document will be used to help facilitate the transition to the new administration. Publication of the statewide transportation plan will not end with this effort. The plan is to become a biennial activity of the department, better communicating information on development needs to the Governor, the Legislature, and the public.

A critical factor in enhancing the state's productivity and Alaska's ability to compete and survive in today's demanding international economic environment is the condition of our transportation delivery system. In Alaska, the desire is for extension and expansion of the transportation system to provide the infrastructure needed to unlock the mineral resources of the state, in which expansion of the rail mode has an important role to play. While the Alaska Railroad operates as a separate entity under the auspices of the Alaska Department of Commerce and Economic Development, we share the common goal of a well-coordinated and responsive transportation system for the benefit of the state. For this reason, the railroad's participation in this effort is very important to us.

Over the course of the next few months there will be a variety of opportunities to exchange information and discuss issues regarding the transportation plan. It is our intention to distribute key documents for interagency review and comment. Please let me know if there is a contact person at the Alaska Railroad that you can appoint to work with us on this project in addition to Sandi. A well-coordinated interagency effort can help define realistic strategies for future management of our entire transportation system.

If you have any questions regarding the planning project, please call Clyde (465-3900) or Kit (266-1440).

Sincerely,

Mark S. Hickey
Commissioner

cc: M. Clyde Stoltzfus, Chief, Office of Strategic Management, Planning and Policy, DOT&PF
Kit Duke, Regional Director, Central Region, DOT&PF
Sandi Anderson, Alaska Railroad Coordinator, DOT&PF

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
STATE TRANSPORTATION PLAN
PUBLIC INVOLVEMENT PROGRAM

As part of the process in development of the State Transportation Plan, a strong public involvement effort was initiated. During February and March, comments were solicited from consumers, labor, business, government agencies, elected officials, environmental groups and many others to help identify options to address the four key issues. This was done by:

- Publication of a newsletter distributed to more than 300 community leaders and organizations throughout the state.
- A series of open houses held at various locations throughout the state.
- Establishment of an Inter-agency Review Committee.

The department received many comments on a wide variety of topics. The following summary is not intended to represent them all. The items included here are only those which speak most directly to the four issues of primary concern in the current study effort. We paraphrased to the best of our ability the comments received.

Many participants, especially other state agencies, expressed strong support for a serious, multi-modal, long-range planning effort for provision of transportation services and facilities. The consensus among participants was that the transportation infrastructure is falling apart. There is concern for the fiscal capability of all parties, including local governments, to be able to physically preserve and upgrade the existing system within existing means. Specific concerns include:

ECONOMIC DEVELOPMENT

Public Meeting Participants

There is no formal connection between economic development decisions and transportation planning. Participants expressed concern about the need for a formal statewide strategy to address economic growth.

> Public Recommendation: *Coordinate with DCED, DNR, DCRA, AIDEA and ARR to assure that the capacity and potential of Alaska's surface transportation facilities support "designated" growth areas. Transportation infrastructure improvements should be done in support of economic development initiatives developed by other agencies/organizations.*

Many people/organizations believe their communities would benefit economically from having DOT&PF build access to potential sites of developable resources, or transportation links with other developed areas.

> Public Recommendation: *Coordinate and undertake improvements in facilities and services that maximize the benefits of energy-efficient and cost-effective goods movement.*

There is an understanding that growth creates a demand for transportation, and new transportation facilities can, in turn, increase pressure for development on adjacent land. Striking the proper balance between desired land-use patterns and needed transportation facilities and services is a growing concern for those involved in city/village, regional, and state planning and development.

Public Recommendation: *To be effective, land use and transportation planning must be connected. There should be a defined relationship between local, regional, and state transportation plans.*

Enhancement of existing transportation facilities to support economic development was a strong theme in many areas and from many people. We heard that the poor condition of roads and runways was stalling development. Maintaining air service to small communities is a major concern.

Public Recommendation: *Preservation of the state's existing surface transportation system should be the primary goal of any future transportation program since it is this system which provides the basic network upon which the economic health and international vitality of the state depends.*

Small, local, relatively low cost enhancements could provide some opportunities for private investment in resource development. Pertinent to the enhancement theme were comments recommending we look closely at the use of "appropriate technology" for facilities to provide "basic access."

Public Recommendation: *Flexible standards which are more compatible with local needs should be developed.*

Preservation of a water transportation system should be a primary goal of the state since the water mode is part of the intermodal movement of goods which supports the state's economic strength.

Public Recommendation: *Funds generated by water transportation-related activities (from user fees, etc.) should be returned to the water transportation industry. Clear priorities should be established for state investments in ports and harbors development. A state policy is needed to guide state, regional and local efforts in a manner that will encourage the development of projects that best serve the interests of the state.*

One concern was voiced in several rural communities which are reliant on air transportation. DOT&PF's policies for management of its properties have a significant influence in the operation of "supply and demand" for private sector providers of transportation services. It appears that incognizance of this fact has resulted in a pricing structure which may not be in the public interest.

Public Recommendation: *Manage state-owned highway, marine, and air properties to assure maximum public benefit--including sale of surplus properties, use of market-rate rentals where appropriate, and examine airport administration.*

An overriding theme which emerged is that a single development strategy is not appropriate for such a large, diverse state as Alaska. A state of contrasts--a resources rich state (fisheries, forests, and minerals) and a land of natural beauty and recreational attractions--Alaska each year attracts an increasing number of visitors. Yet, there is tremendous geographical disparity in the distribution of resources and wealth.

Public Recommendation: *Any economic development strategy or infrastructure plan to support development will need to be a composite of various smaller strategies which are tailored to the needs of various geographical regions.*

State Agency Reviewers

All of the agency participants are enthusiastic that DOT&PF is undertaking a coordinated multi-agency planning process. Most of the state agencies commented that DOT&PF's role in specific resource or community development strategies is supportive, with other state agencies developing economic growth plans.

The Department of Commerce and Economic Development (DCED), the Department of Natural Resources (DNR) and Community and Regional Affairs (CRA) provided recommendations for addressing the economic goals of transportation infrastructure planning:

> DCED & DNR Recommendations: *Emphasize future planning for resource development related access to state lands over short term planning. Use Alaska Regional Development Organizations (ARDORs) for perspective on the economic utility of transportation proposals. Develop project ranking criteria focused on investment opportunities; the criteria should reviewed by a working group of state, industry, and community representatives.*
>
> *Additionally, DOT&PF should work with the Jones Act, exploring exemptions, such as for the Yukon River, for sea transport options and exploring the possibilities for repeal. We should work actively to assert Alaska's rights under RS2477 to obtain fee simple title to these rights-of-way, and work with DNR's land selection process toward additional state ownership. DNR believes we should focus on providing trunk routes for resource development purposes--multimodal if possible--with feeder routes to communities wanting them.*
>
> *Specifically, DOT&PF is urged to take actions which promote Alaska in the international market (including consideration of transshipment staging areas to make Alaska a hub in Pacific Rim transport of goods), supporting the opening of a Northern shipping route, and exploring expansion of our transportation links with Canada, especially through Southeast Alaska.*
>
> CRA Recommendations: *DOT&PF should address site control by comprehensive local/regional planning and work toward more flexible federal land ownership/transfer mechanisms. Examples include airport relocations and upgrades, easements, and staff for planning. The Local Service Roads & Trails program for rural communities should be reestablished. Their success was due to not having extensive design standards, ROW, etc. This comment echoed the appropriate technology concept voiced at the public meetings.*

The Departments of Fish and Game (F&G) and Community and Regional Affairs provided some additional cautions to be considered in planning transportation infrastructure:

> F&G Recommendations: *DOT&PF should emphasize long term stability over short term economic growth. Additionally, planning should include economic least-cost alternatives, with costs including fish and wildlife related tourism and recreation, environmental impacts, subsistence use interests, etc. Specific objectives/policies were offered which DOT&PF could incorporate to address F&G interests. They also urged that long term maintenance of facilities be adequately funded.*
>
> CRA Recommendations: *Criteria for decision-making regarding capital investments should include social goals (basic transportation service) and*

generation of development, as well as economic feasibility. Transportation corridor decisions should consider social and economic impacts to owners and residents (subsistence, etc.).

FINANCIAL RESOURCES

Public Meeting Participants

Alaska is faced with a gap between the needs of the transportation system and the revenues anticipated to meet these needs. The large gap between revenues and needs indicates that a greatly increased effort is needed to keep the existing system from falling into a worsened state of disrepair. Of great concern is the fact that postponement of needed rehabilitation work will greatly increase the costs of repairs when they are eventually undertaken.

The public generally voiced support for drawing a connection between the costs of transportation system maintenance and operations, and revenues collected from user fees.

Public Recommendations: *The department should identify funding mechanisms to support the continuing development and maintenance of highways, airports and harbors and promote partnerships with government and community groups to strengthen the funding, construction and maintenance of the transportation system.*

User and benefiter fees, set at an appropriate level to cover the economic cost of the transportation facilities provided, should be dedicated to funding transportation improvements.

DOT&PF should work with local governments to promote balanced taxing and funding mechanisms to support the construction and maintenance of state and local transportation systems.

Attention to use of "appropriate technology" for transportation facilities could make construction and maintenance money go farther. There is interest in reinstituting the Local Service Roads & Trails program.

Public Recommendation: *Provide technical information, facilitate local and regional trail development, and cooperate with other state agencies' trail initiatives.*

There are opportunities for substantial savings from timely highway maintenance that reduces ultimate replacement and reconstruction costs. Supporting programs of effective and timely maintenance and improvements can affirm public confidence that payments for infrastructure are well managed.

Public Recommendation: *Routine, continuous pavement maintenance programs need to be established to preserve the state's investment in infrastructure.*

State Agency Reviewers

DCED Recommendations: *Design standards should be amended to give priority to highest potential use system additions, and should be lowered for specific user needs where possible. Commitment to commercial user fees should be obtained prior to construction. DOT&PF is also urged to investigate the federal "aviation trust" account for potentially greater support funding.*

DNR Recommendations: *The gas tax approach to funding is appropriate, and toll roads should be considered where appropriate. The DOT&PF should, however, analyze dedicated funds carefully before committing the state to a fixed percentage. We should consider a state lottery for highway expansion, and private industry should build and maintain some components--especially bridges, ports, railroad, pipelines, airports, ice roads.*

F&G Recommendations: *DOT&PF should seek new sources of revenues. F&G provided an interesting list of possibilities.*

CRA Recommendations: *The financial discussion should address the influence of DOT&PF's property management policies on availability of economical air service. This comment reiterated a concern heard in the public meetings.*

TRANSPORTATION RESPONSIBILITY

Public Meeting Participants

Most communities stated that taking over any additional maintenance/operation responsibilities for transportation facilities and services would be unacceptable without some arrangement for increasing their revenues. Various possible methods for funds transfer were brought up by the communities.

The public meetings never got to consideration of criteria for "appropriate state responsibility." Discussion in this area was clouded by the Category III roads issue. The public's reaction is quite defensive and some undoing of public perception about our intentions may be required before we can get a fair reading on transfer of responsibility. Public perception is key to the success of any future initiative.

Public Recommendation: *Utilizing functional classification as a general philosophy might provide a framework in which to discuss administrative jurisdiction. These criteria should be measurable and applied with sensitivity to local circumstances.*

Many rural communities believe that transfer of responsibility without funding would create unfair hardship on them because they lack a tax base from which to increase their own revenues. Urban areas believe that it would be unfair to transfer maintenance responsibilities there, but not in the unorganized borough.

Public Recommendation: *The range of transportation funding alternatives for rural communities will in most cases be much narrower than for more urban areas due to the size and density necessary to make many options viable.*

State Agency Reviewers

DCED Recommendations: *The 1988 Task Force recommendations should be redistributed in the context of this planning process. Private sector responsibilities may not have been adequately addressed. Responsibility for relocation of utilities should be legally established, if not through law or regulation, then through right-of-way agreements. And, again, it was suggested that DOT&PF change road construction standards to provide minimum service guidelines.*

DNR Recommendations: *DOT&PF should be responsible only for main trunks. Industry and communities should build the feeder systems. Maintenance responsibility should be identified in planning phase of projects, so that design is appropriate to available levels of maintenance funding. Additionally, the state should monitor overloads by heavy trucks.*

CRA Recommendations: *Any discussion of funding responsibility for transportation, either construction or maintenance, must consider the ability of local government or users to pay for them. Furthermore, any planning regarding jurisdictional responsibility must include representation from municipalities, the legislature, Alaska Municipal League, Native Corporations, industry and the DCRA.*

ENVIRONMENTAL AND REGULATORY POLICY

Public Meeting Participants

Although most people at the public meetings indicated that little could be done about state and federal environmental and administrative requirements, several stated that DOT&PF could make an active effort to work with other agencies to reduce conflicts in timing of requests, permitting, avoiding duplication, etc. We must ensure that transportation policies are not at odds with social and economic goals in such areas as the environment and public safety since these are important goals. Transportation solutions must be sensitive to these concerns.

Public Recommendation: *Develop, maintain and expand (where appropriate) procedures and agreements with state and federal environmental agencies to identify and help resolve issues early in the planning process. This cooperative approach would help bring to light subtleties of costs and benefits and ensure that decisions result from consensus building among all affected parties.*

State Agency Reviewers

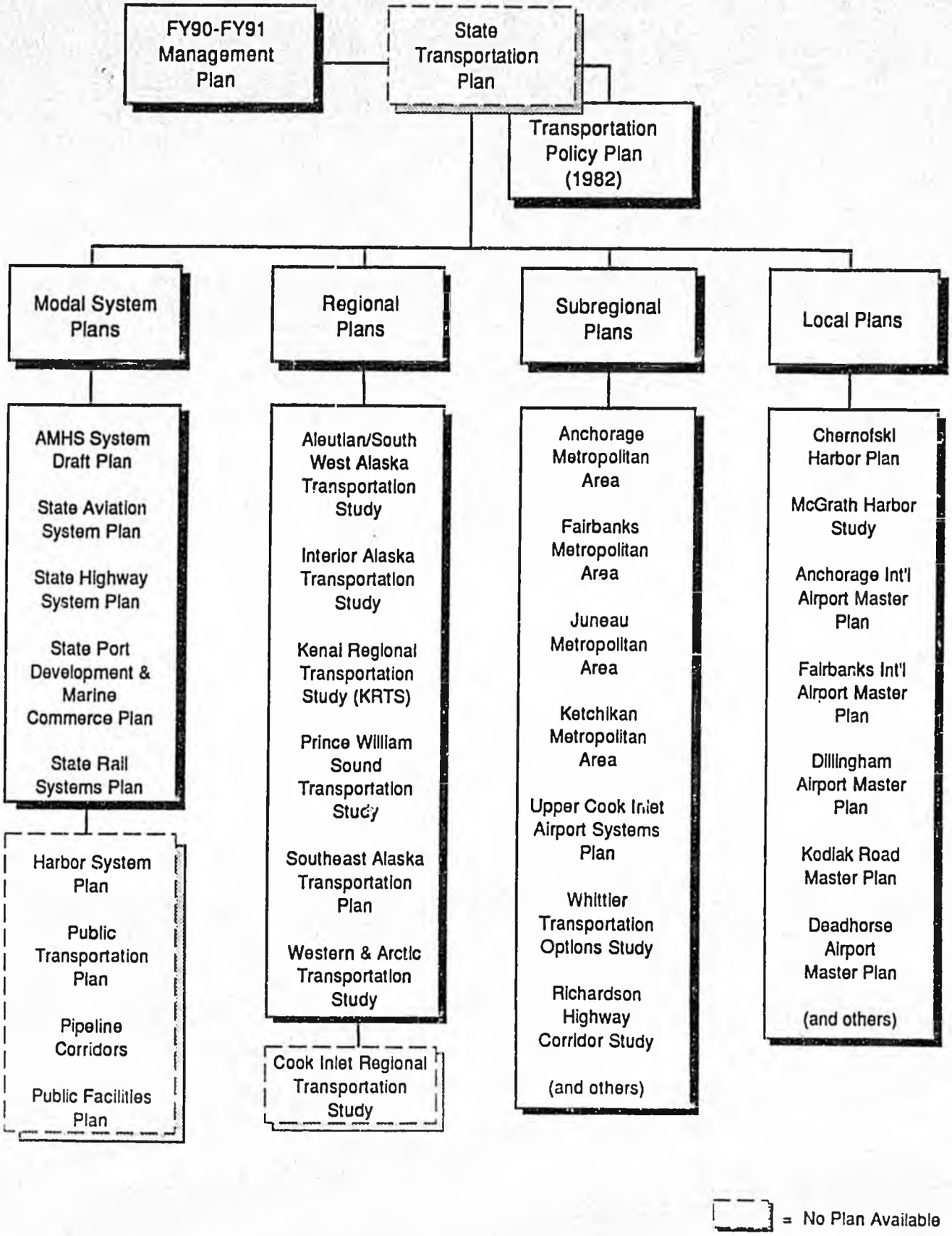
DCED Recommendations:
DOT&PF must balance conflicting demands, examining requirements for reasoned, factual basis and actively helping to keep the extremes in check. DOT&PF must balance habitat requirements of other species with consideration of human needs and full presentation of the benefits of the project. Energy conservation would be best served by DOT&PF's siting roads and facilities to maximize their usefulness.

DNR Recommendations: *Initial planning should build in environmental benefits (scenic turnouts, campgrounds, etc.) and consider environmental policies and laws.*

F&G Recommendations: *DOT&PF should accept and accommodate required compliance and work on reducing costs (time delays, litigation, etc.) F&G provided a list of ways we can do that by early planning to accommodate, etc.*

CRA Recommendations: *DOT&PF should establish policies which will prevent development in areas subject to flooding and erosion when "no-build" or other viable alternatives exist. A multi-agency review of FAA requirements is needed to determine where they are inappropriate and should be amended or waived. There is also a need to examine FAA policies related to ANCSA's denying compensation for airport properties selected by the community or state.*

The Hierarchy of Transportation Plans



Broke to worksession 9 Am

Gail, Lorna, Hudson } Subcommittee on statewide plan

Blue book represents a process used to come up with plan

Why a plan
As 42.050 requires statewide trasp. plan. Only one developed in 1982 — this was a policy plan

DOT has developed extensive process
Statutes call for annual plan
DOT will do bi annual plan
One year do management plan
Second year do state plan

① Some many changing inner relationships with other issues, need a plan + need it to be update

② With limited resources - need to prioritize

③ Identify funding.

④ Plan over time, plan for future

Plan book
① Bibleography

* Map of all facilities

Clyde went thru blue book section by section

136 - Hudson move out w/ individual Reco.

140 — adj to work session.

146 — Want to talk to Committee & est. a sub Committee on state wide trans Gayle P. Chairperson Leman & Hudson member

169 - Clyde Dave? DOT — Process of developing the plan

Trip to Rest Room

234 - Policy issues

240 - Focus Resources over time

249 Short fat roads — Long skinny roads

253 where funding will come from over time

255 Studies by ~~WBSA~~

265 Summary - issues over time & performance in future

271 Review "Dep State Trans plan"

275 Dev. Bibliography of all plan'g documents
Other documents not included - Name them

305 Map of Trans facilities - data base inventory all Communities
all contracts maintained

319 More into document itself
yellow Tab

325 Brown Tab mail outs

332 Pink – Analysis of issues
Technical people — 12 Sub areas & 52 issues
narrowed these on basis what we do — How we do

351 Green Tab – strategic issues identification
est – priorities

360 Blue Tab – Issues will actually be in plan
goal to have Document under 30 pages
Really pretty well covers all issues

374 Golden Rod – Public & agency Revised Section

382 3000 Copies sent out to get participation
open Houses Presentations

400 – got good Comments from public – people do understand issues

407 – letters to state agencies

219 – positive responses from Resource management agencies such as DNR

425 – White Pages Public & agency recommendations

429 – States plan

432 – Hudson excellent process & Presentation
concern "Life cycle costing" Maintain
falling apart – Admin trail more roads Ferry system
used as example – main line Labor intensive Ferries
Complement Dept on public process

465 – Bud Trans Responsibility Bluce – Service life –
life expectancy.

472 – Hudson should say must

484 – Commissioner

Hudson ~~Late Summer~~ Date for Capitol

486 – Turpin Late Summer

~~480~~ 480 – Clyde focus & flexibility

502 – No use in having a plan unless usable – Changing Culture of organization – force agency to look into future & think about contingency

513 – Rep Chenault – Did you get into Kodiak – always in situation where public fighting DOT.
Lots of work w/ organizations to get Bon through organizations such as Chamber – Rotary – Tried to involve Bees community.

534 Chenault Bidding Procurement ← Procedures not here to criticize DOT but
1. Consider to delegate 1 person to help w/ Procurement bill
2. Request some type of breakdown on contracts which inside of state – which outside for last two years
<Procurement code has many problems – i.e. protest clause>
– ~~Amount~~ Number of contracts going to outside firms –

582 – Turpin – Spend Fed money & requirements override state requirements

588 – Keith – problems with current Procurement code spend a lot of money – no marine architects in state other than Moore ? has gone to outside audit work at Int Airports – wanted someone who was familiar with airports of that size

603 Chenault – unstated implication of fed funds.
Not perceived by Alaskans that DOT ~~has~~ contracts with Non-Alaskans.

will help to eradicate preception -

632 - Keith

000 - ~~Choquette~~ Nottingham Drainage -
Wilder had a good relationship w/State
Effort to bring private sector into what is going on
Know restricted by Fed & Constitutionality - may very well
be Constituents don't understand situation -

064 - I need to have some way to respond & not just citing DOT

076 - Turpin - Be working with Bob on Procurement Code

081 - Rep Choquette

087 - Rep Lemon from Travis work with Choquette & DOT
on problems -

114 - adj 9:45

Trans 5/2/91

001 – Call To order 8:50

Foster
Hudson
Kubora
Phillips
Lemm 9:55

012 – HB-295

018 – Witness from motor vehicles
Commerial motor vehicle act of 1986 – Requirt of State adoption
to avoid loss of fed Highway etc funds.
Apr. 1, 1992 must be adopted
Oct 1993 begining losses $12, m
No additional funding required

70 – Hudson question re revenue loss if bill passed
73 – Reply No loss
81 – Kubin
85 Reply – percentages for revoking Commind licenses above
that percentage Reg. laws kick in & loss of all
driving privileges.
106 Kubin lower limit to .04 for Commerd 1.0 for regular

118. Phillips Concern 4 Committees of referral on bill

121 Reply Leg needed by apr 1, 1992

125. Wendy asked speakers office to name Some of Committee

130 – Lemm Supports bill