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That section provides an option-by-option summary of both capital construction/O&M cost estimates and other factors considered.

Public input as well as specific interviews played a significant role in analyzing the comparative ratings assigned. This input process, however, was also limited by time and available resources.

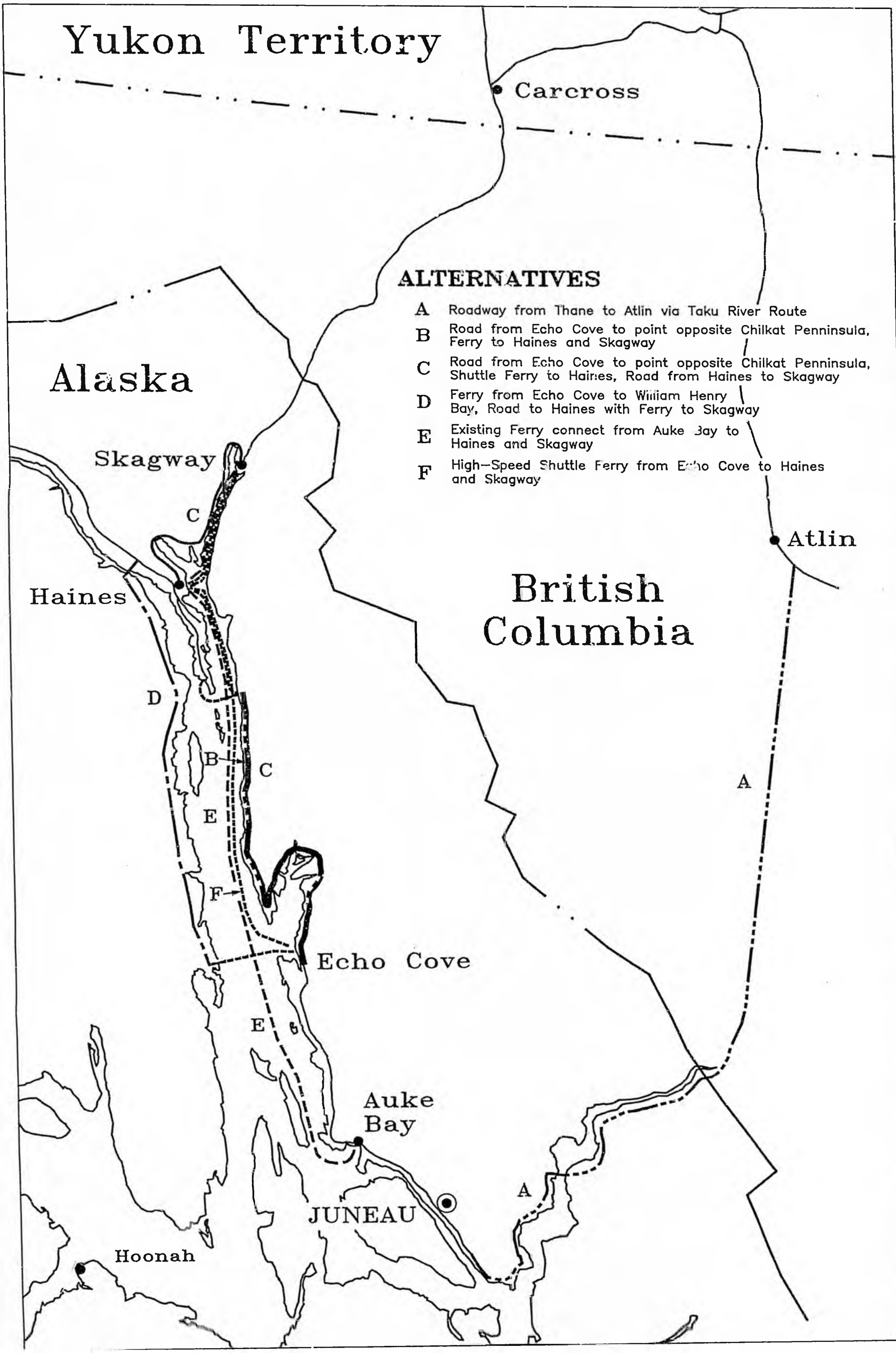
As limited as this approach was in attempting to identify and consider non-construction/O&M cost estimates, the exercise was essential to satisfy the scope of this report. The most compelling reason for reviewing these other factors was that such considerations have rarely been included in previous studies, yet they shape construction decisions as strongly as construction cost estimates.

Given the generic description of each option adopted in this report, the reader is cautioned to review cost estimates as being more an expression of order of magnitude than detailed bidding cost estimates. This delineation of cost estimates to such an order of magnitude permits the general comparative analysis set out as an essential scoping demand of this study. However, actual cost estimates cannot be defended as falling within the +/- 10% range a full design could ascertain. Estimates most susceptible to falling outside of this range are those for facets of the proposed project other than actual road construction, e.g. tunnel construction, avalanche sheds, bridges, etc.

Lastly, construction cost estimates for road, bridges, avalanche sheds, tunnels, custom facilities, maintenance facilities and O&M were generated by Juneau-based civil engineers, currently or formerly employed in private practice or with the State of Alaska. Their time was donated to the study's effort.

Ferry system cost estimates were calculated by Alaska Marine Highway System staff.

Rating values assigned to each of the other considerations identified earlier in this section were made by JEDC staff after conducting public hearings in Juneau, Haines and Skagway and personal interviews with limited number of individuals and organizations. The Southeast Transportation Plan (1986) prepared for Alaska DOT/PF by Acres International Corporation was utilized for establishing comparative values across each option for specific variables, e.g. induced traffic and time/distance benefits. While the actual numbers proposed within this study are questionable due to insufficient data base and scoping, the values are useful in identifying comparative values across each option. Induced traffic study is a critical activity demanded in the next level of investigation of this overall project.


Yukon Territory
Carcross
ALTERNATIVES
A Roadway from Thane to Atlin via Taku River Route
B Road from Echo Cove to point opposite Chilkat Penninsula, Ferry to Haines and Skagway
C Road from Echo Cove to point opposite Chilkat Penninsula, Shuttle Ferry to Haines, Road from Haines to Skagway
D Ferry from Echo Cove to William Henry Bay, Road to Haines with Ferry to Skagway
E Existing Ferry connect from Auke Bay to Haines and Skagway
F High–Speed Shuttle Ferry from Echo Cove to Haines and Skagway
Alaska
Skagway
C
Haines
D
B
C
E
F
Echo Cove
E
G
Auke Bay
JUNEAU
Hoonah
British Columbia
Atlin
A
A

SECTION III

SUMMARY OF FINDINGS

Tables I and II provide in matrix form the summary of both sets of calculations and analyses generated by this study effort.

In reviewing capital construction/O&M costs and the consideration of other factors across the various options identified, several findings emerge:

1. When considering construction dollars alone, the least expensive option is associated with improving the marine transportation system in Lynn Canal by adding two high speed shuttle ferries to serve Juneau, Haines and Skagway.
2. Even when considering other factors (Table II), achieving greater access for Lynn Canal users ranks as high as road construction options for the Taku River Valley and the east side of Lynn Canal.
3. Initiation of high speed shuttle ferry service would provide the least amount of environmental disruption or impacts and the most benefits overall for the communities of Haines and Skagway. Juneau, too, will benefit significantly.
4. Road surface construction beyond Haines on either the east or west side becomes substantially more expensive and almost cost prohibitive.
5. Short of executing ground surveys, an Environmental Impact Statement and actual design needed to generate requests for construction bids within a range of +/- 10%, the Taku River, Juneau-Haines East and Juneau-Haines West are comparatively competitive. Of the two Lynn Canal options, the eastside route is lower in cost. The Taku River is especially competitive when considering that a significant portion of construction costs would likely have to be borne by the Canadian government.
6. More than 20% of the costs identified for the Taku River option are attributable to maintaining the existing ferry service in Lynn Canal.
7. Even operating the existing ferry system will cost almost as much as capitalizing and maintaining a high-speed shuttle ferry service within the same corridor.

8. While enviornmental sensitivity is a critical factor across all of the proposed road options, the westside option poses greater difficulty due to the shuttling across active fishing grounds and the particular sensitivity of eagle nesting and perching, especially along its northern reaches.
9. The westside option is also more vulnerable to the severe weather conditions in Lynn Canal because of the need to provide shuttle service across the Canal perpendicular to the prevailing winds and high sea conditions during storms.
10. Of the three competitive road options remaining after considering construction costs, the Taku River option and the eastside option along Lynn Canal as far north as the Chilkat Peninsula provide the best potential for shared corridor use by utilities.
11. Socio-economic impacts are the most beneficial for Juneau across all options and the least beneficial for Haines and Skagway with the Taku River option.

JEDC staff conducted a series of public hearings in Haines, Skagway and Juneau during February 1989 for the purpose of gaining input on public consensus for any of the proposed access options as well as for soliciting comments on the benefits and drawbacks of each option.

Except for the community of Skagway, there appears to be little consensus on which of the proposed options should be executed.

The Skagway City Council expressed during the public hearing conducted as part of a regular meeting of that body that they were on record opposing any road construction projects within the Lynn Canal. They expressed the concern that any such project would significantly weaken the economic foundation of the community. Public testimony at the same meeting reaffirmed this position in all cases.

The public hearing held in Haines drew approximately three dozen participatnts. The vast majority of those testifying took a similar position opposing any road construction up Lynn Canal. However, at a public meeting sponsored by the Haines Chamber of Commerce held almost two weeks later, approximately 30 individuals attended and the vast majority expressed their preference for road development up Lynn Canal but did not indicate a strong preference for either the east or west side.

The public demand for increased access to and from Juneau has little to do with the length of time it takes to travel from, for example, Juneau to Haines. Instead, demand is for the opportunity for greater frequency of travel and the most reasonable schedules possible.

Two public hearings held on consecutive nights in Juneau generated mixed preferences. The first hearing drew over two dozen participants with the majority expressing their desire for Lynn Canal road development. The second hearing drew similar numbers but testimony was fairly split between those supporting road construction and those preferring the maintenance or expansion of the existing ferry system. The second hearing offered more support for a Taku River option than the first hearing.

Individual comment, submitted by letter or by personal contact, was mixed but slightly favored no road construction.

The Juneau Branch of the Alaska Miners Association took a position at there January 27, 1989 meeting which was stated as follows:

> "While the Juneau Branch of the Alaska Miners Association favors the concept of enhanced access to the State Capitol, it chooses at this time not to endorse any particular plan as the Branch feels the issue merits further study."

TABLE I

JUNEAU ACCESS ROAD
CAPITAL CONSTRUCTION / O & M
25 YEAR PROJECT LIFE

$MILLIONS

ACCESS OPTION	Road Const. (1)	Bridge Const. (2)	Av'l'che Sheds (3)	O&M (1+2+3) (4)	Maint. Facil. (5)	Customs Facil. (6)	O&M (5+6) (7)	Ferry Term'ls (8)	Ferry Vessels (9)	O&M (8+9) (10)	Ferry Revenue (11)	PS&E @10% (12)	Cont'ct Admin. (13)	TOTALS W/O O&M (14)	TOTALS W/ O&M (15)
A) TAKU RIVER	109.6	20.5	3.0	5.0	2.5	4.0	1.0	0.0	29.5	72.4	-49.0	16.9	20.3	206.3	235.7
B) JUNEAU-HAINES EAST	78.0	12.7	15.8	5.4	2.5	0.0	0.0	2.5	18.6	75.1	-35.2	13.0	15.6	158.7	204.0
C) JUNEAU-SKAGWAY	230.0	28.8	32.0	8.5	2.5	0.0	0.0	2.5	4.7	30.1	-8.4	30.0	36.0	366.5	396.7
D) JUNEAU-HAINES WEST	84.8	26.2	8.0	5.4	2.5	0.0	0.0	3.6	17.5	74.6	-34.8	14.3	17.1	174.0	219.2
E) FERRY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.5	72.4	-49.0	0.0	0.0	29.5	52.9
F) FAST FERRY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	26.4	90.0	-50.2	2.9	3.4	34.9	74.7

NOTES
GENERAL
1. All figures represent 1989 dollars with 10% per annum dollar adjustment across 25 year project life.
2. O&M costs assume full 12 month/year use.
3. All cost categories (except PS&E and Admin) consider capital facilities only.
4. Ferry revenue represents cash income, therefore, displayed as a negative figure to offset ferry costs.
5. Contract Admin. estimated at 12% of all capital costs less O&M.
6. Maintenance facilities included as distances along each road alternative considered too great to allow use of existing facilities.
7. All ferry costs supplied by AMHS.

OPTION SPECIFIC
A. TAKU
1. Construction costs represent the entire length of the project. Canadian road mileage is approx. 2x the length of US miles; but construction costs are heavier on the US side, approx. $80 million US/$50 million Canadian.
2. Ferry costs are the same as maintaining the existing ferry system as this option would still demand a minimum of existing levels of service on Lynn Canal.

OPTION SPECIFIC CONT'D
B. JUNEAU-HAINES EAST
1. Ferry vessel costs include two shuttle vessels, the first linking road's end to the southern point on the Chilkat Peninsula, the second linking Haines and Skagway.

C. JUNEAU-SKAGWAY
1. Road construction costs are the same as Juneau-Haines East with additional costs estimated for road linking Haines and Skagway.
2. Tunnel costs included in road construction estimates.
3. Ferry costs include shuttle costs between east side and the Chilkat Peninsula.

D. JUNEAU-HAINES WEST
1. Ferry vessel costs include two shuttles, the first linking existing road's end to the west side on Lynn Canal, the second linking Haines and Skagway.
2. Ferry terminal costs represent additional terminal at existing road's end in vicinity of Echo Cove.

E. EXISTING FERRY
1. Ferry vessel costs represent existing vessel rehab and reconstruction only with no new vessels.
2. Costs estimated for existing levels of service.

F. HIGH SPEED SHUTTLE FERRY
1. Ferry costs include new high speed shuttle vessels only.

TABLE II

JUNEAU ACCESS ROAD
OTHER CONSIDERATIONS

ACCESS OPTION	Enviorn-mental Sensi-tivity 30x	Geo-tech Complex-ities 3x	All-Weather Reli-ability 5x	Alter-nate Funding Potent 5x	Region Factors 5x	Utility Joint Use Corridor 10x	Travel Distance Time Factor 10x	Staged Const. Feasib 10x	Induced Traffic 10x	Inter-national Factors 3x	Socio-Econ Impact Haines 5x	Socio-Econ Impact Skagway 5x	Socio-Econ Impact Juneau 5x	Total Values	Relative Factor
A) TAKU RIVER	60.0	9.0	20.0	25.0	15.0	50.0	30.0	30.0	30.0	15.0	5.0	5.0	25.0	319.0	1.2
B) JUNEAU-HAINES EAST	60.0	6.0	20.0	20.0	15.0	50.0	30.0	30.0	30.0	9.0	15.0	15.0	25.0	325.0	1.2
C) JUNEAU-SKAGWAY	60.0	6.0	15.0	20.0	15.0	50.0	50.0	30.0	50.0	15.0	20.0	20.0	25.0	376.0	1.4
D) JUNEAU-HAINES WEST	30.0	12.0	10.0	10.0	15.0	30.0	30.0	30.0	30.0	9.0	15.0	15.0	25.0	261.0	1.0
E) FERRY	150.0	15.0	25.0	5.0	15.0	0.0	10.0	0.0	10.0	6.0	10.0	10.0	10.0	266.0	1.0
F) FAST FERRY	120.0	15.0	20.0	5.0	20.0	0.0	20.0	20.0	20.0	9.0	20.0	20.0	20.0	309.0	1.2

NOTES

1. Rating scale of 1-5 with 5 representing least impact/ greatest benefit.
2. Ratings multiplied by weighting factor listed in each column heading.
3. Relative factor calculated by dividing total value for each option by total value calculated for ferry option.

SECTION IV

CONCLUSIONS

The most cost effective and timely improvements to access between Juneau and the existing road network in Canada connecting the region to the rest of Alaska, Northwest Canada, and the lower 48 states can be achieved by enhancing the Alaska Marine Highway System. These improvements can be achieved by implementing a high speed shuttle ferry service augmented by mainline ferry service during peak demand periods, particularly the summer months.

The addition of the high speed shuttle ferry service would provide for higher frequency service and better scheduling of that service in Lynn Canal between Juneau, Haines and Skagway.

The implementation of high speed shuttle service can be initiated more quickly than any of the proposed road alternatives, thus generating greater benefits to more people sooner.

The development of a hard surface road north of Juneau would provide greater overall benefit to the region and provide a more stable and long-term improvement to the transportation and, concomitantly, to the socio-economic infrastructure of northern Southeast Alaska.

Road construction, however, is expensive and, while there is significant demand for its construction, that demand is divided across several alternatives.

The potential for the realization of this increased economic demand sufficient to justify moving a particular alternative to full design and construction, however, is already evident in the region. Mineral development on the east side of Lynn Canal is potentially just a few years from reality. Similar mineral development in northern British Columbia and the southern Yukon Territory is potentially as near.

The implementation of the U.S. Canada Free Trade Agreement is already beginning to lure increased northwest Canadian interest and participation in Pacific Rim trade. That trade demands greater access to deep water ports in northern Southeast Alaska and access to and between those ports. The U.S./Canada FTA is also generating growing interest and participation between U.S. and Canadian businesses within the region.

Even though the initial conclusion of this report is that the existing ferry system should be enhanced by adding high speed shuttle ferry service, this conclusion does not preclude the initiation of a sustained effort to advance the development and construction of improved road access to and from Juneau.

Three things are preventing road construction at this time. First, sufficient information to allow the selection of the best road alternative, i.e. up the east side of Lynn Canal with shuttle service to Haines and Skagway or up the Taku River Valley, will not be in hand until a full Environmental Impact Statement is executed across both scenarios.

Second, stronger economic demand is needed to convince some policymakers that the required appropriation is justified in terms of perceived and/or documented cost/benefit ratios. While this demand could materialize within the next few years, it is uncertain at this point in time.

Third, funding for new road construction is lacking statewide. Unless and until the state makes a commitment to the construction of new roads in an orderly and systematic way, local and regional economic opportunity will continue to be lost well into the 21st century.

Enhancing the existing ferry system with the addition of high speed shuttle ferries accomplishes three important goals. First, improved access with higher frequency and improved scheduling is realized as quickly as possible. Second, when economic demand matches the level of public demand to warrant expenditure of significant amounts of road construction funds, these high speed shuttle ferries can be reassigned to other legs on the AMHS which could benefit from higher frequency/better scheduled service.

Third, sufficient time is permitted to execute the necessary EIS and identify the preferred alternative for road construction as well as a funding source or sources to initiate road construction.

The initiation of a sustained effort to advance the development and construction of improved road access to and from Juneau requires the execution of several steps before actual design and construction can begin. A full Environmental Impact Statement must be prepared for the two options that emerge from this study as the most feasible for development: the east side of Lynn Canal between Juneau and Haines and the Taku River corridor.

This EIS effort demands the immediate allocation of resources to execute. However, even with prompt action, the effort will likely take two years due to the complexity of issues involved. Besides the traditional areas of investigation, the effort needs also to undertake a

thorough induced traffic demand study so that a clear cost/benefit comparison between the two options can be delineated.

Most importantly, a commitment to construct this and other new roads must be made by the State of Alaska and a plan identified for their funding. The most direct approach, and an idea not new to this report, would be to allocate up to 10% of the annual Aid to Federal Highway Funds received by the State of Alaska to a new road construction fund. While this would not amount to enough funds in any one year to undertake full construction of this or any other new road project, it would allow the funding of staged construction of priority projects. Staged construction results in full construction. Waiting for the identification of sufficient funds to construct a new road in its entirety almost guarantees no construction at all.

Lastly, discussions between the State of Alaska and th British Columbia and federal governments of Canada must be initiated immediately to define the threshholds of demand and funding participation necessary to execute joint new road construction. This is especially important in examining the Taku River option to allow a full comparative review with the east Lynn Canal corridor.

Major new road construction is a complicated and long-term commitment. If the State of Alaska waits until full demand is evident before initiating the initial steps necessary to realize a project (i.e. EIS, corridor identification, funding identification, Canadian participation, etc.) road construction is needlessly set back by several years. The resultant economic capture and socio-economic benefits are set back as well and some significant opportunities lost.

SECTION V

RECOMMENDATIONS

In summary, the following recommendations are advanced:

RECOMMENDATION I:

The State of Alaska, through the Department of Transportation and Public Facilities, specifically the Alaska Marine Highway System, should initiate the identification and allocation of resources to introduce high speed shuttle ferry service in Lynn Canal between Juneau, Haines and Skagway.

The actual implementation of this improved system should begin as soon as possible.

RECOMMENDATION II:

The State of Alaska should go on record with the commitment to improve hard surface access to and from Juneau, pending the results of detailed EIS and other investigations and negotiations with Canadian British Columbia and federal governments, either up the east side of Lynn Canal as far north as Haines or up the Taku River Valley.

This commitment should be to construct on of the two alternatives recommended in this report, thereby advancing the total process to its next logical step. Any action short of this will result in continued non-focused debate that will not lead to project delineation and construction.

This commitment will allow the use of federal matching funds to execute the required EIS and cost benefit analyses necessary to select the best of the two proposed alternatives.

RECOMMENDATION III:

The State of Alaska, through the Department of Transportation and Public Facilities, should allocate sufficient resources and execute a full Environmental Impact Statement of the two road access alternatives recommended in this report (Recommendation II).

This EIS effort should be initiated in FY90.

This EIS effort should include a cost benefit analysis of the two alternatives that includes a detailed comparison

of induced traffic generated by the two proposed alternatives.

RECOMMENDATION IV:

The State of Alaska, through the Office of the Governor, should initiate immediate discussions with the Canadian British Columbia and federal governments for the purpose of establishing demand thresholds and the protocol for the construction of joint road projects.

RECOMMENDATION V:

The State of Alaska should initiate a new road construction fund by allocating up to 10% of annual federal aid to highways appropriations to the State of Alaska for that purpose.

SECTION VI

ACCESS OPTION REVIEW

This section presents a review of each of the six generic access options reviewed by this study against the captial construction/O&M cost variables and other factors considered as displayed in Tables I and II in Section III of this report.

OPTION A: TAKU RIVER

o Capital Construction/O&M Costs

The Taku River option would begin at road's end near Thane and extend up the Taku River Valley, connecting to an existing road south of Atlin, B.C. Total new road length is approximately 120 miles. Approximately 44 miles lie on the U.S. side of the border and the remaining 76 miles extend from the border to the road's intersection south of Atlin.

Construction on the shorter U.S. portion of the road would be more expensive than the Canadian length due to more difficult terrain. Over 80% of the road on the Canadian side of the border would traverse relatively flat topography. Conversly, approximately 66% of the U.S. road length would traverse moderate to steep sloping terrain.

The proposed road would bridge the Taku drainage at a point below Grizzly Bar. This would avoid the leading edge of the Taku Glacier.

Bridging costs along the entire route mostly require spans of 80 feet or less, although lengths of 100 feet and greater are required in some places.

The construction of avalanche sheds are required in selected locations to enable the route to be used all year around. However, these avalanche control measures are less demanding than other options investigated along Lynn Canal.

A road maintenance facility would be required along the new road since its 120 mile length would be too difficult to maintain from existing facilities in Juneau and Atlin.

Construction of custom facilities are required at the border, similar to facilities at border crossings north of Haines and Skagway. This is the only option investigated with this requirement as the facilities already exist at the border crossings at the northern end of the Lynn Canal corridor.

A Taku Road would still demand Lynn Canal corridor access. As a result, at a minimum, existing ferry service between Juneau, Haines and Skagway would need to be

maintained. The resultant ferry costs attributed to this option are the same as those calculated in Option E (Existing Ferry Service) for maintaining the existing ferry system.

Since the ferry service would also generate revenue, this projected income has been included in the cost matrix as a negative number to offset the total O&M costs to the ferry system.

Road construction costs were calculated across the entire proposed 120 mile length, including the approximately 76 miles in Canada. Approximately $50 million could be subtracted from the total cost estimates to represent the Alaska/U.S. portion of total project expenses. However, unless the Canadian government agrees to participate, the project would lead nowhere and, thus, not be competitive with other options studied on a cost/benefit basis. For this reason, total project costs are included.

o Other Considerations

The Taku River road project poses significant environmental mitigation challenges. While the areas of sensitivity are different in scope than those along the Lynn Canal coast, this sensitivity is of the same order of magnitude. The river valley hosts a large variety of flora and fauna. The area is active with hunting/recreation use. The relative isolation of this area is held by many to be critical for the long-term balance of the ecosystem.

The river's mouth emerges from and into critical fish habitat areas, compounded by management of returning salmon from both sides of the border.

In summary, road access would have to mitigate a range of significant environmental problems. This report assumes these problems can be solved, but only a thorough Environmental Impact Statement and design effort can verify this assumption.

Soil conditions and other geotechnical complexities are more favorable here than along the east side of Lynn Canal, but not as favorable as along Lynn Canal's west side.

While keeping the road open all year long would not be an easy task, all weather reliability is feasible with some avalanche shed management. The lack of long stretches of steep slopes and tunnels make twelve-month maintenance quite feasible.

Of all options considered in this report, the Taku option has the most potential for securing alternate funding, that is funding from sources other than the State of Alaska and federal highway assistance programs. Not only is there a potential for support from specific mining ventures, if and when their projects develop and the road

reaches design certainty, but Canadian government participation must be assumed.

This option provides no more or less, positive or negative, impact on the economic, political and social integration of northern SE Alaska than the other options considered in this study.

The Taku road option would provide excellent opportunities to power and other utility providers for shared corridor use. This availability of existing developed corridors with road access for construction and maintenance is critical to keep utility capitalization costs down. The Taku corridor would provide shared corridor use for the execution of some eventual form of shared power intertie with British Columbia.

Actual travel distance between Juneau and Whitehorse is only about 20 miles longer up the Taku River Valley than through Skagway. However, this option does not increase or benefit travel/distance benefits between Juneau, Haines and Skagway.

All road options investigated would provide opportunities for staged construction, ranging from mining access support, access to private property and greater access for hunting, fishing and recreational use.

All recent studies agree that the presence of a road north from Juneau would increase traffic flow to and from the community. How much induced traffic there would be is uncertain. Comparatively, the Taku option would significantly increase traffic from Juneau to Whitehorse and could attract significant traffic from that area into Juneau. However, this benefit is reduced by the fact that the route would not significantly alter traffic patterns along Lynn Canal.

The enhancement of trade and socio-economic relationships with British Columbia and Yukon Territoy interests is strongest with the presence of an uninterrupted hard surface road running between Alaska and Canada. On the relative scale adopted by this report, the Taku option is rated the highest. Interruption of hard surface road by shuttle ferries as found in the other options reduces this capability somewhat.

Juneau would receive significant socio-economic benefit from this or any of the other hard surface road options considered in this report. However, the Taku River option would provide the least postive impact for Haines and Skagway than any of the other options investigated. The Taku option would not change travel patterns within the Lynn Canal corridor significantly.

OPTION B: JUNEAU-HAINES EAST

o Capital Construction/O&M Costs:

This option would begin at Echo Cove and proceed up the northwest shoreline to Lynn Canal. At this point the road would follow the shoreline of the Canal to a point approximately due east of the lower end of the Chilkat Peninsula. A shuttle ferry would connect the road's end with the existing road system running south from Haines. Transportation between Haines and Skagway would continue to be provided with ferry service.

Total new road construction is approximately 43 miles on the east side of Lynn Canal with an additional 3 miles of new road construction required on the southern tip of the Chilkat Peninsula.

Although these specific road points were identified for the purpose of calculating construction estimates, the actual location of the northern terminus of the proposed road could vary. The termination of road construction and construction of shuttle facilities to Haines depends on the delineation of several factors outside of the scope of this report. Location of a suitable site for the shuttle facilities on the east side of Lynn Canal and the concomitant facilities on the southern reaches of the Chilkat Peninsula could dictate a different road configuration than that proposed here. Environmental issues could dictate extension of the east side road north as far as the Katzehin River drainage with shuttle service direct to the existing ferry terminal in Haines. Variations in cost estimates allowing for these varing possibilities, however, did not yield significant variations in total cost estimates. The reader is cautioned, though, to review this option with the understanding that the exact configuration of the road's northern terminus and shuttling to Haines cannot be resolved until after a full EIS is prepared and full design scoped.

The steep slopes and avalanche areas along this proposed route drive road construction costs higher than the less demanding terrain in the Taku River Valley and along the west side of Lynn Canal. As a result costs for avalanche control to provide all year around access along the route are also significantly higher.

This option requires the least amount of bridge construction of all access options investigated. Most bridging involve spans of 80 feet or less.

The construction of maintenance facilities are required by this, and all other road options, as the length of the proposed road does not make it feasible to maintain it from existing facilities.

Ferry costs are based on estimates for a shuttle vessel

connecting the road's end to Haines and a separate vessel maintaining access service between Haines and Skagway.

Two ferry terminals would be required to provide shuttling between the road's end and the southern tip of the Chilkat Peninsula.

As with all other road options, ferry revenue is calculated and represented as a negative number within the cost matrix to offset ferry system O&M cost projections.

O Other Considerations:

Environmentally, the most sensitive areas within the scope of this option are in the vicinity of Echo Cove, the terminus of proposed road construction at or south of the Katzehin River drainage and the southern reaches of the Chilkat Peninsula. Echo Cove is a critical habitat area as well as an area actively enjoyed for recreation purposes. The isolation of this area from direct road access is considered by many to be critical to maintaining the balance of its ecosystem.

In addition the southern terminus of the Chilkat Peninsula represents the transition of the Lynn Canal water-based ecosystem with the mainland reaches of the Peninsula north. Even if shuttling was redirected from the Mud Bay area on the southern peninsula to the existing ferry terminal in Haines, shuttling from the vicinity of the Katzehin drainage poses its own significant environmental mitigation demands.

As indicated for each option, this report assums that these environmental issues can be mitigated. However, only a detailed Environmental Impact Statement and full project design can verify this assumption.

The slopes along Lynn Canal pose the greatest potential for encountering geotechnical complexities i' the form of weak, unstable and/or seismically-sensitive soils.

All weather reliability of this option is enhanced only with the investment of avalanche controls. The capitalization of these costs are significant, as represented in the cost matrix (Table I) and discussed above. With these efforts, though, maintaining year around traffic access is feasible.

Alternate funding is possible in the form of participation from mining interests along the eastern side of Lynn Canal. While these mining efforts are only in exploratory stages, there full development could be economicaly enhanced by road development. However, these same mining interests have made it clear that their participation would only be offered if their mines were to be developed and if the road project had matured past EIS stages into full design.

Regional integration of northern SE Alaska is

comparatively equal across all road options considered within this report.

The east side of Lynn Canal provides good potential for joint coridor use by utilities. Extension of power from Juneau to mining development on the northern side of Berner's Bay is economically feasible with the presence of a developed access corridor. Even extension of power from Juneau to Haines becomes economically feasible.

While this road option would enhance travel time between Juneau and Haines, the savings are mitigated by the wait for shuttle service to and from the Chilkat peninsula. Some additional benefits, however, are realized by reducing the reliance on scheduling of existing ferry service. Departures to and from Juneau and Haines would only be limited by the schedule of a high frequency shuttle ferry connecting Haines to the east side of Lynn Canal.

Staged construction would provide interim benefits, primarily access to mining development and increased recreational access.

While additional traffic would be generated between Juneau and points north with the construction of this option, the extent of this induced traffic appears to be inversely proportional to the number of road interruptions for shuttling by ferry. Any shuttling system provides the potential for some bottlenecking along the corridor. For this reason, ratings for this variable are moderate. However, the reader is cautioned to remember that a full determination of induced traffic necessitates a more detailed study than any executed to date.

Some increased benefit would be realized in increasing economic and social relationships with British Columbia and Yukon Territory with the construction of this option, but these benefits would not be as great as those derived from options A and C.

As with other road options, Juneau would derive significant benefits from the execution of this option. Haines and Skagway would benefit as well, but those benefits would be mitigated by potential negative impacts. Easier access to Juneau could significantly alter existing buying patterns within each community. Also, easier access could impact the nature of the tourist industry within each community. Because of the potential for these negative impacts, ratings for this variable for each community were moderate.

OPTION C: JUNEAU-HAINES-SKAGWAY

o Capital Construction/O&M Costs:

This option replaces the ferry connection between Haines and Skagway in Option B (Juneau-Haines-East) with a hard surface road link. While several options for construction of such a road were examined, the option selected for calculation of construction estimates extends existing road surface north from Haines along the west side of Chilkoot Inlet around the Lutak Inlet and up the west side of the Ferbee River drainage. The road is connected to Skagway with 2-3 miles of tunneling.

Cost estimates for the Juneau to Haines portion of this option are the same as those provided for Option B. The additional costs are those calculated for the Haines to Skagway link.

The most significant costs associated with this option are those for tunneling. These cost are difficult to determine without extensive ground survey and other field investigations. Tunneling costs are directly proportional to the character of rock encountered. Often this rock will require reinforcement. In addition, construction underground is more expensive than construction of the same surface above ground. Drainage, ventilation, hauling, etc. require more extraordinary construction measures than surface construction. Cost estimates for this option assumed average conditions possible for tunnel construction. Even using average scenarios, tunneling costs were estimated to reach $50 million per mile. However, without detailed field investigation, these costs are very gross estimates.

Total new road miles to be constructed by this option add approximately 24 miles to those proposed for Option B. Of these, 16 miles traverse steep topography.

Bridging and avalanche shed construction add significantly to the costs for construction of this option.

Ferry costs are reduced significantly since the shuttle ferry from the east side of Lynn Canal to Haines is the only required ferry cost associated with this option. While ferry O&M costs decrease proportionately, so do projected revenues from the shuttle system.

While construction estimates are difficult for this option, the costs for constructing the Haines to Skagway road link drive overall costs well beyond those of any other option considered. These high construction costs, alone, make this option the least feasible of those investigated.

o Other Considerations:

The differences between this option and Option B are generated by the substitution of the hard road link between

Haines and Skagway for the ferry service. Ratings across factors other than construction/O&M costs considered in this report differ from those in Option B in three major areas.

First, increased benefit would be realized in calculating time/distance impacts. With the availability of road surface connection, travel time between Haines and Skagway would be enhanced with the elimination of reliance of scheduled service between the two communities. Departure times would be at the discretion of the traveler and would not require conformance with any scheduled service, no matter how frequent.

Second, this increase in traveler discretion would increase the amount of users traveling the corridor. Induced traffic benefits would equal those of the Taku option in relative numbers. Again, the reader is cautioned that actual induced traffic projections are not possible with existing data. However, existing data do suggest that with only one shuttle leg on the entire route, induced traffic would probably equal that of an access corridor that was all hard surface.

Third, road intertie between Haines and Skagway would generate the most benefit of the economies of the two communities. While each community would likely experience significant impacts, the connection of the two economies would create opportunities both individually and in tandem that are presently unavailable to each. Haines would be able to take greater advantage of potential opportunities with its Canadian neighbors. The availability of a hard surface loop to and from Whitehorse would likely greatly increase the amount of summer RV traffic through each community as well as expanded opportunity for destination packaging for visitor traffic flowing north from the Inside Passage.

While this option generates the most positive ratings across these factors other than construction costs, these greater benefits do not offset the proportionately higher costs for construction, operation and maintenance.

OPTION D: JUNEAU-HAINES WEST

o Capital Construction/O&M Costs:

This option would connect the east and west sides of Lynn Canal with shuttle service from the vicinity of Echo Cove on the east to the vicinity of William Henry Bay on the west. From this point new road would be constructed up the west side of Lynn Canal connecting to Haines by bridge across the Chilkat River over the McClellan Flats to a point on the existing road system just north of the Haines Airport.

Total new road construction is estimated at approximately 68 miles.

This option requires more bridge construction than options up the east side of Lynn Canal, with the significant increase associated with bridging the Chilkat River. Avalanche shed construction to enable twelve month open access is the least costly of the Lynn Canal options due to the less difficult terrain along the west side of the Canal.

As with other road options, a maintenance facility is required since service would not be feasible from existing facilities in Haines and Juneau.

Two ferry vessels would be required to service this option. The first is needed to provide shuttling from Echo Cove to Wiliam Henry Bay and the second is required to provide access between Haines and Skagway. Construction of ferry terminals would be required on both ends of the Echo Bay/William Henry Bay shuttle. These are the most expensive terminal costs estimated across the options explored due to specific requirements imposed by landfall demands in the area of William Henry Bay. As with other options, projected ferry revenues are included in the cost matrix (Table I) as a negative number to offset ferry costs for O&M.

o Other Considerations:

While all road construction options are significantly environmentally sensitive, the west side of Lynn Canal appears to be more sensitive than the others. Not only do the specific terminus points of the shuttle ferry in Echo Cove and William Henry Bay pose impact issues of magnitude, but the entire length of the proposed road system traverses an area with greater flora and fauna interaction than on the east side. Bird habitat is more abundant and eagle nesting is significant, especially on the northern end of the route. This difference is considered worth noting and calling attention to by assigning a rating associated with a higher environmental sensitivity.

Conversely, geotechnical complexities associated with unstable,weak and seismic-sensitive soils is the least

sensitive on the west side of Lynn Canal.

While all weather reliability of the road portion of this option is as good, if not better, than other options, the shuttling across a wide stretch of Lynn Canal perpendicular to prevailing winds makes this the most difficult option to keep open across the entire year. The shuttle system would no doubt experience proportionately more down time due to weather conditions than other options investigated.

Other than some private land holdings along this route, there is little other active economic interest that would yield significant potential for alternate funding of the project.

Some joint utility corridor use could feasibly be developed along this corridor, but its potential is not as high as for east side options. Traversing Lynn Canal is an extraordinary expense to assume to access the land corridor from that point north.

Shuttling frequency would provide greater incentive for travel along this option as is the case for east side options. Like other options requiring shuttle service, benefits are realized by increased frequency of access as opposed to any significant time saved enroute.

Benefits realized from staged construction are primarily two-fold. First, private property holdings would realize benefit from greater access and, second, greater recreational access to the west side of Lynn Canal could be provided.

As with east side options, construction of this option would increase traffic along the Lynn Canal corridor. However, this induced traffic would not reach levels typically associated with a full hard surface road with no ferry shuttle interruption because there would still be the need to rely on the scheduling of ferry service. As with other options discussed, detailed induced traffic studies need to be executed before this variable can be ennumerated with any confidence. Relative to other options, however, benefits would accrue to this option sufficient to warrant a moderate rating.

In evaluating impacts on socio-economic impacts with Canada, this option rated the lowest due to the greatest vulnerability to weather closures and the longest shuttling times associated with any of the other road options.

This option rated evenly with Option B (Juneau-Haines West) with respect to socio-economic impacts to Haines, Skagway and Juneau for the same reasons discussed within that option.

OPTION E: EXISTING FERRY SYSTEM

o Capital Construction/O&M Costs:

This option serves as the base option against which the other options can be compared. Capital construction and O&M costs were calculated for the maintenance of the existing ferry system that presently serves the upper Lynn Canal, linking Juneau, Haines and Skagway.

The only capital costs are those in the three columns associated with the ferry system since no new road construction would be executed.

Ferry vessel costs are those calculated by the Alaska Marine Highway System needed to keep existing vessels operational across the 25 year period identified by the parameters of this study. The $29.5 million dollars identified would not be used to purchase any new vessels but, rather, would be used for periodic repair and reconstruction of existing vessels to keep them operational.

As with other options, ferry revenue was calculated for the same 25 year period and included as a negative number in the cost matrix (Table I) to offset O&M costs.

This report does not propose that maintenance of the existing system with no additional carrying capacity would satisfy even minimum projected user demand on Lynn Canal over this time period.

The Southeast Alaska Transportation Plan, 1986, prepared for the Alaska Department of Transportation and Public Facilities, recommends the addition of high speed shuttle ferry service between Juneau, Haines and Skagway to the existing mainline vessel service now operating within the corridor. This option is reviewed in more detail and presented as the sixth option examined within this study.

Another variation on this option is the addition of a mainline vessel to service the entire system, including the provision of additional service in Lynn Canal. Capital construction costs for a Malispinia-class vessel is approximately $59 million.

While other options have been proposed for improving existing ferry service, for purposes of maintaining consistency with previous studies, this study effort identified the high speed shuttle as the optimum alternative to examine for improved ferry access between Juneau, Haines and Skagway. The presentation of Option E, maintaining the existing ferry service, is presented to provide baseline costs against which to compare other options and is not intended to represent a viable alternative for improved access to and from Juneau.

o Other Considerations:

The analysis of the factors other than construction/O&M

costs for this option is intended to provide a similar baseline against which to compare other options.

Values displayed in Table II are ratings on a five-point scale which indicate the benefits of the existing system compared to no ferry system. Allowing for other options reviewed by this study to represent higher values on the five-point scale dictate minimum values for this option across the various categories. Again, the reader is cautioned to review the data presented in this report and summarized in Table II as relative values between the various option examined and not a presentation of absolute values for each alternative.

OPTION F: HIGH SPEED SUTTLE FERRY

o Capital Construction/O&M Costs:

The high speed shuttle ferry option would require the construction of two new vessels which would provide daily round-trip service between Juneau, Haines and Skagway. The vessels would be large enough to accomodate approximately 40 vehicles and 200 passengers. Limited van capacity could be accomodated. Each vessel could operate at speeds more than twice that of existing vessels and each would be schedule to provide 2-3 round-trips between Juneau, Haines and Skagway within a 16-18 hour time period, for a total of 4-6 round-trips per day.

High speed shuttle service could be initiated out of Echo Cove at the end of the current road on the east side of Lynn Canal or could be operated out of the existing facilities at Auke Bay.

Costs for a ferry terminal at Echo Cove were calculated and included for this option to allow for the execution of that alternative. The only immediate advantage for operating out of Echo Cove would be to save enough running time across the 16-18 day to complete another leg on the system.

O&M costs were calculated by AMHS to include augmentation of the high speed shuttle service with mainline vessels, primarily during peak demand in the summer. AMHS spread the capital costs for vessel repair and reconstruction across the entire system so that only a very small portion was allocated to the Lynn Canal corridor. As a result the $26.4 million identified for capital vessel costs is primarily the cost identifed for construction of the two high speed vessels.

As with all other options, ferry revenue has been estimated and displayed as a negative number to offset O&M costs for the ferry system.

θ Other Considerations:

The only environmentally sensitive facet of this option is the construction of a ferry terminal in Echo Cove. For this reason, the rating value assigned is lower than that for the baseline option of maintaing the existing system with no capital construction. Echo Cove is a sensitive habitat. Design and construction would have to be preceded by detailed studies of the area to make sure that construction would not cause any serious impact to the area. This study assumes that any such impacts can be mitigated but only a detailed study coupled with full design can verify that assumption.

Since the high speed shuttle vessels would be considerably smaller than existing mainline vessels, they would be more susceptible to down time caused by weather conditions in Lynn Canal. While not as reliable as the existing mainline vessels they would still provide greater reliability than the road links proposed in Options A-D.

The high speed shuttle ferry option can be implemented faster and at a lesser cost than the road options reviewed in this study. This significant increase in potential frequency for travel between Juneau, Haines and Skagway can be accomplished without altering the socio-economic base of either Haines or Skagway as road terminus communities. For these reasons, regional benefits were rated higher than other options.

Travel time and frequency of travel permitted by this option are less beneficial than for road options. However, the significant increase in frequency for travel is significantly greater than that offered by the existing ferry system. Rating values assigned within this category reflect that relationship between the proposed options.

Some limited benefit to users could be realized by adding a single high speed shuttle ferry vessel to the corridor. The benefits are primarily those associated with greater frequency of service created by the increased number of runs between the communities of Juneau, Haines and Skagway.

Induced traffic generated by this option could reach the same levels as the two proposed road-shuttle options if the system was able to provide a full six round-trips per 18 hour day. The greater all-weather reliability and the capability of some reservation scheduling would offset the risks of bottlenecking at a road shuttle point, especially during peak demand periods. However, this full 6 round-trips/day configuration is probably optimistic. For this reason, rating values for this category displayed in Table II show a sightly reduced benefit provided by this option for induced traffic.

While high speed shuttle service would offer less than full benefit impacts for Juneau when compared to road construction options, this service would provide significant benefit to Haines and Skagway. Each community would retain their socio-economic structure as a road terminus community and increases in the economic sectors associated with ferry traffic without altering the physical and social structure within the communities. The latter was a fear expressed by many residents of both communities during the public hearing process of this study effort.

APPENDIX A

CHRONOLOGY OF EVENTS
JUNEAU ROAD ACCESS
1921 - 1989

CHRONOLOGY OF EVENTS - JUNEAU ROAD ACCESS

PROVIDED BY SENATOR JIM DUNCAN, JANUARY 20, 1989

1921	TAKU VALLEY RECON. REPORT PREPARED FOR THE ALASKA ROAD COMMISSION - TIDEWATER TO THE CANADIAN BORDER.
1951-52	RECONNAISSANCE REPORT ON PROPOSED TAKU RIVER ROUTE AND PHOTO RECON. REPORT FOR THE BPR.
1954	DECEMBER - RECONNAISSANCE SURVEY OF THE TAKU ROUTE FOR THE ALASKA ROAD COMMISSION.
1963	TAKU GLACIER EVALUATION STUDY BY MAYNARD MILLER FOR THE ALASKA DEPT. HIGHWAYS AND BPR - INDICATED UNSTABLE SITUATION.
1964	NOVEMBER - RECONNAISSANCE REPORT FOR PROPOSED FOREST HIGHWAY DONE FOR THE U.S. FOREST SERVICE. ACCESS TO TIMBER AND THE GLACIER BAY NATIONAL MONUMENT THE GOAL.
1967	APRIL - RECONNAISSANCE REPORT ON THE CHILKAT RIVER CROSSING BY DOT/PF - TO PICK CROSSING LOCATION. ASSUMES A WEST SIDE ROUTE.
1970	STATE DEPT OF. HIGHWAYS DEVELOPS PLANS FOR CHILKAT RIVER CROSSING BUT FINDS RIGHT OF WAY PROBLEMS WITH INDIAN RESERVATION, ALSO ENVIRONMENTAL ISSUES ARISE.
1974	SEPTEMBER - LYNN CANAL ENVIRONMENTAL ASSESSMENT FOR THE ALASKA DEPARTMENT OF HIGHWAY.
1974	OCTOBER - ALASKA DEPARTMENT OF HIGHWAYS PREPARES A COST ESTIMATE ON THE JUNEAU TO SKAGWAY ROUTE.
1975	LYNN CANAL TRANSPORTATION CORRIDOR PUBLIC HEARING BROCHURE PREPARED BY THE DEPT. OF HIGHWAYS. CONCENTRATED PRIMARILY ON SURFACE TRANSPORTATION, TRANSPORTATION COSTS AND ENVIRONMENTAL ISSUES.

1979	SOUTHEAST TRANSPORTATION PLAN BY WILBUR SMITH & ASSOC. EXAMINES TAKU ROUTE AND ROUTES TO HAINES AND SKAGWAY.
1980	COST ESTIMATES PREPARED ON JUNEAU TO HAINES ROUTE BY DOT/PF
1981	JANUARY - JUNEAU TO HAINES LOCATION INVESTIGATION DONE BY R&M FOR THE SENATE TRANSPORTATION COMMITTEE.
1986	EVALUATION OF CORRIDOR ALTERNATIVES BY ACRES INTERNATIONAL FOR DOT/PF
1987	MARCH - GREATER JUNEAU CHAMBER OF COMMERCE, ECONOMIC DEVELOPMENT COMMITTEE PREPARES AN EVALUATION AND RECOMMENDATIONS STATING THE ACRES REPORT DID NOT INCLUDE IMPORTANT ECONOMIC FACTORS.
1987	MAY = SENATOR DUNCAN APPROPRIATES $100,000 TO DETERMINE THE ECONOMIC FEASIBILITY OF ROAD ACCESS TO JUNEAU.
1988	MARCH - THE FEDERAL HIGHWAY ADMINISTRATION INDICATES THE NEXT STEP IN THE PROCESS SHOULD BE AN ENVIRONMENTAL IMPACT STATEMENT FOR A HIGHWAY CONNECTION BETWEEN JUNEAU, HAINES AND SKAGWAY. THE FHWA WOULD REQUIRE A COMMITMENT ON THE PART OF THE DEPARTMENT TO BUILD IN ORDER TO PROCEED.
1988	AUGUST - MAYNARD MILLER RELEASES INFORMATION STATING THE TAKU GLACIER WAS ADVANCING AT AN ACCELERATING RATE AND COULD DAM THE RIVER IN SIX TO 10 YEARS.
1988	SEPTEMBER 15 - MAYNARD MILLER RETRACTS HIS PREVIOUS STATEMENT SAYING AN ASSISTANT HAD CONFUSED FEET WITH METERS.
1988	SEPTEMBER - SENATOR DUNCAN ASKS DNR, FISH AND GAME AND THE U.S. GEOLOGICAL SURVEY TO DETERMINE WHETHER OR NOT THE INFORMATION ON THE GLACIAL PROBLEMS ON THE TAKU ROUTE WAS CORRECT.
1988	SEPTEMBER - SENATOR DUNCAN ASKS THE JUNEAU ECONOMIC DEVELOPMENT COUNCIL TO TAKE THE LEAD IN PULLING TOGETHER A COMMUNITY CONSENSUS ON A ROAD OPTION.

1988	NOVEMBER - SENATOR COGHILL ASKS FOR AND RECEIVES A $6,000 GRANT FROM THE SENATE LEADERSHIP FUNDS FOR RED SWANSON.
1989	JANUARY 18 - SENATOR COGHILL INTRODUCES SB 124 AND SB 125 WHICH WOULD AUTHORIZE DOT/PF TO CONSTRUCT THE LYNN CANAL HIGHWAY PROJECT AND APPROPRIATE $102.0 MILLION IN FEDERAL AND STATE FUNDS.
1989	DUE MARCH 1 TO SENATOR DUNCAN, A REPORT FROM THE JUNEAU ECONOMIC DEVELOPMENT COUNCIL EVALUATING ALTERNATIVE ACCESS ROUTES WITH SPECIFIC RECOMMENDATIONS AS TO LEGISLATIVE ACTION REQUIRED.

SJR 55

SENATE COMMITTEE REPORT
FIRST COMMITTEE OF REFERRAL

DATE: 1/9/90

FURTHER:

Date of 5-Day Notice: 1-18-90
(in accordance with Uniform Rule 23)

DATE TURNED INTO OFFICE: 1-23-90

Transportation _____ Committee considered SJR 55

Relating to the proposed restructuring of the National Weather Service in Alaska

~~following~~ efr

and recommended:

[ ] replace with _____ CS _____ [ ] same title [ ] new title

[ ] attached amendment(s)

[ ] _____ letter of intent adopted

[✓] do pass

[ ] do not pass

[ ] no recommendation

[✓] individual recommendations

[ ] further referral to _____

ATTACHES NEW FISCAL NOTE(S):

Department(s)/Date:

[ ] fiscal note(s) _____

[ ] appropriation-no fiscal note

Department(s)/Date:

[ ] zero fiscal note(s) _____

[ ] Governor's bill w/fiscal note

SIGNING DO PASS:

OTHER RECOMMENDATIONS:

STATE OF ALASKA
1990 LEGISLATIVE SESSION

BILL VERSION: SJR 55
PUBLISH DATE: 1/24/90

FISCAL NOTE

REQUEST:

Revision Date: 1/23/90
Title: restructuring of the weather service in Alaska
Sponsor: Senator Zharoff
Requestor:

Agency Affected:
BRU:
Components:

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96
PERSONAL SERVICES	0	0	0	0	0	0
TRAVEL	0	0	0	0	0	0
CONTRACTUAL	0	0	0	0	0	0
SUPPLIES	0	0	0	0	0	0
EQUIPMENT	0	0	0	0	0	0
LAND & STRUCTURES	0	0	0	0	0	0
GRANTS, CLAIMS	0	0	0	0	0	0
MISCELLANEOUS	0	0	0	0	0	0
TOTAL OPERATING	0	0	0	0	0	0
CAPITAL	0	0	0	0	0	0
REVENUE	0	0	0	0	0	0

FUNDING: (Thousands of Dollars)

GENERAL FUND	0	0	0	0	0	0
FEDERAL FUNDS	0	0	0	0	0	0
OTHER	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0

POSITIONS:

FULL-TIME	0	0	0	0	0	0
PART-TIME	0	0	0	0	0	0
TEMPORARY	0	0	0	0	0	0

ANALYSIS: (Attach a separate page if necessary)

Prepared by: Senate Transportation Committee
Phone: 465-3743
Division:
Date: 1/23/90

Approved by Chairman
Commissioner:
Date:
Agency:

Distribution (by preparer):
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

SENATOR FRED F. ZHAROFF
ALASKA STATE LEGISLATURE
P.O. BOX 405. KODIAK, ALASKA 99615 (907) 486-5259
DURING SESSION:
P.O. BOX V, JUNEAU, ALASKA 99811 • (907) 465-3473 • 465-3474
DISTRICT N
ALASKA PENINSULA • ALEUTIAN CHAIN • BRISTOL BAY • KODIAK ISLAND • LAKE CLARK/LAKE ILIAMNA • PRIBILOF ISLANDS • SHUMAGIN ISLANDS

JAN 11 1990

M E M O R A N D U M

TO: SENATOR LLOYD JONES

FROM: SENATOR FRED ZHAROFF

DATE: JANUARY 10, 1990

RE: REQUEST FOR COMMITTEE HEARING ON SJR 55

I would like to request a hearing on Senate Joint Resolution 55, relating to the proposed restructuring of the National Weather Service in Alaska, at your earliest convenience. It is imperative that we make our concerns known to the U. S. Department of Commerce as soon as possible to effect changes in the proposed plan.

It is my understanding that at this time the Weather Service is revising it's initial automation plans for Alaska, thus our input will be most timely.

I have attached a copy of the Plan for your perusal. If you have any questions regarding this issue, please contact myself or my staff person Pennelope Goforth.

Thank you for your prompt attention.

May 15, 1989

Honorable Fred F. Zharoff
Alaska State Senate
P.O. Box 405
Kodiak, Alaska 99615

Dear Senator Zharoff:

At the May 11, 1989, regular meeting, the City Council unanimously passed Resolution Number 11-89, requesting Congress reject the plan presented by the National Weather Service. The strategic plan as presented March 13, 1989, provides for modernization and associated restructuring of the Weather Service. There is no question this plan is beneficial to the contiguous states, but it would be disastrous in Alaska.

Alaska's weather is likely to shift quickly and impracticably at any season. Alaska's economy is based on outdoor industries, of which fishing is the largest. Because of the vast distances Alaska has more private pilots than any other state. Many communities depend on small planes which provide the only transportation available. Kodiak is the fifth largest city in Alaska located on the north east end of Kodiak Island. There are six villages, up to 95 air miles from the city accessible only by air and water.

Alaska has only three manned full-service weather stations. The National Weather Service plan proposes to eliminate Kodiak as one of those substituting a much reduced service facility. Under the plan, Anchorage would be the closest manned station and it is 250 miles away across open water. As the country's largest fishing port, we find this unacceptable. It is vital that our fishing fleet and our many small plane pilots have the most complete weather information possible. It is also a vital necessity to have a meteorologist available to talk to fishermen and pilots as trips are planned.

I urge you to carefully review the National Weather Service plan taking into consideration the special needs of the State of Alaska. Remember, if Alaska was superimposed over the contiguous states, it would cover an area from Florida to California and from the Canadian border to the Texas panhandle. That is a lot of land mass generating an incredible variety of weather.

POST OFFICE BOX 1397, KODIAK, ALASKA 99615 PHONE (907) 486-3224

I would like to take this opportunity to commend the National Weather Service performance to date during the oil spill crisis. The information required of them has been delivered in a professional and competent manner and has been a great help in our contingency planning. Kodiak appreciates the job they have done for us under the direction of Kodiak's Official-in-Charge, Bob Bonner.

Sincerely,

CITY OF KODIAK

ROBERT B. BRODIE
Mayor

RBB/mhd

CITY OF KODIAK
RESOLUTION NUMBER 11-89

A RESOLUTION OF THE COUNCIL OF THE CITY OF KODIAK, ALASKA, REQUESTING CONGRESS REJECT THE PLAN PRESENTED BY THE NATIONAL WEATHER SERVICE

WHEREAS, on March 13, 1989, it was announced the National Weather Service strategic plan for the modernization and associated restructuring of the National Weather Service was presented to Congress; and

WHEREAS, this plan would eliminate Kodiak as a full service manned weather station and substitute automatic sensors in 1993 - 1994; and

WHEREAS, Kodiak is the number one fishing port in the nation and weather is a vital link to our fisheries and tourist industry; and

WHEREAS, the recent catastrophic oil spill by the Exxon Valdez and subsequent environmental damage emphasizes the need for on-site local weather knowledge; and

WHEREAS, with a winter just past that featured very cold temperatures, winds to to near 100 miles per hour and the worst oil spill in United States history, the need for weather service in Alaska was never more clear,

NOW, THEREFORE, BE IT RESOLVED that the Council of the City of Kodiak, Alaska, respectfully requests our Congressional Delegation reject the plan presented by National Weather Service headquarters and to develop a plan that will continue vital weather services at existing levels.

PASSED AND APPROVED this 11TH day of MAY, 1989.

CITY OF KODIAK

Robert B. Brodie
MAYOR

ATTEST:

Marcella Dalton
CITY CLERK

Ted Stevens

United States Senator For Alaska

Contact: Press Office
(202) 224-3210

October 26, 1989

FOR IMMEDIATE RELEASE

STEVENS OPPOSES NATIONAL WEATHER SERVICE PLAN FOR ALASKA

A plan to modernize the National Weather Service nationwide would reduce rather than improve the forecasting information available to Alaskans, Senator Ted Stevens said today.

During a Senate Commerce Committee hearing on a major restructuring of the National Weather Service, Stevens noted that the plan would eliminate local forecasting services at 17 service stations in Alaska. The staff at these stations currently collect meteorological data for forecast stations in Anchorage, Fairbanks and Juneau and provide local weather information for fishermen, pilots and other members of their communities.

National Weather Service officials today informed Stevens that the three forecast stations in Anchorage, Fairbanks and Juneau would remain open and provide information to the communities that would no longer receive information from a service station.

Stevens questioned the ability of a forecaster in Anchorage to be able to match a local weather service staff person's ability to tell pilots about weather conditions.

"Now we're going to have the fellow who tells us it's all right to land ...is two mountain ranges and 1500 miles away. That's the distance from St. Louis to San Francisco. [Is a weather forecaster in St. Louis] going to tell the people in San Francisco you're clear to land?" Stevens asked.

Using a map showing Alaska superimposed over the lower 48, Stevens pointed out that the nation's largest state will not have an equitable share of National Weather Service offices under the modernization plan. While Alaska will be left with only three forecast stations, the second-largest state of Texas will have ten. A total of 112 forecast stations will be located in the lower 48 states, Stevens was told.

-more-

Stevens noted that the National Weather Service is required to certify that the proposed modernization will not cause a degradation of service. He suggested that certification will not be able to be made in Alaska, where residents rely on accurate forecasts for air and water transportation.

"If there's any place that's sensitive to your business, it's my state...," Stevens said. "Could you certify that this plan ...would not reduce the services to my people who rely on weather data?" Stevens asked Dr. Joe Friday, Assistant Administrator for Weather Services.

Friday said that based on Stevens' information, he would take a second look at the plan for Alaska.

Stevens also questioned the effectiveness of new radar that will be installed in Alaska under the modernization plan. The doppler NEXRAD radar cannot "see" over mountain ranges and therefore would offer only limited coverage in Alaska, Stevens said.

During today's hearing, Stevens read letters from Alaskans who oppose the National Weather Service modernization.

Kodiak mayor Bob Brodie wrote, "As the country's largest fishing port...it is vital that our fishing fleet and our many small plane pilots have the most complete weather information possible."

Local governments in Kodiak, Valdez and Gambell have passed resolutions in opposition to the modernization, Stevens said.

National Weather Service service stations are currently located in Anchorage, Fairbanks, Juneau, Barrow, Kotzebue, Nome, Unalakleet, McGrath, Bethel, King Salmon, St. Paul, Cold Bay, Kodiak, Homer, Valdez, Yakutat and Annette Island.

Under the modernization plan, many of the stations will be automated. Personnel may remain at other stations. However, they will only send data to the forecast stations in Anchorage, Fairbanks and Juneau. They will not provide local weather information or briefings to area residents.

###

STRATEGIC PLAN FOR THE MODERNIZATION AND ASSOCIATED RESTRUCTURING OF THE NATIONAL WEATHER SERVICE

Department of Commerce

National Oceanic and Atmospheric Administration

March 1989

Table of Contents

INTRODUCTION

Weather pervades and affects the daily life of each American. Since the beginning of the Republic, a strong scientific tradition of meteorological research and service has existed in the United States. At a national, regional, and local scale, weather affects the Nation's agriculture, water resources, transportation, general economy, and public safety. Accurate information about future atmospheric events is key to mitigating any adverse effects of the weather. Federal agencies have long joined in cooperative efforts to collect, share and effectively use weather data and information for the public good. Applied research conducted over the last ten years in the National Oceanic and Atmospheric Administration's (NOAA) Environmental Research Laboratories in New Jersey, Colorado and Oklahoma, and other Federal laboratories such as the National Center for Atmospheric Research has demonstrated that state-of-the-art laboratory techniques for analyzing and predicting severe weather and flood phenomena can be practicably applied to Weather Service operations. Because the scientific understanding of the atmosphere and the ability to forecast large and small-scale weather phenomena has increased dramatically over the last two decades, the Department of Commerce has set an ambitious goal for the National Oceanic and Atmospheric Administration's agency, the National Weather Service (NWS):

To modernize the NWS through the deployment of proven observational, information processing and communications technologies, and to establish an associated cost effective operational structure. The modernization and associated restructuring of NWS shall assure that the major advances which have been made in our ability to observe and understand the atmosphere are applied to the practical problems of providing weather and hydrologic services to the Nation.

Implementation and practice of the new science will achieve more uniform weather services across the Nation, improve forecasts, provide more reliable detection and prediction of severe weather and flooding, permit a more cost effective NWS, and achieve higher productivity for NWS employees. The effort to improve weather warnings and forecasts will be guided by the principle of providing high quality weather services to users while concurrently lowering NWS operating costs. The development of new technologies will be guided by the principle of balancing technical and service improvements with overall costs. All changes proposed by the NWS will allow productivity and efficiency for any entity dependent on weather information. This includes local, state, and Federal government agencies, private sector meteorologists, private industry, and resource management organizations.

In 1988, Public Law 100-685 was signed by the President which, in part, specifies conditions on the planning, reporting and accomplishment of the modernization and associated restructuring of the NWS. This Strategic Plan is the first response to the Congress required by Public Law 100-685. The Federal law requires an identification of the basic service improvement objectives of the modernization, the pivotal new technological components, and the associated operational changes required to fulfill the objectives of weather and flood warning improvements. Plans, resources, schedules, etc. will be contained in the second, and subsequently annual report required by the Congress -- the National Implementation Plan.

PRINCIPLES FOR THE MODERNIZATION AND ASSOCIATED RESTRUCTURING

The Modernization and Associated Restructuring goal will require significant changes in the current weather service infrastructure and operations. Accordingly, the following principles will guide the planning and implementation.

Throughout the process of change, the NWS is committed to its Mission which is *to provide weather and flood warnings, public forecasts and advisories for all of the United States, its territories, adjacent waters and ocean areas, primarily for the protection of life and property. NWS data and products are provided to private meteorologists for the provision of all specialized services.* The following principles are essential to meet the operational mission and will be continued during the modernization and associated restructuring transition period.

The principle that the modernization and associated restructuring process will not result in the degradation of services to the general public. Also, service and structural changes and improvements will be implemented only when certified in accordance with Public Law 100-685 to be beneficial to users.

The principle that NWS employees will be involved because their participation is crucial to a successful transition and improved operations. Significant levels of training and education will be provided so that employees will gain the necessary expertise to utilize the new technologies, understand the new sciences underpinning the modernization and associated restructuring and provide the improved services to the Nation. The changes will provide exciting opportunities for professional growth.

The principle that United States international meteorological and hydrologic obligations will be met during and after the modernization and associated restructuring. The exchange of global atmospheric data is essential to the successful interpretation and forecast of weather phenomena in the United States. The NWS is a partner supporting national security interests on a global basis.

The principle that NWS employees will continue to provide the quality weather services required by the country in the most economical manner.

THE NEED TO IMPLEMENT NEW SCIENCE AND TECHNOLOGY

A weather service organization, whether private or public, fulfills fundamental public safety and economic needs. The information provided supports life-saving and economic productivity decisions. For example, hurricane evacuation recommendations and airline routing decisions are heavily dependent on weather forecasts. As a Nation, the United States experiences more severe local storms and flooding than any other in the world. Eighty-five percent of all presidentially declared disasters result from severe weather events. In a typical year, the United States can expect a staggering assault by the elements: some 10,000 violent thunderstorms, 5,000 floods, 1,000 tornados, and several hurricanes. Along with periods of severe drought, hard winters, and heat waves, these events translate into considerable loss of life and annual property damages estimated in billions of dollars.

The most deadly of our Nation's weather events -- tornados, severe thunderstorms, and flash floods -- are also the most difficult to detect and forecast. They form and exist at the small atmospheric scale (mesoscale) and are measured in minutes and tens of miles. Most mesoscale phenomena are well below the operational resolution of routine observations and analysis today. However, prototype observing technologies and information processing systems, when made available to research meteorologists have provided the first observations of, and insights into the formative indicators of dynamic mesoscale processes of the atmosphere. When implemented operationally, these systems and associated science will improve all weather forecasts provided by national meteorological centers and weather forecast offices. These new systems will enable earlier detection and permit the short range prediction of destructive, violent, local storms and floods, thereby mitigating a glaring shortfall in current warning services. The new observational technologies planned for the next decade will provide unprecedented amounts of complex information and data, requiring significantly higher levels of analytical and interpretive skills by the operational forecasters.

To realize the gains from this research and technology, the Nation needs to put the new meteorological science into practice. This will require training personnel and the deployment of proven, new observational, information processing, and communications technologies.

At present, the vintage technologies that compose part of today's weather service infrastructure need to be replaced. As the equipment has aged, it has become costly to maintain. By replacing the equipment with more reliable technologies that support the new scientific capabilities, the Nation can move into the twenty-first century with strengthened confidence in its atmospheric prediction capabilities.

THE TECHNOLOGICAL OPPORTUNITY

MAJOR TECHNOLOGIES FOR MODERNIZATION

New technological systems are essential in providing the opportunity to improve warning and forecast services and for replacing obsolete and increasingly unreliable existing systems. Each of the new technologies plays a unique, but complementary role in the modernization process. The information provided by the new observational technologies will yield high resolution, time variant, three-dimensional representations of details on the state of the atmosphere. At Weather Forecast Offices, intended to perform warning and forecast services, advanced weather data processing systems will aid the forecaster in the assimilation of changing data and numerical weather prediction products. The meteorologist and hydrologist will be able to rapidly manipulate, display and analyze information, thus enabling them to combine scientific principles and operational experience to produce more accurate and timely warning and forecast services for the Nation. The new high resolution data sets and derived information are an important input to business and economic decision making outside the NWS.

Numerous Federal agencies have long shared in the observation and exchange of hydrometeorological data. The existing national observing networks are sparse and limited in their coverage of the Nation's atmosphere. The NWS is joined in its acquisition of much of the major new technologies by the Department of Transportation's Federal Aviation Administration and the Department of Defense, which results in economies of scale and a reduction in purchase costs. The geographical placement of the new radars and automated surface observing systems is coordinated by the three agencies thereby providing more uniform national coverage by these land-based systems. The new geostationary meteorological satellites being procured by NOAA complement the new radars and automated surface observing systems with blanket coverage of the conterminous states. Data from these new observing systems will be shared by each participating agency and will be available in summary form throughout the Nation.

Automated Surface Observing System (ASOS)

Automating surface observations will relieve staff from the manual collection of surface observations. Over 1000 ASOS systems across the Nation will be providing data on pressure, temperature, wind direction and speed, runway visibility, cloud ceiling heights, and type and intensity of precipitation on a nearly continuous basis. The 1000 ASOS sites include approximately 750 airport installations under the jurisdiction of the Federal Aviation Administration and approximately 250 NWS sites. The Department of Defense is also considering the acquisition of additional units. The observational data provided by the ASOS system supports aviation operations and provides meteorological data needed by severe weather, flash flood, and river flood forecasting programs. The national capability to observe and transmit critical changing weather conditions almost as they occur represents an important enhancement for improving warning and forecast services.

Next Generation Weather Radars (NEXRAD)

Utilizing Doppler radar technology, the NEXRAD system will observe the presence and calculate the speed and direction of motion of severe weather elements such as tornados and violent thunderstorms. NEXRAD will also provide quantitative area precipitation measurements so important in hydrologic forecasting of potential flooding. The severe weather and motion detection capabilities offered by NEXRAD will contribute toward an increase in the accuracy and timeliness of NWS warning services. At present, for example, due to the limitation in the current radar detection systems, tornado warnings are usually issued only when visual sightings have been reported. The advent of NEXRAD will not only allow for an earlier detection of the precursors to tornadic activity, but will also provide data on the direction and speed of tornado cells once they form. The national network of 160 NEXRAD systems provides a significant improvement in uniform coverage over the present day radar network. The NWS plans to operate 121 NEXRAD systems; the remainder of the NEXRAD systems will be located at Federal Aviation Administration and Department of Defense locations.

Satellite Upgrades

For severe weather and flood warnings and short range forecasts, cloud imagery and atmospheric sounding data from the geostationary meteorological satellites will continue to be a major data source. The new Geostationary Operational Environmental Satellite (GOES) I-M system will have separate instrumentation that allows simultaneous image and sounding data to be observed and transmitted to ground stations. The GOES I-M system will also provide visible and infrared imagery data updates as frequently as every six minutes during severe weather warning situations over selected areas of the United States.

For longer-range forecasting, soundings from the polar orbiting satellites are a primary data input into the National Meteorological Center numerical forecast models. The Advanced Microwave Sounding Unit, to be flown on the NOAA K-M satellite series, will provide global soundings in cloudy regions at nearly the same level of accuracy as those presently produced in cloud free areas.

National Center Advanced Computer Systems

Warnings and forecasts prepared by NWS offices in the next decade will rely heavily on the basic analyses and guidance products provided by the National Meteorological Center, especially for periods of 36 hours and beyond. These analyses and guidance products result from numerical models of the atmosphere run on high-speed computers. The future requirement for guidance products for mesoscale warnings and forecasts is greatly increased over the present. Fundamental model improvements are necessary to satisfy these requirements and provide guidance products of sufficient quality and frequency to support the warning and forecast operation at each office. Present day Class VI computers do not possess sufficient capacity to support the improvements needed at the National Centers. These increased demands require the acquisition of dedicated next generation Class VII computer capabilities with a processing capability an order of magnitude greater than the present Class VI computer.

Advanced Weather Interactive Processing System (AWIPS)

The revised AWIPS system will be the nerve center of the operations. AWIPS will be the data integrator receiving the high-resolution data from the observation systems, the centrally collected data and the centrally prepared analysis and guidance products from the National Meteorological Center. The integration of all of this data from multiple sources represents the information base from which all warning and forecast products will be prepared. The AWIPS system will provide fast-response interactive analysis and display of the data to help support the meteorologist make rapid decisions, prepare warnings and forecasts, and disseminate products to users.

AWIPS includes the communications network that inter-connects each Weather Forecast Office for exchange of locally generated data. NOAAPORT will provide communications support for the operational distribution of the centrally collected data and centrally produced analysis and guidance products, as well as the satellite imagery and sounding data processed by the National Environmental Satellite, Data and Information Service. In addition to supporting the requirement for AWIPS point to multi-point communications, NOAAPORT will also deliver a wide range of NOAA products, such as oceanographic and environmental data to external users including other government agencies, universities, private research organizations, and business interests.

THE NEED TO RESTRUCTURE

The planned restructuring involves changing the number and location of field offices in a manner responsive to certification conditions imposed by Public Law 100-685, a gradual transformation of the workforce to one more professional in its makeup, and a reallocation of operational responsibilities between field offices and the National Centers.

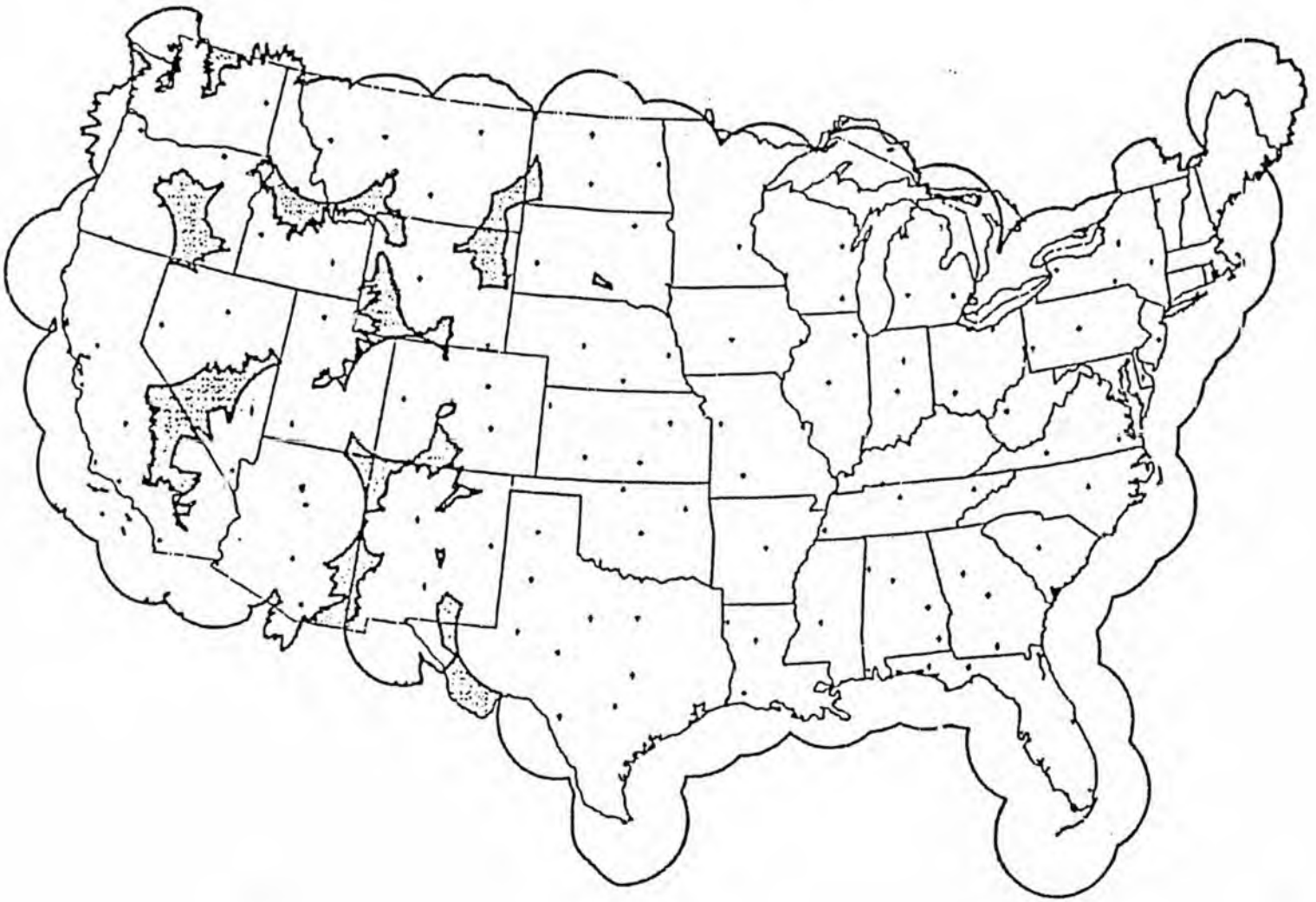
The effective use of the advanced technologies planned for the NWS is closely linked to the scientific abilities of NWS personnel and the national field office structure. The current field office structure has evolved intermittently throughout the agency's history. Today, the structure supports a labor intensive observation and dissemination network. If the new technological network were constrained by the current field office structure, required staffing levels and overall costs would increase unnecessarily.

The need to restructure is twofold: first, the combination of new operational concepts, new data sets, and an evolving scientific understanding of the dynamic processes associated with the most dangerous weather phenomena requires an increase in the number of meteorologists. During periods of impending severe weather and flooding, operational personnel are under extreme pressure to make timely and accurate decisions. The percentage increase of meteorologists in the NWS workforce will improve warnings and forecasts by taking advantage of the capabilities of the new technologies. Second, productivity and efficiency gains will occur as a result of increased integration of the new technological observation, information processing and communication systems with the staff. An increased effective range of the radar systems and the ability to assemble all data at a reduced number of offices increases productivity and efficiency. The reduced number of offices places a special emphasis on the effective delivery of weather services to communities.

Key tradeoffs in the restructuring process exist between human capabilities, costs, and programmatic, scientific, and technological opportunities. Factors considered in determining restructuring and ultimately the quality of warning and forecast services include the ability to establish a more uniform observational network across the country, the automation of observational duties, orographic (effects of mountains) characteristics, the ability of the NWS workforce to employ and understand new technologies and science, and so on.

DEPICTION OF THE TOTAL COVERAGE (AT 10,000 FT ELEVATION) PROVIDED BY THE COMPLETED NATIONAL NEXRAD NETWORK.

DARKENED AREAS OVER THE ROCKY MOUNTAINS ARE GAPS IN COVERAGE AT THE 10,000 FT LEVEL. NEXRAD COVERAGE WILL ALSO BE PROVIDED IN ALASKA.



THE NATIONAL WEATHER SERVICE IN THE 1990s

THE WEATHER FORECAST OFFICE (WFO) AREA OF RESPONSIBILITY

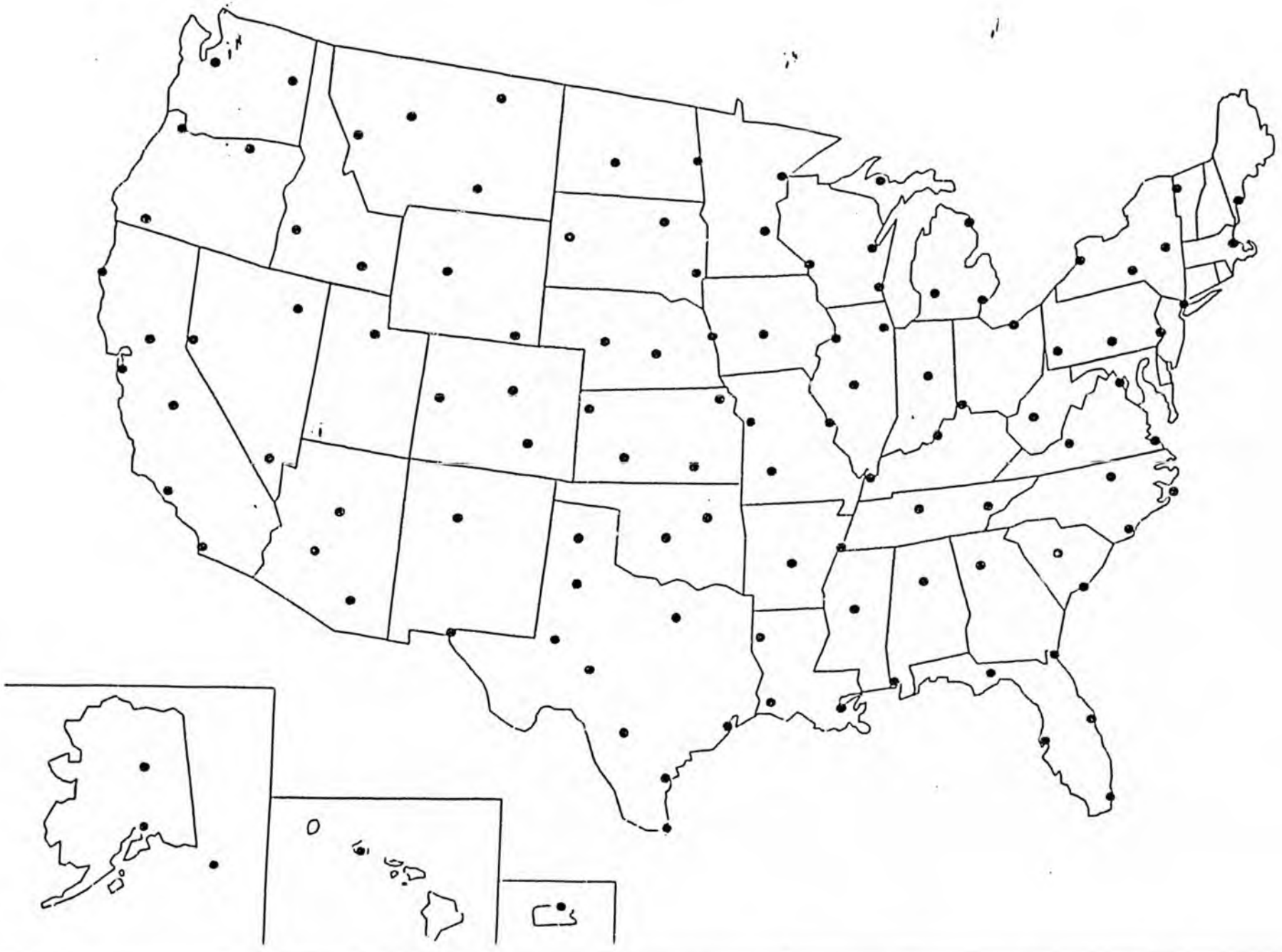
A conceptual analogy of the area of responsibility of a WFO can be portrayed as follows: on the surface of a map of the United States consider a uniform arrangement of 115 conterminous cylinders, each with a radius of approximately 125 miles, extending from the earth's surface up through the atmosphere. The volume of space contained within each cylinder represents the "area" of operational responsibility associated with the WFO. A WFO is located in the center of the base of the cylinder. Each section of the country and the coastal ocean is contained in one of these cylinders and the whole of the country is theoretically uniformly covered.

The GOES Satellite positioned over the United States is providing uniform coverage with visible and infrared imagery and remote soundings penetrating each cylinder from above. Associated with each WFO is one or more NEXRAD radars which scan the atmosphere from near the earth's surface to a height sufficient to detect the majority of meteorological events. Across the surface of the country are the approximately 1000 ASOS units each measuring surface weather parameters as fast as every minute. All of these data within the cylinder are sent directly to the AWIPS system in each WFO. The AWIPS is also receiving the centrally produced guidance products from the National Centers generated from globally exchanged data. Subsets of these data sets are available to all other WFOs through the AWIPS communication network.

INTEGRATED OPERATIONS WITHIN THE WFO

The future operations will allow forecasters to comprehensively address the air-sea environment in their assigned area. The observation and analysis of current and expected weather conditions can be quickly and reliably completed, critical decisions made, and translated into immediate warnings and forecasts. This is contrasted to current operations where a number of meteorologists and technicians are required to individually evaluate a limited data base and separately derive the required variety of warnings and forecasts.

LOCATIONS OF THE WEATHER FORECAST OFFICES



The concept of the local data base is central to future operations. The high volume of data from the local NEXRAD and geostationary meteorological satellites combined with the high frequency observations from ASOS will flow directly to the Weather Forecast Office. The most complete data sets will only be available to the local WFO. However, summarized data from all NEXRADs and ASOSs in the Nation will be made available to all field offices.

The new observing systems are designed to provide data sets which can be immediately integrated into three dimensional depictions of the rapidly changing state of the environment. Each system will contribute a critical part, combining with and complementing data from all other systems to form a complete set of information about the space from the earth's surface to the upper atmosphere over the WFO's area of responsibility. AWIPS work stations will allow the forecaster to quickly update, quality control, and analyze current processes and events detailed within the area of concern. New dedicated supercomputer capabilities and high resolution models running at the National Centers will provide a stream of detailed, frequently updated guidance to forecasters, assisting in the prediction of future conditions. This represents a new, highly integrated mode of operation which greatly increases the productivity of personnel, and also holds the promise of increased accuracy and greater timeliness of forecast services for the Nation.

THE NEW STRUCTURE

The WFO will be the future weather office that will provide all warning and forecast services for its assigned area of responsibility. The forecast and warnings operations at the WFO are supported by guidance products issued from the National Centers and RFCs.

Weather Forecast Offices (WFOs)

A total of 115 WFOs will exist in the future that will provide weather and hydrologic services in four major areas:

- Watches and warnings for the general public for severe local storms, floods, flash floods and winter storms. Local and zone public forecasts, and fire weather forecasts;
- Local aviation watches and warnings, terminal forecasts, and domestic aviation enroute forecasts;
- Marine warnings and forecasts for coastal areas of the Nation and the Great Lakes; and

» Hydrologic services which identify flash flood-prone areas and the development of community supported surveillance systems.

The foundation for the more accurate and timely warnings and forecasts will be the guidance products from the National Centers and RFCs and the data from the new observing systems: ASOS, NEXRAD, and geostationary meteorological satellites. They will provide the unique local data base which depicts the environment in the WFO's area of responsibility.

The basic tool for more accurate and timely warnings and forecasts from the WFO is AWIPS. It will assemble, process and display the observational data and guidance from National Centers. AWIPS will help meteorologists with the warning and forecast decision process through an interactive work station. It will preformat warning and forecast products and disseminate these products to the users in a timely manner.

River Forecast Centers (RFCs)

RFCs provide hydrologic forecasts and guidance information in three major categories:

» Mainstem river and flood forecasts for conditions at approximately 3000 locations with lead times ranging from six hours to several days;

» Flash flood and headwater guidance to WFOs for warning services involving small drainage basins with response times under six hours; and

» Long-term, seasonal forecasts providing estimates of snowmelt and water supply outlooks (from excess to drought) at approximately 1000 locations for periods up to several months in advance.

In the 1990s, the operations of RFCs are expected to change in a number of important ways. Each of the 13 RFCs will be colocated with a WFO. This will result in a more effective utilization of hydrological and meteorological information facilitated by a Hydrologic Analysis and Support Group in each colocated facility. It will also result in cost savings through shared facilities and through on-site exchange of data and information. Flash flood procedures will be more sophisticated resulting in more frequent updates of guidance and information for use by WFOs.

The basic river and flood forecasts produced by the RFC for specific locations along mainstem rivers are sent to WFOs as a basis for flood warnings to the public. Historically, RFCs have operated on one forecast cycle per day, based upon manual observations taken early each morning. To keep pace with changing weather and soil moisture conditions, assimilated data from automated data collection networks and NEXRAD, and to provide quality control, RFCs will operate an average of 16 hours-per-day. RFC operations will expand to 24 hours during periods of flood threat and with seasonal

peak work loads. RFCs will produce hydrologic forecasts as frequently as every six hours, based upon additional data and improved forecast procedures. AWIPS will assist hydrologists in the RFCs through data collection and processing, hydrological model execution, product formatting, and product dissemination.

National Meteorological Center

The National Meteorological Center has the responsibility for national and international data collection. This data base is first employed for global atmospheric and oceanic analysis. The resultant analysis products are distributed to international and domestic users which include the NWS, other government agencies, and private sector meteorologists. The data base is then used as initial input to global atmospheric numerical models. These models produce international aviation forecast products, high seas forecast products, long range national forecast, and forecast guidance for local WFOs and RFCs. New dedicated Class VII computer capabilities will enable increases in the resolution of the models resulting in improved forecast products and guidance. Traditionally the long range national forecasts have begun at 3-4 days and beyond. The new computers will reduce this threshold to beyond 36 hours. This will allow local forecasters to devote their attention to short-term weather events that are not amenable to centralized model solutions.

Climate Analysis Center

The Climate Analysis Center is a specialized center established in support of the National Climate Program Act. The Climate Analysis Center is part of the National Meteorological Center and is colocated with it to take advantage of the data, computers, and scientific expertise available there. The Climate Analysis Center's responsibilities are national and international in scope, related to overall goals of the United States Climate Program and are not directly affected by the NWS field reorganization. The Climate Analysis Center collects, organizes and disseminates climate information for diagnosis of short-term climate change; conducts and supports research on the physical cause of short-term (monthly, seasonal and interannual) climate change; and issues forecasts of weekly, monthly, and seasonal departures of average weather conditions from climatological means.

National Hurricane Center

The National Hurricane Center will continue to be responsible for the analysis, prediction, and tracking of tropical weather systems, their development into tropical storms and hurricanes, and larger scale disaster preparedness and coordination. Geostationary meteorological satellites will track and monitor tropical storms 24 hours-per-day throughout their entire life cycle. Coastal NEXRADs will provide the opportunity to examine tropical storms and hurricanes as they approach land, to an extent never

before possible. New dedicated Class VII computer capabilities located at the National Meteorological Center will run new hurricane models which will provide improved hurricane forecast guidance to highly specialized tropical and hurricane forecasters located at the National Hurricane Center. AWIPS at the National Hurricane Center will integrate data, improve storm identification and tracking, improve dissemination of vital information to the NWS and external users, and allow more efficient use of personnel.

National Severe Storms Forecast Center

In the 1990s, the National Severe Storms Forecast Center will provide national severe weather guidance to WFOs and RFCs. It will issue more timely and specific mesoscale guidance necessary to support the severe weather and flood warning activities of the WFOs. It will develop new guidance products based upon National Meteorological Center mesoscale model output and new mesoscale data. It will continue to produce special hazardous weather forecasts and forecast guidance for domestic aviation users under interagency agreement with the Federal Aviation Administration. All of these activities depend on the new observing systems (NEXRAD, ASOS and geostationary meteorological satellites), on AWIPS, and on the improved guidance from the National Meteorological Center Class VII computer capabilities.

National Data Buoy Center

The National Data Buoy Center will continue the operation of deep sea, coastal buoys, and headland systems. Data from these buoys and these coastal systems are essential to marine warnings and forecasts, and numerical weather predictions.

STAFFING

The new observing and data processing and display systems will provide forecasters the opportunity to sample, observe, and analyze the environment to an extent never before possible. The related expansion of the sciences of meteorology and hydrology will directly translate into improved service capability while simultaneously allowing greater efficiencies. Future field offices will have a core staff of professional scientists at each WFO and RFC to take advantage of these new capabilities. These individuals will be charged to provide all warning and forecast services across their area of responsibility. They will meet these tasks with the ability to evaluate vast amounts of integrated data, analyze the processes and events which will affect their area, and apply their scientific and technical expertise in a broad spectrum of immediate decisions. These will translate into a flow of service products, warnings, forecasts and advisories, that will be based on, and contain increased detail for all parts of the area.

Meteorological technicians will require different skills to support the new technologies, and more demanding, and increasingly sophisticated operations. System maintenance requirements will also place increased demands on electronic technicians who will require advanced training to support and maintain a variety of complex equipment.

A Meteorologist-in-Charge will have responsibility for each WFO. WFOs will operate 24 hours-per-day. The staffing level will be determined by peak service demands and maximum weather activity, with reduced staff requirements at selected offices during hours of lower threat and service demands. The support staff in each WFO will include positions providing critical program and maintenance support to ensure efficient operations and for the practice of advanced applied science. The public hydrologic warning, forecast and information programs of each WFO will be managed and supported by Service Hydrologists strategically located at selected WFOs throughout the Nation. At each of the 13 colocated WFO/RFC facilities, a Hydrologist-in-Charge will have responsibility for the RFC, including the Hydrometeorological Analysis and Support Group. Hydrologists and hydrometeorologists will maintain non-real-time operational support functions, as well as provide hydrometeorological support to the multiple WFOs within the RFC's area of responsibility. Staffing levels at the RFCs will be sufficient to maintain forecast services, nominally 16 hours-per-day, with variations attuned to each RFC's hydro-climatology and seasonal distribution of flood threats.

IMPLEMENTATION

The NWS has never undertaken a systematic modernization and associated restructuring effort of the magnitude presented in this Strategic Plan. Accomplishing the transition from today's operation to the modernized and restructured NWS of the 1990s, without disrupting ongoing services, will be a complicated process. Application of the new science, enhancement of the workforce, deployment of the new technology, and restructuring of field offices will mean that virtually every NWS activity will change in some way during the next eight years.

Management of this transition will be a complex effort, involving every level of the NWS. Accordingly, the NWS has established a Transition Program Office to provide an organizational focus for the entire transition process. The Transition Program Office will draw upon the technical staff resources of the NWS Headquarters, regional offices and field stations to prepare the plans necessary for the NWS modernization and associated restructuring. Once these plans are prepared, the Transition Program Office will manage the implementation.

TRANSITION PLANNING

Transition plans will be placed in a tiered structure, with the Strategic Plan as the top level plan. The second tier, the National Implementation Plan, will be a broad guidance document supported by more detailed transition planning and implementation activities carried on throughout the entire agency. The National Implementation Plan will provide a planning framework and general strategies for accomplishing the transition, and establish basic transition management principles that will be used throughout the entire transition period in fulfilling the fundamental goals and objectives in the Strategic Plan. The National Implementation Plan will be updated annually and used to provide the Executive Branch, Congress, cooperating agencies, users, and the public with an overview of what modernization and associated restructuring is, how and when NWS will accomplish the transition, and progress reports on implementation.

The third planning tier, the Regional Transition Plans, will provide management flexibility and recognize both the decentralized nature of the agency's and the NWS Regions' responsibility to maintain ongoing operations throughout the transition period. These plans, intended for internal use, will set a course that will ultimately

achieve the modernization and associated restructuring goals and objectives within each Region, while taking into account unique conditions at each site, such as weather variations and user needs. Each Regional office will have the lead responsibility for preparation of their Regional Transition Plan, consistent with national policy.

The final planning tier, Site Implementation Plans, will contain specific, detailed actions and schedules for accomplishment. A separate Site Implementation Plan will be prepared for each WFO or WFO/RFC, and will address transition of all sites in its area of responsibility. Each Regional office will be responsible for the development and integration of Site Implementation Plans, with the support of the area managers.

The changes in operations and services related to modernization and associated restructuring will ultimately guide the transition. Future operations and services define the system outputs, the staffing type and mix of an office, and the field structure needed to efficiently provide these services. These, in turn, set requirements for training and education, facility preparation, and guide a number of other dimensions of the modernization and associated restructuring. A realistic view of technological capabilities, resource availability and schedules, and the NWS environment will help shape the scope and pace of service changes.

The breadth of future operations and services is bounded by the agency mission and scientific and technological capability. Transition planning will recognize and incorporate these factors, and retain sufficient flexibility to respond to these dynamics. The NWS will plan and maintain a steady and predictable pace for implementation to allow sufficient time for orderly change and adjustment, both internally and externally, and to accommodate and capitalize upon the new knowledge and understanding acquired throughout the transition period.

DEMONSTRATION AND CERTIFICATION

The modernization and associated restructuring of NWS features improved services through the effective and efficient use of the new technology. Aspects of this objective imply significant change both internally and externally. Active participation by NWS employees and external users is imperative for a successful transition. Support will be sought by informing them in advance of what changes are planned and why these changes are needed. Clear demonstrations of the service improvements that will result from these changes are a critical element in obtaining NWS employee and external user acceptance.

Demonstrations of new capabilities and services will take place through a wide range of activities. The Modernization and Associated Restructuring Demonstration (MARD) will be the centerpiece for demonstrating the fully modernized and restructured NWS of the 1990s. As currently planned, MARD will take place in a multi-state area in the central United States which is extremely prone to severe weather. Once the

proper number and mix of staff is in place along with the new technology, and training has been completed, a number of WFOs supported by RFCs and National Centers will operate in the modernized and restructured mode as the first step towards national conversion to the new structure.

The primary objectives of MARD are to demonstrate more accurate and timely warning and forecast services and to provide an opportunity to evaluate service performance and responses of users within the context of the most cost-effective organizational structure. MARD will help refine new operational procedures and resolve implementation issues that can best be addressed through actual field experience. MARD will also provide an opportunity to examine additional organizational efficiencies that may be gained from application of the new science and operation of the new technology, such as a 2-tier field office structure with reduced staffing at some offices.

Based upon the MARD experience, full implementation of modernized and restructured operations will proceed on a national basis in compliance with the provisions of Public Law 100-685. During national conversion to the new structure, existing weather service offices would be closed, consolidated, automated or relocated only when such action can be certified to result in no degradation of services to the affected area.

IMPLEMENTATION SCHEDULE

Programs to acquire the new technology have been approved, and acquisition is underway. Developmental efforts to simulate the Weather Forecast Office of the 1990s have been undertaken since the late 1970s at NOAA's Environmental Research Laboratories as part of the Program for Regional Observing and Forecasting Services. Planning for application of the new science, transformation of the workforce, and the deployment of the new technology has been started. In a broad outline, the implementation schedule for modernization and associated restructuring of the NWS will consist of activities bracketed in time between now and MARD that must be accomplished in preparation for the demonstration, the Modernization and Associated Restructuring Demonstration itself, and implementation of full modernized and restructured operations after MARD. Field preparatory and risk reduction activities requiring long lead times to complete have already begun, and are scheduled to ensure their timely completion.

EXPERIMENTAL SYSTEMS

Additional work is underway on other technologies, though technically not now a part of the modernization program. As the research community continues development of experimental systems to improve observational techniques or improve operating efficiencies, demonstration networks may be deployed at specialized operational sites to establish and validate the utility of the new data or improved system. These centers of excellence provide unique opportunities for the research and operational communities to jointly assess and improve the operational utility of the new scientific innovations.

A demonstration project is underway that will deploy a new ground-based atmospheric sounding system, the wind profiler. This system will provide data on atmospheric winds with time and height resolutions not economically available with alternative techniques. Research is also continuing on thermo-dynamic profilers that may ultimately make important improvements in the acquisition of moisture and temperature information and lower the operating costs of today's upper air program.

PRODUCTIVITY AND EFFICIENCY ADVANTAGES

In designing the modernized and restructured NWS as a complete system, as opposed to the current system, which has evolved sporadically throughout the agency's history, improvements in services can be combined with productivity and efficiency gains by deliberate design of the new NWS.

Productivity and service improvements will be achieved by automating observation and communication duties, freeing trained professionals to concentrate on the highest operational priority -- analyzing and forecasting local atmospheric events. Because the data available from the precisely organized satellite, surface observing systems, and Doppler radar networks can be processed and manipulated by tomorrow's meteorologists, more accurate and timely warnings and forecasts can be provided by fewer field offices. Using more data with fewer offices and a core of professional personnel translates into higher productivity.

The productivity gains acquired with the professional workforce, new science, and advanced technologies, in turn, mean operational efficiency gains. That is, lower costs associated with delivering more accurate and timely warning and forecast services are accomplished while concurrently increasing the benefits from more timely, pertinent information. The efficiency gains, once achieved, are a direct product of the entire operational design of the modernized structure.

MEETING THE CHALLENGE OF THE 1990s

Understanding and predicting weather, climate and the state of the Nation's rivers has never been more important to the people of the United States and the world. Major advances in technologies, scientific understanding of the atmosphere, and in the prediction of the localized, most severe storms are within reach. While the resources to achieve the goals set forth in this Strategic Plan are significant, they pale compared to the savings of lives and property attainable through the modernization and associated restructuring of the National Weather Service. The challenge of the modernization and associated restructuring is to configure the NWS field offices, implement the new systems and networks, and professionalize the NWS workforce, without diminishing ongoing operations.

This document summarizes the opportunities and challenges that the Nation faces in modernizing and restructuring its capability to detect, understand, and predict our atmosphere. The discussion focused on the new scientific concepts that foretell significant advances in meteorology and hydrology. It considered the technology available to effect these advances and scientific concepts -- automated surface observations, Doppler radars, satellites, supercomputers, and advanced information processing technology.

The people, the new technology, and the new ideas at hand combine to offer unprecedented advances in hydrometeorological prediction and in understanding climate change.

SJR 56

Alaska State Legislature

SENATE

Official Business

P.O. Box V
State Capitol
Juneau, Alaska 99811

M E M O R A N D U M

TO: Senator Lloyd Jones, Chairman
Senate Transportation Committee

FROM: Senator Kerttula

SUBJ: SJR 56 --
Supplementary Highway
Funding

DATE: February 15, 1990

FEB 15 1990

SJR 56 would request that the federal government provide an additional $250 million over a four-year period to construct new highways and upgrade existing highways in Alaska.

It is clear to any of us who live in Alaska, that many of our highways are in pitiful condition, and additional highways need to be constructed. The federal Department of Transportation evidently agrees with what is common knowledge in Alaska: 42 percent of Alaska's interstate highway system is classified as "deficient." This situation is a progression of the minimal transportation system which was in place at the time of statehood.

Since statehood, there have never been the federal funds to implement a decent transportation system in Alaska. During our first year of statehood, Alaska received the woefully inadequate sum of approximately $14 million in federal highways monies. As noted in one of the attached reports from House Research, Alaska currently receives the minimal allocation of 0.5 percent. Following is a list of the amount of federal highways monies which Alaska received during recent years:

1985	$ 159.4 million
1986	151.1 million
1987	152.4 million
1988	132.7 million
1989	145.3 million
1990	139.9 million (preliminary)

I believe $250 million is the minimum amount required to get our highway system up to par.

For the committee's further information, I have attached two House Research reports on federal highway funding, as well as a newspaper article citing the "deficient" status of Alaska's highways. Please let me know if you would like any additional information.

JK:kh

1SJR56

Alaska State Legislature

SENATE

Official Business

MAR 07 1990

P.O. Box V
State Capitol
Juneau, Alaska 99811

M E M O R A N D U M

TO: Senator Lloyd Jones, Chairman
Senate Transportation Committee

FROM: Senator Jay Kerttula

SUBJ: SJR 56 -- Requesting Supplemental Federal Highways Monies

DATE: March 5, 1990

SJR 56 would request an additional $250 million in federal highways monies to correct the deficiencies in Alaska's highways. As you will remember, SJR 56 was heard in Senate Transportation on February 20, 1990. At that time the committee held the resolution pending further information from the Department of Transportation concerning a more meaningful estimate of how much money is needed to bring our highway system up to minimum standards.

It is my opinion that, since the Department is opposed to the resolution, they will delay as long as possible in coming up with reliable figures.

Attached is a copy of the Executive Summary of the Alaska Interstate Highway Needs Assessment, issued in December, 1987. Table 2 of this assessment estimates the cost of correcting highway deficiencies at $976 million. A footnote to Table 2 notes that approximately $33 million of those deficiencies might have been improved at that time; however, that still leaves at least $943 million necessary to correct highway deficiencies. This assessment is around 14 months old, but I am afraid it is the best we are going to get. I doubt, though, that things have changed that much.

I would also like to note for your information that when questioned by the committee on what signified a "deficiency," the department spokesman said that it had to do with

"rideability" of the road. This Executive Summary notes that several elements are used in determining improvement priorities in the following, descending order:

a. Functionality or servicability of the road determined by the roadway geometrics.

b. Safety determined by accidents on the road.

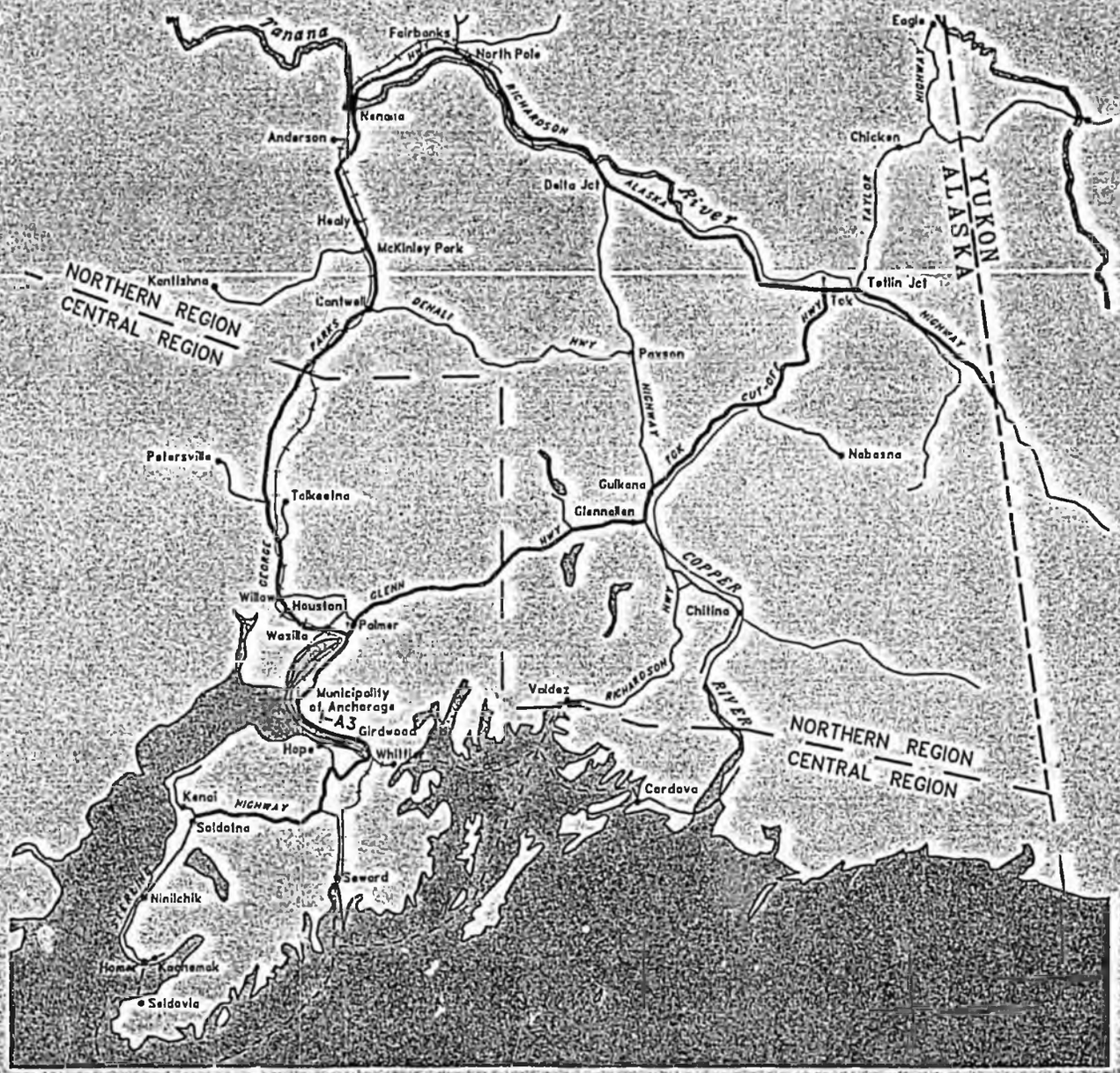
c. Condition determined by rideability, cracking and patching of road pavement.

d. Congestion

I would appreciate further consideration of SJR 56 by the Senate Transportation Committee. Thank you.

JK:kh

ALASKA INTERSTATE HIGHWAY NEEDS ASSESSMENT



EXECUTIVE SUMMARY

DECEMBER 1987

THE
ALASKA INTERSTATE HIGHWAY SYSTEM
NEEDS ASSESSMENT

EXECUTIVE SUMMARY

DECEMBER, 1987

PREPARED BY

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
PLANS, PROGRAMS AND BUDGET DIVISION

IN COOPERATION WITH THE
FEDERAL HIGHWAY ADMINISTRATION

FROM A REPORT DEVELOPED BY
H. W. LOCHNER, INC.
IN ASSOCIATION WITH
BOEING COMPUTER SERVICES
AND
WOODWARD-CLYDE CONSULTANTS

AS PART OF THE
HIGHWAY IMPROVEMENT PROGRAMMING SYSTEM

STANDARDS AND CONDITIONS

The Interstate Highway System in Alaska is unique in that the designated system consists of previously completed highways. Therefore, Alaska's Interstate System is not subject to the geometric and design standards normally associated with the national Interstate System (divided multi-lane highways).

At the time of the designation of Alaska's Interstate Highway System, the Federal Highway Administration (FHWA) approved Alaska's use of the American Association of State Highway and Transportation Officials (AASHTO) design standards for Primary System roads as the standards for Interstate Routes, except for the standards for width and design speed. The exceptions are:

Minimum Widths:

Minimum widths shall be those recommended in the appropriate AASHTO publication except that no section shall be reconstructed to less than a 36 foot roadway width.

Minimum Rural Design Speed:

Level Terrain	65 MPH
Rolling Terrain	60 MPH
Mountainous Terrain	50 MPH

Three condition states are utilized when determining highway and bridge improvement needs. Because of their importance, definitions are provided. Figure 1 shows the relationship between segments classified in these condition states and the requirement for improvement.

Design Standards:

The minimum conditions to which a facility is constructed in order to provide desirable speed, safety and comfort to the motorist. No improvement is required.

Tolerable Conditions:

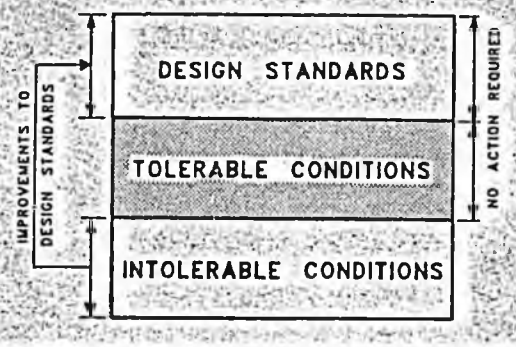
The minimum conditions under which an existing facility can provide reasonable speed, safety and comfort to the motorist. No improvement is required.

Intolerable Conditions:

Not meeting minimum conditions. This condition will require improvement to the facility. An identified intolerable condition is termed a deficiency.

The traffic data used for the needs analysis was from 1984. Accident data used was averaged from 1982 through 1984. Highway and bridge condition and location data was from 1985.

Figure 1
Relationship of Condition States



PROJECT PRIORITIES

The priority rating system developed for roadway and bridge improvements on the Interstate Highway System is most helpful in guiding decisions for selecting projects in the Capital Improvement Program (CIP).

An important factor supporting the improvement priority process on the Interstate Highway System is that it is done on an objective basis, which bolsters credibility when producing recommendations for highway improvements.

Several elements, or groups, of highway performance information were used in the objective analyses which determined improvement priorities. These groups, listed in descending order of maximum weight assigned were:

Functionality or servicability of the road determined by the roadway geometrics was considered up to a maximum of 35% of the assigned weight.

Safety determined by the accidents on the road was considered up to a maximum of 25%.

Condition determined by the rideability, cracking and patching of road pavement was also considered up to a maximum of 25%.

Congestion, which turned out to impact urban areas only, was considered up to a maximum of 15%.

For bridges, two data elements were used in the objective analyses. These were:

Design load was considered up to a maximum of 60%.

Bridge width was considered up to a maximum of 40%.

It should be recognized that some time will be required to transition from current procedures of selecting projects for the CIP to the process of using the priority system.

Table 2 lists segments and bridges requiring improvements in descending order of deficiency. Figure 2 depicts the cumulative costs of the ranked deficiencies by region. Figure 3 compares deficient miles vs total miles on each Interstate route.

FURTHER INFORMATION

Further information is contained in a two volume report is available for review at the Department's Headquarters and Regional Offices in Juneau, Anchorage, or Fairbanks, and at State Libraries.

Additional details may be obtained by contacting Mr. Ben Davis at (907) 465-2171, or writing to P.O. Box Z, MS 2500, Juneau, Alaska, 99811. If in print, copies of the report would be available for distribution.

TABLE 2

ALASKA INTERSTATE HIGHWAY NEEDS - IMPROVEMENT COSTS

Shown in descending order of deficiency

FAI ROUTE	REG	HIGHWAY NAME	CDS ROUTE	SEGMENT TERMINI	ROUTE MILE	TO ROUTE MILE	LENGTH (MILES)	AADT (1984)	* COST IN $000's (1985 $)
A4-5	N	Parks	170000	Chena River Bridge to Richardson Hwy. via Airport Way	321.16	325.38	4.22	21,209	27,000
A1-1	N	Alaska	180000	Milepost 1291 to Tanana River	68	81.67	13.67	378	31,560
A3-3	C	Sterling	110000	Skilak Lake Road to Quartz Creek Road	116.24	129.82	13.58	2,052	17,885
A2-1,2	N	Alaska	180000	Dot Lake Vicinity to Old Alaska Highway	139	154.5	15.5	325	25,437
A1-2,3	N	Tok Cutoff	230000	Ahtel Creek to Mentasta Spur Road	60.4	81.41	21.01	325	41,113
A3-1	C	Seward	130000	Tudor Road to 5th Avenue	125.3	127.86	2.56	33,177	122,000
A1-3	N	Tok Cutoff	230000	Milepost 52 to Ahtel Creek	52.1	60.4	8.3	325	6,319
A3-2	C	Seward	130000	Milepost 54 to Bertha Creek	54.32	65.54	11.22	2,257	24,578
A2-2	N	Alaska	180000	Milepost 1378 to Milepost 1404	163.84	181.27	17.43	300	23,889
A1-5	C	Glenn	130000	Old Glenn Highway to Jonesville Road	170.3	183.28	12.98	1,925	15,795
A3-1	C	Seward	130000	Indian Creek to Milepost 111	103.28	111.11	7.83	4,759	10,101
A3-1	C	Seward	130000	Milepost 91 to Indian Creek	91.95	103.28	11.33	3,837	5,057
A1-4	N	Glenn	130000	Milepost 119 to Little Nelchina River	239.92	258.48	18.56	832	17,669
A1-6	C	Glenn	130000	5th Avenue (Anchorage) to Artillery Road	127.86	140.95	13.09	30,693	200,000
A4-1	C	Parks	170000	Glenn Highway to Cruzie Road	0	4.19	4.19	11,086	20,000
A4-1	C	Parks	170000	Milepost 45 to Little Susitna River	9.84	22.04	12.2	4,611	6,863
A3-3	C	Sterling	110000	Milepost 94 to E. Jct. Robinson Loop Road	81.11	91.11	10	4,589	16,125
A2-2	N	Alaska	180000	Milepost 1404 to Delta Junction School Road	181.27	200.41	19.14	534	7,961
A1-5	C	Glenn	130000	Chickaloon Road to Victory Bible Camp Road	200.26	217.02	16.76	125	33,921
A4-5	N	Parks	170000	Little Goldstream Creek to Bonanza Creek	280.81	294.7	13.89	1,175	2,923 **
A2-1,2	N	Alaska	180000	Old Alaska Highway to Milepost 1386	154.5	163.84	9.34	313	10,179
A1-4,5	C	Glenn	130000	Victory Bible Camp Rd to Milepost 119	217.02	239.92	22.9	1,061	46,288
A3-3	C	Sterling	110000	Quartz Creek Road to Seward Wye	129.82	137.97	8.15	2,214	13,083
A1-5	C	Glenn	130000	Jonesville Road to Chickaloon Road	183.28	200.26	16.98	1,317	35,162
A3-1,2	C	Seward	130000	Portage Creek to Twenty Mile River	79	81	2	3,213	482
A3-2	C	Seward	130000	Milepost 50 to Milepost 55	50	54.32	4.32	2,002	6,966
A4-5	N	Parks	170000	Bonanza Creek to Old Nenana Highway	294.7	315.3	20.6	25,011	3,967 **
A1-6	C	Glenn	130000	Eagle River to Birchwood Road	143.7	145.4	1.7	18,454	5,000
A1-6	C	Glenn	130000	Milepost 28 to Parks Highway	155.52	163.57	8.05	12,000	59,500
A3-3	C	Sterling	110000	Robinson Loop Road to Watson Lake Campground	91.11	102.51	11.4	2,149	15,469
A4-4,5	N	Parks	170000	Julius Creek to Little Goldstream Creek	251	280.81	29.81	1,170	5,217 **
A1-3	N	Tok Cutoff	230000	Milepost 30 to Milepost 39	29.5	38	8.5	325	10,400
A1-2	N	Tok Cutoff	230000	Clearwater Creek Rd to Milepost 122	108.41	121	12.59	225	9,443
A4-3,4	N	Parks	170000	Denali Highway to Panguingue Creek	175.85	218.25	42.4	21,173	7,420 **
A3-3	C	Sterling	110000	Watson Lake Campground to E. Jct. Skilak Lake Road	102.51	116.24	13.73	1,900	17,712
A4-3	N	Parks	170000	Broad Pass ARR Crossing to Denali Highway	159	175.85	16.85	11,256	2,949 **
A2-4	N	Alaska	180000	Laurance Road to Badger Loop Road	281	288.8	7.8	7,430	10,000 **
A1-4	N	Glenn	130000	Lake Louise Road to Richardson Highway	280.7	310.02	29.32	734	5,131
A4-1	C	Parks	170000	Old Willow Road to Milepost 80	34.7	45	10.3	1,653	7,572
A4-1	C	Parks	170000	Milepost 80 to Talkeetna Road	45	63.8	18.8	1,406	13,574
A2-1	N	Alaska	180000	Tok Cutoff Highway to Moon Lake Campground	92.45	110.26	17.81	753	10,299
A1-2	N	Tok Cutoff	230000	Mentasta Spur Road to Old Tok Cutoff Road	81.41	97	15.59	325	3,222
A1-4	N	Glenn	130000	Little Nelchina River to Lake Louise Road	258.48	280.7	22.22	543	4,477
A1-1	N	Alaska	180000	Tok River Bridge (#506)	87.6			500	1,366
A1-1	N	Alaska	180000	Scottie Creek Bridge (#501)	1.3			425	616
A1-3	N	Tok Cutoff	230000	Gakona River Bridge (#646)	1.8			600	1,237
A3-2	C	Seward	130000	Lyon Creek Bridge (#619)	67.7			2,532	788 **
A2-1	N	Alaska	180000	Robertson River Bridge (#509)	123.9			250	10,692
A3-1	C	Seward	130000	Campbell Creek Bridge (#1350), on West Frontage Road	125			950	298
A1-2	N	Tok Cutoff	230000	Tok River Bridge (#663)	103.4			225	1,301
						TOTALS	598.62		976,006

* Where a highway segment includes a deficient bridge(s), the cost includes the bridge(s).

** Some improvements have been completed or almost completed on these segments, however some deficiencies may still remain.

REG Means a geographical region of the Department of Transportation and Public Facilities with Federal Aid Interstate mileage.

C is the Central Region

N is the Northern Region

Figure 2

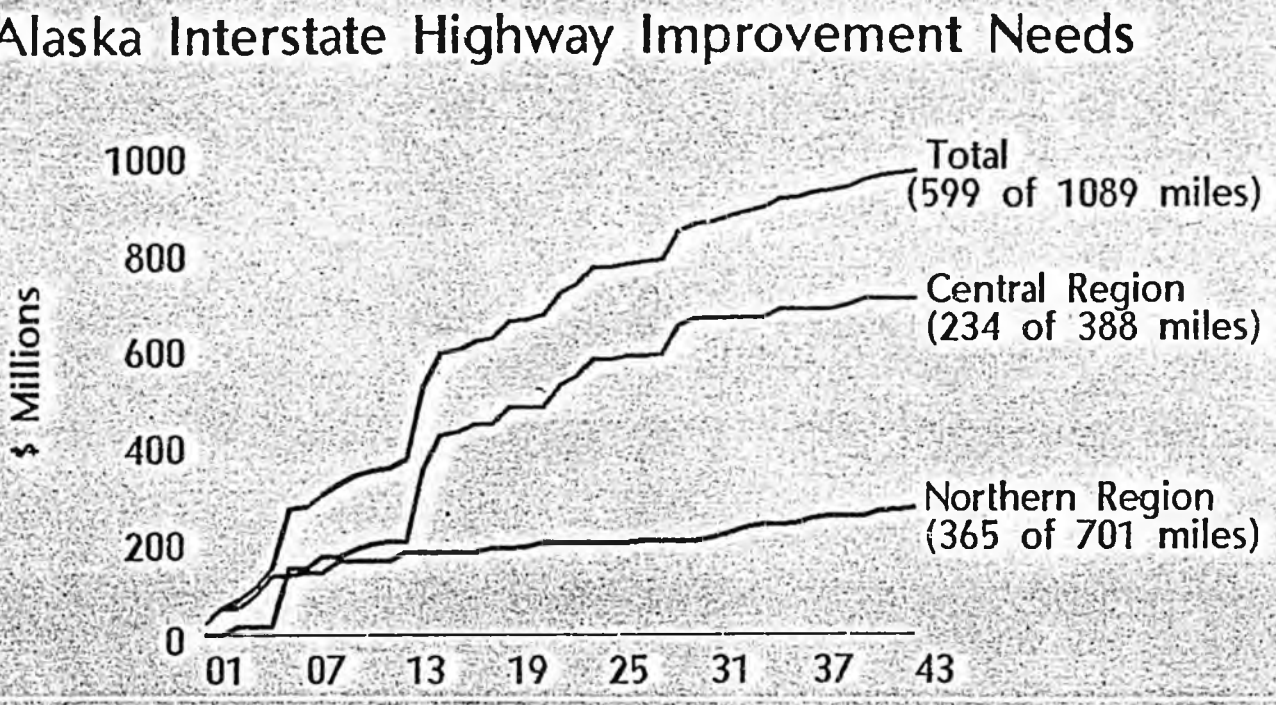
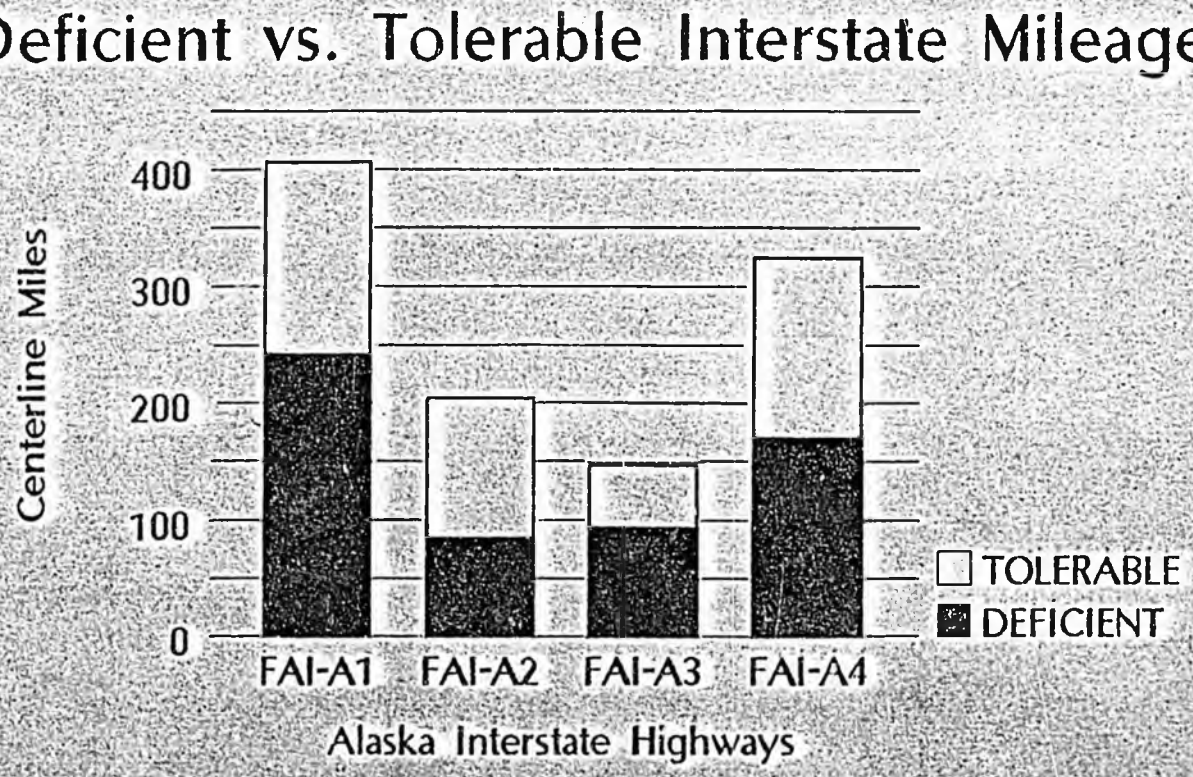


Figure 3



MAR 13 1990

Alaska State Legislature

Senate

Official Business

P.O. BOX V
State Capitol
Juneau, Alaska 99811

DATE: March 12, 1990

TO: All Senators

FROM: Senator Jay Kerttula

SUBJ: Federal and State funds for Highway Construction

I received the enclosed letter from Mr. Warren C. Hoflich, Jr., President of the Funny River Chamber of Commerce, concerning SJR 56: additional Federal Highway funding $250,000,000. Enclosed with Mr. Hoflich's letter is a letter from Mr. John Grunza, Jr., concerning the Funny River road.

I am also enclosing an article from the Anchorage Daily News, "Feds want states to pay for more highways," March 8, 1990.

matt

send to all Sens

FUNNY RIVER
Chamber of Commerce
Alaska

March 2, 1990

The Honorable Jalmar Kertula
State of Alaska Senate
P. O. Box V
Juneau, Alaska 99811

Dear Senator:

We are submitting the following information to help the State Senate justify their request for the 250 million dollars in Federal Funds for upgrading and improvement of Alaska's roads.

The Funny River road is located on the south side of the Kenai River and runs from Soldotna back up river for approximately 25 miles. Eighteen miles of this road is gravel and state maintained. State maintenance consists of grading the same road materials over and over again. Thus causing the people who use the road, some 480 property owners and many additional ones during the summer months, to either drive over large boulders pulled up by the grader or through many deep chuckholes, particularly after a rain. This road is the only way out of the area, and when needed during an emergency, it offers a poor choice.

A bridge has been promised by 1999, but this same promise has existed during the past 20 years. What we need now is upgrading of this road. We believe the conditions as stated in this letter, and in the attached copy of a letter sent to the Governor by a resident of the area, justify a portion of the 250 million dollars in Federal Funds for use in this endeavor.

Sincerely

Warren C. Hoflich, Jr./egm

Warren C. Hoflich, Jr., President,
Funny River Chamber of Commerce

WCH:egm

atch: copy of letter from resident

HC 1 - Box 1424 • Soldotna, AK 99669

Governor Steve Cowper
Juneau, Alaska 99811

30 August 1989

Dear Governor Cowper:

The purpose of this letter is an attempt to obtain your support to correct a very serious condition affecting many Alaskans here in Soldotna. Funny River Road is an 18 mile gravel road providing the only land route for hundreds of families (in addition to the many touris and weekenders) living east of the Sterling Highway south of Soldotna. If one could envision some of the worst parts of the ALCAN in the early 50's they would have a good description of Funny River Road today. Such roads were accepted 25 years ago but today 1989 I would think Alaska would provide something better for her citizens.

Throughout the State I see much road improvement and feel proud to see how the road upgrade program is progressing which shows off Alaska to those entering from Canada. But the time has come that something must be done to improve Funny River Road. We have "served our term" down here with a prestatehood standard road.

Governor Cowper the road is unsafe, dangerous and costly. During the school term it is of particular concern because of the children traveling in busses. There are many road accidents, rollovers, vehicles in the ditch, etc, it's a real obstacle course. The morning of 28 August the paramedic ambulance had to radio the Soldotna hospital that they would be late arriving with an emergency heart attack patient because of the extreme bad road conditions. The story goes on and on and I could easily fill several pages with it. I don't believe you will find anyone here in the Soldotna area who will deny the need for a safer road but it seems that the local officials have fallen into the doldrum of "things are tight and we need to cut spending..."

Certainly Governor Cowper you must have someone on your staff with the wisdom and energy to find a way to pave this 18 mile road. Nothwithstanding the extreme unsafe condition and damage to our vehicles some considerations listed below may be useful:

Cost the State now encounters running graders over the road (this is how it is maintained and totally unsatisfactory-a losing battle).

Matching federal funds.

Cancel or postpone the 10 year Funny River Road bridge construction and use the funds to pave the road now.

If paving can't be done now some other hard surface coating like chip seal would be a great improvement.

Governor Cowper this is a serious, dangerous situation affecting a large number of alaskan families. Please give us your help.

Sincerely:

John J. Grunza Jr.
HC 1 Box 1479
Soldotna, Alaska 99669

NATION

Feds want states to pay for more highways

By SAM FULWOOD III
Los Angeles Times

WASHINGTON — A national transportation policy to be released today will call for a fundamental restructuring that will shift to states a greater share of the burden of building and maintaining the nation's highways.

According to a draft of the policy, the administration plans to concentrate its share of highway spending on selected roads "of national significance," leaving the care and maintenance of a great majority of highways to state and local governments.

President Bush and Secretary of Transportation Samuel Skinner are expected to unveil the long-awaited transportation policy this morning at a White House news conference. Virtually all states can expect less federal aid for highway projects under the plan, which would increase pressure in many states for higher gasoline taxes to make up the shortfall.

To pay for road repairs and construction on roads newly designated "of national significance," the administration will aggressively seek tolls and other forms of user fees on roads, bridges and other federally supported structures, and will spend the $14 billion surplus in the federal highway trust fund.

The report did not specify how many of the nation's approximately 900,000 miles of roads currently eligible for federal funding would be among those designated as having special national significance.

To assist the local governments, the policy pledges the federal government's help in removing restrictions that now inhibit cities and states from imposing tolls and other revenue-generating schemes.

The plan is the administration's blueprint for legislative action. The department must go before Congress for funding; highway funding authorizations will be expiring within the next one to two years.

A key feature of the policy is the call for refurbishing of the nation's highway system. But it offers few specifics, such as projecting construction timetables or specific national highway projects.

Department of Transportation & Public Facilities

POSITION PAPER

BILL NO: SJR 56 **APPROVED:**

TITLE: Supplementary Highway Funding **DATE:** February 20, 1990

The department concurs that the Alaska Highway System needs a substantial commitment of funds to bring the system to an acceptable standard. However, the method of getting funds to the system suggested in SJR 56 needs to be carefully considered. On the national level, Alaska's transportation program is the recipient of the most generous return of Highway Trust Fund dollars of all states. In addition, Alaska has one of the lowest fuel tax rates in the nation. While the transportation community debates a revised highway program where our best argument is to be held harmless from program revisions, we believe that raising the issue as posed by this legislation would tend to focus national interest groups on equity issues less favorable to Alaskan interests.

The Resolution implies that the federal government should have committed substantial funds to Alaska at statehood for highway system improvements to meet a national standard. In the past, Alaska has always argued that the national highway standards should not apply to Alaska because roads built to a national standard are not suited to the Alaska climate and are too expensive to maintain. While we agree that Alaskan roads need additional work, we are not convinced that suggesting compliance with a national standard is in the best interest of the state. If there was a commitment to Alaska at statehood, that commitment should be fought for with the emphasis on keeping a commitment rather than forcing the road standard issue.

For further information call Catherine A. McHugh at 465-3900