

## VII. PROGRAM OF PROJECTS FOR PUBLIC ASSISTANCE

The State of Alaska has not historically been called upon to fund railroad projects, since the ARR was federally owned and the WP&Y was essentially a private Canadian venture. Now that the WP&Y has ceased operations and the ARR is owned by the State, it is possible that the State should consider some types of railroad-oriented investment. Such investment could be oriented to the ARR or the WP&Y, or to new railroads or railroad extensions. This report section reviews projects and project types that might be considered for State investment. It concludes that State investment in ARR rail projects should be delayed at least until the ARRC has had more time to demonstrate its capacity to be self-sustaining. It does not rule out, however, State funding of planning nor does it rule out State-funded projects in the mid-term (within a few years). As explained herein, there are situations where State activity and funding would comprise a reasonable and legitimate State function.

### A. Criteria for State Rail Assistance

It is the policy of the Alaska Railroad Corporation, and of the State of Alaska, that rail investments that are needed by the ARR, and that produce benefits for the railroad, be funded by the railroad. This implies that rail line maintenance or rehabilitation projects, or equipment acquisition, and similar projects that are for the benefit of the railroad are to be funded by the ARRC and not the State.

## 1. Rationale for State Funding

This does not imply, however, that the State has no funding role. Although the desire is to have a self-supporting ARR, legislation does permit the ARRC to request funds from the legislature relative to services or projects that are not self-supporting. Furthermore, investment projects may arise that are needed by the State, its residents or its regions that do not benefit the railroad as much as they benefit the State's residents. Examples would include safety projects, or new rail lines to open territory, or new rail passenger services, or similar investments that do not necessarily produce a profit or a cost savings for the railroad. These project types, if proven to be needed and justified, could be funded (or partly funded) with public sector funds (State, federal, local). Also, it is State policy to assist the ARRC with its start-up costs since the transfer to State ownership.

## 2. Criteria for State Funding

To assist in the Alaska funding deliberation process, it is suggested that the State utilize a project eligibility and appropriateness screening procedure. Such a procedure should be a guide, rather than a rigid and absolute determinant of eligibility, and should consist of criteria that can be used to determine whether specific investment needs should be funded in whole or in part by the State.

### a. Rail Planning Criteria

The ARRC is of course concerned with the planning of its services, operations and capital investments. However, the perspective of that planning is oriented to the ARR as an

entity, rather than the State as a whole, and to only the rail mode. Recognizing this, the Governor designated the DOT/PF as the "official rail planning entity" in the State. This implies that the DOT/PF is responsible for the preparation of the State Rail Plan, and other overall rail planning activities.

It would follow, therefore, that the DOT/PF should fund needed and eligible rail-oriented planning projects. To be an eligible planning project, it is suggested that the proposed planning project have one or more of the following attributes:

- \* Comprise a multimodal planning project, wherein rail is only one of the modes involved; or
- \* Utilize federal Section 803 rail planning funds; or
- \* Constitute a planned project that would be undertaken primarily for the betterment of the State, its communities and its residents (rather than only done for the betterment of the railroad; or
- \* Involve a project that is clearly not self-sustaining from the railroad's viewpoint; or
- \* Involve planning that is done for social, or environmental, or economic development reasons; or
- \* Comprise a politically-inspired subject; or
- \* Comprise a subject that is traditionally within the planning sphere of the State and/or the DOT/PF.

By utilizing such criteria, it is readily seen that the Alaska DOT/PF should have a legitimate planning agenda which complements but does not supercede nor conflict with the planning processes of the ARR or other railroads.

#### b. Railroad Projects Criteria

Once the planning is complete, the State must decide whether the envisaged rail project warrants State monies, in whole or in part. A two part criteria process is suggested, relative to:

- 1) The appropriateness of project funding by the State.
- 2) The feasibility of project funding by the State.

The "appropriateness" element is designed to determine whether the project should be eligible for funding in whole or in part by the State, or whether it should be funded by the railroad or by other relevant participants. It is suggested that the following be used:

The project should be funded by the railroad if:

- \* The project itself is financially self-sustaining from the railroad's viewpoint; or
- \* The project is of a type to be viewed as a routine, railroad matter; or
- \* The project is to be undertaken because it is to be of direct benefit to the railroad only; or
- \* The railroad has the necessary capital, or can obtain the capital, needed to fund the project; or
- \* The project is a single mode (railroad) project.

The project should be eligible for State funding, in whole or in part, if:

- \* The project is not expected to be financially self-sustaining but instead is being done for other reasons; or
- \* The project's beneficiaries comprise a larger group than merely the railroad; or
- \* The project is being done for social, environmental or economic development reasons; or
- \* The project has multimodal impacts and benefits; or
- \* The project is intended to develop tourism, or to create employment, or to accomplish other State goals and objectives; or
- \* The project will be eligible for federal funds for which the State, but not the railroad, is eligible; or
- \* The project is intended to alleviate adverse economic, social or environmental impacts of a railroad action; or
- \* The railroad has proven that it does not have the capacity to undertake the project on its own.

Using the above criteria, it can be seen that the State might consider using State funds for such projects as: major rail line extensions, grade crossing and other safety purposes, rail passenger services of various types, specialized or experimental projects, and even some railroad rehabilitation projects.

However, merely because a project is deemed "eligible" for State funding based on the above criteria, does not imply that the State should necessarily fund it. Before such funding, the second level of criteria should be considered, dealing with feasibility.

The project should be considered as "feasible" for State funding if:

- \* The application of the tests of feasibility (as described in Report Section VI) find the project to be economically "feasible"; and
- \* The State has a suitable funding source for the project; and
- \* The project has a suitable level of active support by relevant participants; and
- \* The project has acceptable social, environmental and developmental impacts and implications.

To attain the above feasibility criteria, it is requisite that the project be suitably analyzed to ensure that it is in fact feasible.

B. Candidate Projects

Based on the above criteria and types of projects that might be suitable for some type of State or other public sector financial assistance, a number of specific investment projects were identified for consideration. These projects were identified via Consultant inspections, discussions with ARR personnel, and discussions with others. At this point the projects represent a "shopping list," for State review and consideration and to depict the type of projects wherein State funding might be appropriate. The candidate projects are arrayed by possible funding source, so as to depict possible sources of funding. However, no detailed feasibility analysis was made of any of these project candidates.

## 1. FRA Funding Candidates

The Federal Railroad Administration administers the Local Rail Service Assistance (LRSA) Funds which can be used to preserve rail service, upgrade branch lines, etc. Two ARR projects appear eligible for such funding, both of which comprise rail line rehabilitation. Either or both of these projects are possible only if Congress funds the LRSA program in sufficient amounts to make a meaningful contribution to total project costs.

### a. Eielson to Fairbanks Branch Line Rehabilitation.

In FY 1984 the Eielson-Fairbanks section of the ARR had a traffic density of 0.59 million gross ton-miles per mile, making it eligible for LRSA funding. Currently the MAPCO refinery at North Pole is being expanded. This expansion will generate additional traffic on this branch line, necessitating an upgrade in the condition of the track from the North Pole Refinery Spur to Fairbanks, a distance of 16.6 miles. Required will be the replacement of defective ties and worn rail, the addition of new ballast, and the possible grinding of the newly laid rail. An estimated cost of the project, based on a cost of \$750,000 per track mile for furnishing and installing new track, is \$12,500,000. The State could be involved in this project if it is decided that LRSA funds shall be used.

### b. Whittier Portage Tunnel Track Rehabilitation

This 12.4 mile line from Whittier to Portage carries passengers and automobiles from the ferries and cruise ships docking at Whittier. In addition, the trains carry passengers to their private boats anchored in the small boat harbor at Whittier. The port also handles freight by trailers and freight cars from

Seattle and Prince Rupert. The 1984 density was 1.29 million gross ton-miles per mile, making it eligible for LRSA funding. There are two tunnels on this branch line: Portage Tunnel at 5,060 feet and Whittier Tunnel at 13,344 feet.

No significant track work has been performed in the tunnels since the line was constructed. The condition of the tracks within the two tunnels has deteriorated considerably and requires rehabilitation, removal of contaminated ballast and improved drainage. The work would consist of replacing the tunnel ties with new wood or concrete ties, replacing the existing rail with 78 ft. rails or continuous welded rail, and resurfacing the track. Using a price of \$300/foot, the cost is estimated to be \$5,521,200. Again the State would presumably be involved only if LRSA funds are to be used.

*Note: the following section c was added as an amendment, December 1990.*

c. Garner Tunnel Rehabilitation

The Garner Tunnel is a 500-foot long tunnel located in the Healy Canyon at mile 356.2 of the Alaska Railroad. An integral part of the Alaska Railroad Corporation (ARRC) mainline, all rail freight traffic between Anchorage and Fairbanks passes through this tunnel. In 1989 the line associated with the tunnel, the Matanuska to Healy segment, had a traffic density of 4.62 million gross ton-miles per mile, making it eligible for LRFA funding. Traffic density for 1990 is forecasted to be 4.85 million gross ton-miles per mile. Recent distress in the original timber lining, the preponderance of large-scale landslides throughout the Healy Canyon, and the significant erosion associated with the sharp outside bend of the Nenana River, prompted the ARRC to commission an engineering stability evaluation of the Garner Tunnel. In 1989 Golder Associates (report dated 2-19-90) performed an evaluation of the physical condition of the Garner Tunnel. The Golder report identified severe problems with the tunnel. The problems are categorized as follows:

- Rotting Timber Sets
- Loose Rock at North Portal
- Poor Drainage Control at North Portal

A new structure at the north portal is functioning well to date, except that seepage and subsequent winter icing has become a serious problem. The tunnel entrance is encased in ice and the drainage ditches have iced to the top of the rail. This seepage and icing problem is caused by the large rock falls diverting new water flows into the tunnel from the mountain above. Currently, the ARRC must frequently inspect the tunnel for ice conditions prior to each train movement through the tunnel. Rehabilitation would involve addressing the problems identified in the Golder report including replacement of timber sets, drainage system improvements, and insulation improvements to reduce icing and improve rock stability. A project evaluation by the ARRC engineering department estimates the costs to meet the most immediate needs to be \$207,900. Long-term work would include monitoring to determine if overall slope movement is occurring and action to correct any problems revealed.

## 2. FHWA Grade Crossing Funding Candidates

### a. Nenana Relocation Project

Currently the ARR mainline runs through the downtown area of Nenana, resulting in 6 grade crossings. It has been proposed that a bypass be constructed south of town and north of the airport. Although the existing alignment cannot be removed from the downtown and barge wharf area because of required local freight service, the number of trains passing through town would be greatly reduced if a bypass were built. The reduction in train traffic would alleviate the need for grade crossing signals and would reduce disruption to activities in Nenana. Eliminating the need for all main line trains to pass through Nenana would also improve train operating speeds and would reduce track maintenance costs due to the presence of a series of sharp curves through Nenana on the existing alignment. A new grade separation structure would be required to cross the Parks Highway, since the present line crosses under the highway at the approach span for the Parks Highway bridge over the Nenana River.

The cost of the relocation would presumably be at the expense of the ARR, but funds could be available for the grade separation from the FHWA Grade Crossing program. It is estimated that the cost of this track relocation project will be approximately \$2.5 million, based on an order-of-magnitude estimate of \$1.5 million per mile for roadbed and track construction including a new wye connection for a Nenana loop. The cost of the grade separation over the Parks Highway is estimated to cost an additional \$1.5 to \$2.0 million.

The State could be involved in this project's funding because the project will be of benefit to Nenana (in addition to the ARR) and because of the possible use of FHWA funds.

#### b. Crossing Gates at Signalized Crossings

For safety reasons, some of the existing ARR signalized crossings need crossing gates. Further site studies by the ARR and DOT/PF staff would indicate which locations are candidate crossings.

The State could be involved in these projects because of the intermodal nature of the projects, the safety elements, and the traditional State role in such projects.

### 3. FHWA/FRA Corridor Crossing Funding

In September 1985 a joint FHWA/FRA "Railroad Crossing Corridor Improvements" demonstration program was announced by the U. S. Secretary of Transportation. Under the program, the Department of Transportation's traditional railroad-highway safety initiatives, which concentrate on correcting safety problems at individual railroad-rail crossing sites, will be expanded to include wide-scale low-cost improvements at numerous crossings along many miles of railroad. The program will be to improve multiple crossing sites along rail corridors and to emphasize the use of relatively

simple, inexpensive safety improvements at low volume crossings where the installation of active warning devices and other high-cost safety features is not practicable. These low cost improvements include the installation of adequate signs and workings along the highway, clearing obstructions to make warning devices and approaching trains more visible to motorists, and upgrading the track crossing surface to prevent cars from stalling on the tracks. Alaska was one of the six states selected to participate in the demonstration project which began in October, 1985. The program does not involve new federal funding but will be a cooperative effort between the FHWA and FRA and those states which choose to participate in the program.

The task force formed by the Commissioner of the Alaska Department of Transportation and Public Facilities, and the President and Chief Executive Officer of the Alaska Railroad Corporation in October, 1985 has reached some preliminary conclusions concerning crossing safety improvements in Alaska. General recommendations of the task force include bringing all existing crossings up to basic industry and government approved safety standards; maintaining current crossing database information; actively supporting crossing safety education programs; and including local governments and developers, as well as all other interested agencies and parties, in the crossing planning process. Changes to existing crossings as well as design of new crossings will be evaluated by a diagnostic team consisting of representatives of Alaska DOT&PF, the ARRC, and, as appropriate, the FHWA, the agency responsible for road maintenance (if not ADOT&PF), the local borough government and law enforcement agencies. The task force, in its final report, will recommend adoption of crossing standards and policies for all railroad crossings in the Alaska Railroad corridor.

#### 4. State Funding Candidates

The State might also consider the use of State monies for various railroad projects which the ARR would not normally undertake on its own. Examples include the following.

a. Passenger Station Rehabilitation

The State might consider a program intended to upgrade rail passenger stations on the ARR. The purpose would be tourism-oriented, and would therefore seem to fall within the areas of the State's responsibility. Such improvements would be oriented to passenger comfort and baggage handling, and could include improvements to the following example stations.

- \* Anchorage Station - General remodelling, with increased separation between ARR offices and passenger facilities.
- \* Fairbanks Station - The present station track is on the end of the main line in downtown Fairbanks. The track is essentially an industrial sidetrack, which also serves the local newspaper for newsprint unloading directly to the printing plant. The passenger train at the existing station location blocks Phillips Field Road, a major street. The State could consider relocating the station to a point just west of town nearer to the University and Airport. Such a relocation would release the station area for other development, would improve the passenger train schedule time, and courtesy cars from motels and hotels would operate as efficiently to the new site as downtown since the normal runs include the Airport. Further study is suggested, however, to determine associated costs and savings for this project.
- \* Denali Park Station - Remodelling of this facility, with improved baggage handling facilities, could reduce station dwell time and improve the passenger train schedule time at this major travel point on the railroad.
- \* Whittier Station - No facilities presently exist for the transfer of passengers from the ferries and cruise ships. There is a need to build a station, possibly near the existing tank farm and with bus shuttle service to the docks. It might also be possible that passengers for Anchorage to be loaded on buses at dockside and transported to Portage on the top of the flat cars presently provided by the ARR. This could eliminate the need for a major terminal station.

b. Additional Use of New Rail Passenger Equipment

Proposed changes have recently been approved for the change in type of equipment and operating schedule to be used for the 1985 winter schedule for passenger service between Anchorage and Fairbanks. Two rehabilitated self-propelled diesel passenger cars have been purchased to provide one round trip to Hurricane on Saturdays and Sundays, with a 4-month trial schedule of operations from Anchorage to Fairbanks on the 1st and 3rd Tuesdays of each month and returning on the following Wednesdays. After the 4-month Tuesday/Wednesday trial to Fairbanks, the schedule and patronage will be reviewed and a decision reached to continue or stop the service. If these vehicles are available during the summer, the State might fund their use elsewhere on the system.

c. Roll-on/Roll-off (RORO) Barge Service

The State could consider a demonstration project that would provide a rail/highway vehicle barge roll-on/ roll-off service to the West Kenai Peninsula near Nikiski. This system could eliminate trans-shipment costs by delivering and picking up materials in the original supplied vehicles. The system would utilize a steel docking grid onto which the barge would be docked at high-tide and upon which it would securely rest as the tide ebbed for unloading of rail cars on trucks at a permanently positioned ramp. This may offer a cost-effective answer to expanding the rail transportation infrastructure to meet the unique problems facing a major part of Alaska. Such experimental or demonstration projects could be viewed as a proper State role relative to railroad development.

d. Transportation Service to Girdwood

With the acceptance of Anchorage as the U.S. representative for the 1992 winter olympics, projects to provide transportation to the prime ski area of Alyeska need to be considered. This could include rail transportation and

passenger terminals. Given the nature of this possibility, funding would likely be a public undertaking, implying State roles and/or responsibility.

e. Nenana to Yukon River Extension

A near term major extension possibility for the ARR system would be to build an extension from Nenana to the Yukon River near Tanana. This extension would provide a connection to barge service on the Yukon River, as well as providing a beginning of a transportation system to serve the interior of Alaska. From previous studies performed (as discussed in Section V) it is estimated that the cost of this 120 mile extension would be some \$420 million, based on an order-of-magnitude construction cost of \$3.5 million per mile. If such an extension were to be built, it would have multimodal, State policy and economic development elements implying State participation. Furthermore, it is unlikely that the ARR could fund such a major project.

5. Alaska Railroad Funding

Currently the ARR must generate sufficient revenues to provide for most railroad capital improvements and expanded services. Many railroad projects, however, contribute to the overall benefit of the State as well as the railroad. In order that the maximum internal use can be made of railroad generated earnings, (e.g. rail and cross tie renewal) State assistance with capital funding for certain selected projects would relieve some of the cash demand on the railroad. In this sense, it might be appropriate for the State to participate, along with the railroad, in some projects.

a. Passing Sidings

The following additional passing sidings need to be constructed to provide for increased operating efficiency of the joint use passenger and freight tracks. Sidings should be considered at the following locations:

- \* Julius (M.P. 401.3)
- \* Eagle River (M.P. 126.6) - The ARR 1986 capital budget includes \$394,000 for a 6,000 foot siding in the vicinity of M.P. 128 (the one location within this area where there is sufficient room on tangent track for siding). A siding in this area will undoubtedly be required if commuter service to Wasilla or Nancy Lake is initiated.
- \* Wasilla (M.P. 159.8) - Extend length from 3200' to 5000' to facilitate the passing of longer trains.

b. Alignment Change

In order to reduce operating and maintenance costs, the ARR has proposed alignment changes between approximately M.P. 120.6 and M.P. 122 and between M.P. 123.7 and 125.6. Within these areas, the existing alignment has several 10 degree curves which create considerable maintenance costs and operating problems, especially with the operation of heavy coal and sand/gravel unit trains through this area. The present timetable speed is a rather slow 35 mph, and realignment would permit higher train speeds and reduce the current high track maintenance cost at this location. In addition, existing curvature creates excessive rail wear and difficulty in maintaining track gauge. The cost of these projects is estimated to be approximately \$5 million, based on a cost of \$1.5 million per mile to construct roadbed and track. This might be an appropriate project type for State participation if the ARR is unable to undertake it.

6. Other Funding

a. Anchorage Airport to Wasilla or Nancy Lake Commuter Service

The Municipality of Anchorage is proposing to study the possibility of providing rail commuter service to the expanding community of Wasilla. This service would use the existing ARR trackage, which may have to be upgraded and signalization provided to furnish an attractive operating schedule which does not interfere with freight movements. Track realignments, including location between MP 120.6 and 122 discussed earlier, would be required to

permit adequate operating speeds to compete with other modes. This type of passenger service seldom is self-sustaining. If this proves to be the case, it would comprise a proper public sector funding possibility.

### C. Suggested State Funding

Based on the State funding criteria and possible projects, as well as other Alaska activities and priorities, this 1985 Alaska State Rail Plan considered both planning and project funding activities over the near-term.

#### 1. Recommended Rail Planning Activities

##### a. Immediate Rail Planning Needs

Given the recency of the transfer of the ARR to State ownership, it is difficult to anticipate with any degree of accuracy the planning needs which will have to be funded by State or LRSA funds. Two planning projects that are suggested at this time are:

- \* Rail Line Extension Evaluation - This Rail Plan (Section VI) developed an economic evaluation methodology that should be used to evaluate rail line extension proposals. That methodology, to date, has not been applied. To test the methodology, to clarify its many issues and to be most useful to the State, the State should fund one or more applications of that evaluation methodology. Candidate applications would be the TransCanada link or the extension to the Yukon River. A planning budget for FY1986 is \$78,000 for this purpose, of which 80% would be funded by the FRA-administered LRSA program.
- \* Implementation of ARR Performance Indicators - This Rail Plan (Section IV) developed a series of statistical indicators that the ARRC should provide to its Board of Directors on a continuing basis. To implement the tabulation of these performance indicators, it will be necessary to computerize the process so that tabulation is inexpensive and comparable. To develop and implement the procedures, a planning budget of \$42,000 is suggested for FY 1986, of which 80% would be funded by the LRSA program.

Both of the above should be eligible for FRA-administered LRSA funding, locally matched by State funds. Both of these planning projects should be considered in fiscal year 1986.

#### b. Mid-Term Rail Planning Needs

Beyond 1986, other rail planning projects, to be funded by the State, appear appropriate. These projects could include the following:

- \* Grade crossing protection planning.
- \* Planning of such rail passenger improvements or services as: station improvements, winter Olympics planning, and Anchorage rail commuter planning.
- \* Planning of such experimental projects as a roll-on/roll-off service at Nikiski.
- \* Other planning projects that will become apparent as the ARRC gains greater experience with the operation of the ARR.
- \* Impact analysis of any abandonment of the White Pass and Yukon Railway.

The costs of these mid-term rail planning projects are not estimated at this time.

## 2. Recommended Rail Projects Activities

Currently the ARR is attempting to abide by legislative intent, by maintaining a self-sustaining financial posture. Therefore, it would be premature for the State to thrust funding upon the ARR. Furthermore, no major capital investments were identified in the Rail Plan that will require State funding in the next several years. As a result, no State funded railroad projects are suggested at this time. However, the State should reserve the right to modify this conclusion at any time, so as to fund projects as the need arises - subject to each project's ability to be demonstrated to be both eligible for State funding and feasible for State funding.

