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SUMMARY OF THE RECOMMENDATIONS

ENVIRONMENTAL IMPACT STUDY

NORTHERN AIRPORTS: INUKJUAK

February 1986

RESEARCH DEPARTMENT

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INTRODUCTION

This document is a translation of the chapter containing the recommendations that came out of the environmental impact study on the the planned construction of airport infrastructures in the Northern community of Inukjuak.

Also included are the discussions and understandings arrived at in a meeting in Inukjuak with the municipality and the Ministère des Transports of Québec, represented by Messers Clément Tremblay and Michel Boivin, on February 12, 1986, after the impact study had been presented.

The purpose of this study was to evaluate the impacts and to propose mitigative measures in conjunction with the construction of new airport infrastructures for the Northern village of Inukjuak. Without questioning the objectives of such an operation, so crucial for the development and quality of life of the community, the study set out to evaluate the choice and location of certain sites for the activities and infrastructures as well as the directions recommended by the proponent, using plans and specifications provided by Transport Canada.

For each of these sites, we will summarize the foreseeable impacts and the proposed mitigative measures.

1. THE SOCIAL IMPACT OF THE PROGRAM AS A WHOLE

As described in the chapter on the resistance and impacts, in the section on the social and environmental impacts as perceived by Inuit, the most important impact is clearly the way in which the program has been planned and organized at the community level. For years now, the Inuit have been visited by many people working on the choice of sites for the airstrip,

the road, the borrow pits, etc, but they have never really been involved in the process. It was during these visits that the community learned of changes in certain choices, but not the reasons for them. In short, the Inuit became concerned about the approach of the program as a whole since there did not seem to be any coordination among the participants, and especially because the Inuit were not involved as a true and equal partner.

Furthermore, the community of Inukjuak told us at meetings of its concerns about how it would be affected by the program as a whole on a day-to-day basis and the part it would have in the process. Based on the experiences of other villages in which the work has already started, the Inuit wonder whether any consideration is given to their comments and their social and economic expectations.

Thus, to correct the lack of involvement of the communities in choosing the sites, it is essential that any requests from the community for modifications, such as the location of the road, or borrow pits, should be evaluated technically by the Ministère.

2. PROJECT PLANNING AND EXECUTION

The measures suggested to reduce the harmful impacts on the community, or even increase the positive impacts, are often based on the requests already made in other villages. They are:

- the appointment of an Inuk from the village as project supervisor. This person would be responsible for planning and carrying out all duties associated with the preparation and construction of the project and would provide liaison between the project proponent and the municipal council;

- preparation of a list of the labor needs, complete with job descriptions;
- interview by the contractor or a representative of the Ministère of candidates from Inukjuak who are qualified or interested, and clear explanation of what is expected of them;
- priority shown to qualified workers from Inukjuak, then from other Northern communities, over employees from the south;
- creation of on-the-job training programs for so-called unqualified employees;
- search for candidates locally for service positions (kitchen, airstrip maintenance, etc.);
- encouragement of the Inuit to learn about heavy equipment when airstrips are being built in other communities (Kangirsuk and Salluit);
- consultation with the Inuit about their working conditions (normal working hours, overtime, job description);
- drafting of contracts of employment in Inuktitut;
- participation by the Inuit workers in selection of a foreman, who should have experience in the North;
- no drugs or alcohol;
- preparation of understandings for contracts of employment, by the supervisor.

For the Inuit, the greatest source of conflict and disenchantment in the entire project is in the very organization and execution of the work. They want better communication with the proponents in order to reduce the problems. Thus, if they are included in the overall process and all of its phases, they could find solutions to the problems that arise and benefit from the positive effects of the program.

3. THE AIRSTRIP

Transport Canada's first studies defined two potential sites: option 1, northwest of the village, and option 2, northeast of the village. The virgin Arctic tundra, with its hilly relief, offers few suitable sites. After the first evaluation, site 1 was rejected because it did not meet all the technical requirements, and the nature of the soil and poor drainage would have necessitated additional work that would have disturbed all of the environment. Furthermore, it was not really closer to the village since it would have been on the other side of a big and rocky hill that is difficult to climb from the village.

At the February 12, 1986 meeting, the following points were discussed:

- Mr. Tremblay said that a minimum of 7,200 hours of work had been reserved for the Inuit;
- At the beginning of February, eight Inuit of Inukjuaq were taking courses on heavy equipment at Vaudreuil. They will also receive the training to work on the project, but the Ministère cannot guarantee that they will be hired by the contractor;

- Mrs. Francine Bisson of Main-d'oeuvre Québec has set up a course on site safety which will begin on February 12, 1986. Furthermore, she is organizing information meetings about job placement (work card, certificate of classification, apprenticeship booklet, etc.);
- The council will ensure that it has the regulations to allow it to intervene in the event that certain social problems arise during the construction;
- When the contractors visit on March 4, 1986, the council should warn them about possible problems with drugs, alcohol and prostitution;
- It was also noted that the social worker in Inukjuak could play an important role during the construction phase;
- The council should inform the Ministère of the name of the Inuit coordinator they have chosen.

Thus, the validity of option 2 by Transport Canada, for which the engineering and technical specifications have been prepared, is confirmed by the impact study as the best site with the least environmental impact for establishing such an infrastructure.

This site should have little physical impact apart from a possible disturbance of the drainage in the neighboring zone. The mitigation

measures recommended (drain ditches) were designed during Transport Canada's technical studies, and we agree that they are important.

This area is used by the wildlife of the area and is important. However, since the Inuit use motorized vehicles, they hunt several kilometers from the village and are prepared to lose this hunting area in exchange for improved airport facilities.

However, the caribou migration corridor crosses the northern half of the planned site. There is a risk that, at the peak of migration, groups of animals might move beside and onto the airstrip, thereby creating a risk of accident. The construction of a 3-meter-high opaque fence, like the one at the Kuujjuak airport, would rectify the situation. However, since there would be little air traffic, we recommend that this measure be implemented only in the long term, when there will be more flights.

From all the evidence, the impact on the vegetation will be major since a large part of the valley will be disturbed by the work and by heavy-vehicle traffic. The fragility of the plant life is well known, and the ultimate means for mitigation would be revegetation. However, it is essential that the area used in the project be limited, because of the experimental nature of revegetation at this latitude.

The airstrip itself should have no visual impact since it will be at ground level. However, the disruption of the space and the vegetation throughout the work will produce a major degradation in this wide corridor beside the river. Limiting the area used in the project is crucial for minimizing the disturbance, especially since there is no guarantee at the outset that the revegetation program will be successful. A chapter of this document discusses revegetation in a Northern climate.

From an urban and social perspective, the location of the airstrip is excellent, and the Inuit accepted it a long time ago. However, the alignment of the airstrip with respect to the village, nearly a kilometer away, implies a major impact. Because of the predominant winds, landing and take-off will usually be from the south, and, thus, the aircraft will be flying right over the village. This will lead to a risk of accidents in the village during storms. The possibility of changing the axis of the airstrip by a few degrees, so that aircraft would fly over the river, was considered.

A change of axis was preferred by the Air Inuit pilots interviewed; however, it would mean more excavation and embankment work in order to make the option meet the technical, i.e., physical (soil) and aeronautic (lateral zoning), standards, and would also require repeating all the technical studies. This solution would hardly change the problem of flying over the village, since Inukjuaq would still be in the approach triangle of the strip, even if the strip were pivoted to the maximum technically acceptable angle. Furthermore, the shortest path between the bay (navigation corridor from the south) and the airstrip would be above the village, and it is likely that it would be used often, if not as a matter of course.

4. BUILDINGS

The projected service buildings (airport and hangar) will represent a major step forward for the community's quality of life and will also serve as new visual markers in the valley. However, their architecture and sidings will not really form part of the Inuit landscape. To mitigate this problem, the structures should have siding made of non-reflecting materials, which would not serve as a visual attractant for the avifauna and lead to accidents. The permafrost may cause

problems because of differential thawing of the ground. The recommended measures for mitigation are to construct the airport one meter above the ground and the hangar, on an embankment, with culverts.

5. ROAD

Most of the route to the airport follows an unmaintained path which leads to the river beyond the four rapids. The creation of a real road is perceived as a very desirable improvement with no impact on any of the environmental units studied. There are problems of soil structure or topography in two sections (1 to 1+000 and 1+200 to 1+500), and we can only agree with the technical measures suggested by the studies of Transport Canada (type of culverts and embankment).

Revegetation should take place on the portions of the existing path which will not be used for the new route in order to eliminate the use of this route and thus, ensure greater chances of success in the revegetation of areas that will be disturb by the project. It is to be noted that the presence of snow much of the year decreases the visual impact of the disturbance to vegetation.

6. POWER LINE

The line runs from the middle of the village to the airport buildings, and has led to considerable differences of opinion about the best design option. The residents want it built on or under ground, depending on the cost and available technology, because they fear for the avifauna. However, the urbanists involved with the study stated that the power line could also be considered a new visual marker, highlighting the course of the road in winter. Although the lines will serve as perches and attract birds of prey, few negative impacts should result.

7. POWER SUPPLY

The generating facilities in the village do not have the capacity to satisfy the needs in this rapidly developing community and provide enough power for the airport. Hydro-Québec, the municipality and the ministère des Transports du Québec should jointly assess the needs so that the village can be provided with additional power and function normally, even at times of high demand (in winter).

8. NAVIGATION AID TOWERS

The 60-meter high towers with their "guy" cables are located south-east of the airport buildings. They may represent a danger to the avifauna in stormy weather. We recommend that stroboscopic lights be installed at the top of the towers or, even, that all the lights be turned off at the height of the migration period, in particular for Canada geese. Furthermore, it is important that there be no reflecting surfaces on these structures.

9. BORROW PITS

The borrow pits chosen in the technical studies carried out by Transport Canada were eliminated during the impact study because they would have major and permanent effects on the environment, especially for sites 1 and 2. They were also rejected by the community because of transport and safety problems. Thus, in order not to delay airport construction, the question was discussed with the federal and provincial transport departments, and the two departments chose a new site, which was later evaluated by the environmental team.

The new site, made up of a gravel pit and a sand pit, is located near the site of the airstrip in a triangle bordered on two sides by a curve in the river, which is characterized by four large rapids. The new borrow site has an advantage over those rejected, because it is near the construction site; therefore, the disturbance from transportation will be limited to a smaller area.

Nevertheless, it is located on the edge of the river, and could have a potential impact on the fish. Is is also an area frequently used by the Inuit for social and recreational activities, this area is highly sensitive and is considered a site of high potential impact.

At first glance, the new borrow site should not have any major impacts, provided that certain mitigative measures are applied.

From the social point of view, the community would prefer that this site not be used; its concern is mainly with protecting the river and an area of recreational use. Nevertheless, it would accept the site if the mitigative measures maintain the river's natural balance and protect it from any spills during construction and from any degradation of its shore by runoff or other factors in following years.

The community requested that a meeting be held in Inukjuaq so that all the information on the proposed mitigative measures be presented, before the residents approve this new site. The meeting requested by the community was held on February 12, 1986.

At the meeting, the community expressed some reservations about use of the borrow site because there is a source of water supply downstream from it. It was agreed by the community council and the ministère des Transports du Québec, and stipulated in the contract that, after the camp

is established, the contractor would build an access road to the apron, taking a minimum of materials from the new borrow site. This will enable the residents to follow the road to the river above the fourth rapid, where they could take water upstream from the borrow pit. The contractor will have to authorize traffic of tank trucks to supply the village.

The gravel pit site should have a regraded surface that is relatively uniform, and on the same level as the surrounding natural terrain in order to prevent formation of one or more depressions which would eventually fill with water. It should slope (1 to 2%) to the south.

The slope should be constant for all of the sand pit so that runoff and percolation waters can be drained to the river via a ditch emptying near and to the west of the first rapids (on the village side).

The gravel pit could even be expanded somewhat to lessen the final slope in the buffer zone between the gravel pit and the borrow pit.

All these measures are needed to preserve the rapids and the area's capacity to attract residents for recreation and fishing and to prevent erosion of the river banks and transport of particles into the water. It goes without saying that the outer limits of the site must be within the 75 meters of protected area established by the MENVIQ.

From the biological point of view, the location of the borrow pit is not likely to have any major impact on the wildlife and vegetation if the following mitigative measures are taken.

If the granite dome less than 160 m from the river is blasted in the fall (mid-August to end of September) during the spawning run of anadromous arctic char, there might be a negative impact on the ichthyofauna. There are some small zones between the 4 rapids (contact with the municipality), but given the distance and the fact that the period in

which blasting is planned is the same (mid-August to end of September), we recommend more frequent blasting with smaller charges in order to minimize shock waves reaching the river. However, this question must be discussed with the municipal council at the meeting planned in conjunction with the new borrow sites. Excavation of the granular section of the borrow pit might require drainage of a poorly drained zone west of the point of operations. Although humid tundra is very valuable as a good habitat for several animal species, we believe that the loss of this small area should not have an adverse effect on wildlife.

After excavation, the borrow sites should be revegetated to prevent excessive erosion. This operation must be monitored for three years from the end of the construction work to ensure that this experimental operation is effective.

As for the impacts on the visual environment, the four rapids contributes to the visual homogeneity of the area. Moreover, the site of the borrow pit, a naturally well-drained and dry environment, is frequently used by the community. Several summer paths converge right at the proposed site for the borrow pit, suggesting the importance of the area and of the panoramic view it offers, to the social and recreational activities of the community.

It should be noted that there is little vegetation at the site now and the sand is visible on about half the surface. This tends to minimize the damage to vegetation from construction work.

In order to restore the recreational potential of the site, it is essential that it be adequately drained, as already explained, and that it be revegetated. Since the site is frequently used, this use will have to be controlled by the community (after introduction of plants) in order to avoid major deterioration of the new vegetation.

Finally, because of the mitigative measures and the elements that counterbalance the impacts (such as snow cover in winter), the residual impacts are medium to low.

The road leading out of the village is now located in the middle of the borrow site. It will have to be rebuilt after completion of the construction work to allow access to the river at the third rapid as is now the case. The decision for this should be made by the community.

In conclusion, it is likely that if all these mitigative measures are applied, almost all the residual impacts, especially on the social fabric, will be reduced, perhaps even to very low levels.

PROGRAM OUTLINE
COMMUNITY CONSULTATION AND PROJECT REVIEW
NORTHERN AIRSTRIP INFRASTRUCTURE IMPROVEMENT PROGRAM
INUKJUAK
November 15-30, 1985

Submitted to GENDRON, LEFEBVRE, Inc.

Submitted by MAKIVIK RESEARCH DEPARTMENT

NOVEMBER 1985

Background

The impact assessment study for the Northern Airstrip Infrastructure Improvement Program was carried out in Inukjuak in two stages. The first stage involved personnel from the firm Gendron, Lefebvre, Inc. who visited the community in early September 1984. Their research focused on environmental, resource and urban planning issues or impacts and they also developed a general overview for the entire project. The second stage was completed in late April 1985, by personnel from Makivik Research Department. Their research focused on social and economic issues or impacts and it provided an Inuit data base and point of view about potential impact and the local environment, resources and community infrastructure. The results of this study were submitted to Gendron, Lefebvre, Inc. for inclusion in their final report.

Studies for the northern airstrips involves four distinct but complementary group of people; the engineers, who must determine the physical characteristics in relationship to the site potentials; the Inuit that must express their knowledge, perceptions and concerns about the airstrip siting, construction and use; the impact assessment researchers that must integrate the engineering requirements within the environmental, social and economic settings of the community and region; and the contractor that must accept the responsibility for constructing the airstrip and its related infrastructure in relationship to the engineering plans and to the results of the impact assessment study.

Each of these groups has particular research needs and time tables that makes it difficult to establish a complementary schedule of events. For example, in Inukjuak, the impact assessment had to be completed before engineering plans were finalized or before all the technical information required by either the researchers or the community was available for review and discussion by Inuit. Although this type of situation could not

be avoided, it requires certain changes in procedures to minimize potential problems that could arise. In particular it means that the community must be kept informed about changes in the plans, and about any technical decisions that were made after completion of the impact assessment study in September 1984 and April 1985. This is best accomplished through direct consultation with the community.

Since the Kativik Environmental Quality Commission has asked for the Inukjuak report in January 1986 it is essential to undertake this consultation at once.

Consultation : Objectives and Approach

The purpose of this consultation is to enable representatives designated by the community of Inukjuak to review the final plans for the airstrip and infrastructure location; to inform them about the potential impacts that have been identified and to explain the proposed remedial measures for these impacts. The consultation will also discuss in more detail the most appropriate system that will enable the community of Inukjuak to maintain an active communication with the ministère des Transports du Québec on the preparation of the final report and KEQC review and throughout the critical final stages of project planning that follow the KEQC approval.

Consultation will be carried out through a series of meetings with the Municipal Council and other community representatives. This approach has been successful in other community studies and it was used in Inukjuak during the April 1985 work of the Makivik Research Department. In the meetings to be held in November 1985, all of the information and conclusions that are represented in the final report will be discussed with the community and the issues that the community considers to be most relevant will be discussed in detail. Particular attention will be paid to

defining areas of community concern that may be affected and changed as planning moves into its final critical stage.

Community discussion will be animated through the use of maps. In particular a map that denotes areas of potential impacts from the project and a map that accurately portrays the engineers' plan of the airstrip, air terminal, access road, quarries, gravel pits and other infrastructure will be used. Special attention will be paid to the change in gravel pit location that now places it south of the airstrip near the river.

In this consultation, a record of any problems or issues raised by the community in relationship to the report will be identified and provided to the ministère des Transports du Québec. The specific means for structuring further communication and consultation between the ministère and Inukjuak will also be defined.

Schedule of work

The following steps must be accomplished in order to prepare materials and to complete the consultation.

1- Preparation of Maps. Copies of the relevant engineering and impact maps that have been developed by Gendron, Lefebvre, Inc. or by the ministère des Transports du Québec must be obtained and explained prior to departure to Inukjuak.

2- Findings of the Report. A brief review and summary of the findings, and especially those that identify impacts and remedial measures must be completed. This must be based on the Gendron, Lefebvre, Inc. report that has now been completed.

3- Departure for Inukjuak. Souie Gorup will depart for Inukjuak on November 15, 1985. Inukjuak consultation with the community including

meetings and FM program will take place during the week of November 18 and November 25. It is estimated that at least three meetings will be held with the Municipal Council and other community representatives and that subsequent smaller meetings on particular topics may also be required.

4- Preparation of Community Review. The major concerns and comments by the community will be finalized prior to November 29, and forwarded to Montreal.

5- Preparation of Consultation Report. The information supplied from the community will be incorporated in a brief final report that will be forwarded to Mr. Daniel Waltz, chef du Service de l'Environnement, ministère des Transports du Québec on December 6, 1985.

6- Translation of Consultation Report. An inuktituk translation of the report described in 4 and 5 above, will be completed and forwarded to the community.

Budget

Airfare	Montreal-Kuujjuarapik return	\$400
	Kuujjuarapik-Inukjuak return	314
Lodging/food	6 days/\$50 per day	300
Translation	40 hours/\$20 per hour	800
Salary	S. Gorup 6 days/\$92	552
	W. Kemp 3.5 days/\$220	770
Translation of consultation report to inuktituk		
	estimate 3000 words/0.20 per word	600
Report reproduction inuktituk		85
Wordprocessing	15 hours/\$20 per hour	300
	TOTAL	\$3,321.00

FINAL REPORT
SOCIAL AND ECONOMIC IMPACT ASSESSMENT
FOR THE NORTHERN AIRPORTS INFRASTRUCTURES IMPROVEMENT PROGRAM :
INUKJUAQ

Prepared by
Makivik Research Department

September 6, 1985

1. OBJECTIVES AND APPROACH

This report will present a summary of the findings and recommendations on the social and environmental impacts from the northern airports infrastructure improvement program for the community of Inukjuak. The work was carried out by the Makivik Research Department under a sub-contract to the consulting firm of Gendron, Lefebvre Inc. who was given the responsibility for the social and environmental impact assessment by the Service de l'environnement du Ministère des Transports du Québec.

Inukjuak is the fifth community in which the Makivik Research Department has carried out part or all of an impact assessment study on the northern airport infrastructure improvement program. In these five studies the Research Department has attempted to describe the Inuit point of view about the importance and role of air service and its improved infrastructure in the development of their communities and region; to create a means for Inuit to define the objectives, methodology, and appropriate data base for impact assessment; and to provide an opportunity for Inuit to receive specific training in the design, execution and analysis of impact assessment studies.

This study has focused on the potential impacts from the planning, construction and operation of the proposed airstrip at Inukjuak. The approach has utilized the findings and opinions that have emerged from the completed studies for the communities of Ivujivik, Salluit, Povungnituk and Kangirsuk. Overtime, the ideas and experience of one community begins to coalesce with those of another, so that a more consistent and widely held point of view about airstrip impacts and corrective measures begins to emerge. A more active involvement of Inuit in impact assessment is not intended to override the responsibilities of the project proponent, but it will contribute well defined ideas about how the proponent could incorporate Inuit more effectively in every phase of the assessment process.

1.1 Objectives and Schedule of Inukjuak Study

The purpose of the social and economic impact assessment study for Inukjuak is to define the potential impacts from the planning, construction and future operation of the proposed airstrip, and to specify what measures could be taken to reduce potential negative impacts and to amplify potential positive impacts from the airstrip improvement program. The topic and issues highlighted in this study represents the information, opinions and concerns that were stated by the community.

The role of social and economic impact assessment was introduced on September ..., 1984 by Juusipi Illimasaut of the Kangiqsujuaq Cartographic Centre. This presentation was part of the general introduction to the larger impact study that was made by personnel from Gendron, Lefebvre Inc. who visited the community from September .. to .., 1984. The schedule of the research program called for the social and economic study to be carried out after Gendron, Lefebvre Inc. completed their community visit and had the opportunity to prepare preliminary reports on their findings.

In order to clarify the purpose of impact assessment for the community an FM radio broadcast was presented by Juusipi Illimasaut to explain the history of the airstrip infrastructure improvement program for Northern Québec and to identify some of the major concerns and recommendations made by the other five Inuit communities. At that time it was announced that social impact assessment would take place in the winter of 1985.

The social and economic impact assessment study as described by Juusipi Illimasaut was carried out from April 18 to 26, 1985. It was undertaken by Juusipi Illimasaut and William Kemp. It was decided by the Municipal Council that it would be the body responsible for making decisions related to the airstrip, but that the researchers should be

in contact with all of the organizations that contribute to the social and economic life of Inukjuak. Opinions and information from the general public about the airstrip were obtained through the FM radio in an "open line" discussion. Two meetings were held with the Municipal Council and interviews were completed with the Federation of Cooperatives, the Hudson Bay Company, the Kativik School Board, Social and Health Services, and Avataq Cultural Institute.

The information presented in this report is a summary of the findings that were gathered from these three sources. This contact with the Inukjuak community was organized around three basic themes. The first was a review and clarification of Inuit opinion about the specific airstrip and infrastructures plans for Inukjuak. The second involved general concerns about the development of the airstrip in relationship to physical, social and economic development of the community. The third theme was based on the presentation of results from the completed social impact studies for Povungnituk, Salluit, Ivujivik and Kangirsuk and a review of the applicability of the findings from these communities to Inukjuak. It is this third theme that the Municipal Council wished to stress, for they felt that many of the problems and preferred solutions identified by the other communities were directly applicable for resolving the concerns and conditions for planning and constructing the Inukjuak airstrip.

1.2 Project Justification

The need to develop an improved airstrip and infrastructure for Inukjuak is based on the same principles that underly the original creation of the northern airstrip infrastructure improvement program for all of Northern Québec. In Inukjuak as in all other Northern Québec communities, the fundamental need for this program is based on the reality that air travel is the only feasible transportation alternative for the Inuit communities of northern Québec. This justification is strengthened by the fact that the airstrips now in use are

both unsafe and unable to accommodate any improvement in services that are based on the use of larger aircrafts. The construction of airstrips and airport facilities that are safe, and which have the capacity to accommodate different aircraft and expanding local needs, is vital for the health, safety and development of every northern Québec community. There are no other means of public transport available to the Inuit, and the future expansion and delivery of services within the region is fully dependent on the quality of air service.

Community airstrips present a constant danger to pilots and air travellers. The runways are too short and too narrow, with soft and uneven surfaces that cannot be improved or easily maintained with the equipment and budgets available to the communities. Lighting and navigational aids are poor or non existant and there are no passenger or freight facilities. Night landings often require the aid of snowmobile lights; beacons can guide a plane to the community but not get it to the ground; wind conditions and ceiling are guess work; and patients, passengers or freight may either freeze or get wet, depending on the season. Nevertheless, these airstrips are all there is, so they are used day in and day out, good weather and bad. They must accommodate the long dark of winter, the fog of summer and the rapidly changing weather conditions that can occur at any time.

Individuals, communities and northern organizations are all vitally concerned that the present conditions of air travel be greatly improved. Northern air service still involves frequent delays and many anxious moments, especially while flying at night or in bad weather. The skill and experience of pilots and the remarkable adaptability of the Twin Otter aircraft have reached the limits of their capacity to overcome poor and unsafe facilities. This can only be accomplished by upgrading the physical infrastructure and navigational aids.

The standards for improvement that have been set out in the Northern Airports Infrastructure Improvement Program will, in the mind of Inuit, create a significant and positive change in the quality of air service, that is already long overdue. Inuit state that the most important change will be the safety of air travellers and the improved conditions for evacuating the sick and injured. Inuit also realize that improvements in the airport infrastructure will have significant implications for the economic, social and political development of their communities and the region.

2. THE INUIT PERSPECTIVE

Social impact assessment in the north can only be effective if it incorporates the perspectives, values and participation of Inuit in each of the four phases that comprise the assessment process. These phases are: 1) establishing the terms of reference for impact assessment studies; 2) participating in the planning and execution of these studies; 3) maintaining membership in the Environmental Quality Commission; and 4) exercising a control over decisions that occur during the final stage of project planning and throughout actual construction.

Access to information and decision-making, through the Environmental Quality Commission, is the cornerstone of Inuit involvement in impact assessment. At the present time the Inuit hold three positions on the Commission and, consequently, they have the opportunity to contribute specific knowledge, perspective and values to the deliberations and decisions on the merits and conditions of development projects. Inuit have also had the opportunity to participate in the design and execution of research and data analysis for impact assessment studies the airstrips, through the Makivik Research Department and through the archeological program between the Ministère des Transports du Québec and Avataq Cultural Institute.

The most important problem that must be resolved, is how Inuit can participate more effectively in Phases 1 and 4 of the assessment process. Participation in Phase 1 requires that a well-defined procedure be established to assure that Inuit have a continuing voice in determining the content for the terms of reference that must be submitted by project proponents. The need for establishing this role is demonstrated by the fact that Inuit do not feel they are presently able to make any significant contribution towards setting the principles, questions and priorities for impact assessment studies. To this end, the Inuit are adamant in their opinion about what

elements in the life of their communities are most important with respect to potential impact from projects. They also cautioned researchers not to try to establish the only value system around which the positive and negative impacts from airstrips or other projects should be evaluated.

Inuit question who controls the assessment procedure; what type of protection impact assessment actually provides for the bio-physical and socio-economic environment of their community and region; why these protections are needed; and how specific impacts are determined and corrective or remedial measures established. In order to answer these questions, appropriate terms of reference must be developed so that they identify problems and address issues that are relevant to the current conditions and long term needs of Inuit.

Such an approach does not mean that southern-based concerns are disregarded, or basic principles of research and analysis ignored. It simply means that the context for identifying and solving problems must be enlarged and the time frame, methods and statement of results made accountable to Inuit. What these questions imply is that the proponent of a development project must be able to interact with Inuit values and points of view in a manner that enables a cross cultural understanding of problems and their solutions to be addressed in the terms of reference in the research and in the recommendations. An excellent model of how Inuit can be included is illustrated by the way in which the archeologists of the Ministère des Transports du Québec have worked with Avataq Cultural Institute. Appropriate terms of reference for the archeological surveys required for the airstrip program have been designed; a structure for training Inuit to undertake the research is being put in place; and a means for Inuit to evaluate the findings and implement the recommendations has been established.

Closely tied to the question of social impact assessment is the question of planning and of establishing a better framework for

coordinating all of the different decisions that are made on behalf of the community by outsiders who are themselves usually not knowledgeable of one another. Fieldwork on social impact assessment for the northern airstrips has now been carried out in four communities and there is a coalescing of Inuit opinion about their roles and their rights in this process. Ideas first stated at Salluit and Ivujivik were heard again in Povungnituk and Kangirsuk, and the experiences of Ivujivik are being heard in the other communities. In particular, questions are raised about how the Inuit can gain an effective sharing of control over a process that in itself has such a strong potential for negative impact.

The Inuit considered that impacts resulting from the airstrip or other community infrastructure developments are often related to ineffective planning. They questioned why it seemed to take impact assessment for a project to create a concern about planning. The problem as stated by Inuit is that no one is really in control of community planning and thus, every mandate is treated in isolation. They called upon the different organizations that were proposing projects to coordinate their plans and specific requirements prior to coming to the community. It was felt that the municipal councils or other bodies could never make rational decisions since they never knew the full range of issues.

The Inuit felt that certain groups were very naive about the requirements of northern projects and the type of planning that was necessary to make them successful. They also said they felt that some of the people sent to do studies are unaware of how to work in the north, and do not ask the proper questions or don't seem to understand the issues. These people are said to bother the community and it is felt they cannot write strong reports if they are unprepared and do not have the time to understand.

The Inuit stated that, although it may be the mandate of project proponents to identify planning requirements and impact assessment, it is the communities that are penalized when improper studies and poor consultation lead to the failure of a project to meet the criteria necessary for the review process. If a project needed by the community is rejected because of poor planning, or because the people were not able to do a proper study, it is the community that is the big loser.

These concerns are well summarized in the statements that were made in a formal meeting of the Inukjuak Municipal Council on April 23, 1984.

"We have heard from the other communities about the impact assessment studies and the way they want to control the work in order to benefit the economy of their community and to provide other services by using the equipment that will be brought in for building the airstrip. We agree with many of these recommendations and I think we are prepared to follow them without many changes.

This would be good if it would really happen, but we have heard that many of the things that the other communities want are forgotten after the report. We will say this to you again and I hope that the people at Transport Québec will listen because the Inuit have many good ideas and they know what is best for their community. We really agree with Kangirsuk because this isn't just a present. If we have employment and if we can get other community benefits the airstrip will be much more important because it will help us and not just by landing the planes safely."

3. FINDINGS

This section of the report will summarize the findings from the formal meetings, special interviews and public opinion from Inukjuak. The information so gathered have been organized by topics. The topics are selected by the researchers and the Municipal Council of Inukjuak and they are based on the themes that emerged during the social impact studies in the four communities. Once agreement was reached on these topics they were written on a blackboard and then discussed by the Council. In the FM radio show a similar approach was used to describe the decisions of the other communities and to use these decisions for structuring the comments from Inukjuak.

3.1 Justification for a new airstrip

The Inuit of Inukjuak repeated many of the same concerns about the need for a longer and better built airstrip that have been stated since the initiation of these studies in Ivujivik. In particular they emphasized the role of air service in health and the need to have a feeling of security while landing and taking off. The siting and utilization of the present summer and winter airstrips have been considered convenient and safe by the community, and no specific concerns with air safety were expressed.

The primary concern of the community therefore, is to improve the airstrip for economic reasons. With this improvement it was stated that the required changes for runway lights, navigation equipment and an improved surface condition will automatically increase the safety of flying.

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Inukjuak Inuit feel that their community will develop rapidly over the next ten years, and they cite the development of Makivik Offices, the building and operation of a major cultural centre for Avataq Cultural Institute, and the general growth of the local economy in support of this assumption. There is a constant demand for freight, and the number of organizations that exist within Inukjuak or which have frequent contact with the community require an active passenger service.

The Inuit feel that the local service in and out their community has been adequate, although they point out that passenger travel to and from the south is often delayed because of weather problems at Kuujjuarapik. They also note that the delivery of freight is extremely difficult in the summer, fall and late spring when the icestrip is not operating and where only Twin Otters can be used. It is felt that improved runway facilities will be very important for the year round availability of adequate freight service. It was also noted that improved airstrips for the Hudson Bay coast communities might encourage the development of a more frequent direct passenger service to the communities of Ungava Bay, which will create a stronger network of communication within the North.

3.2 Land and Resource Impacts

The Inuit of Inukjuak stated clearly that the position of the proposed airstrip and access road posed no obvious threat to the immediate land and resource environment of the community. The airstrip or access road do not interfere with established patterns of community activity and it was stated that these do not affect any places that the Inuit consider to be environmentally sensitive or of importance for cultural reasons. It is felt by the community that the planned airstrip should help establish an outer limit to the environment that will be affected by the activities associated with present or future community development.

3.2.1 Protection of River Valley. The Inuit consider that the location of the airstrip will not have any impact on the physical or biological environment of the river valley or on the water quality and fish population of the river itself. The Municipal Council is insistant that the river valley be protected from any development related to the airstrip or other disturbances, and this attitude was supported by the statements of individuals on the FM radio.

3.2.2 Wildlife Resources. It was stated that the airstrip is on a plateau occasionnaly used by geese but the proximity of this plateau to the community meant that it was not presently used by geese for nesting or for the resting of large flocks on either the north or south migration. They stated that a large project such as the airstrip will always create a disturbance of the local environment but since this area has never been important for the ecology of geese or other species the disturbance will not translate into an important ecological or environmental impact, and any changes in hunting that might be caused by the airstrip will not affect the subsistance economy of the community.

Specific questions were asked about the impact of the access road and airstrip on other resources used by the community and there were no concerns stated by the Municipal Council or from other community members. The following quote summarizes community opinion on the potential impact of the airstrip on the resources :

"No one from Inukjuak likes to see the land disturb but all of us know that we cannot have a community and still have the land exactly as it was. We do not want to see the wildlife pushed out of reach because of all of the activity but this is not a worry for the airstrip because it is not important for hunting. Somebody can always find an animal or a bird almost anywhere but even the people who want to walk out of the community for hunting would not expect to catch an animal so close except as a surprise."

3.3 Community Infrastructure

The planned airstrip and access road follows the general growth pattern of the community since it extends inland to the east. At the present time there is no road extending east of the community to the airstrip plateau so that this will form a completely new part of the community infrastructure. As noted in 3.2 above, the Inuit want the airstrip to define the eastward limit of growth and they do not want to expand south towards the river valley. The plans for community growth were reviewed with the Municipal Council and it was noted that the airstrip and access road will not duplicate or replace the present infrastructure required for water, garbage and liquid waste disposal. Some concerns were raised about the utilization and stock piling of granular materials and various opinions were expressed about other small projects that the community would like to undertake while the construction equipment for the airstrip is available.

3.3.1 Airstrip Location and Orientation. The location of the airstrip has been and continues to be fully agreed to by the Municipal Council and other community members. Only one negative comment about the location was stated by an individual but the Municipal Council said that they have no other preference for airstrip location. They did state that the orientation of the airstrip itself would probably be safer if it was possible for planes to approach or depart over the river rather than over the land. They wanted it to be stated in this report, however, that there is no disagreement on the airstrip location or on the position of the access road, and that a change in the orientation of the airstrip is not essential for their continued agreement with the plans.

3.3.2 Granular Resources. The Municipal Council stated clearly that they do not want the airstrip construction to depend on the excavation and transport of granular materials from the area to the northwest of the community noted on the engineering maps as burrow pit 1. They

stated that the supplies in this area are limited, that excavation would damage the landscape and, most important, the transport of the material through the community by truck would be dangerous, dirty and noisy.

The community favors the development of burrow pits much closer to the airstrip site which means the utilization of pit 3 on the engineering plans. They stated, however, that they would prefer the granular materials to be obtained directly on site from blasting and crushing. This is based on minimizing the movement of materials from burrow pits to the construction site and on the stated need of the community to have stock piles of prepared stone for other construction purposes.

3.3.3. Airstrip access road. The Municipal Council reviewed the position of the access road according to the plans that were used for the April 1985 review of the project. They stated that there were no obvious problems with the surface conditions for the access road and that it did not disturb or duplicate their present patterns of community road transport. Several areas of snow accumulation were noted but it was felt that these were not serious problems that would require any change in its position.

They noted that the road provided a positive benefit in that it forms the first well-defined route to the west of the village and this would minimize the random travel routes that are now being developed as people move in this direction. The municipal council also stated that the airstrip road would provide easier access to the river and to granular and sand deposits that would be developed on the plateau south of the airstrip.

3.3.4. Other infrastructure. The position of the airstrip, access road and power line was reviewed in relationship to other existing or proposed community infrastructure. It was clearly stated that there

was no duplication of infrastructure created by the position of the airstrip and road. The community questioned transport of power from the present generator site to the airstrip facilities and stated that they would prefer the power to travel on or under the ground if such technology existed, was safe and also reliable.

3.3.5. Maintenance of air service. The construction of the new airstrip will have no negative impact on the easy maintenance of present air service, using the available coastal airstrip.

3.4 Economic and social concerns

The Inuit noted that the people of Inukjuak had many of the same concerns about employment and other work related issues that have already been identified in the Kangirsuk and Salluit Impact Studies. They also were made aware of problems encountered in Ivujivik during construction and prior to the community meetings in April, they were made aware of some of the difficulties both Kangirsuk and Salluit have encountered when trying to have their economic and social concerns accepted as a condition for construction. Consequently, the Inukjuak municipal council was conservative in their reaction to the question "How do you want to maximize economic benefits and minimize social disruptions?" The following quote summarizes their approach to this question and its long-term implications:

It is premature for us to answer this in any detail until we can be guaranteed that our request will be taken seriously. You have reviewed what the other communities wanted and their request would be very similar to ours. The best thing to be done at this time is to indicate how we wish to proceed but the details should only be provided and actual plans made once we know what will really happen here in Inukjuak.

3.4.1. Employment of Inuit. In Inukjuak, no individuals have undergone training in the heavy equipment operator program. It was mentioned however, that there were trained operators in Povungnituk and they would be welcome to work in Inukjuak. The community, however was skeptical about whether or not Inuit heavy equipment operators would be hired since they had heard that this was not happening for the projects scheduled to begin in the summer of 1985. Thus, a summary statement made by a Municipal Council member indicates community feelings about employment:

We would expect that the local people will be given employment that is equal to their experience and which will pay according to a wage that is the same for non-native workers. We will talk to the Quebec people as soon as possible and they should submit a list of possible employment and qualifications that we can work with. It will not be fair if we are considered to be only a source of employment for unemployed construction workers from the south.

The solutions for maximizing local employment developed by Kangirsuk were reviewed in Inukjuak and it was agreed that the same conditions should apply.

1. The company should provide a clear description of manpower requirements to the community. This can first be done in writing followed by a community visit and meeting. Each position noted in this document must be accompanied by a brief job description.
2. The contractor and le ministère des Transports du Québec or Manpower representative should then interview the qualified and or interested people in Inukjuak and find out what people are available for work at what jobs. The Inuit should be told exactly what is required so that no misunderstandings arise later.

3. The qualified people from Inukjuak should have first opportunity for job and these would be followed by qualified candidates from other communities. Potential candidates should then be contacted as soon as possible to see if they are interested.

4. After the formally trained people have been reviewed, the other positions can be reviewed and a program to have on-the-job training should be set up.

5. The other labor requirements, cooks, cleaners, airstrip labor, etc., should be defined and attempts made to locate candidates for each available position.

3.4.2. Training for employment. The Inuit of Inukjuak stated that although no one from their community attended the heavy equipment operator's course, certain individuals could still be selected and trained. It was suggested that an ideal time for training to take place would be during actual construction of either the Kangirsuk or the Salluit airstrip. This could happen in the spring and early summer of 1986, prior to the construction at Inukjuak.

It was also stated that this type of training would be ideal for an Inuk supervisor who would then have first hand experience in dealing with the consultative and supervisory problems during actual construction.

3.4.3 Project supervision. Inukjuak was insistent that a position be created within the airstrip budget to hire an Inuk for planning and carrying out all of the responsibilities associated with preparation for construction. This individual would work throughout the construction period as a full-time employee. The Municipal Council stated that such a position was "absolutely necessary" to make the project successful and to minimize local problems. They learned about the compromise for this position reached at Kangirsuk and stated that this was unacceptable.

3.4.4. Labor relations and work conditions. The Municipal Council stated that the Inuit should be consulted as in other communities on certain conditions of their work. These would include the hours of expected work and overtime, the need to work on Sunday, and the actual description of the job requirements. They stated that difficulties could be minimized if there was a simple, written contract in Inuktitut, so that the worker would really know what was expected.

The community of Inukjuak agreed with statements from other communities that the selection of a foreman was critical for good working conditions. They would like to have more than one candidate for this job and they would like to participate or to at least give their opinion in selection. They noted that it would be best if the construction foreman had northern experience and if so, could recommendations from Inuit workers be used in his selection.

3.4.5. Control of the work force. The Municipal Council stated that it is very difficult for a large work force to be in a community without some problems. They said that a committee from within the community would not be necessary because of the Inuit supervisor who would be responsible directly to the contractor and the Municipal Council. No alcohol and no drugs were fundamental requirements stated by the community.

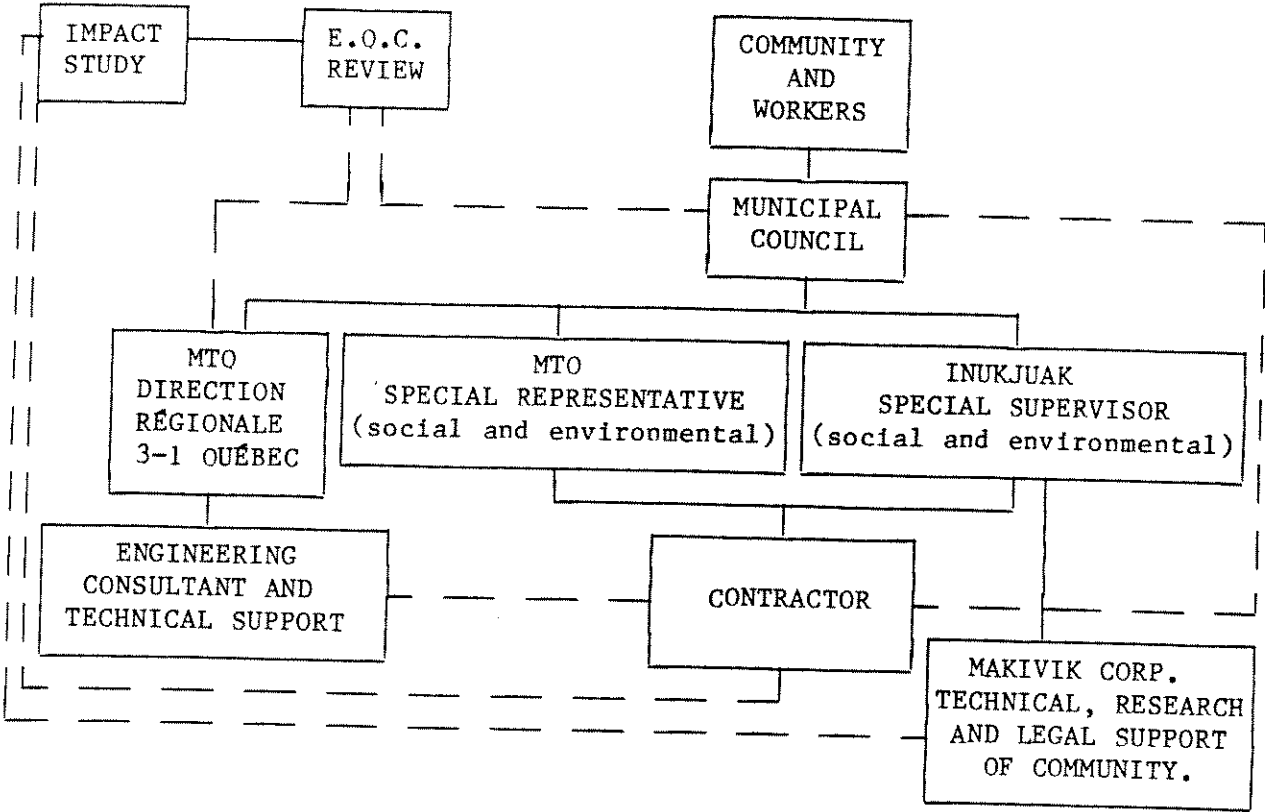
3.4.6. Service contracts. The Municipal Council stated that they were prepared to benefit economically from service contracts but not until the plans for construction and the requirements of equipment, food and lodging were decided upon. They would expect that the Inuit supervisor would be hired in time to help the contractor and the community establish these contracts where feasible.

The Municipal Council worried about some of the problems that occurred in Ivujivik and they stated that they wanted some formal

contacts such as a complimentary trip to Kangirsuk in order to see the problems that will occur during this phase of the airstrip program. Once they have more information, they will be able to determine how to avoid such problems within their own municipality.

It was mentioned that the construction equipment and vehicles in Inukjuak could be available through contracts for limited airstrip work, but that they are committed to a variety of other jobs throughout most of the year, and would therefore not be easily available for long term use.

3.4.7. Structure of project planning and supervision. The diagram presented on the following page identifies the parties and illustrates the structure for project organization (solid lines), and for the primary interactions of the identified organizations and tasks (dotted lines).



4. CONCLUSION

THE NEGATIVE POTENTIAL IMPACT OF SOCIAL ECONOMIC IMPACT STUDIES

Research carried out in Inukjuak on the social and economic impact of the Northern Airport Infrastructure Improvement Program is similar in format and perspective to studies completed in five other communities. Information derived from each of these studies has been communicated to the other communities and there is a rapid coalescence of an Inuit point of view about their relevance and the authenticity of the impact assessment process.

The impact statements for the northern airstrips provided the Inuit communities with an opportunity to present their concerns about the planning and construction of a vital part of their infrastructure, and it enabled the people to state how the community could benefit economically from the construction phase and how potential social and environmental problems could be minimized. For most communities, it was their first contact with the impact assessment process, including the proponent, the terms of reference required from the proponent and evaluation by the Environmental Quality Commission. Certain parts of this process worked extremely well, especially the critical review. Others, such as the development of appropriate terms of reference and of post-review decisions did not.

The impact assessment process called for a review and evaluation of social and economic factors, and the communities took this mandate very seriously. Time is now at hand for stating what has actually taken place in relationship to what the communities justifiably requested within a process that is designed to protect their legitimate interests and concerns. What emerges from this examination is a very serious shortcoming between the stated objectives of the social and economic impact studies, the specific findings of these studies and the real application of findings after the review process. At the present time, much of what the community stated in terms of economic and social benefits or concerns has been totally ignored when planning and carrying out construction.

Inuit representative organizations within the northern municipalities have made an honest and thoughtful attempt to deal with the problems of a massively disruptive construction project. They also attempted to transfer in many significant ways important community benefits. They were led to believe by the social and economic researchers responsible for the study that the environmental review process was a protection for their community and they acted accordingly and in good faith.

Certain problems arose early in the study, when the Service de l'environnement du Ministère des Transports Québec seemed ill-prepared to incorporate procedures within their terms of reference that would make the study more responsive to community values, perspectives and well-defined needs. Social impact assessment was viewed by Inuit as the type of research that, at last, could play a positive role in the life of the community, since it provided a voice for the people and an opportunity to advance legitimate community interest. These expectations have not materialized. What communities asked for was not some impossible "wish list", but rather a set of legitimate instructions to responsible authorities about how to maximize potential benefits and minimize potential negative impacts. In retrospect, this assumption was at best misleading, but most probably it served to deceive. The deception is compounded by the fact that the communities desperately want an improved air service so they are prepared to ignore or substantially compromise with their stated concerns in order not to jeopardize construction.

The process of assessment and evaluation has to date been successful in so far as the airstrips have been permitted to be built. It is not successful in so far as the community expectations of complimentary benefits are concerned. It was stated in Kangirsuk that airstrips need not be thought of as Christmas presents. They are essential and they need not be considered as a gift. Consequently, they should provide other opportunities for much needed community development. People trained in heavy equipment had expectations, other community workers had expectations, and the community itself had a structure for meeting these and other economic and social expectations. The question that must now be answered is how to address this

problem as defined in Part 4 of the assessment process. In a municipal council meeting held on November 12, 1984, in Kangirsuk, it was stated that:

You say that you are here to find out how the new airstrip will affect our lives, and we don't know why you bother to ask that question because it should be clear to anyone who know our problems. But it always seems that people down south know more about our problems than we do because their answers are stronger than ours.

If everybody in all the governments is worried about all that is going on up here in this community why do they come to us the very last, after everything is done, to ask what we think; does it matter to them anyway if we like something or are against something. ...If we cooperate and tell you what we think or what we worry about, will anybody down south pay attention if they think we should be thinking or worrying about something else?

It seems only fair that this individual's concern be honestly answered in relationship to the decisions that have been made with regards to the economic and social concerns of the communities.

Finally, it was stated by another individual who participated actively in the Kangirsuk Social Impact Assessment Study and who now sees what is not happening:

I don't know exactly how we should proceed to change the situation that exists in my community and throughout northern Québec. If I was a mayor, I would like to see airstrip construction shut down until the problems with poor Inuit participation are finally solved. I know that this would be very difficult for a community to do, because they need the airstrip and other community facilities. I know it is difficult to heat your house, haul your garbage or land a plane safely with nothing more than principles, but drastic action will eventually have to be taken. The Environment Quality Commission should be notified about what happens once the project is out of their jurisdiction.