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agriculture, would certainly develop and enhance the interior Alaska.

The worst would be to build expensive office buildings as a monument to political efforts of bureaucracy and the other use as a drain of our resources rather contribute to our economical or cultural stability.

I realize that Permanent Fund must be used in such a manner as to be permanent. However, low interest loans to aid in establishing better transportation system is a common factor and addition prime loans, tourism loans should be built upon. Once established, these industries would aid in getting interior Alaska out of the government dole, reliability upon government because we would develop a stable, an expanding economic situation or base here in interior Alaska. I want to thank you again for the opportunity to speak a few words to you and commend you on your all-out effort travelling throughout the state and getting the information from the citizens. Thank you.

GRUENING: Could you stay for a few questions? Any questions from the committee? I have one. You mentioned office buildings being an example of one of the worst investments. Would that follow through the Permanent Fund getting into, let's say, a guarantee for cities to build office buildings?

CARLSON: No. I think what I am referring to here is just the building of an office building for office building's purposes and just to be building it and no real need for it. Certainly, I realize that government needs office facilities, but not to make something with a lot of sugar-coating on it just because we have the--in other words, gold door-knobs just because we have the funds available. There are areas, for example, here when we look at a permanent building, certainly funding could be made available through the Permanent Fund or securing of the bonds would be necessary to build it would be a way to go. So I'm not excluding it, I'm just saying that we shouldn't be building office buildings for the building sake--just to have a hall here that would not be utilized.

GRUENING: Has Fairbanks used the Municipal Bond Bank with any success?

CARLSON: We have not had need of it. No, we've gone on our own bond. I think the Municipal Bond Bank is geared more in the past towards smaller communities who did not have the bonding capability that the larger cities have.

GRUENING: Do you see any need for that activity to be expanded to include Fairbanks? I'm trying to understand if

the city doesn't have need, then you're talking more about infrastructure, transportation, and so forth.

CARLSON: I think, it's my understanding of the bond bank the availability of it is if a community doesn't have the base to go on the bond market and get a good price could utilize this, then the state would then take and market the entire package, like Anchorage or Fairbanks, where we do have the base for a bond market and that we have not utilized this as a source. When I talk of transportation development, the airport and the rail facilities and the highways, it is, like I noted, we met with several people in the development of petrochemical opportunities here in interior Alaska. One of them even indicated should they select interior Alaska as a site, they would need a double rail to Anchorage for their commodities. This, of course, is a large scale operation. There is a continued need, to look at the transportation facilities and the means for funding them. Now we have to go to bond issues and there probably is an opportunity here for a pay as you go operation.

GRUENING: How would the, since the Permanent Fund, as you noted, has to earn its income and should be permanent, how would the Permanent Fund derive income, earnings from, say building a rail---would the petrochemical company pay for that?

Reimburse the Permanent Fund or how would that work?

CARLSON: The revenues, of course, on rail-maybe Alaska should buy the railroad with the Permanent Fund. It would have to be looked at as a source of revenue through the rail. It would have to be probably something worked out in that area, when you say that the petrochemical people or the oil people look at some way of funding the, or returning the funds, it would have to be on some type of scale for the use of it, if this is the way that we would have to go, if it wasn't available to go through other sources to the revenues that would be derived to the railroad would be a means of reimbursing the state.

GRUENING: Are there any other questions? Representative Parr.

PARR: John, we all saw your thing in the paper about the Fairbanks airport losing money. We all know that it usually does, because, obviously, the gallonage fees are all paid in Anchorage not in Fairbanks. If the fund were to invest money in the airport, have you got any ideas of the mechanism where we can make sure that the fund would get the, it would be a, you know, the money would not be a loss-- would be a making operation.

CARLSON: I think one of the things that was discussed in the paper the other night was the idea of a capability to expand the airport. It is my, in discussions that we've had with the oil companies or the gas companies that are doing this, until it becomes economically feasible or the demand for it, they would not put it in. Now if the state were to put this in, there would have to be probably a gallonage fee used to reimburse the cost of it. I think naturally the oil distributors are looking at their return on something like this before they would invest it and they'd be having to go into the money market. If the state could develop this, then there'd be a charge upon the flow of the gallonage through it. It would be a means of reimbursement.

GRUENING: Any further questions?

DOOGAN: Mayor Carlson, I just want to make sure that I understand--would it be accurate then to say that insofar as you can see a need for the use of Permanent Fund money that it would be on a relatively large scale for a large scale project?

CARLSON: Not entirely. One thing I didn't get into is, let's take agriculture in interior Alaska. The studies that we've had made over the years indicate that agriculture has a good potential and the climate is such that it would be well if not

better than we normally think of the Matanuska Valley. But the cost of clearing land is prohibitive to a lot of this development. Perhaps, something could be worked out on a smaller scale, where the funds could be made available for the land to be cleared over a period of years, so whoever is farming this is to reimburse it. So this would be probably considered a small scale development versus something in a larger area. I know that there probably will be more discussion on this agriculture aspect from other people.

GRUENING: Mayor, I just have one question on the agriculture. We do have an agriculture revolving loan fund, which is an aid--quite a few million dollars worth of loans. Do you know whether this fund presently is sufficient or whether it's one that we should expand? Are there problems with the loan fund itself, which make it incapable of doing what you'd like the Permanent Fund to do?

CARLSON: I haven't honestly looked into that to answer that question. The only contact I've had is with the people interested in developing; for example, about three weeks ago we had a contingent of people from Japan over here that were very interested in buying rape, which the university is experimenting with it, develops oil. It's a plant that will

grow where barley grows. It's a, for example, the oil that is used by MacDonalds for their frying. It's not cottonseed oil; it's rape oil.

GRUENING: It's called rape?

CARLSON: Yes. It is being looked into seriously as a plant or a product that can be and should be developed in interior Alaska. In fact, since 19, I think, 52, Canada has been the largest grower of this product, the producer of this. It certainly would be advantageous in interior Alaska. We're looking at 3,000 acres to make it financially feasible. So it would be then an opportunity to develop agriculture as a stable economy in the Interior.

GRUENING: I think we'd have to change the name of the product.

CARLSON: I had nothing to do with naming it.

GRUENING: Could you stay for one more question? Representative Russ Meekins has a question.

MEEKINS: Mayor, following up on that line, we have two Permanent Funds in the state. The one we're dealing with

today is so large that it sort of overshadows the other one--- hopefully, it'll be large. There's not much discussion going on on a public level on the Renewable Resources Development Fund, which also establishes a Permanent Fund. That fund starts accumulating money in 1978, beginning in January of this year. It will have, of course, all this is subject to change, but it will have 20, 40, to 60 million dollars a year coming into that fund. I don't know what the renewable resource potential in the area is, but I know it's somewhere in the Interior that they're considering increasing agriculture and that fund would be a prime source of funding for that kind of development. In that sense, in fact, it would be more appropriate for that fund than the Permanent Fund. One advantage of that fund is that it doesn't have a requirement that it be income producing. So that there is something that needs to be indirectly appropriated, money can be directly appropriated in that case from that fund. Just for your deliberations, you might want to start considering proposals in regards to the disbursement of money from that fund also.

CARLSON: Alright, thank you. I appreciate that.

GRUENING: Thank you very much, Mayor. Yes sir.

SEIFERT: My name is Rich Seifert. I would also like to take this opportunity to welcome you to Fairbanks and thank you for allowing us to have this opportunity to speak. One of the things I really enjoy about living in Alaska is the accessibility of the legislature to public input. I certainly appreciate this opportunity.

My employment, by the way, is with the Institute of Water Resources at the University of Alaska. I'm going to dwell on a specific topic having to do with what is kind of a professional fetish with me---it's energy and renewable resources. I have prepared an overview of what I think is a good suggestion, and I hope you will consider for use of the Permanent Fund.

Its purpose is in view of the inevitable depletion of our fossil fuel resources, even with Alaska's comparative wealth, it seems very prudent to begin to assess alternative renewable resources of energy. We have an inevitablity facing us, so the transition to a renewable resource economy, the whole nation does---it's obvious to everyone now that sooner or later fossil fuels are going to run out. So we have to begin to assess our future. My proposal is future oriented. Everything I intend to state has a future orientation about it.

The proposal in specifics is to use the Permanent Fund and

other available earnings, and I am very familiar, by the way, with the Renewable Resources Development Fund---I certainly wouldn't hesitate to make this suggestion strongly toward that fund, because it has to do with research. Use for these monies, as I would propose, would be to research those projects which relate to renewable natural energy resources relevant for use in any and all regions of Alaska. The prospective types of energy resources which would qualify for that program include:

Hydroelectric power, including low head, low-gradient water power applications

Solar heating and solar agricultural applications

Wood burning research for heating

Wood lot management research

Wind power applications

Certain geothermal applications---not all geothermal is legally regarded as renewable, something many people don't know, but some geothermal sources are

Tidal applications

Earth heat and geothermal gradient systems

Bioconversion and waste conversion systems

Ocean currents

Any other naturally available energy source which can be shown to benefit Alaska and which can be demonstrated to be renewable.

In my proposal, I do a legislative review of the renew-

able resources development after 1974 and also all the pending and on-the-books legislation concerning the Permanent Fund use; I don't need to go into that. You're probably more familiar with that than I am.

I think the public mandate is worth considering in this whole process. I was fortunate to participate in the Public Forums that occurred throughout the state. I participated in the one in Fairbanks. Interestingly, Fairbanks had the highest of all areas, which the public attested to its recommendation that the Permanent Fund be used to loan to development of renewable resource industries. In Anchorage and Southcentral, 39% of the people who were polled favored loans for development of renewable resource industries. 32% in Southeast did likewise. A quote from the Public Forum proceedings was that "The enormous response to that choice as the top priority use of oil and gas revenues set the tone for the regional workshops and most of the meetings from Skagway to Metlakatla."

I was also primarily involved in the town meeting on energy which occurred here in March. Some of the ideas we polled on that were uses of renewable resources of energy. In particular I asked the question on the questionnaire, "Do you think that solar energy is practical in Fairbanks, Alaska?" Surprisingly, of the people who were present, 62% of the people said yes, and

only 16% said no, while 22% were not sure. We also asked for priorities for research in energy development, which were relevant to Alaska.

We asked that they be prioritized according to six questions, six topics, by the way, and the prioritization occurred in terms of research support, first was solar; second was geothermal; third was coal; fourth was hydroelectric; fifth and sixth were synthetic fuels and oil and gas. Now, I was called on the carpet there because I didn't mention nuclear. I didn't mention nuclear because I don't think nuclear bears much on the future of Alaska for the next 50 year, because of the scale of application. Please be aware that I wasn't slighting nuclear, but I didn't feel that it entered into the Alaskan picture in a relevant way. I think most energy authorities would agree with me on that.

So I think the mandate is clear that people are very interested in the use of Permanent Fund monies and the large amount of capital the state is going to invest in Renewable Resources Development Fund for renewable resources. I think the public consciousness is there. People are not comfortable with spending that money, I don't think. They like the idea of using that money for a renewable economy. It's not always not very easy to articulate that in public, but I think the Public Forum responses are significant in that respect.

Now in order to accomplish that goal, it becomes a political question, of course. I would suggest that not a large amount of bureaucracy would be needed to set up an ongoing research program. I would suggest that the obvious place is the University of Alaska. It's Alaska specific; there's a crying need for money to do Alaska specific research now because many of the problems which result in questions of relevancy in university research today are because research has to be nationally applicable to get federal funds. If the problems aren't of a national crying nature, it's very difficult to document the need from Alaska's point of view because Alaska has an, inevitably is the case, has Alaska specific problems. Consequently, we fall flat on our faces when we propose research that's energy oriented in an Alaska specific sense to a federal agency, and they'll say, "well, how's it going to work in Pittsburgh?" Obviously, it isn't going to work as well in Pittsburgh, and it doesn't have a whole lot of relevance to a lot of the lower 48 problems. So we just don't have the opportunity.

There are also more specifics on how I would suggest this be done, however, that remains to be worked out in a political way; but I would suggest again that the University of Alaska's ongoing research establishment is perfectly adequate, capable of administering this in a fair sort of way. I would also suggest that somehow, and I'm not astute or sophisticated enough in the politics

to know how it might be insulated to a proper degree, and I put proper in quotes from the political process. I would like some degree of autonomy here because again, as was suggested from two previous speakers, there is a problem of power and whatever the university's position is not always favorable in the public eye now, so we have a lot of political problems.

The level of support for an ongoing Renewable Energy Research Unit depends on several elements:

Of course, it depends on the amount of money available from the resources, the Renewable Resource Development Fund, and the Permanent Fund earnings. How much the legislature should appropriate for this kind of research program.

The level of support necessary to provide support for that research program, including what is felt to be adequate, in fact, which, again, is a political question. However, I'd be more than willing to try to document what I think is adequate.

The political importance and priority of developing alternative energy resources for Alaska. This is a question I don't think a lot of people have addressed. Alaska's been preoccupied with land issues and a lot of state-level problems. We haven't really had an energy crisis here. I think the

fact that these other problems have overshadowed the issue that a lot of attention hasn't been drawn to energy problems. I think it's inevitable that they will. I think it's very important that that kind of a consciousness be raised in Alaska, that we are always better off doing something which is not irreversible. Right now, every time we start up our car, we are doing something which is irreversible. I'm not saying we stop driving cars, but to get into a system which is renewable is where we need to go.

Okay, I was getting into the philosophical basis of why I feel this is an important thing to do. But our opportunities are enormous here. I have a quote in my prepared notes from Walt Kelly's Pogo comic strip which has supplied what, I think, is one of the relevant quotes for Alaskans, and he says, "We are confronted with insurmountable opportunities."

I think that is a very appropriate way to address the Permanent Fund. I think there are many problems in Alaska that are, indeed, insurmountable for various reasons. But I think the establishment of a Renewable Energy Research and Development Program is simply a matter of having the will and foresight to commit our Permanent Fund resources to this plan. It can be a great service to Alaskans and the nation to provide badly needed development experience for renewable resources, both to ourselves, to Canada, and to the rest of the nation. Thank you.

GRUENING: Thank you very much, Rich. There may be some questions. I appreciated your letter, incidentally, earlier. I hope you got back my reply.

SEIBERT: Yes, I did.

MEEKINS: You touched on a subject, I think, is so close to my way of thinking. I can tell you that the Renewable Resource Fund, although it didn't list that possibility, I think it's certainly within the definition of renewable resource. I was one of the people who drafted that legislation that finally passed.

SEIFERT: I was concerned about that, because a lot of the aspects that are, in fact, using the public documentation that I did, never was it specifically stated in any of the Public Forums that renewable resources would include renewable energy resources.

MEEKINS: Well, that's one of the problems, of course. Some people define even mining as a renewable resource. It depends on who you are, I guess, how you define it. In my mind, that was what we envisioned when we passed that portion of it. I have a couple of questions.

First, what are we doing now? What level of research in energy development is Alaska participating in currently?

SIEFERT: Most of it is still at the proposal stage. I would say there is an ongoing wind energy program. I'd like to consult. Lee, would you mind giving me a hand? This is my associate, Lee Leonard, who also has his name on our preparation. He also works for the University of Alaska Geophysical Institute.

LEONARD: From the University of Alaska standpoint, there are several research programs which are ongoing and offgoing. For about five years, we've been involved with some level of geothermal research, geothermal energy research in Alaska. But the amount of effort, which has been given to these projects is spotty; and the reason is, as Rich pointed out, that one of the problems doing relevant, applied research for Alaska is that the sources of funding are mostly on federal level. In order to get those funds, you've got to show that the work I'm doing up here applies to Alaska; but it's also, in some way, applied to national need. This is not always easy for us to document. We have had a great deal of trouble getting research funds to do energy research which is specific to Alaska. As we know, as with several other things, energy research---the environment of Alaska is so different compared to much of the Lower 48 that we require specificity which we cannot appeal to the funding agencies to show that we are worthy of so many dollars. We do, though, have---we are in the process now of maybe making a breakthrough---more money

has become available on the national level through ERDA, the Energy Research and Development Administration, in other areas. So it looks like some money is going to start to come through.

Another reason we've been frustrated is that in many states when you apply for research which is specific to a state's need on a federal level, one of the common techniques of getting research money at a university level and other levels is to say, "Well we're asking the federal government for X amount of dollars and a state agency, which is interested, is willing to put up so many dollars in a matching fund." Our state agencies, because of financial exigencies, have not been able to meet these requirements, which would have enhanced our proposals at a federal level. So we've been frustrated again.

We do have a solar project which is starting now. The State Energy Office is involved with some research in geothermal energy and some in wind energy. We do have an ongoing wind program at the geophysical institute, which is also suffering some of these frustrations of kind of on again off again. We have never---nowhere in the state, to my knowledge, is there an active program, which has been established and which is ongoing at a significant level of activity.

One thing I might mention is that recently I've heard comments in the media that there is a complaint that the University of Alaska is more research oriented than academic oriented and so forth. I think it's a testament in a way to the ambitions and aggressiveness of many of the university researchers, which has built up. It has been the work of these people which has built up a very big research facility at the university. They have done it almost with a majority of getting money from the federal area. They have not had the opportunity to get money from the state to do state-specific research. So I would say that the potential is there, that the people are there. There's a lot of good talent there. There's a lot of people who are interested in doing work which is state specific if they had a mechanism to keep their job and do it.

I think it's inevitable that this kind of---if monies become available from the Permanent Fund or from the Renewable Resources Fund to do these kind of things, we're going to see a growth in research; but we're also going to see alot more relevant research.

GRUENING: Thank you. Sally.

SMITH: Just one question. Lee, you and Rich and I have

kind of talked some of this over; but would you explain for the committee the relationship between the university research program and the State Energy Office?

LEONARD: The State Energy Office, when it was formed, there were ongoing energy research projects at the University of Alaska. At that time, which was 1974, I believe, the university entered into a joint kind of an effort to sponsor a seminar, a meeting, on energy in the state of Alaska with respect to geothermal energy and wind power. It was held in Anchorage. Since that time, this joint effort went on and we had this meeting and it was very well attended. People came from all over the state, from little fishing villages, from bush villages, not people that had vested interests but a lot of homesteaders and fishermen and carpenters and everything else that were just interested in getting off the high priced petroleum band wagon, so to speak, in rural areas mainly; because this, of course, is where energy research really pays off, when you get out in the bush where they're paying 25, 30 cents a kilowatt hour for electricity or a buck and a half a gallon for fuel oil. The proceedings of this were published and since then, the university has not had what you would call good relationship with the energy office, for a variety of reasons, some of which may be personal and some of which may be institutional.

But a problem with the university, with the university doing research, is that it must maintain its autonomy from political entities as much as possible. So the University of Alaska's research has always been conducted in the, so to speak, the world environment of research. That is, we go to funding agencies on the federal level and in some cases international level---in the case of the Geophysical Institute and Institute of Marine Science and so forth---to obtain funds. There were some problems with, when we were trying to deal with the state through the State Energy Office, there were some problems of a political nature, which suggested that the university might best channel its energy research through a state agency, such as the Alaska Energy Office.

Well, as you can see, I'm trying to make this as painless as possible. It was a very awkward situation. The energy office was, from the standpoint of the university, too political to really function as a proper funding agency or an agency through which the university could channel its research. As I said, as an academic institution and as an educational institution, there has to be a degree of autonomy. An individual investigator could go out into the world, whether it be the private sector, whether it be a federal agency and say, "I've got an idea which might pay off, if we can

do some work on it." Therefore, he either gets his funds or he doesn't. But it is very difficult to work through a bureaucracy which has political overtones in this situation.

GRUENING: Are you suggesting that they were tampering with the results?

LEONARD: No, no. I'm suggesting that a university normally to give a specific example---the feeling of the energy office was that if the university wanted to do energy research, let's say geothermal energy, let's say the university is interested in doing a research project which involves a technique for small scale electricity development at a hot spring---the idea was that normally this is the way it's done. The university or the investigator, who comes up with the idea---I don't like to keep using the word "university" because it really is individual people with ideas that go out and sell these ideas---an investigator gets an idea to do something. He applies to do research on this idea to somebody. He may go to an oil company. He may go to the state, a given state agency. He may go to the federal government, a given federal agency.

Well, what the energy office was interested in doing was being a channel by which energy research done at the university level in Alaska, that all proposals for this kind of work be channelled through the State Energy Office. The State Energy Office in turn would rewrite proposals or would apply for the money. When the energy office got the money, it would become the recipient of the grant. Then the energy office would sort of pass out the money to the university. Well, this is out of bounds in the normal way academic research is carried out in the United States. It became a little awkward for us to operate like that.

GRUENING: Do you have a question, Charlie?

PARR: I would like to make an over-generalization and see what your response is---that the state of art is that we know that hydroelectric power is feasible. We know that in Alaska solar power is probably not feasible. We know that wind power is feasible only in certain areas on a very small scale. We don't really know what the possibilities are for geothermal.

That's probably an over-generalization, deliberately so. But I'd like to know, in other words, the point I'm trying to make is do we really need to do research on all energy sources at this point? Or isn't the state of the art such that in some of them we already know the answers?

LEONARD: Well, one thing, which is another generalization, but might help explain this---there's been a lot of talk so far today about investment of Alaska's money in renewable resources and investment of money in the Permanent Fund in renewable things. Every big corporation in America, every multi-national corporation in the world, every government entity does research in one way or another to find out new ways of doing their things. That's how the United States became a great industrial nation, because of the Yankee ingenuity, so to speak.

In order for the Permanent Fund to wisely invest its money in Alaska, we have got to continue to come up with new ideas, new ways of doing things. What is possible to invest money in renewable resources, such as a lumber industry in the lower 48, which has been done maybe for a hundred years, may not be the way to do it in Alaska to make it economically feasible.

In other words, there are a lot of specific things in Alaska with regard to industrialization of the state, questions which have never been answered. So when people have, when you have a large, usually what happens is a guy comes up with an idea; and he gets an idea that you might be able to make money this way. He generates the idea and gets it going and then he finds somebody with the money.

In Alaska, we've kind of got this situation turned around right now. Right now, we're looking at a whole lot of money, and we're talking about investing it in renewable resources. But how? Are we going to use the same techniques which have been used for a hundred years or two hundred years in the Lower 48, or are we going to have to come up with new ideas? I think is the question. I would say, in answer to your question, we know hydroelectric power is feasible. But we have a lot of flat running rivers in Alaska. We don't know about low gradient hydroelectric power. A lot of this research hasn't been done. There hasn't been anything concentrated on it.

As far as solar energy is concerned, I have a folder over here, which has a concept of a solar hot water and shower facility to be used in a rural area. Now this is to provide showers and washing machines, coin-operated. A guy can make a little business out of this in a village to people who could not afford electric hot water at 24 or 30 cents a kilowatt hour and they don't have it now, and they won't have it in the future, as long as the price stays that way. This little system, which we've developed here, which we're proposing now to ERDA to do as a demonstration project, would only operate for about eight months out of the year. But if you're living in Venetie, that may mean alot to you---or some other village, which has a great deal of solar resources for a large part of the year.

Geothermal energy, we know, is feasible. The big concentration on the federal level and millions and millions of dollars of research has gone into researching big power plants, geothermal power plants, which are big; because the Lower 48 is faced with the fact of transferring their normal energy fuels, their normal energy resources to a new type. They already have the industry. They already have the business. All they've got to do is find a new fuel to use. In Alaska, we don't have that. We've got to find new imaginative ways to use alternate energy resources to spark industries. So that's one of the things. So, no, we haven't done enough research in geothermal energy as it applies to Alaska.

Similarly, with wind power. Wind power is an old technology; it's been working for many, many years. Alaska has a great deal of wind resources. When we consider our rural population, village populations, which, even if there is a big dam put on the Susitna River, you're not going to run a transmission line to Bethel and Galena and McGrath and Ruby and all those other places all over the state. You're just not going to do it. Sure, we can use the standard technology, which exists today, to give power to places like Fairbanks and Anchorage, where our big populations centers are. But what are we going to do about the rural areas?

If we develop, are we going to develop two huge meg-

alopolises, one in the center of the state and one down in Southcentral? Or are we going to diversify and develop small industrial, small businesses and so forth throughout the state, and include the native population, which for right now, exists in kind of a quasi-limbo outside of the normal economic structure? So I don't think it's enough to say that we know very much at all about how the potential of renewable energy resources and alternate energy resources apply to the state of Alaska right now.

GRUENING: Thank you. Do you want to follow that up?

PARR: One final question, if I might; and that is this: wouldn't it be desirable to do some of that research on the capability of transmitting power farther without losing so much of it? You said awhile ago we can't do this. We can't for example, build a Susitna project, get power out to McGrath and these various places. Right? Or similar things, okay. We all know there's a power loss as it goes---the farther it goes. This has been the thing. Wouldn't Alaska, in the long run, be better off with an overall grid for the whole state, if that became technologically possible somehow, rather than a number of small, independent, unconnected power sources scattered in a hundred different locations?

LEONARD: Well, I think that you may be right; I don't know. Let me preface my remark by saying that, there is a difference in philosophy in the technical community at large in the world today.

One philosophy says faced with diminishing resources, we're going to have to go back to the age of individualism. We're going to have to start looking at unitizing our energy resources on local levels and so forth. A large power company--- I recently was talking to somebody from Union Oil who was in my office talking about this same concept. This is a consideration in industry, big industry, as well as just in the academic community. That's one idea.

The other idea is well, maybe what we really have to do is find better ways to transmit energy, as you suggested. It's very likely that the state of Alaska should fund research which investigates cryogenic transmission lines and various numbers of transmission lines. Probably you wouldn't do that at the University of Alaska. You might fund MIT to do something like that because they've got more horsepower, but I would say yes that that's something that could be done. At the same time, you want to do the other kind of research as well and in that research, hopefully the better ideas will come out of it.

DOOGAN: Because the constitutional amendment stipulates

that Permanent Fund investments will be income producing, I wanted to ask one of these gentlemen how research and development is income producing?

SEIFERT: We are referring to the Renewable Resources Fund.

GRUENING: Either they're referring to the Renewable Resources Fund or the dedication of the Permanent Fund interest. I corresponded with Rich on that.

SEIFERT: I would like to reiterate what was said. It is very difficult, this is a question that researchers always have to respond to---how are you going to justify your existence? All I can say is one of the greatest testimonies to the value of research is the fact that every, as Lee stated earlier, every major corporation, every major government, every major entity in the world does research. Obviously, it's paying off. In the annual research budget in the United States, there is over \$36 billion invested in research.

The benefits of research are not easily made obvious, because they're hard to document. If we were to develop and demonstrate the feasibility of solar hot water heating in Alaska---which, by the way, is a feasibility, I know it is, I wouldn't stand here and

say it if I didn't believe it and hadn't done the calculations, it is a feasibility, and it's an economic feasibility today, because our electric is so expensive. Even if you only use it half the year, it's an economic feasibility. If we could demonstrate that to people, show them that it's an economic viability, decrease our use of fossil fuels sources, decrease the expenditures of the public---that's our documentation. You don't do it unless you get the chance to do it. But once you can give people the opportunity to see what the possibilities are, that's what research is all about, expanding the human potential, the obvious technical potential. That's the only reimbursement energy research can ever provide.

MEEKINS: I think most of the members of the committee I've talked to would certainly recognize that there are benefits from research. I don't think that's exactly the question. The problem we have is a constitutional one with the Permanent Fund in that even though there may be social benefits, if we can't quantify them, we probably can't justify legally investing money in areas that don't return money back to the fund with interest, so they can't be social benefits or benefits that are disbursed other than the.....

SEIFERT: I wouldn't be certainly up here and guarantee

a fixed rate of return in that sense. I look favorably toward the Renewable Resources Development Fund. It's a less risky political way to go about this, but nonetheless, I think, I have faith in it. I have faith in the idea. I think it will document some value.

GRUENING: Okay. As I said, I'd like for somebody here who can't make it back after lunch. I would like to reconvene right at 1:15 sharp. If there's somebody who would like to testify now because they can't make it back later, we can do that. Mr. Weeden.

WEEDEN: Mr. Chairman, my name is Bob Weeden. The Permanent Fund problem is a complicated one and neither we as citizens nor you as legislators are really used to dealing with the problem that carries such a tremendous implication way beyond the time when you are no longer legislators or I am no longer alive, etc. The problem of grappling with a long term future is a tough one.

We have a couple of general purposes, I think, with the fund. One of them is that to some degree we don't trust ourselves to be rich right now. We don't know that we will really make good decisions about a lot of money when we have been used to not having a lot of money. So we are adopting a strategy of trying to smooth out and length out that curve of income from exhaustible resources. We're saying let's live leaner and longer rather than fatter and

shorter, if indeed that's the choice we have.

Another general purpose though is that we feel that the oil wealth ought to be translated into human welfare, and I think the interesting thing there is the money that we all talk about is only the medium, it's not the message, it's not the end product, which leads me to conclude that what we are about is establishing a mechanism, an additional mechanism beyond the governor, beyond the legislature itself for making social decisions of a very major magnitude.

One of the stray thoughts that has occurred to me that I would like to leave with you is that the fund and the use of the fund has to be firmly guided by policies that are developed by all citizens of Alaska acting through a diversity of representatives, who are, in fact, accountable for their decisions on behalf of the public. I would not like to see both the policy-establishing group of the Permanent Fund and the managerial group dominated by bankers. I feel that although bankers can make good social decisions, that their chance of doing so is no greater than a trucker's or a forester's or anyone else's. I would use an analogy that when I would really like to have mechanics around to keep car running, but I rarely ask them where I should drive it. I think that's the essence of the difference there.

The income from the investments may, in the fairly near

future, turn out to be kind of an embarrassment itself because it may get to be fairly large. The constraints on that income are not as great as you have pointed out on the capital itself. I would suggest that we look very strongly at putting income, a large share of the income from capital funds investments, Permanent Fund investments back into the Permanent Fund unless we prove in the interim that we devise really firm public social goals and that we can spend that income money wisely in pursuit of those social goals.

I feel that the fund should not be used to underwrite projects that could not stand on their own in the market place, I say that knowing that there must be a qualifying thing. When representatives of the people have decided that there is a social goal that mutually can be agreed on that is so important and that cannot be taken of by the market place decisions that there must be some kind of a front end loaning of money, there must be some kind of subsidy, if you want to call it that, that's fine. I don't object to that at all. But I feel that should be the exception to the rule rather than the rule itself.

There has been some mention in testimony today about the scale of projects, and somehow people are focusing on the idea that the Permanent Fund can do big things in a big way that other funds cannot do and private money may not be able to do. I

would maintain that if you look at the product in terms of human welfare and society, the scale of the project is of very little consequence. There can be bad as well as good big projects and there can be good as well as bad little projects. The need of those projects, at whatever scale, for Permanent Fund support is what needs to be demonstrated. The fact also needs to be demonstrated that those projects, big or small, are really in pursuit of social goals that we agree on are satisfactory. That's one of the prime things we should focus on again. Money is only the medium. It certainly isn't the message itself.

I personally feel that we should not use the fund in ways that have as one of their major results a large increase in the population in Alaska. I say that because I know a lot of people who do not feel that we need millions of people up here. There are a lot of people who feel that some of our amenity resources are in scarce enough supply right now, the competition is keen enough for them right now that we would not really need to consciously go ahead and add more people to the state of Alaska as a goal in and of itself. I think it's fairly clear that certain proposals for use of Permanent Fund monies would have, as one of their major effects, the increase in numbers of people coming here. If you propose to eliminate income taxes, for example, you create a haven for

people who don't want to pay income taxes. That in itself would be a major incentive for people to come here, establish a residence, if there is a residency requirement tied to it, etc. Those are the sorts of things and I toss this out knowing that a good many people will not agree with this goal and that doesn't bother me a bit. All I'm saying is that we should decide mutually whether or not increasing our population is, in itself, a desirable goal. Whatever way that decision goes, that will be one of the policies that will influence the expenditure use of Permanent Fund monies.

That's really all I had to say at this time, Mr. Chairman. As I say, I'm easily embarrassed in this whole field of income investment. I don't deal in the figures that we're talking about here, personally. I will, however, try to acquaint myself with what seems to be the most important parts of the nuts and bolts of this thing as I become more acquainted with it.

GRUENING: I hope you do that. Thank you for the very thoughtful statement. I was intrigued by your comment on the use of the income. At the same time you mentioned the fact that you think the investment decisions sometimes, at least the policy of them and whether or not to make them in a particular area, could be better handled or as equally well handled by let's say laymen.

In that regard, would you think that the use of the interest,

in terms of paying it out, could be equally handled by the individual who received it? In other words, if everyone got an equal share of the income, aren't those individuals equally competent to spend it on what they see fit, as opposed to, say requiring that we re-inject it in the fund for whoever the fund managers are to decide what to do with it? See my point?

WEEDEN: Yes. I do, and what you are saying is that one of the channels into which we might like to put our oil wealth is immediately into the private sector for the individual to make her or his own decision. That's fine. Do you always then ask to what extent? Is 30% the right figure? Or is all of the income? Or, you know, what is the right figure?

That really is basically a decision of how much to favor the present generation as opposed to the future generations; that's only partly true, because presumably the private individual could put that money into a trust for children and so on.

But it's also partly a decision to increase activity in the private market place, which is already, by the way, being increased through the other channels through which oil wealth passes.

All we're talking about is the state, public revenues. We're not talking about the private wealth that is generated through exploiting the oil resource. Certainly a lot of the people who might get part of this Permanent Fund income monies as their very own are also getting a share of the oil wealth in other means by having jobs at high rates of pay, etc., making good business investments.

So, I really can't say that I have a preference there. What you do run up against though is the same thing I mentioned before---if it looks as though your decision to put Permanent Fund income monies back into the hands of private individuals is going to stimulate people to come to Alaska, so that they can gain a share, then you ought to recognize it and decide whether that's what you want to do. Is that a sufficient disbenefit, let's say, to override the benefits you see from doing it?

GRUENING: You mentioned subsidy that should be an exception to the rule. What entity do you think ought to be best to decide on who gets the subsidy? The legislature, the governor, I'm just giving you these examples---they're not the choice you could pick---if you're not going to use the market test in terms of, let's say the Constitution---what entity do you feel is the best one to decide who gets the subsidy?

WEEDEN: I think, in terms of who gets it, I presume you don't mean the individual applicant?

GRUENING: Which Alaskans, general, as a class? If you look at loan funds, there are certain classes of Alaskans that get more loans than others. If they are subsidized loans, they get a greater benefit than others that, say, pay loans at the market rate. So the political question, you, the political system allocates benefits. Part of that system, what entity, my question is...

WEEDEN: My feeling is that to provide a subsidy is an important decision that must stem from some social goal that you have and we are talking then about those decisions must be generated, in my view, by those who are accountable to the public for developing and articulating social goals, the legislature and the governor. Now, if you ask as between those which, well there are pros and cons on either side; but I would say that the legislature, being obviously more diverse by 60 times, is the one that should be setting the overall policies including the policies for how to disburse this broad subsidy benefits, if there are subsidy benefits to be disbursed. The governor and his administration help to carry that out, and the Permanent Fund policy group has

other levels of policy that they have to make decisions about. I think it's a tiered structure, but I simply see the legislature at the top.

GRUENING: Any other questions? Russ.

MEEKINS: Mr. Weeden, we've had some testimony from some of our consultants. It's a funny thing. They are very concerned about us sort of diluting the power or the benefit that we can distribute from investments or anything from the fund by the influx that people that that investment might create.

What they've told us, and I think it makes sense to a certain extent, is that amenities are also part of the real wage. People come up here for higher wages; they also come up here for more amenities. The person who was giving us this, he followed this logic out and came to a different conclusion---he came to the conclusion that we should distribute, if possible, we should distribute the principal of the fund, which, of course, we can't do constitutionally. But lacking that, at least all of the interest from the investments of the fund, which should be maximized for yield, should be distributed to the public because he felt that anything else you did with it, any social benefit, any economic benefit at all would be completely diluted by the in-

flux of people to obtain that benefit and that the real wage counting amenities would always equalize.

WEEDEN: In other words, if we spent the income in these ways we would, let's say, diminish Alaska's stock of amenity resources. Therefore, people would have to use that income to travel somewhere else in hopes of finding them. Maybe that would be the case. I don't know. No, Russ, this is one of those areas where I am not convinced that I know where I would vote on this question of using income, but I think you obviously understand the overall goal that I'm looking towards. I don't know how to get there.

MEEKINS: It's sort of Catch 22 we're confronted with because I'm tempted to suggest that we use it for creating a better quality of life for people, economically and other ways. At the same time, I can see, we've had one example given to us, I think it was a very good example, that in New York state changing their welfare laws some time back, and as a direct result of that, two million people immigrated to New York, mostly Puerto Ricans, but other people also. Consequently, they then went into a deficit situation in their welfare; and they didn't have as much money to distribute to the large amount of people, so it just sort of under-

cut the benefits they were trying to give out because a larger number of people were claiming them.

Alaska, with its small population, is very vulnerable in that sense, it seems to me. One of our people testified, I'm not sure it was correct, that the number of unemployed in the city of Detroit is larger than our work force here. In a situation like that, if we attempted to create jobs or if we attempted even to make life better for people without jobs, we may find ourselves undermined in the very principles or very things we're trying to get at.

WEEDEN: I might point out that all of us are really puzzled and the Pogo comment of "insurmountable opportunities" is really neat, I think; but what we can understand, too, is that we can manipulate the amount of flow of revenue into the Permanent Fund in various ways. We can manipulate it by changing the tax structure, for example, changing our royalty share. You might say that well, if we don't know what to do with our money, why we just let the oil companies pocket all the profits and they'll certainly take it out of the state and solve our problem.

Another possibility is to approach the leasing of state lands for oil and gas, in other words, gear the development of the basic resources over time to that amount of income that you think you

can handle. I guess Norway has kind of approached that strategy that way. They say, "look, we just simply won't lease a piece of land until we think we want the money." That's another way of either starving or enriching the Permanent Fund over time. So there's lots of things we can do with our left hand if we can't do it with our right.

GRUENING: Any further questions? Thank you very much, Bob. We'd like to come back promptly at 1:15 and anybody who wants to testify, we'll be ready. Thank you.

BREAK FOR LUNCH

GRUENING: I think we can start to call this thing back to order, and call up anybody who wants to be first in the afternoon portion of this. Sorry about returning a little bit late. Go ahead. We had a slow waitress. A good lunch, but a slow waitress.

INOUE: Thank you. I am sorry I have just a single copy to distribute to you.

My name is Ron Inouye. I'm a resident of Fairbanks and am employed at the University. My comments to you are strictly my own.

I appreciate the opportunity to share with you a few of my concerns regarding the Permanent Fund. Although the thoughts I express may not directly fit what may currently be the focus of your committee's discussions, I do hope that a few of my ideas may creep into some of the committee's minds and find a hospitable niche, to be retrieved at the appropriate time.

My plea is pretty much a standard one, that of increasing help to state agencies for the preservation of historic and cultural artifacts and manuscripts. I believe we are all aware of the usual arguments for such material, culture and manuscript preservation pleas resulting from vanishing life styles, big time economics decimating human values, and all of those kind of arguments. However, I would like to pursue the issue a bit differently.

If the purpose of the Permanent Fund is essentially economic and your concerns are accruing interest and getting "a good return on our dollar" I would like for you to consider the following:

Tourism is an example. It's becoming a larger and larger part of our state's economy. Why do tourists come here? I bet it's not to see how many new homes have been built in Anchorage or Anaktuvuk or to shop in any of one of the new malls that are popping up all over the state like puffballs after a lucrative rain. Many of these tourists come up to see the undeveloped areas and to look at the historic sites and artifacts of the past. The

tourists love the local museums and historic buildings. They stay in hotels and spend money on transportation and meals, they visit those museums and historic places. Without those records of the past, the tourists wouldn't be here.

What economic contribution comes from the current educational and research communities of our state which use as their raw material the resources of the past that are now discreetly preserved and made available for present use? Take a look not only at those on private and state payrolls servicing museums, archives and libraries, but also those who make use of those collections. Those depositories of information are located all over the state from Ketchikan to Barrow. The users of these depositories include the lawyer, corporation executive, environmental impact statement complier---all of whom are linked in their work to information from the past. They indirectly make their livings too from the past.

Needless to say, I believe there is a long-term return on the dollar for every penny spent by our state government in historic preservation and the acquisition and care of historic manuscripts and material collections. These are the kinds of things I believe the state should be promoting through its Permanent Fund development.

While I believe that Permanent Fund money should be partially devoted to such things, I believe too that good management

principles should be applied.

Several years ago the Kate Pullen Memorabilia Collection was lost to and by the state. That historic Skagway collection was offered to the state as an intact collection and would have been an asset to all of us. Unfortunately, the state was unable to get its act together and the Pullen Collection was sold off piece-meal to the highest bidder in Seattle. I was in Seattle during that sale and saw many Alaskans there trying to retrieve bits and pieces so that they could be returned to the local museums within the state.

Regardless of our personal feelings about the value of the Pullen Collection or those that that represents, the situation points out that our state has inadequate policies to deal with such situations.

When first teaching in Ketchikan, I was very interested in having my students learn more about Northwest coast art styles, particularly that done in the Southeastern part of the state. In checking for good examples from the late 1800's and early part of this century, I found that my students would have to go to Portland or Leningrad or Denver to see them. Is there not a way that some of those items could be returned to our state?

I feel guilty and powerless to do anything when I hear about another art dealer from Seattle, or Anchorage for that

matter, buying another collection for disposition when really the state has a legitimate right to look out for the public's interest in such situations. This pattern continues because we have yet to find a creative way to ensure that cultural materials and manuscripts of significance stay in Alaska, open to public use. Had we conceived of these materials initially as resources of increasing value and developed good management policies for their acquisition and use, we would not now be wringing our hands and bemoaning the loss of so many valuable aspects of our state's history. Thank you.

GRUENING: Thank you, Ron. Representative Meekins.

MEEKINS: Ron, thank you for those comments. I found them very persuasive, quite compelling, especially from a viewpoint of my duties as a Finance Committee member. Chairman Gruening is also serving on the House Finance Committee. My question is in regards to the specific purpose of this hearing which is a testimony in regards to Permanent Fund investments. One of the limitations on the Permanent Fund, which we explored and talked about quite a bit in the morning session, was that it must, by Constitution, be income producing. There is some debate about exactly what that means. We, I think, do have some agreement that the income producing must be a

direct income. In other words, dollars must flow back into the Permanent Fund. It can't be social benefits put into money terms. So I am wondering if you have any, if you thought of it in that respect, and if you have any ideas to how we could accomplish your purposes with the limitations of the fund.

INOUE: Well, I think there are probably a number of ways to approach that. One would be to, in fact, find a way to squeeze around the intent of the law. The other is to maybe just change it, because we found that we're dealing in a very marginal area now, where there is very little support, because you can't quantify the benefits of such things. Similarly, you can't quantify the benefit of research. I think Rich Seifert pointed that out fairly well today.

There is really no other source for these kinds of things to remain in our state for all people to use. I think if maybe we broaden our definition of what income producing would be, to take a look at the fact had we bought that Pullen Collection, its value on the market now would be so many dollars more. If you arbitrarily wanted to sell it and spend that increased amount of money, you could.

MEEKINS: Maybe that's an idea right there. The appreciating

value of the artifacts or whatever we bought might, I don't know, I'm just thinking, but that the...I'd just like to say two things.

One is that I was in the legislature when we failed to purchase the Pullen Collection, and I was on the Finance Committee and voted for it, but unfortunately, it didn't prevail.

Secondly, I think that you have to remember that the words income producing are not in the law by legislation. That was in a constitutional amendment voted by the public. In order to change it, we'd have to have another constitutional amendment to change the language. As a political matter, that's very unlikely to happen, I would say, since the legislation other methods in order to accomplish that besides changing the law itself.

INOUE: Right. I recognize that and I think in my earlier comments, I sort of addressed that by saying, "I hope you keep these things in your minds, and then when the appropriate time comes, that you as legislators will see a way to possibly help us." Because I am getting more and more concerned about those large collections in Alaska that are

just barely surviving. Certainly, we're aware of one major one in Southeast, probably two or three, that could very easily leave the state unless we have some strategy to have money available in a fairly fluid form to get those things purchased at the time they're available. If we have to wait for the legislature to appropriate the money with all the appropriate politics, our chances are gone. I think Kluckwan is a very good example of that. I think the history of that case is not unique and that it has been going on for many years. Some place in the middle of all of this, I think there is a string of logic that somehow we can attach to something. All I wanted to do was raise the issue with you.

GRUENING: Thank you. I always think there's more than one way to skin a cat. The Permanent Fund may not be the most appropriate institution to do it, but you could either do it through the use of the Permanent Fund income directly purchase these materials or set up a special grant fund in the General Fund to do that or again maybe the Renewable Resources Development Fund---which doesn't have to make loans, it can make grants---could do it. I think maybe you could write under the tourism loan, maybe have a grant system and have some entity administer, be able to administer quickly enough, so it can, at an appropriate time, step in and prevent the loss of these priceless items. You might give some thought to how that might be administered in terms of---if

you're not going to have it directly run by, let's say, Commerce or a special department, how you might have it structured and who would serve on it.

INOUYE: I wanted to make clear too that there are many manuscript collections that I think would equally fit into that area. For instance, there are many things in the University Archives that are really invaluable; but I have a feeling there are a lot of other things that should probably have been deposited there, that unfortunately we don't have now.

MEEKINS: Ron, one other thing. I serve on the sub-committee that is looking into the Renewable Resource Development Fund. If it's alright with you, I'll send a copy of your comments to this committee to the chairman of that sub-committee, Terry Gardiner.

INOUYE: I'd be pleased if you would do that. Thank you.

GREUNING: Thank you very much, Ron. Yes please.

MATSON: My name is George Matson, the Executive Director of the Fairbanks Environmental Center. I don't have any prepared testimony, but I would like to make an appeal to you

that the money from the Permanent Fund be invested in environmental research, environmental baseline studies, fish and game. fish and wildlife and habitat. These are renewable resources, and I know the question you're going to ask, how do they produce income? Well, I think, you can look at this in a number of ways. If you look in your booklet here, it refers to the origin of the Permanent Fund, and it says that the fund evolved as a means of preserving the Alaska lifestyle. I think fish and wildlife and the habitat are very much a part of this. So I think some of the statements and some of the reasons why the Permanent Fund evolved are very much in support of why a broad definition of income should be applied to how the Permanent Fund is spent.

I think, also, we're all familiar with the environmental impact state requirements and things like that. You can directly relate the quality of the baseline study to the potential for resource development. If the baseline data isn't there, the resource development is jeopardized. The resource developments produce the royalties and the leases and everything else from which the Permanent Fund feeds off of. So there's a relationship there.

Also, I think, you can relate the protection of the fish and wildlife and habitat to social costs. One thing I would like to point out to you, maybe you're not too familiar with it, I just came back from Barrow. I spent a few days up there, involved with the Inupiat in terms of the bowhead whale situation.

They're faced with a decision by the International Whaling Commission to, well, in fact, the decision has already been made, not to allow any bowhead whaling starting the spring of this year---next year.

It doesn't appear that the justified position on the International Whaling Commission's part, and in response to it, the people, the Eskimos in the North Slope area, have put together what I consider to be a very excellent proposal to look into the population dynamics and habitat of the bowhead whale, in fact the whole habitat, which you might define as the Arctic Ocean. They're very sincere about this. They want to protect the whale; they want to protect their culture, the two are related, but this proposal they have, which is sophisticated, uses an inventory as well as combines the knowledge of the whalers is a pretty extensive effort.

They're concerned enough that they have taken their dividends from the North Slope Borough---30 some hundred dollars and applied it towards the start of the study. However, the study is going to be about \$13 million and they don't have the money to do this. I think it would be very appropriate if the Permanent Fund were to put some money into this five year study that's being proposed. You can, here again, you have to, if you take the rigid interpretation of

what is income producing, you might not be able to justify it. But if you look at the alternatives and apply a little flexibility, you'll see the social costs, if the study doesn't go forward.

Without hunting of the whale in the Artic Slope, there's going to be all kinds of social costs in terms of welfare and transporting food up there and everything else. It's not desirable, I don't think, from the state's viewpoint or the people that live there. Like I mentioned, I don't have a prepared statement. I just wanted to point out that I think this is a legitimate need, and right now, I just came back from a very intense exposure to a very legitimate situation.

GRUENING: Thank you very much, George. I attended the Inuit Circumpolar Conference, and I remember when that was discussed, the people were very concerned about it.

I think the question facing this committee with your suggestion and that that was just made on artifacts is one of dealing with all the proposals with the appropriate tool.

One point we tried to raise in the brochure, and I don't know whether we made it clear, is that there are two funds that the legislature deals with. One is the General Fund, which in terms of revenue projections, is going to be probably larger than the Permanent Fund to the extent that we've derived money from

our oil wealth, the larger portion of it, as the constitutional amendment now stands, will go into the General Fund. There are no restrictions on the General Fund as to how it can be used. We could spend it to study peanut farming in Alaska or we could use it for, say, baseline data for the bowhead whale situation. That's one thing we have to address--- which is the most appropriate tool for it. I'm saying that your proposal, your suggestion that we look into it is a good one, I know, I think, I hope the governor, at least, who has been up there for that and has expressed some concern, will have a suggestion as to where the money should come from.

MATSON: He expressed concern but he didn't express any solutions or absolve the state from being a part of the solution. I think the state could be, they could exert some leadership here and say the state is just as concerned and is going to chip in to this \$13 million or whatever it's going to be to do this study.

In terms of income producing, you might point out that what they want to do is develop a sophisticated monitoring system to measure a number of different types of signals from whales, acoustical signals and everything else. This type of monitoring system has all kinds of applications in other OCS areas. So attached to this, you could have a license.

The license would generate income because it would be bought, you know the concept or maybe even the whole package, the hardware and the software could be bought by someone else to monitor some other species or maybe even by the Defense Department to monitor submarines for all that matter. But basically, the mix of sensors they want to put into this, I think, has a lot of potential in other areas, and so, like I say, if you use a little imagination, you can find out how it would produce income. Just having a license would be one way. Patent, I should say.

MEEKINS: Just to define terms here---we have, of course, as we've mentioned, there are several funds. We have the Renewable Resource Fund, which your suggestion would probably fit under that definition---it does not need to be income producing.

Then we have the General Fund, which is used for budget purposes, but there is, at this point, projected to be a surplus of revenue over and above what we spend on the operating expense for government in the General Fund, so there'll be a surplus in the General Fund.

There'll also be a surplus revenue in the Permanent Fund. The Permanent Fund is the only one that's limited to income-producing investments.

In fact, the revenue from the Permanent Fund is not limited.

If we make 5% or 10% return on a billion dollars in the Permanent Fund, that's quite a substantial amount of money in itself. That money is not limited and not subject to the same constraint. So you have of the four vehicles there, you've got three of them that are not limited.

MATSON: One reason I wanted to point this out is that time is of the essence here. This whole system would have to be operating sometime next spring. Now if money comes from the General Fund, the legislature would have to be in session first. I'm under the impression, it may be wrong, that you have the ability right now to commit money from the Permanent Fund.

GRUENING: No. That is one impression I want to clear up. The Commissioner of Revenue---there's about \$7 million that has collected in the Permanent Fund now. That's a total amount because the pipeline hasn't been in operation very long---the Commissioner of Revenue is authorized to put that into essentially a savings account. He wouldn't be authorized to do anything else with it. We'd have to change the law to authorize him to do other things with it.

Because of the constitutional requirement, I doubt whether we could change the law to allow grants or investments to be

made that didn't produce direct income. Now this doesn't mean we couldn't use the income from the Permanent Fund to do what you're doing, or these other loan funds. Actually, your problem probably is only addressable by the Permanent Fund in terms of the time frame you're talking---I mean the General Fund---in terms of the time frame you're talking about, because the General Fund has right now, it's got a cash turnover of close to a billion dollars. That's the only fund that has the kind of money you're talking about. I don't know how much you're suggesting the state kick in, but...

MATSON: Well, the Department of, they're approaching the Department of the Interior. They're using their own money as much as they can. I think it's a significant commitment to take all the dividends from last year from the North Slope Borough and apply it towards this study.

MEEKINS: Of course, if time is your problem, the Renewable Resource Fund has no money in it yet. It doesn't even start collecting till 1978. The Permanent Fund has just a few million dollars and there's no income of any great amount being produced by it yet. That income is going to be reinvested anyway under the current law. So nothing could happen till the legislature meets. Your most likely vehicle, in fact I think, your only one

if you want it within---by next spring is the legislature.
Out of the General Fund, just a regular appropriation.

MATSON: Well, I think there's another point I'm alluding to, I haven't brought out is very much in accord with what Bob Weeden mentioned. I'd hate to see the Permanent Fund be defined according to what's acceptable to bankers. I think the tone of how this whole thing started was it's for the basis of the people; it's not for the basis of feeding more money to the bigger and better for fewer and fewer. I think, unlike our rate structures and some of the other things, it should be structured so it benefits the smaller person more so than the bigger person, the bigger corporation. I appreciate what you're saying but taking a rigid interpretation to me comes across as it's going to favor those who are higher up in the power structure to tap into this.

GRUENING: We're trying to avoid that. I'd hate to see it, like Mr. Weeden, benefit the bankers. They need it least.

CARPENTER: I was just going to elaborate a little, George. We have to keep a clear focus, I think, on the principal and then the income from that principal. One of the basic thoughts here is that if we adhere as we are mandated to a strict fi-

nancial interpretation of the income producing for the investment of the principal of the Permanent Fund, then the types of projects you involve to speak of, the research that's necessary and so forth will ensure us of monies down the road income for which these restrictions are not placed. I think, though, that if we try to depart in the investment of the fund from a strict and literal interpretation of income producing will be, in fact, defeating your interests and Bob's in the future. We don't want to dissipate, cannot dissipate the fund.

MATSON: I'm not sure the best way to address these needs that I mention, but I want to be sure that in the mix of all the tools you have to work with it does get its fair share.

GRUEING: You don't fall between the cracks.

MEEKINS: I might just say something too. I think that the points you make are very good ones, and the committee, I feel, is in agreement with your attitude essentially. We see it---what we're trying to find out and what I don't think we do have any great consensus on in the committee or in the legislature is how to go about getting benefits to Alaskans and Alaska society. We certainly don't want to benefit just the economic part of the state, just the bankers and other people who are involved in

financial dealings. The question is, is it better to do that by investing that money in very high yield activities or investments and then using the income from that for social benefits or whether we should use the principal and directly invest the principal in things that might be socially beneficial? That's the only question.

MATSON: There is a potential for high yield on these things, I think the availability of fish and game in Alaska has a very dispersed high yield to a lot of people. To Rich Seifert, it was asked how you quantify this. I think it's not easy to quantify, but it's clear how you quantify these things. It's difficult because the benefits are dispersed. Its not the same as if some corporation has their income coming in and selling products all over and they can work at their bottom line. The benefits don't channel into one area---channels to the whole public and what you have to do is do some economic research and breakdown of who benefits by this and who loses by that and through the EIS process, I've seen other areas where there are quantified things like recreational benefits. In fact the Corps of Engineers has become pretty good at saying, "Well, so many user days is worth this much to the economy." I think you can do the same thing here. It's just not as obvious because the benefits are dispersed.

GRUENING: Thank you. Any further questions? Thank you very much. Do you think it's quiet enough to open the door now? Sandra, love to hear from you.

STRINGER: My name is Sandra Stringer, and I'm here speaking for myself.

First of all, I would like to thank you for coming to Fairbanks to ask for opinions. I think that this is certainly a step in the right direction in terms of getting public input and also spreading knowledge on what the Permanent Fund is and what it can and cannot do. I think it's evident from some of the people who spoke earlier today and certainly from myself, from my own lack of knowledge as to what are the real specifics in terms of what the Permanent Fund was designed for. I found myself, a little earlier, in listening to George and agreeing with a portion of what he said and listening to Rich and to Bob Weeden. I also found that I agreed, a little bit to my surprise, with Representative Carpenter. I think that I really do agree that money is a means of transaction. Therefore, we must be extremely careful that the principal is invested in such a way that we are going to continue to get money from it, that the interest from the principal is going to continue to come to the state.

However, it seems to me that there must be a way, there should be a way in which to invest this money so that the money could

perhaps be invested in the state itself, in various enterprises within the state hopefully or at least a portion of the money, and that there would be spin-off, good spin-off on that, and that the interest drawn from this investment can be used to subsidize such things as research and as projects, various projects which have been mentioned, which have no source of funding right now and which could bring great benefit to the entire state, even though that benefit could not necessarily be quantified in the monetary fashion.

I wish I were able to suggest some way of doing this; I really can't. I'm quite ignorant in terms of investment, in general, and certainly don't have any specific suggestions to offer you as to how to invest the Permanent Fund. However, I do feel, as Bob Weeden also stated earlier, it would be a very good idea to be sure that there is some general citizen input along with your money managers, along with your bankers and your investment brokers that there are some ordinary citizens whose opinion is asked, not, of course, for the technical end of things, but just to get an idea. Some people who have lived in Alaska for awhile and who plan to live in Alaska and who want to see the state prosper and grow however prosper and grow is defined by the individual. That's really about all I have to say. Thank you for coming. I hope you come again.

GRUENING: Thank you, Sandra. Any questions? I am glad that you got up and didn't feel intimidated by the seemingly technical nature of it because none of us know any more about investment banking than you do. That's not what we're interested in. We're really interested in how people think the Permanent Fund could help Alaska. I'm glad that you came up here and gave us your philosophy. That's really where we're at, at this point. We hope to come back to Fairbanks too when we have a proposal and hear some more.

STRINGER: Thank you. I think that certainly the people in this room are reflective of a vocal portion of the community. I think they'll have a lot of good ideas.

However, I know that there are many others in the community who might have come today if they felt they had something to offer. Many people that I've talked to felt that because of their lack of technical expertise, they really didn't have anything to offer to the committee and were reluctant to take up your time and their own coming down and offering some sort of general comment. Please be assured that there are a lot of people in the community who are concerned and who will continue to try to become informed. I think that the Alaska Forum last spring, for instance, there was a discussion of the Permanent Fund at that; and a lot of people started thinking at that time about the subject.

Most people don't have the technical background, as we've already gone over, to offer firm suggestions; but I think they shouldn't be discounted as being, say, disinterested. They are interested; it's just that they don't have the background.

MEEKINS: Sandra, do you think that there is a need for more information about the Permanent Fund to be distributed in some way or another to the public?

STRINGER: I think it's not so much---certainly there is an amount of information available. I think it's not so much lack of information, as most people in our society, which is already so highly specialized in so many areas, most people who know nothing about oil, for instance are somewhat reluctant to talk about oil policy. Most people who don't know much about mechanics are reluctant to offer their suggestions about mechanical things. I think it's generally just, not so much lack of information as a lack of, I don't know what, an assurance on the part of the people on what they're speaking about.

I think you should continue to attempt to get word out to people that there is a Permanent Fund because, often in the

rush of every day life, people tend to forget---"oh, yes, I remember reading something about that or hearing something about that a month ago or two years ago or whatever." Since it's something that will continue to affect us, and far more so than right now, in a few years, that a continual stream of information must be put out and also you must always assume that when you put out that particular piece of information, that no one knows anything and start from point one recapitulating, if necessary, because people do tend to forget, even those who are interested.

PARR: Sandra, you mentioned that you would like to see at least some of the money invested in the state. If the state could get, and I'll take figures out of the thin air here, if the state could get, let's say, 7% in New York in some kind of investment and could only get 6% in the state of Alaska by investing it in the state or 5% or something, does that seem like a good trade-off to you? In other words, not those specific figures, but would you think it would be desirable to accept perhaps a lower rate of return by investing in Alaska? Do you think the benefits would outweigh the loss of interest dollars?

STRINGER: I think probably that it would depend a great deal on the projects that you know what the two projects were that were being invested in, and the exact amount of loss being

experienced and also whether you're talking about investing 100% of the money this way or maybe 50% or 10%, it would vary a lot. But it seems to me that under certain given circumstances, the loss of financial return to the principal, if it were not too great and the project were sufficiently worthwhile---of course this is all a very subjective evaluation---that it would indeed be a trade-off that could be acceptable. Because after all, the money should be benefiting Alaska.

PARR: Thank you.

GRUENING: Sally.

SMITH: Sandra, if I may just add for the benefit of anybody else who lacks self-confidence to come and speak as you have, I know of one person sitting on this panel that's in the dark in a lot of it and that's me. This is where we need to get some of the people out to learn about it. Perhaps, some of the fault with all of us is when we send information out, it's already too technical for anyone to understand. There again, I can fall under that category on more than one subject. When I pick up background information, I have to sit there with a dictionary. We need to really, all of us, kind of re-evaluate how to present information to the public,

so that it's short and concise and does bring about their interests and let's them feel that they have something to say too. I'm really glad you said that.

STRINGER: Well, thank you, Sally. I think that a lot of times people are so caught up in the general business of living, sending the kids to school, getting to work on time, bringing in the pay check, and maybe taking off an evening for fishing, that they don't have time to read the legal page or they've seen an advertisement on television about something, but it's real hard to follow up. A brochure of the nature which we picked up today is most informative but sitting here, trying to scan it while the meeting was going on, I found that I should have probably gone home and gotten a dictionary and come back too. But you can only make a certain amount of effort in that direction, I'm sure.

DOOGAN: Unfortunately, this is a rather technical question.

STRINGER: You probably shouldn't ask it of me then.

DOOGAN: Those sorts of things have to be answered. Really the purpose of my comment is to say that the committee has been cooperating with the Public Forum and one of their four main sets of questions is going to be Permanent Fund questions. I believe they're scheduled into Fairbanks sometime later this month.

GRUENING: September?

DOOGAN: I think so. I don't have the schedule with me.

GRUENING: It's after October. I think the first one is in October.

DOOGAN: Yeah. What I am talking about? It would be later in October. I'm sorry. But the purpose of that comment is simply to say that we hope to derive some information for the committee's benefit as well as for the general benefit of the public through the Public Forum. So we would hope that everyone here would participate.

STRINGER: Well, it was well advertised last time. Hopefully, it'll be equally as well advertised this time.

GRUENING: Thank you, Sandra. Allen Bloom.

BLOOM: Thank you, Mr. Chairman. My name is Allen Bloom. I'm here also just as an interested spectator more than anything else. Originally, I hadn't planned on testifying but I was going to use this as an opportunity to familiarize myself as well with the technical mechanism of the Permanent Fund. I'd like to point out I'm not an economist, but I

do have two recommendations for long term utilization of the principal for the Permanent Fund.

The first is that after we've solved, to a great extent, the investment problems that are facing the state of Alaska, and we've funnelled whatever principal into the programs that may be funnelled in, 25 years from now or 50 years from now, it may be advantageous to take the principal of the Permanent Fund and make a quantum jump on the part of the state of Alaska investing the Permanent Fund monies in the emerging nations around the world, the lesser developed countries of the third and fourth world so that we can tie them to a certain extent to our own economic well-being and potentially act as brokers for more stable economic systems in other parts of the world. This goes on beyond just a simple step of perhaps investing in growth bonds and proposals of other states. I'm talking in this case of going to the poor countries such as Chile or Malaysia or such areas as that with the idea that we act as the broker both as a multi-national corporation, called Alaska, and we do it along the lines of the principal of the Japanese superstate in dealing with Korea, Taiwan, the Soviet Union. I think we have that potential in terms of the long-term net effect the accumulation of principal capital in the Permanent Fund.

I don't have any mechanisms for how to set this in motion. I don't have any real strong recommendations on how to manage it

and how you allow the taxpayers in this state to make the decision to make that kind of an investment. But I think it should be explored at this stage, so that when we've solved our own problems and, so to speak, fed our own poor, then we can extend out to that particular level as a stabilizing economic interest, possibly a competitor to the International Monetary Fund, I don't know.

My second point, and it's sort of a composite of what Mr. Matson, Mr. Seifert, and Mr. Inouye were talking about in terms of the research component. Perhaps one of the ways that the principal from the Permanent Fund can be used in a research component is to create a maximum learning center on the north through the University of Alaska system. The attendant return to the Permanent Fund could be in the form of jobs, just the whole potential of employment through the creative and intellectual exercise in the state of Alaska, broadening of the cultural experience and an acceleration of the cultural experience by using some of that principal to actually create a new category of professional employment for the people of the state of Alaska. This is a potential mechanism, and again, I don't have the details worked out.

My last point is---and this concerns just the structure of fund management---we hear a lot here of the difficulties of the constitutional amendment that was passed in creating the

Permanent Fund and then the management device itself. One of the things that I fear is that we may end up creating a constitutional mechanism that is as rigidified and as autocratic as the Federal Reserve System. I would hope that in creating the management tools for the Permanent Fund that we do not create an autocratic empire for another Arthur Burns. We may have to make a concession in form to the general politics of the people of the State of Alaska. We may have to rely very much on the urban or Fairbanks against Anchorage, when it comes down to that, to managing the fund in such a manner that everybody really has a chance to play in it. Thank you.

GRUENING: Thank you, Allen. Any questions from the committee?

The thing that strikes me, you know you hear two suggestions that were very innovative. I've never heard them before for potential use of the fund. But since it's something that might take place down the road quite a ways, it would seem to me that whatever the fund did between that and the time your proposals, let's say, looked good, it would have to be left flexible for the fund to be able to change directions.

BLOOM: I see that as being absolutely essential. What we cast in concrete could turn out to be a real Catch 22 for the taxpayers, for the consumer in the State of Alaska. We're going to

have to develop a mechanism, I think, to encourage people not to come to Alaska; but at the same time, we've got to develop that same mechanism to give the people that are here a decent lifestyle and employment.

One of the things I'm referring to in this structure is the AFL-CIO national position that was developed last year. Do we develop the concept that business and investment will be the whole purpose of the use of the Permanent Fund or do we use what organized labor calls the most important priority, which is jobs, period? I think that has to be addressed in the context of how we use the money in the Permanent Fund.

DOOGAN: The obvious difficulty with that scenario is that jobs is sort of a neuter word. Since we cannot close our borders if we create jobs, we create jobs equally for people that are here and people who may come up to take the jobs. If you were to attempt to develop a mechanism to sort that out, we would be very interested, at least I would, because it's a question that does not seem to be soluble.

BLOOM: The wisdom of Job I don't have. Again the problem is tossed sort of in your laps for consideration. We've got 20 to 25 years to begin addressing this. I think it should be addressed now.

GRUENING: I think it's the patience of Job; the wisdom of Solomon.

BLOOM: Something like that.

PARR: I'd like to say I'm glad that Allen brought that up because everybody who's been around Fairbanks for any length of time knows that one of the problems has always been we've had a seasonal economy. In the past, we've only had really one major, year-round payroll, and that was the military bases. In the last decade, perhaps, the University of Alaska started to offer us a second one. But that's been it. We definitely could use some sources of year-round jobs in this area---no question about it.

The second point that Allen mentioned, perhaps Mike, how do we keep from being flooded by people from the Lower 48 if we do this. I don't have any good answers but I would hope that we may have learned something from our fiasco with Alaska hire on the pipeline that would permit us to do something, at least, to give a preference to Alaska residents.

BLOOM: Perhaps, we use the interest to pay people not to come to Alaska.

PARR: With bodyguards every hundred yards.

SMITH: Send the Alaska, Inc. money Outside.

GRUENING: The dividend money to stay out.

MEEKINS: Allen, I think you pointed up a problem that continually seems to flare up in front of us and that is that if we do assume that our labor supply in Alaska is essentially the United States labor force, that if we increase jobs up here or the real wage up there that it's just going to increase immigration into Alaska to fill those jobs. The attendant social costs, so that if we create a lot of jobs, we're talking about more people coming up and the real wage is, therefore---the equilibrium wage, therefore---remains the same after that influx; but the only difference is that the demand for government services is vastly increased, so that we'd spend more of our surpluses on normal revenue-sharing and building roads and those types of things.

That seems to be sort of a vicious cycle that we get into. Along that line, I've sort of been, by the discussion we had this morning, I'm sort of toying with an idea and that you sort of touched on when you talked about research. Research does really seem to be within the limits of the Permanent Fund. But we're trying to invest the Permanent Fund we get some sort of social benefit out of it. We may, in-

deed, find a way---somebody may find a way for us to do this without all these attendant problems; but one of the things is that real wages are based upon productivity---that if you increase jobs, if you just increase the number of jobs or if you increase the supply by producing things that are not supplied now, and therefore increase jobs, you're really not increasing the wage. You're not increasing the wage until you increase productivity. You can have a differential wage if productivity in Alaska is increased.

BLOOM: This is what leads me to the concept of investing through the lesser developed countries, but also just by extension, we could also extend into the Pacific Rim, and we can also conceivably grab onto the concept that Mayor Hobson has been talking about, which is circumpolar investment as well. That means if we are funnelling the money into the human employable markets, that are market specific perhaps, then we're in a position to run that money out, manage it well, and not encourage an influx of people at the same time that we're putting people to work in a productive manner.

I'd like to see the idea, say 50 years or 100 years into the future, that the State of Alaska becomes a significant economic force as a stabilizing and pacifying force among other nations, other geographic centers of power around the

the world. This is not an Alaska separatist argument; it's just that I think we can start exercising the economy of the United States, in general North America and other parts of the world. Thank you.

GRUENING: Step right up.

HAKKILA: Thank you. I'm Jack Hakkila. I am an economist. I had the good fortune of spending a great deal of my early adult life studying the field of economics. Most recently, I've had the good fortune of spending the last eight years most of it in business development here in the interior of Alaska. I'd like to, first of all, commend the panel for the conduct of the meeting. The proceedings here, unlike hearings I went to two and a half weeks ago, we are speaking equally.

For a non-economist, I think, the last statement we heard was an excellent beginning. I think we should be looking forward to 50 years. I have run some of my own calculations on some of these figures, and I have seen figures of up to a trillion and a half dollars that could be returned just from oil revenues in 50 years time. Alaska could, indeed, be a stabilizing influence in the worldly, economic community.

I have a short, prepared statement here that I'd like to read.

The Alaska Permanent Fund, through its creation, has two immediate, important connotations. It is permanent and it is for Alaskans. I'd like to footnote a non-economic comment here---I don't know how we're going to limit Alaskans with what we define as Alaskans as people who are here as a state of the 50 states. It reminds me some of Representative, former Representative Bradner's comments I overheard on the radio interview one night before the pipeline, him stating that we should keep the people in Seattle at the airport unless they had a job in Alaska. The interviewer asked Representative Bradner what job he had when he came to Alaska, and his reply was that he was looking for a job. I think that the United States of America was built on Ellis Island, the Statue of Liberty---this was the home that welcomed the tired, the hungry, the poor. I think for Alaskans to suddenly realize that we're coming into great wealth and to limit this wealth to that particular group that happens to be here at the time, is going to be a very difficult thing.

It is important, as a Permanent Fund for development purposes, it is important that long term goals for development of the state be established concurrently. If we're talking about accumulating wealth over a period of 50 years, we must, ourselves, set long-term goals. I had the good fortune of working with some of the native communities over the last year in trying to implement, develop long term goals and objectives for them. I would

hate for us to be guilty of stepping into a long-term venture such as the Permanent Fund without establishing our own long term goals. I think this is one of the things that should definitely come out of these hearings and out of the legislation establishing it. Having as its objective the assistance to Alaskan business development, it is important that the goals be achieved through the administration of the fund by Alaskans.

I read in the papers here about Outside consultant roles being handled by Outside economists, and again, we're doing the same kind of talk that we had using the oil lease money in 1969, the great opportunities for Outside investment. Meanwhile, Alaskan businessmen starve, go broke, and die. I'd hate for us to not remember the lessons of the investment of the funds in 1969.

The basic factors of economic production for several hundred years have been recognized as land, labor, and capital. Land is an all-inclusive term in macroeconomic usage for natural resources. We're all aware that Alaska is abundantly endowed with this one economic factor of production. Similarly, in recent years, human capital has become the all-inclusive term for labor and the other human factors in economic production. In much of our discussion here today, we've recognized this term implicitly through our ventures as such things as research, development, human ingenuity

through invention. Human capitalist today, in textbook term which is all-inclusive for the old traditional term of labor.

While the Permanent Fund considers the disposition of that third fundamental item for economic production, capital, it must be remembered that effectively capital can only be used with the other two resources. We are abundantly endowed with natural resources.

Nowhere can capital be more effectively combined with natural resources and human capital than in Alaska itself. The construction of a single pipeline, which will carry 20% of our nation's energy in oil is testimony to that fact.

Now let us examine where lower 48 investment banking firms, insurance companies, and banks were during the eight years from 1969 to '77, from oil lease sale to oil flow.

I speak from personal experience.

On December 31, 1973, after spending three and half years with New York Life Insurance Company, one of the largest of the American insurance companies, and having submitted for consideration investment proposals on shopping centers, apartment projects, and other projects such as a medical clinic here in Fairbanks, at no cost to the company (I was doing this as a service for my company and my clients), I was told that New York Life would rather invest its money in projects associated with another pipeline to Texas. Alaska is too speculative. When the vice president making this statement was asked which is more speculative, investing

where the oil is running out or where the largest resources on the continent are being tapped, a blank stare was the reply. The mortgage department convened its annual meeting and Alaska was not on the agenda.

Having learned from three and one half years of experience with the leading insurance investor in Alaska that investment in interior Alaska included the 1967 power plant at the University of Alaska and no more, that New York Life simply was not the vehicle and neither were any of the other insurance companies. At that time, New York Life was the leading insurance company in interior Alaska. In 1974, I entered a partnership to find investment funds for Alaskans.

At the Bank of America, one of America's leading banks, a vice president admitted in August 1974 that the company had twenty billion dollars in loans it would like to consider in its own backyard. They did not have time to consider investments in Alaska. Once again, sound economics could not justify business decisions.

In 1975, I worked with the firms of Merrill, Lynch, Pierce, Fenner & Smith in their California Street office in San Francisco. I worked closely with the investment banking division there in San Francisco and with the bond offices in New York. In May of 1975, the head of this firm's office doing business in Alaska told me that if anyone comes from

New York to underwrite energy related issues out of the North Pacific region, they would first come to the Seattle area and underwrite issues related to nuclear power plant construction there.

Personal experience in securing investors for the greatest investment experience in history through lower 48 institutions has not been good. Alaskans should not be asked to commit their development funds to these institutions for their decisions, but the decisions should be retained right here in Alaska.

As far as what could be done immediately at the present, turning back to our world of reality today, Alaskans are being asked to transmit the most fundamental resources to lower 48 markets without processing. An immediate opportunity exists right now for investment in petrochemicals. Five million dollars would provide a pilot petrochemical plant. Within a matter of months or a year, we could all be carrying around little samples of petrochemicals. We could be marketing them to other countries. People could take some pride in developing the petrochemical industry domestically here, just as we did a few years ago carrying these little vials of oil from Prudhoe Bay before the oil pipeline went on stream.

Of course, this is a gigantic industry. I've been told by one of the, well, by Ed Hayes of the Northwest Pipeline Corporation that we could foresee a one billion dollar plant per year in the Tanana Valley for the first ten years of the functioning of the Alcan pipeline. This is the economics of it. It remains for us to do it

here in Alaska.

At that point, I'd like to take exception to some of the statements in your study right here. Arlon Tussing is quoted as saying that usually it makes more sense to invest the major portion of the fund outside the state. One of the major threats of Dr. Tussing's testimony was that there is no function for Permanent Fund investments in major industrial or commercial enterprise in Alaska, unless special reasons to subsidize them. Our petrochemical industry doesn't need a subsidy; it's a very profitable industry. And we do have in Alaska the last great domestic resources in these petrochemical basic factors, ethylene. I'm sure many of you are aware of this. The discussion has been rather prominent in the last several months.

The development fund could provide the basic financing for a myriad of projects which leveraged---we heard some testimony on this this morning---would multiply its value. Those projects planned for the oil pipeline and never built such as airplane hangars, hotels, and apartments might be built through adequate mortgage financing. This financing has not been available to Alaskans because past experience has been too short to justify lending based on traditional banking evaluation.

Over and over a couple years ago, we met the answer when

we brought the best Alaskans to bankers in the lower 48. We met the question they don't have three years business experience. Yet we were asked to build the largest project in history here. We have the largest airlift going off the airport here in Fairbanks during the pipeline construction and we couldn't get hangars financed. We couldn't get helicopters financed for Alaskans because they did not have the business experience, although they had the flying and the Alaskan experience that it took for these projects. So traditional banking evaluations are not necessarily sufficient.

Now let's turn for a moment to creative financing. I'd like to enter some of my own thinking here. Where can the greatest return be secured for society through the operation of the private enterprise system?

It was mentioned above that the basic factors of economic production are natural resources, human capital and capital. Alaska will now have both natural resources and, through the creation of the Permanent Fund, capital. How then might the Permanent Fund be used to create human capital?

I am proposing here the formation of an exchange for patentable ideas.

Our system of economic enterprise operates through a system of organized markets. Stock and bond markets and commodity markets operate by bringing investor and speculator together in an organized fashion to bid on tangible and intangible products, such as

coffee, sugar, or wheat---tangible items and intangible such as stock certificates, representing the value of their particular company.

The only provision made today to capitalize on that most fundamental of economic resources, inventive ingenuity, and we heard reference to that this morning, can be made through the incorporation of its value in the price of stock in existing companies. Research and development is generally thought of as being a function of the universities or private companies. Yet ingenuity, ideas come also to the people who are outside the mainstream of organized production. Necessarily so, to be a creative person, he must be outside or have time to think and come up with the ideas. Fortunately, we in Alaska here, especially in the Interior are endowed with a number of these types of individuals; because we have the time here to think and do these things. A Wall Street Journal article about a year and a half ago documented a television program called "The Inventors in Australia"---this, by the way, was a most popular program in Australia. Each week a family of four inventors would be brought on with their inventions, and the best one was selected. More often than not, the best inventions came from the outback, from the outlying regions; because these people had the time to think.

The inventor today is afforded patented protection for a period of 17 years by the U.S. Government but his patents have no exchange value on an organized exchange unless their value is incorporated into the value of stock of a company, which is traded through the stock exchanges. In the case of a patent whose value lies further down the road than 17 years, no incentive lies in its disclosure.

I'd just like to comment here---I think with more testimony in all of these hearings this summer on D-2 hearings here---we hear considerable amount of testimony on preserving traditional values. While I think that it's deplorable the bowhead whale, for example, will not be allowed to be hunted out here, there are many people in society who like to go to the stars. The picture "Star Wars" and its reception in Anchorage, I think is adequate testimony to this. People love to think about 50 years down the road, 100 years down the road, when we're travelling not just to the planets but interstellar travel. If an inventor were to have such an invention today, he has no incentive for its disclosure. It's very difficult to uphold the patent protection of 17 years on an invention to have something that's utilized 50 years down the road to want to disclose it. In many cases, he may be laughed at.

I mentioned earlier, the most creative of our inventors are in Alaska. The Alaska Permanent Fund could establish a provision to form an exchange for patentable ideas. Going back to the type