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FROM: Christy Miller *cm*

SUBJECT: Susitna Power Project
Presentation by:
Senator Gravel

Senator Mike Gravel gave a presentation to the Anchorage Municipal Assembly regarding progress to date of the Devil's Canyon and Watana Dam projects.

Resistance by Congress to the Susitna hydropower project, and other Alaskan projects because of the State's image as becoming the wealthiest State in the Union were iterated by Gravel. This type of Congressional resistance plus the traditional method of financing a hydropower project (through the time-consuming procedure of authorization, appropriation and construction) Gravel explained, are what prompted him to look at a new approach to financing the Susitna project.

Gravel explained in detail (using charts and graphs as illustration) the traditional method of hydroelectric development and the method proposed under the Alaska Hydroelectric Power Development Act.

In brief Gravel's financing method is as follows: 1) Through Congressional legislation a \$25 million revolving fund would be established, 2) The money would guarantee state bonds issued to pay for Phase I work (involves advanced engineering and design, final F.T.S., and cost/benefit analysis). 3) If the project is "go" the Alaska Power Authority (would handle the bond issue and run the project) may at this time, eliminate the further assistance of the Corps of Engineers, choosing another construction contractor, or the Corps would be chosen as the contractor offering the advantages of a guarantee against cost overruns and "acts of God". 4) If it is determined in Phase I that the dam should not be built, the federal government would be obligated to pay off the State's bonds.

The newly-appointed chairman of the Alaska Power Authority, Phil Hubbard, was introduced.

Several questions were asked by assembly members with respect to the impact of the Susitna Project on local government. Gravel recommended that the Municipality establish and maintain contact with the Corps and the Alaska Power Authority as Phase I progresses.

Gravel emphasized that he would like to see Alaskans benefit from low cost hydroelectric power, "not some Outside aluminum company." (It is my understanding that he may have been referring to a proposal and report by the Henry J. Kaiser Company, September 1974, for an energy-intensive industry to utilize any electricity surplusses.)

The attached summary paper on the Susitna Power Project was distributed to assembly members and other attendees.

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THE SUSITNA POWER PROJECT

A Report to Alaskans

by

Senator Mike Gravel

Chairman, Water Resources Subcommittee
Committee on Environment and Public Works

May 23, 1977

Page 1 of Senator Gravel's report is missing.

a huge dam at the Yukon's Rampart Canyon 100 miles northwest of Fairbanks. A heated national debate arose over the environmental liabilities of the Rampart proposal, and a subsequent cost/benefit analysis showed the project to be economically undesirable.

The Rampart proposal was dismissed just as a second water crisis arose: the 1967 flood at Fairbanks. For the next several years, the need for flood control drew attention away from the question of hydroelectric development in the state.

In 1972, however, the Senate Public Works Committee ordered the Corps of Engineers to renew the study of power options, including hydroelectric potential, for the railbelt. By the time I became chairman of the Water Resources Subcommittee in 1973, the Corps was reporting that preliminary data pointed to the Susitna at the Devil Canyon site. Its location, its high power potential, the stabilizing effect it could have on the energy systems of the railbelt area and the fact that it would reduce the need for new fossil fuel plants in Alaska: all these factors were in its favor. I acquired accelerated funding for the study, and last year the Corps finalized its recommendation.

The Corps suggested to the Congress a \$1.5 billion project composed of a 635-foot concrete dam at Devil Canyon, 14.5 miles east of the Alaska Railroad at Gold Creek, with four 194-megawatt generating units; and an 810-foot earthfill dam at the Watana site, 31 miles upstream from Devil Canyon, with three 264-megawatt units.

The Watana Dam would be built first. Together the dams would generate an average 6.91 billion kilowatt hours per year. According to the Corps, demand for electricity in the railbelt area, presently about 2 billion kilowatt hours annually, will reach 5.5 billion by 1980 and 15 billion by 2000.

Watana would be on line in 1986, Devil Canyon in 1990. They would comprise the largest project in Corps history -- in fact, the largest hydroelectric development in North America. } *

FINANCING -- THE OLD WAY

At first glance, the prospects for a dam project on the Susitna would seem very bright.

The site is particularly well-suited to hydroelectric development. Environmentalists had cited it during the Rampart

controversy as a preferable alternative because it would do relatively little harm to fish and wildlife habitat. And as chairman of the Senate subcommittee, I was in a position to support the project.

But in my committee work, I had learned that the prospects were in fact not bright for any hydroelectric project, no matter how promising the project might be. Furthermore, the prospects were declining year by year.

The traditional method of financing a federal hydroelectric project is through Congress's dual procedure of authorization (basically, permission to act) and appropriation (making money available for the action). These two distinct functions must be completed for each step in the making of the dam.

The initial surveys, a plan of study for Phase I, Phase I itself (involving advanced engineering and design, a final environmental impact statement and cost/benefit economic analysis), and the actual construction: all of these, must be separately authorized, and money then appropriated. Furthermore, although authorization is needed only once for each phase of the project, the money is appropriated only as needed on a yearly basis. This means that, during the long planning and conceptual phase, Phase I, and during the construction phase, appropriations must be made again and again, year after year, for a single project.

All of this is time-consuming in itself. But more than that, the appropriations process is a political, and hence a relatively capricious, one. It is subject to all the winds of the American political process, including the popularity or unpopularity of dams and federal projects in general. These funds must compete with all other appropriations.

Engineers may know the right amount of money to request year by year in order to complete a project on an optimum schedule. But members of Congress like to think of themselves as hard-nosed on the subject of federal spending, and members of appropriations committees are often likely to trim the requests that come before them.

The result of this process is predictable. In the case of federal water projects they are never finished on schedule. They drag on, sometimes for several decades, and costs go up.

A few examples are instructive:

The Harry S. Truman Dam and Reservoir in Missouri is a multi-purpose project which was authorized in 1954. Construction money was first appropriated in 1965. Total project cost at that time was estimated to be \$129.5 million, and completion was scheduled for 1971. Now, in fiscal year 1977, the cost estimate has climbed 219 per cent to \$413 million. The project is 51 per cent done, and is scheduled for completion in December 1980, 26 years from original authorization.

The Tennessee-Tombigbee waterway in Alabama and Mississippi will provide a connecting waterway system considered to be national in scope. It was authorized in 1946 at an estimated \$120 million. Construction funds were first appropriated in 1971. The estimated total cost at that time was \$361.3 million. The 1977 cost estimate for this project is \$1.5 billion. It is 6 per cent complete and the estimated completion date is March 1986, 40 years from original authorization.

The Lower Granite Lock and Dam in Washington, part of the Lower Snake River Multiple Purpose Project, was authorized in 1945 at an estimated cost of \$82 million. Construction was initiated in 1965. The project is now 92 per cent complete and the total estimated cost is \$310 million. Date of completion is now scheduled for September 1979, 34 years from original authorization.

It has taken an average of 18 years from the time of authorization to first construction monies. Construction when initiated has been prolonged an average of five years, or a third longer than engineering schedules would require.

It should be pointed out that the Corps of Engineers suffers the criticism for cost overruns when in fact most overruns are a product of erratic cash flows necessitated by federal budget constraints.

It is also worth pointing out that the named above projects lie within the home states of some of the Senate's most powerful members: John McClellan, James Eastland, John Stennis, Warren Magnuson and Scoop Jackson. If these men have not succeeded better in advancing projects essential to their states, I can't be very sanguine about the chances for the Susitna project under the Congressional appropriation process.

The fact is that federal funding for water projects has been declining for years, even though the nation's hydroelectric capacity could be doubled. It could provide non-polluting, renewable energy and, in effect, help conserve petroleum. I myself would favor an aggressive national hydroelectric policy.

But the conclusion is inescapable that in the competition for federal dollars, the priority given to water projects is slipping lower each year. The total Corps of Engineers program is currently being funded at a rate less than half that of ten years ago. The current budget includes no new construction starts and very few new survey starts.

Ten years ago, nearly 75 per cent of the Corps' appropriation was for construction; 14 per cent was for operation and maintenance. Today construction accounts for only 58 per cent of the Corps' budget; operations and maintenance account for 27 per cent.

Funding was terminated this year for 21 ongoing Corps projects. And my prediction to the legislature last year that a change in Administrations would not mean a change in this policy has been borne out: one of President Carter's first actions was to threaten water projects underway in all parts of the country.

Already, then, it seems an inopportune time to propose a new project, the largest ever, for the Corps of Engineers. But there is yet another strike against the Susitna proposal, one which makes adequate funding for the project appear virtually impossible.

THE IMAGE OF ALASKA

Alaska's energy wealth, in particular its pipeline wealth, is no secret in Washington. In fact, stories of pipeline salaries seem to make a more vivid impression on national legislators than do the much more widespread instances of high costs for basic materials and services.

Alaska experienced a boom while most of the country underwent a recession. No matter that the blessings of a boom are very mixed. A Congressman who hears of a single 17-year-old Alaskan making a \$50,000 salary as a surveyor becomes suddenly unsympathetic to the true, pervasive problems of our state.

Throughout its history as a state, Alaskans approached the Congress with the explanation that "things are different here" and "things are harder, and they cost more." This is all true, and Congress has responded: as recently as 1974, Alaska received more than twice as much in federal dollars as we paid in taxes. In highway construction and in federal land revenues, we enjoy a higher share of U. S. money than any other state.

In 1974, in fact, the government spent more per capita in Alaska than in any other state. Only in Washington, D. C. was more federal money spent per person.

In recent years, it has become apparent that our welcome is wearing thin. Alaska is to become the wealthiest state in the union. Why, a congressman asks himself, can't we pay our own way?

This situation is especially applicable to the Susitna proposal. The Corps estimates ten years for construction under optimum funding. At an estimated cost of \$1.5 billion, this averages out to \$150 million per year. That is 12 per cent of the total Corps construction budget for the entire country in 1977.

If that budgetary level were to remain constant over the next decade, we would have one project using, for ten years running, some 12 per cent of the total construction funds for all 50 states. And this would be for the benefit of little more than one-tenth of one per cent of our nation's population.

One thing was clear: "it wasn't going to happen that way.

FINANCING -- A NEW APPROACH

How, then, could the Susitna project be brought about? How could we even fund the \$20 million Phase I work, without which we could not be positive of the feasibility and the desirability of the project?

At lunch one day with Maj. Gen. Ernest Graves, chief of the Corps' Civil Works division, I found myself asking a familiar question: "Why not pay for it ourselves!"

The state could sell revenue bonds to pay the Corps to study and eventually to build the project. We would still have the advantage of federal guarantees during construction. But when the dam was finished, it would be the property of the state of Alaska, not the federal government.

Perhaps most important, if the state sold revenue bonds to pay for construction, we could be sure that the money would be available when it was needed. That would mean optimum scheduling, which would lower the cost of the dam and get power on line quickly.

I came to Alaska in February to discuss this plan with state officials, utility executives and all interested parties. The concept was well-received.

I then presented the plan to the legislature. In its refined form, it looked like this:

Through Congressional legislation, a \$25 million revolving fund would be established. The money in the fund would be used to guarantee state bonds issued to pay for Phase I work on hydroelectric projects. If it was determined in Phase I that the dam should not be built, the federal government would pay off the state's bonds. The state in other words loses nothing if the project proves to be ill-advised, either because of reasons of engineering, environment or economics.

If it was decided to go ahead with the project, the state would issue new bonds which would, 1) pay off the Phase I bonds, thus reimbursing the government for the Corps' work; and 2) pay for the construction of the dam, either by the Corps or by other private contractor. The bonds would be repaid through the sale of electricity from the project.

An Alaska Power Authority would also have to be created to handle the bond issues and run the project. State Reps. Jim Duncan and Red Swanson had already introduced legislation creating such an authority before I addressed the legislature, and this was approved a short time later.

I introduced the Hydroelectric Power Development Act in 1976 to create the revolving fund, and it was reported by the Public Works Committee in September as part of the Water Resources Act.

(In an ironic twist, the House-Senate conference committee refused to believe that the \$25 million bond guarantee fund was simply that. They altered the title and the authorization so the bill became the Alaska Hydroelectric Power Development Act, making Alaska the only state eligible for the benefits of the revolving fund.) *(Reinstate as a "national" project)*

After the bill was passed and signed into law last fall, I organized meetings between the Corps, bond attorneys and state officials. Two more needs were identified: 1) the Corps needed \$100,000 to complete a Plan of Study for the Phase I work; and 2) clean-up language was needed in the authorizing bill to make clear the liability for litigious cost overruns.

The state agreed to put up the \$100,000. To have that money authorized and appropriated by the Congress would have delayed the project a year.

The clean-up language is part of this year's omnibus water bill, now reported to the Senate by the Environment and Public Works Committee.

In a word, the detailed Phase I study, meant to enable the Corps to give a firm recommendation for or against the Susitna project, is on its way. What remains to be done is to secure the passage of the clean-up language; finish the Plan of Study and pay for it; appropriate the first \$6 million of the \$25 million revolving fund, needed to guarantee the state's bonds; secure a resolution from the state legislature authorizing the sale of the bonds, and sell the bonds. The Corps says that if it begins next spring, Phase I recommendations can be completed by 1980.

One other facet remains. My original legislation provided for thorough independent critique of each of the segments of the Corps' Phase I report: engineering and design, environmental impact statement, and cost/benefit analysis. This provision was inadvertently omitted by the House-Senate conferees, and I was unable to have it reinstated in this year's omnibus bill. It is my hope that the state power authority would provide for such an independent critique of the Corps' work.

ADVANTAGES

The Hydroelectric Power Development Act was originally conceived out of necessity: we simply needed an alternative to the traditional financing method, because it was clear the Susitna project could not be financed that way. As it was developed and refined, however, we recognized a number of unexpected advantages that come from the alternative financing method.

A great hydroelectric project could be completed in ten years, not 30 or 40. Not only did this mean power on line more quickly, but it meant lower construction costs. Even the higher cost of Wall Street bonds, as opposed to federal money, would be more than counterbalanced by the savings effected by an optimum construction schedule.

At the end of construction, the dam would be owned by the state. This would give the state great flexibility to provide low-cost power throughout Alaska. This is because when the construction bonds are paid, the huge power output from the project would be extremely low-cost, the operating and maintenance costs of hydro projects being very small and there being no fuel costs. The state, through its power authority, could equalize electricity rates throughout Alaska so that all residents would share in the benefit of state ownership.

Even in spite of its eventual ownership, however, the state's risk is minimized. The experience of the Corps in dam building is unassailable. The thorough Phase I study assures a reliable go or no-go decision -- and if the decision is no-go, the state does not pay the Phase I costs.

Finally, the procedure offers more discipline for safety. A traditional project undergoes the scrutiny of the Corps and the Congress. Projects under the Hydroelectric Development Act would undergo not only this scrutiny, but also that of the state power authority, the state legislature, the national bond market -- and hopefully a qualified independent source to critique the Corps' work.

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