

PIONEER SHIRE COUNCIL

**STRATEGIC PLAN  
AND  
STATEMENT  
PART B  
WHOLE OF SHIRE AREA**

**MARCH, 1982**

PIONEER SHIRE COUNCIL  
STRATEGIC PLAN  
AND  
STATEMENT  
WHOLE OF SHIRE AREA  
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THIS PAGE AND THE SUCCEEDING 121 PAGES COMPRISING PART B OF THE STRATEGIC PLAN MADE BY THE PIONEER SHIRE COUNCIL, AND SIGNED FOR IDENTIFICATION BY, OR ON BEHALF OF, THE DIRECTOR OF LOCAL GOVERNMENT, WERE TODAY APPROVED BY THE GOVERNOR IN COUNCIL.

DATE 24.11.83

CLERK OF THE EXECUTIVE COUNCIL

## 1.0 INTRODUCTION

### 1.1 COMPOSITION OF STRATEGIC PLAN

Local Authority Town Planning Schemes must provide zoning maps depicting existing land uses and a set of legal provisions and schedules which allow an orderly allocation of land to the uses considered under the Town Plan Scheme referred to herein as the Statutory Town Plan.

However, in a developing Shire such as Pioneer Shire, it is quite clear that, besides the Town Planning Scheme proper, it is necessary to provide a supportive document known as a Strategic Plan. The Strategic Plan should be based on accurate projections in regard to future requirements for various land uses and should identify the areas where future development should be allowed to proceed in order to secure maximum economic and environmental benefits for the community to be served by the Town Planning Scheme.

The Statutory Town Plan protects the existing development but does not outline how changes in land use will be allowed to occur in the future. This function is more properly discharged by the provisions of the Strategic Plan.

In order to provide more positive control of future land use, a Local Authority can prepare a Strategic Plan for any area which will then assist the public business interests and designers of services to plan for the future on a rational basis. Advance information such as that shown in a Strategic Plan should in the long term secure a more economic provision of essential services and engineering infrastructure and help to prevent haphazard development.

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In the case of the Pioneer Shire Area, the Strategic Plan refers to a number of specific geographic entities and in accord with the Act provides:

- a) a series of maps identifying preferred dominant land uses;
- b) a statement of objectives of the Local Authority in relation to preferred dominant land uses together with other criteria for determining the type, scale or distribution of other uses required as an integral component to service the preferred dominant land uses;
- c) copies of writings containing supportive information used for, or in connection with the preparation of the Strategic Plan.

This Strategic Plan therefore broadly consists of:

- 1. maps on which designated future land use classifications are shown with particular reference to areas of urban growth, arable lands, beach erosion buffers, and a major transportation corridor serving the Mackay urban area of Pioneer Shire and Mackay City;
- 2. a report which justifies the strategy shown on the maps and which identifies the objectives of the Strategic Plan;
- 3. statements of policy which will be used by Pioneer Shire Council in assessing land use requirements and stating the provisions of the Strategic Plan that must be met in complying with those requirements, the aims and goals of the Strategic Plan and the means by which the aims and goals will be attained.

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## 2.0 SCOPE OF PIONEER SHIRE STRATEGIC PLAN

Pioneer Shire Council has a Town Plan which covers part of the area of the Shire and includes most of the areas where urban development of significance has occurred in recent years. There are however some notable exclusions in regard to urban development with geographical entities such as Eimeo - Black's Beach, Bucasia, Shoal Point, Dimdula, Eton, Walkerston, Seaforth - Halliday Bay - Ball Bay, Calen and Midge Point lying outside the boundaries of the area covered in the present Statutory Town Plan.

At the present time, a Statutory Town Plan has been prepared to cover the whole of the Pioneer Shire Area. It must be stated that there is a conflict between needs for lands required for urban development and those essential for cane cultivation. This conflict was the subject of official State Government investigation in 1978 leading to the development of an optimal land use pattern for parts of Divisions 1 and 2 and taking in all of the Mackay urban area, the northern beaches as far north as Shoal Point and the neighbourhoods of Walkerston, Ooralea and Paget.

This optimal land use pattern was approved by State Cabinet and is therefore expected to have administrative effect which must be taken fully into account by the Pioneer Shire Council in the determination of land usage patterns within the Shire Area. There are significant land-form constraints upon the total integrated urban development for urban populations resident north of the Pioneer River. The settlement pattern is broadly one of neighbourhoods separated from one another by extensive tracts of highly fertile agricultural lands much of which are extremely valuable alluvium with underground aquifers because of frequent inundation from

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outflows of the Pioneer River and other principal water-courses of the Shire Area.

After a period of relative quiescence there has been a renewal and intensification of interest in development for tourism. Within Pioneer Shire Area this development seems to be becoming more discernible in localities such as Slade Point, Eimeo - Black's Beach, Shoal Point - Bucasia, and the Seaforth and Midge Point areas.

Tourist resort development has an intrinsic difficulty in that often the development implies a number of concurrent land uses being permissible, and unless special zoning provisions are provided in the Statutory Town Plan, and unless the Strategic Plan supports such zoning with a clear indication as to the location of possibly suitable tourist sites, the tourist industry may claim with justice that its development is being inhibited.

Also, resort type development invariably requires a high standard of infrastructure. In some cases Local Authority can not meet the financial burdens implicit in providing expensive water supplies and access roads and sewerage schemes, but likewise, if the tourist entrepreneur is a small, single operator, the private sector is equally unable to meet infrastructure costs. There is a need to rationalise the legitimate aims and aspirations of the tourist industry with infrastructural practicalities.

In the discussion of opportunities for tourist development, it would be less than realistic, too, if an attempt is not made to formulate beach erosion problems and to offer an appropriate strategy in relation to the problems within the littoral zone of the Shire.

In planning for industry apart from tourism, it must be

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noted that there is a need to ensure that secondary industries and major installations such as the sugar mills and export abattoir need to be separated by buffers from residential uses. It is desirable therefore that the Strategic Plan identifies fairly precisely the areas in which industrial uses will be encouraged and because of the importance of accessibility arrangements with regard to industrial estates, transportation corridors are required to be known with precision in order to avoid undue intrusion into the residential and valuable agricultural lands of the future.

No worthwhile land capability assessment in published form exists at present, although the Department of Primary Industry land use studies within the Shire Area are well advanced. An interim statement from the Department of Primary Industries is contained in two maps which set out the arable lands that ought to be considered for conservation for future cane cultivation purposes. The maps require noting because the sugar industry continues to underpin the Shire economy.

It is known from a Government sponsored strategic study made of the Mackay region in 1976, that shortage of cane lands will be a significant factor with expansion in the sugar industry by the year 2000. There is therefore no doubt the Strategic Plan for Pioneer Shire must endeavour as one important aim to conserve valuable and increasingly scarce rural land resources.

Prospects for the beef industry still continue to appear depressed, and it is considered no undue duty of care lies with the Council to make special arrangements for land for the cattle industry.

Mineral development also requires consideration, and in

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this Strategic Plan no allowance has been made for the Condor Oil Shale Project because of the imprecise time of implementation for this project.

For the next 20 years with which the Strategic Plan is concerned, the economic advancement of the Shire is certain to be significant through growth in sugar, tourism, and secondary industry, and the urban growth associated with these industries as well as the major mining developments now existent and foreshadowed for the adjacent Bowen Basin.

A likely future settlement pattern emerges from the foregoing considerations. Pioneer Shire will be the scene of further expansion at all of its existing urban centres, and steady infilling of rural lands by more intense land pursuits such as the growing of sugar cane and the cultivation of other cash crops. There is therefore a need to bring order to the future growth of the Shire Area, particularly those areas lying outside the present boundaries of the existing Town Plan.

In order that development is contained to specific areas Pioneer Shire Council has decided to adopt a Strategic Plan to supplement the Town Plan.

Council has already decided certain policy matters in this respect covering future urban and industrial development and these matters are discussed in section .

Strategic planning for Pioneer Shire is now related to the whole of the Shire Area and takes cognisance not only of the needs of the cattle and sugar industries, but also aims at the necessity to obtain balanced and appropriate development for the tourist industry which is deemed to be still in an inchoate state on the mainland.

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For most of the beaches with development potential or for those beaches where development has already occurred and where growth is being experienced, the coastline is characterised by demonstrably clearly distinguishable sediment patterns. In some instances there is a virtual absence of alluvial sediments, e.g. north of Reliance Creek.

The areas that consist of dune fields have been formed in a time of different climate; when rainfall exceeded that experienced now; when the sea level was much higher than is the case now. The beaches have been formed in the main by giant storms transporting large quantities of coralline and terrigenous sand and muds, placing them above the high water mark.

With the recession of sea levels these storm beaches have remained and constitute the platform upon which much of the beach township development has occurred.

Problems are now being experienced where, in one case, no beach exists (St Helens); elsewhere only small fragmentary beaches remain. In other cases, such as Slade Point, and parts of Eimeo, Black's Beach, Halliday Bay, Ball Bay and Seaforth, there has already been unwise use of the frontal dune. Once more because of terrain constraints, conflict arises between man and his environment.

With the existence of the jet airports at both Mackay and Proserpine, there will need to be major improvements to access roads along the Shire's beach resorts. There is a distinct need for expansion of water and sewerage services to most of the beach areas with tourist potential.

A general picture emerges, therefore, of the distinct need for planned development of the beach areas, to conserve

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what remnants of the natural environment do remain, and to regulate development to preserve the situation for the coming generations, and to ensure the implementation of reasonable infrastructure programmes.

During the cyclonic season, bad weather may be experienced; and, quite customarily, the climatology of the Mackay region is beset with cyclonic "lows" which are associated with rises in sea levels owing to atmospheric pressure changes, tidal surge and wave action of a primary and secondary variety. The coastline of the Shire is afforded protection by the numerous islands offshore, but is vulnerable nevertheless to great destructive forces from the large waves capable of creating huge devastation to the natural and built environments.

The Beach Protection Authority has provided the Pioneer Shire Council with revised dimensions for a buffer zone in which only Open Space use may be tolerated. There has been increasing cognisance taken in most cases of this plan of buffer areas, where there has been a pattern of long-existing subdivision. Nevertheless, there are some clearly discernible problems with the existing subdivision where expensive redevelopment using largely private sector funds seems to be the most predictable solution.

Were it possible to impose upon all coastlines in the Shire a buffer of the widths envisioned in the BPA Plan, it is true to say none of the present problems experienced by Council at its eroded beaches would have arisen. However, this is to ignore the fact of subdivision and development much of which goes back to the earliest period of the history of local government in the area. Also it is clear that were it so inclined, the Council could not afford from its resources to buy back the eroded areas.

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At the present time there is no published overall basic engineering study of the basic problem of littoral transportation in Pioneer Shire which can be used as a framework of reference. Such a study would require a great outlay of funds and time, as very little data have ever been collected. In this, Pioneer Shire is not unique, and the comments that have been made would apply with equal relevance to a number of Shires in Queensland. The Harbours and Marine Department through the Beach Protection Authority is undertaking a series of surveys of the entire coastline of Queensland and it is correct and proper that that Authority undertake such a study, for it is important not to judge any of the State's beaches in isolation from one another and it seems equally important not to judge the Pioneer Shire coastline in isolation from the rest of the coastline, characterised by the absence of major watercourses and affected as it must be by the fluvial morphology of the Whitsunday Channel.

Accordingly, the Shire Council is not in a position unless it undertakes its own major littoral study to advance a better suggestion than that contained in a plan of buffer areas which has been supplied already by the Beach Protection Authority for Council's guidance and which has been incorporated and adapted as part of this document.

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It is concluded, too, that in the interim until such time as the Beach Protection Authority completes a Littoral Transportation Survey for the Shire - and it is not known if and when such a survey will be completed - Council will adopt the buffer plans as suggested by the Beach Protection Authority in their entirety and, at the same time, adopt a policy of referring each and every development proposal affecting coastline lands in the Shire to the Beach Protection Authority in the first instance.

Another important aspect in coastal management is the protection of the environment taking into account the built environment and activities of man as they currently exist. The coastal dunes, in places such as Lambert's Beach and Bucasia, should be protected against the depredations of trail-bike riders. Wherever fencing has been erected to prevent active ingress and egress of humans and animals, vehicles and the like, the frontal dune is kept largely intact. The legal complications of gainsaying the safety of the frontal dune are formidable and, were there a perfect set of By-laws or Statutes to ordain the activities of mankind so that no damage to the dunes were to result in the proper operation of the Shire's coastline policy, such a policy would be impractical in many cases and prohibitive in cost in others.

The Strategic Plan endeavours additionally therefore, to deal with the questions of development proposals and

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man's activity in both the developed and undeveloped beach situations in those areas existing at the junction of land and water.

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### 3.0 REVIEW OF THE STATE OF SHIRE PLANNING

Council has to prepare annual loan programme submissions and also five year loan operating programmes to enable discussion between the Council and the Co-Ordinator General on funding of public works. It is inevitable that such works programmes must be framed within the text of the overall works planning for the Shire and the town planning for the Shire which in turn must be based on meeting, as correctly and properly as may be, the social demands of the populace.

The works programmes for the coming financial year and for the next five years are the subject of separate reports. It is clear in considering works programmes that population growth and demographic trends require close review to formulate and categorise the engineering and social needs of the Pioneer Shire population. The following comprehensive review of the demographic characteristics of Pioneer Shire and Mackay City for the period 1966-1976 makes detailed evaluations on natural increase in population, migration trends from Mackay City and other places, changes in fertility rates and mortality rates and eventually prepares a prediction of populations for the year 2001. It should be noted that the report comes to the conclusion that by the year 2001, an urban population can be expected in excess of 44,000.

The balance of the report then summarises the two Munro reports which were prepared in 1975 when Dr Munro was attached to James Cook University and towards the end of 1979 when he was attached to Northern Rivers College of Advanced Education. The studies are of vital interest to Council in that they endeavour to measure social needs and the level of participation of the urban environment in thirteen centres.

1. Andergrove
2. Bakers Creek
3. Beaconsfield

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4. Blacks Beach
5. Bucasia
6. Eimeo
7. Glenella-Farleigh
8. North Mackay
9. Racecourse
10. Shoal Point
11. Slade Point
12. Walkerston
13. Mackay City

The sociology portion of the Study reveals the following household structure :

Household Structure	J.C.U. Survey	N.R.C.A.E. Survey
	%	%
1. Single person	4.7	7.78
2. Couple without children or none living at home	16.8	22.35
3. Family or parent with one or more infant children	22.7	17.17
4. Family or parent with one or more primary school children	11.4	16.57
5. Family or parent with one or more teenage children	9.5	9.98
6. Family or parent with mixed aged children	29.4	15.37
7. Two or more unrelated persons	3.0	3.19
8. Two or more related persons	-	4.39
9. Other	2.6	0.20
10. Non-response	-	2.99
<u>TOTAL :</u>	100.0	100.00

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Essentially, the central sociological unit of the Shire is the single family group and that 59% of the population has education of at least junior or senior secondary level or that a further 15% has had tertiary or university education; 20.5% of workers are professional, administrative or clerical workers; 30.5% are tradesmen; 23.55% are full time housewives and the next most numerous groups are pensioners or retired persons, which make up 11.58%.

Dr Munro has indicated that Pioneer Shire has seen spectacular growth and it should not be surprising to note that the majority of residents (58.08%) have only resided in the current location for a period of 5 years or less. The longer established neighbourhoods, such as North Mackay, Walkerston and Andergrove, have a history of residents with a longer period of residence, but even in these centres there is an exceptionally high level of recent arrivals. The Pioneer Shire Council patterns of migration accord well with the rest of North Queensland and Southern Queensland. The major reasons for the migration into particular neighbourhoods being employment opportunities, retirement and recreation.

Significantly, 51.50% of residents in the N.R.C.A.E. survey indicated they had no further indication of moving from their current residence; 24.35% indicated that they would move, and 22.55% were undecided. These figures should be compared with the J.C.U. survey where 75.9% stated that had no intention of moving and 18.4% indicated they would be moving. Thus the community instability first perceived in the 1975 survey is illustrated to be a growing trend. Instability levels can also be summarised by the accommodation characteristics, with reference to house ownership.

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ACCOMMODATION CHARACTERISTICS	J.C.U. SURVEY	N.R.C.A.E SURVEY
	%	%
1. Owner occupied	83.2	78.45
2. Rented	14.7	21.76
3. Rented for holiday purposes only	0.4	0.20
4. Other	1.7	-
Non-response	-	3.59
Total :	100.0	100.00

### Works Programming

As has been stated, the subject of a works programme for the coming year and five years are subjects of separate reports. But it should be noted that the **priority** ratings in future works programmes should take full cognisance with the ten issues which supplied the highest levels of dissatisfaction in the N.R.C.A.E. survey, which were :

1. The condition of roads and paths (66.47% compared with 60.5% in the J.C.U. survey).
2. Entertainment facilities for young people (56.49% compared with 72.4% in the J.C.U. survey).
3. Job opportunities for women and girls (53.29% compared with 38.9% in the J.C.U. survey).
4. Shopping facilities for clothing (52.10% compared with 60.1% in the J.C.U. survey).
5. Public transport facilities (51.10% compared with 71.6% in the J.C.U. survey).

6. Cultural amenities (48.70% compared with 52.2% in the J.C.U. survey).
7. Parks and playgrounds (47.50% compared with 56.9% in the J.C.U. survey).

Of these ten issues, only four had measured levels of dissatisfaction increased from the J.C.U. survey. However, there were three other issues which caused dissatisfaction levels to increase and these were :

1. The water supply system (from 12.9% up to 23.75%).
2. Quietness of the area (from 16.6% up to 24.35%).
3. Cleanliness of the area (from 16.8% up to 18.96%).

The water supply system dissatisfaction is well recognised by Council and proper action is now in hand through the Consultative Committee of Mackay City and Pioneer Shire to overcome the problems encountered in the past. In regard to recreation facilities in the Shire, the following responses have been noted:

PRIORITY RATING FOR FUTURE RECREATIONAL FACILITIES	PRIORITY ORDER	TOTAL NO. 1'S
1. Community hall (for bingo, card evenings and other functions)	4	57
2. Playing fields (league, soccer, etc.)	2	64
3. Theatre for cultural activities	6	43
4. Tennis courts	3	15
5. Art centre (for potters, hobby clubs, painters, etc.)	7	26
6. Squash courts	8	8
7. Parkland (free recreation areas)	1	129
8. Swimming pool	5	43
9. No new facilities should be built	9	22
10. Other facilities	10	14

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These comments deserve specialised attention, but as a consequence of the Munro reports, it must be concluded that the works programme must be underpinned on the premise that considerable progress remains to be achieved in road and streets throughout the whole of the urban area. While substantial progress has been made, there are some areas of the utmost priority, such as the Eimeo-Blacks Beach neighbourhood and to a diminished degree, the Shoal Point-Bucasia neighbourhood where major improvements to the Bucasia Road are now underway.

The recreational planning of the shire would indicate that if it can be expected that no Council can attend to all of the divisions of recreational facilities in the next five years and it ought to so select the first five of these for attention. The priority that the public desires is as follows:

	Priority
1. Parkland (free recreation areas)	1
2. Playing fields (league, soccer, etc)	2
3. Tennis Courts	3
4. Community Hall (for bingo, card evenings and other functions)	4
5. Swimming Pool	5

Significantly, no mandate for a performing arts centre or theatre for cultural activities was received, although the fact that these occupy priorities 6 and 7 would indicate that the matters should not be shelved. It is important to note that Council has appointed community music and arts officers and doubtless in the course of the work to be undertaken by these people, Council will receive clearer advice than it is possible to give now. However, with regard to social and recreational amenities, the situation is very clear.

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4.0

# REVIEW OF DEMOGRAPHIC CHARACTERISTICS OF PIONEER SHIRE AND MACKAY CITY 1966-1976

At the time of the 1966 Census, Pioneer Shire had a total population of 19,900 which increased to 22,561 by 1971 at an average growth rate of 2.3% per annum. By the 1976 Census, the population had increased to 26,938 at an average growth rate of 3.8%.

The population of Mackay City at the time of the 1966 Census was 18,640. This population had increased to 19,148 at the 1971 census. During this period there was net decrease through the emigration of 587 persons, at an average annual rate of -0.6% per annum. Natural increase, that is the excess of births over deaths, was 1,042 which gives an average growth rate of 1.1% per annum. Hence the total average growth for the five year period was only 0.5% per annum.

From the available data it cannot be ascertained where the recorded "emigrants" were relocated but in all probability a large proportion moved to the neighbouring Pioneer Shire. Table 1 shows the intercensal growth rates for Pioneer Shire and Mackay City.

TABLE 1

## PIONEER SHIRE AND MACKAY CITY - GROWTH RATES 1966-1976

CENSUS	PIONEER SHIRE				MACKAY CITY			
	PERSONS	INTERCENSAL NATURAL INCREASE	INTERCENSAL NET MIG'N	GROWTH RATE % P.A.	PERSONS	INTERCENSAL NATURAL INCREASE	INTERCENSAL NET MIG'N	GROWTH RATE % P.A.
1966 to 1971	19,900	1970	455	2.3	18,640	1042	-587	0.5
1971 to 1976	22,561	2059	2761	3.8	19,148	1026	399	1.4
	26,938				20,224			

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*H. N. Jacobs*  
DIRECTOR OF LOCAL GOVERNMENT

#### 4.1 AGE-SEX STRUCTURE OF PIONEER SHIRE AND MACKAY CITY

Tables 2 and 3 set out the age-sex structure of the population at the 1966, 1971 and 1976 census. This information has also been plotted onto bar charts, Figures 1 and 2. Examination of these bar charts reveals some pronounced differences in the population of Pioneer Shire and Mackay City.

The variation in the pattern of age group increase or decrease from one census to the next is clearly revealed on the population pyramids for Mackay City and Pioneer Shire, Figures 3 and 4. Examination of Figure 4 and Table 2 reveals large increases in the population at each successive census. The most notable increase is from 1971 to 1976 in the female population aged 15-19 and 30-34 and males aged 25-29. Figures 2 and 4 clearly exhibit the youthful population of Pioneer Shire. The greater proportion of males to females in all age groups up to 15 years and in 25 to 34 years illustrates the familial structure of the population in Pioneer Shire.

Age-sex structure of the population at the Collector's District level for the following areas are shown on Tables 4, 5, 6 and 7.

- . Bakers Creek
- . Blacks Beach
- . Bucasia
- . Eimeo
- . Farleigh
- . Glenella
- . Outer North Mackay which takes in Andergrove and Beaconsfield
- . Port of Mackay
- . Racecourse
- . Shoal Point

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TABLE 2  
PIONEER SHIRE: AGE-SEX STRUCTURE OF THE POPULATION  
1966-1976 CENSUSES

Age-Group	1966					1971					1976				
	M	%*	F	%*	P	M	%*	F	%*	P	M	%*	F	%*	P
0-4	1,426	7.2	1,339	6.7	2,763	1,526	6.8	1,441	6.4	2,967	1,598	5.9	1,496	5.6	3,093
5-9	1,290	6.5	1,159	5.8	2,449	1,453	6.4	1,341	5.9	2,794	1,603	5.9	1,525	5.7	3,127
10-14	1,049	5.2	921	4.6	1,965	1,235	5.5	1,154	5.1	2,389	1,445	5.4	1,381	5.1	2,825
15-19	870	4.4	732	3.7	1,602	976	4.3	774	3.4	1,750	1,152	4.3	1,110	4.1	2,262
20-24	889	4.5	852	4.3	1,741	909	4.0	972	4.3	1,881	1,104	4.1	1,144	4.3	2,248
25-29	856	4.3	705	3.5	1,561	947	4.2	946	4.2	1,893	1,301	4.8	1,185	4.2	2,487
30-34	742	3.7	619	3.1	1,361	808	3.6	709	3.1	1,517	1,059	3.9	1,036	3.8	2,096
35-39	671	3.4	551	2.8	1,222	714	3.2	618	2.7	1,332	917	3.4	763	2.8	1,680
40-44	577	2.9	463	2.3	1,040	640	2.8	548	2.4	1,188	736	2.7	677	2.5	1,413
45-49	491	2.5	463	2.3	954	583	2.6	521	2.3	1,104	676	2.5	566	2.1	1,242
50-54	449	2.3	363	1.8	812	505	2.2	446	2.0	951	589	2.2	539	2.0	1,128
55-59	433	2.2	342	1.7	775	423	1.9	400	1.8	823	469	1.8	462	1.8	931
60-64	322	1.6	237	1.2	559	367	1.6	326	1.4	693	447	1.7	422	1.7	869
65+	593	3.0	503	2.5	1,096	693	3.1	586	2.6	1,279	820	3.0	717	2.7	1,538
<b>TOTAL :</b>	<b>10,653</b>	<b>53.5</b>	<b>9,247</b>	<b>46.5</b>	<b>19,900</b>	<b>11,779</b>	<b>52.2</b>	<b>10,782</b>	<b>47.8</b>	<b>22,561</b>	<b>13,914</b>	<b>51.6</b>	<b>13,024</b>	<b>48.4</b>	<b>26,938</b>

\* Percentage of total population

THIS IS PAGE 21 OF THE STATISTICAL PLAN MADE BY  
Pioneer  
SHIRE COUNCIL AND APPROVED  
BY THE GOVERNOR IN COUNCIL ON 24.11.83  
H. N. Jacobs  
DIRECTOR OF LOCAL GOVERNMENT

TABLE 3

MACKAY CITY: AGE-SEX STRUCTURE OF THE POPULATION  
1966-1976 CENSUSES

Age Group	1966					1971					1976				
	M	%*	F	%*	P	M	%*	F	%*	P	M	%*	F	%*	P
0-4	924	5.0	883	4.7	1,807	881	4.6	858	4.5	1,739	753	3.7	778	3.8	1,530
5-9	925	5.0	934	5.0	1,859	927	4.8	927	4.8	1,854	894	4.4	817	4.0	1,711
10-14	882	4.7	895	4.8	1,777	947	5.0	895	4.7	1,842	935	4.6	932	4.6	1,867
15-19	849	4.6	893	4.8	1,742	774	4.0	962	5.0	1,736	1,036	5.2	1,073	5.4	2,110
20-24	660	3.5	687	3.7	1,347	781	4.1	729	3.8	1,510	931	4.6	890	4.4	1,821
25-29	577	3.1	535	2.9	1,112	598	3.1	605	3.2	1,203	786	3.9	672	3.3	1,458
30-34	519	2.8	518	2.8	1,037	600	3.1	551	2.9	1,151	611	3.0	564	2.8	1,175
35-39	576	3.1	523	2.8	1,099	520	2.7	507	2.7	1,027	550	2.7	582	2.9	1,133
40-44	601	3.2	574	3.1	1,175	591	3.1	546	2.9	1,137	523	2.6	566	2.8	1,089
45-49	546	2.9	571	3.1	1,117	546	2.9	537	2.8	1,083	557	2.8	502	2.5	1,060
50-54	509	2.7	541	2.9	1,050	475	2.5	532	2.8	1,007	562	2.8	554	2.7	1,116
55-59	438	2.3	442	2.4	880	471	2.5	526	2.8	997	487	2.4	514	2.5	1,001
60-64	407	2.2	352	1.9	759	385	2.0	433	2.3	818	394	1.9	502	2.5	896
65+	829	4.4	1,059	5.7	1,879	923	4.8	1,121	5.9	2,044	992	4.9	1,264	6.3	2,257
<b>TOTAL :</b>	<b>9,233</b>	<b>49.5</b>	<b>9,407</b>	<b>50.5</b>	<b>18,640</b>	<b>9,419</b>	<b>49.2</b>	<b>9,729</b>	<b>50.8</b>	<b>19,148</b>	<b>10,012</b>	<b>49.5</b>	<b>10,212</b>	<b>50.5</b>	<b>20,224</b>

\* Percentage of total persons in the population

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H. N. J. J. J.  
DIRECTOR OF LOCAL GOVERNMENT



TABLE 4

## PIONEER SHIRE (URBAN)

## AGE-SEX STRUCTURE OF THE POPULATION

THIS IS PAGE 23 OF THE STRATEGIC PLAN MADE BY PIONEER AT COLLECTOR'S DISTRICT LEVEL  
SHIRE COUNCIL, AND APPROVED  
BY THE GOVERNOR IN COUNCIL ON 22.11.83

1976 CENSUS

H. N. Jacobs  
DIRECTOR OF LOCAL GOVERNMENT

AGE GROUP	BAKERS CREEK				BLACKS BEACH				BUCASIA				EINEO			
	M	F	TOTAL	%*	M	F	TOTAL	%*	M	F	TOTAL	%*	M	F	TOTAL	%*
0-4	49	29	78	12.6	32	34	66	12.8	97	83	180	14.6	18	16	34	14.3
5-9	31	35	66	10.6	37	29	66	12.8	80	84	164	13.3	6	2	8	3.4
10-14	33	25	58	9.4	20	25	45	8.7	37	55	92	7.5	4	6	10	4.2
15-19	38	27	65	10.5	12	2	14	2.7	31	33	64	5.2	4	12	16	6.8
20-24	32	28	60	9.7	11	26	37	7.2	45	56	101	8.2	14	10	24	10.1
25-29	34	32	66	10.6	35	33	68	13.2	87	78	165	13.4	22	14	36	15.2
30-34	26	13	39	6.3	28	22	50	9.7	81	53	134	10.9	9	2	11	4.6
35-39	21	21	42	6.8	17	15	32	6.2	35	25	60	4.9	7	8	15	6.3
40-44	6	8	14	2.3	16	6	22	4.3	27	22	49	4.0	8	6	14	5.9
45-49	19	10	29	4.7	8	17	25	4.8	22	13	35	2.8	6	4	10	4.2
50-54	7	8	15	2.4	14	8	22	4.3	22	30	52	4.2	2	4	6	2.5
55-59	12	14	26	4.2	15	9	24	4.7	27	21	48	3.9	2	6	8	3.4
60-64	16	15	31	5.0	10	12	22	4.3	22	23	45	3.6	7	10	17	7.2
65-69	8	9	17	2.7	5	4	9	1.7	10	11	21	1.7	8	6	14	5.9
70-74	8	0	8	1.3	6	2	8	1.6	8	9	17	1.4	4	2	6	2.5
75+	2	4	6	1.0	4	2	6	1.2	4	2	6	0.5	4	4	8	3.4
TOTAL POPULATION	342	278	620	100.0	270	246	516	100.0	635	508	1143	100.0	125	112	237	100.0

TABLE 5

## PIONEER SHIRE (URBAN)

AGE-SEX STRUCTURE OF THE POPULATION  
AT COLLECTOR'S DISTRICT LEVEL

1976 CENSUS

THIS IS PAGE 24 OF THE STRATEGIC PLAN MADE BY  
Shire COUNCIL AND APPROVED  
GOVERNOR IN COUNCIL ON 26.11.83

H. J. Jacobs  
DIRECTOR OF LOCAL GOVERNMENT

AGE GROUP	FARLEIGH				GLENELLA				OUTER NORTH MACKAY				PORT OF MACKAY			
	M	F	TOTAL	%*	M	F	TOTAL	%*	M	F	TOTAL	%*	M	F	TOTAL	%*
0-4	16	10	26	9.2	29	40	69	12.1	123	113	236	14.8	34	31	65	13.6
5-9	17	21	38	13.4	40	38	78	13.7	106	111	217	13.6	31	27	58	12.1
10-14	23	19	42	14.8	22	22	44	7.7	108	72	180	11.3	12	12	24	5.0
15-19	21	14	35	12.3	19	18	37	6.5	32	56	88	5.5	18	16	34	7.1
20-24	3	6	9	3.2	6	23	29	5.1	67	88	155	9.7	35	44	79	16.5
25-29	11	9	20	7.0	38	41	79	13.9	109	92	201	12.6	41	29	70	14.6
30-34	8	7	15	5.3	21	27	48	8.4	79	84	163	10.2	21	13	34	7.1
35-39	12	11	23	8.1	31	20	51	8.9	37	37	74	4.6	18	11	29	6.0
40-44	11	6	17	6.0	17	19	36	6.3	47	35	82	5.1	7	9	16	3.3
45-49	3	2	5	1.8	11	5	16	2.8	33	22	55	3.4	14	11	25	5.2
50-54	5	7	12	4.2	8	7	15	2.6	12	20	32	2.0	15	8	23	4.8
55-59	8	9	17	6.0	10	9	19	3.3	14	16	30	1.9	8	7	15	3.1
60-64	5	2	7	2.5	10	15	25	4.4	14	8	22	1.4	3	2	5	1.0
65-69	4	2	6	2.1	11	4	15	2.6	16	12	28	1.8	2	0	2	0.4
70-74	2	4	6	2.1	3	2	5	0.9	12	6	18	1.1	0	0	0	0.0
75+	4	2	6	2.1	0	4	4	0.7	8	10	18	1.1	0	0	0	0.0
TOTAL POPULATION	153	131	284	100.0	276	294	570	100.0	817	782	1599	100.0	259	220	479	100.0



TABLE 6

## PIONEER SHIRE (URBAN)

AGE-SEX STRUCTURE OF THE POPULATION  
AT COLLECTORS DISTRICT LEVEL

1976 CENSUS

IS PAGE 25 OF THE STRATEGIC PLAN MADE BY  
Shire COUNCIL, AND APPROVED  
GOVERNOR IN COUNCIL ON 24.11.83  
H. J. Jacobs  
DIRECTOR OF LOCAL GOVERNMENT

AGE GROUP	RACECOURSE			SHOAL POINT			SLADE POINT			WALKERSTON		
	M	F	TOTAL	%*	M	F	TOTAL	%*	M	F	TOTAL	%*
0-4	45	36	81	13.0	11	8	19	11.7	199	146	345	14.1
5-9	38	25	63	10.1	7	4	11	6.8	180	174	354	14.5
10-14	19	25	44	7.1	4	12	16	9.9	116	135	251	10.3
15-19	23	20	43	6.9	15	10	25	15.4	84	77	161	6.6
20-24	23	49	72	11.6	11	10	21	13.0	63	115	178	7.3
25-29	44	24	68	10.9	7	6	13	8.0	149	145	294	12.0
30-34	23	25	48	7.7	2	2	4	2.5	120	125	245	10.0
35-39	27	14	41	6.6	4	4	8	4.9	92	88	180	7.4
40-44	17	18	35	5.6	4	4	8	4.9	64	35	99	4.0
45-49	13	18	31	5.0	2	0	2	1.2	26	23	49	2.0
50-54	15	10	25	4.0	7	4	11	6.8	45	46	91	3.7
55-59	13	8	21	3.4	2	6	8	4.9	27	27	54	2.2
60-64	8	12	20	3.2	4	4	8	4.9	18	33	51	2.1
65-69	8	8	16	2.6	0	0	0	0.0	22	20	42	1.7
70-74	6	4	10	1.6	2	4	6	3.7	10	18	28	1.1
75+	2	2	4	0.6	2	0	2	1.2	14	10	24	1.0
Total Population	324	298	622	100.0	84	78	162	100.0	1229	1217	2446	100.0
									589	546	1135	100.0

TABLE 7

## PIONEER SHIRE &amp; MACKAY CITY

THIS IS PAGE 26 OF THE STRATEGIC PLAN MADE BY Pioneer AGE-SEX STRUCTURE OF THE POPULATION  
 COUNCIL, AND APPROVED AT COLLECTOR'S DISTRICT LEVEL  
 BY THE GOVERNOR IN COUNCIL ON 24.11.83

H. N. Jacobs

DIRECTOR OF LOCAL GOVERNMENT

AGE GROUP	NORTH MACKAY				PIONEER SHIRE (URBAN)				PIONEER SHIRE (URBAN)				MACKAY CITY			
	M	F	TOTAL	%*	M	F	TOTAL	%*	M	F	TOTAL	%*	M	F	TOTAL	%*
0-4	452	480	932	9.9	1171	1075	2246	11.7	753	778	1531	7.6	427	421	848	11.1
5-9	544	509	1053	11.2	1191	1119	2310	12.0	894	817	1711*	8.5	412	406	818	10.7
10-14	520	486	1006	10.7	977	953	1930	10.0	935	932	1867	9.2	468	428	896	11.7
15-19	449	455	904	9.6	792	789	1581	8.2	1036	1073	2109	10.4	360	321	681	8.9
20-24	410	346	756	8.1	766	842	1608	8.3	931	890	1821	9.0	338	302	640	8.3
25-29	346	344	690	7.4	991	908	1899	9.9	786	672	1458	7.2	310	277	587	7.6
30-34	339	397	736	7.8	787	808	1595	8.3	611	564	1175	5.8	272	228	500	6.5
35-39	350	262	612	6.5	676	539	1215	6.3	550	582	1132	5.6	241	224	465	6.1
40-44	266	274	540	5.8	515	477	992	5.1	523	566	1089	5.4	221	208	429	5.6
45-49	262	234	496	5.3	447	377	824	4.3	557	502	1059	5.2	229	189	418	5.4
50-54	218	214	432	4.6	401	393	794	4.1	562	554	1116	5.5	188	146	334	4.4
55-59	164	160	324	3.5	324	315	639	3.3	487	514	1001	5.0	145	147	292	3.8
60-64	149	160	309	3.3	285	307	592	3.1	394	502	896	4.4	162	115	277	3.6
65-69	115	125	240	2.6	225	216	441	2.3	336	416	752	3.7	125	85	210	2.7
70-74	69	69	138	1.5	158	143	301	1.6	310	311	621	3.1	99	58	157	2.0
75+	97	109	206	2.2	147	163	310	1.6	346	537	883	4.4	66	52	118	1.5
TOTAL	4750	4624	9374	100.0	9952	9174	19126	100.0	10011	10010	20021	100.0	10022	9607	19629	100.0



- . Slade Point
- . Walkerston
- . North Mackay

The above collector's districts make up the area referred to as Pioneer Shire (Urban). The population pyramids for the Collector's Districts are shown on Figures 6 and 7. These pyramids clearly reveal the areas where the youthful population of the shire is centred. On Figure 8, the proportion of the population in the collector's districts is shown. This circular graph shows that 34.8% of the population is resident in North Mackay. (Refer to Figure 1 for location of Statistical Districts.)

## 4.2

MIGRATION IN PIONEER SHIRE AND MACKAY CITY

Some indication of the movements of the population can be gained from the 1971 and 1976 census. Responses to the question "place of residence in 1966 and 1971" are shown on Tables 8 and 9.

TABLE 8

PIONEER SHIRE AND MACKAY CITY  
RESIDENCE IN 1966 OF USUAL RESIDENTS - 1971

Residence in 1966	Pioneer	Shire	Mackay City	
	Persons	% *	Persons	% *
Same dwelling	10,084	44.7	8,667	45.3
Same division - Urban	3,074	13.6	2,910	15.2
Same division - Rural	1,622	7.2	762	4.0
Same State	1,848	8.2	2,170	11.3
Another State	892	4.0	749	3.9
Other and not stated	800	3.5	589	3.1
Not applicable (under 5 yrs)	4,241	18.8	3,301	17.2
Total population at home	22,561	100.0	19,148	100.0

\* Percentage of total population at home

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Shire COUNCIL AND APPROVED  
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DIRECTOR OF LOCAL GOVERNMENT

TABLE 9  
PIONEER SHIRE AND MACKAY CITY  
RESIDENCE IN 1971 OF USUAL RESIDENTS - 1976

RESIDENCE IN 1971	PIONEER SHIRE (RURAL)		PIONEER SHIRE (URBAN)		MACKAY CITY	
	PERSONS	% *	PERSONS	% *	PERSONS	% *
Same dwelling	4225	59.8	7480	41.7	9079	48.9
Other dwelling - Same L.G.A.	542	7.7	2176	12.1	2324	12.5
Other L.G.A. - Same State	1110	15.7	4369	24.4	4039	21.8
Other State	313	4.4	1305	7.3	1240	6.7
Overseas	75	1.1	465	2.6	426	2.3
Not Stated	2	0.0	1	0.0	8	0.0
Not Applicable (Under 5 years)	798	11.3	2141	11.9	1449	7.8
Total Population at home, 1976	7065	100.0	17936	100.0	18565	100.0

\* Percentage of total population at home

The figures in Table 9 indicate that in Mackay City 48.9% of the residents aged 5 years and older were domiciled in the same dwelling. In Pioneer Shire (urban), the proportion living in the same dwelling (41.7) was slightly less although the proportions living in other local government authorities and other states was higher than Mackay City. This would indicate that the urban region of Pioneer Shire is attracting more of the population moving to the district.

This trend was also evident in the 1971 Census (refer Table 8).

The general trend of migration within the urban region of the Pioneer Shire can be seen by referring to Table 10. Areas like Blacks Beach, Bucasia, Glenella, Andergrove and Beaconsfield are attracting more residents than some of the older, and more established areas.

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TABLE 10

## PIONEER SHIRE (URBAN)

RESIDENCE IN 1971 OF USUAL RESIDENTS - 1976  
AT COLLECTORS DISTRICT LEVEL

1971 RESIDENCE	BAKERS CREEK		BLACKS BEACH		BUCASIA		EIMEO		FARLEIGH		GLENELLA		OUTER NORTH MACKAY		PORT OF MACKAY		RACECOURSE		SHOAL POINT		SLADE POINT		NORTH MACKAY	
	NO.	PROP%	NO.	PROP%	NO.	PROP%	NO.	PROP%	NO.	PROP%	NO.	PROP%	NO.	PROP%	NO.	PROP%	NO.	PROP%	NO.	PROP%	NO.	PROP%	NO.	PROP%
Same Dwelling	300	51.1	91	22.9	236	21.6	59	29.5	122	47.5	93	18.0	447	29.4	54	15.0	154	26.2	48	33.6	793	34.5	5083	50.9
Other Dwelling, Same L.G.A.	53	9.4	56	14.1	167	15.3	24	12.0	8	3.1	87	16.9	246	16.2	36	10.0	79	13.5	19	13.3	300	13.0	1101	11.0
Other L.G.A., Same State	103	17.6	130	32.7	231	21.1	57	28.5	90	35.0	174	33.7	508	33.4	112	31.2	241	41.1	34	23.8	612	26.6	2079	20.8
Other State	54	9.2	45	11.3	226	20.7	28	14.0	13	5.1	58	11.2	72	4.7	78	21.7	23	3.9	8	5.6	171	7.4	529	5.2
Overseas	4	0.6	17	4.3	71	6.5	2	1.0	0	0.0	37	7.2	22	1.4	24	6.7	11	1.9	17	11.9	89	3.9	171	1.7
Not Stated	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Not Applicable (Under 5 years)	72	12.3	59	14.8	162	14.8	30	15.0	24	9.3	67	13.0	223	14.7	55	15.3	79	13.5	17	11.9	337	14.6	1016	10.2
Total Population at home	586	100.0	398	100.0	1093	100.0	200	100.0	257	100.0	516	100.0	1519	100.0	359	100.0	587	100.0	143	100.0	2302	100.0	9979	100.0

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Pioneer Shire COUNCIL, AND APPROVED  
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DIRECTOR OF LOCAL GOVERNMENT

## 4.3

INDUSTRIAL STRUCTURE OF LABOUR FORCE

Tables 11 and 12 show the age, sex structure of the workforce for Pioneer Shire and Mackay from the 1971 and 1976 Censuses.

Tables 13 and 14 present the industrial for the Pioneer Shire and Mackay City for the 1966, 1971 and 1976 Censuses.

In the Pioneer Shire agriculture has been the dominant employer, however the percentage of the labour force engaged in agriculture has declined over the ten year period. The wholesale and retail trade was the second to agriculture as an employer. Entertainment, community services and transport were the most important of the minor categories.

The participation rate in these industries has risen slightly since 1966 with the exception of entertainment which is down on 1966. In each case the number of persons employed has risen.

The most important sector of the economy in Mackay City in terms of persons employed was wholesale and retail, with 25.7% of the labour force. Manufacturing, construction and community services each employed greater than 10% of the labour force over the ten year period.

It is evident from Tables 13 and 14 that the overall industrial employment pattern of Mackay City differs significantly from Pioneer Shire. Mackay City would appear to contain the major finance and business sections of the employed population. The number of persons employed in the business and finance category has doubled between 1966 and 1976. The participation rate

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TABLE 11  
AGE, SEX RELATIONSHIPS FOR LABOUR FORCE  
1971 CENSUS

Age Group	Mackay City				Pioneer Shire Urban				Pioneer Shire Rural				Pioneer Shire Urban and Rural			
	Male	Female	Persons	Prop %	Male	Female	Persons	Prop %	Male	Female	Persons	Prop %	Male	Female	Persons	Prop %
15-19	541	679	1220	15.8									760	443	1203	14.2
20-24	734	421	1155	15.0									871	383	1254	14.8
25-29	573	220	793	10.3									927	238	1165	13.8
30-34	574	199	773	10.0									782	183	965	11.4
35-39	492	202	694	9.0									690	193	883	10.4
40-44	567	205	772	10.0									618	155	773	9.1
45-49	522	164	686	8.9									555	138	693	8.2
50-54	428	150	578	7.5									462	101	563	6.7
55-59	409	116	525	6.8									372	72	444	5.2
60-64	267	51	318	4.1									268	33	301	3.6
65-69	169	35	204	2.6									176	29	205	2.4
70+	-	-	-	-									-	-	-	-
TOTAL	5276	2442	7718										6481	1968	8449	100.0

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TABLE 12

## AGE, SEX RELATIONSHIPS FOR LABOUR FORCE

1976 CENSUS

Age Group	Mackay City			Pioneer Shire Urban			Pioneer Shire Rural			Pioneer Shire Urban and Rural			
	Male	Female	Persons	Prop %	Male	Female	Persons	Prop %	Male	Female	Persons	Prop %	Male
15-19	783	727	1470	16.0	588	459	1047	12.6	291	172	463	13.4	879
20-24	877	606	1483	16.2	736	456	1192	14.5	326	158	485	14.1	1062
25-29	659	337	1096	12.0	970	371	1341	16.3	302	128	430	12.5	1272
30-34	598	275	872	9.5	765	382	1147	14.0	268	104	372	10.8	1033
35-39	537	297	834	9.1	670	277	947	11.5	240	134	374	10.8	910
40-44	490	307	797	8.7	500	240	741	9.0	218	126	344	10.0	718
45-49	524	252	776	8.5	426	167	594	7.2	209	109	318	9.2	635
50-54	510	201	711	7.8	359	103	462	5.6	180	53	233	6.8	539
55-59	431	139	570	6.2	283	99	382	4.7	110	53	163	4.7	393
60-64	295	75	370	4.0	205	36	241	2.9	125	36	161	4.7	330
65-69	77	36	113	1.2	61	13	74	0.9	46	13	59	1.7	107
70+	53	17	71	0.8	28	13	41	0.5	32	13	45	1.3	60
<b>TOTAL:</b>	<b>5895</b>	<b>3267</b>	<b>9163</b>	<b>100.0</b>	<b>5592</b>	<b>2615</b>	<b>8207</b>	<b>100.0</b>	<b>2346</b>	<b>1100</b>	<b>3446</b>	<b>100.0</b>	<b>7938</b>
													<b>3715</b>
													<b>11653</b>
													<b>100.0</b>

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TABLE 13

PIONEER SHIRE: INDUSTRIAL STRUCTURE OF LABOUR FORCE, 1966-1976

Industry	1966		1971		1976	
	Persons	% *	Persons	% *	Persons	% * Increase or Decrease $\phi$
Agriculture	2825	36.7	2110	26.0	2467	23.0 +ive
Mining			58	0.1	61	0.5 +ive
Manufacturing	1398	18.2	1297	15.6	1574	14.2 +ive
Electricity, Gas etc.	79	1.0	76	0.9	126	1.1 +ive
Construction	807	10.5	1021	12.3	1208	10.9 +ive
Wholesale and Retail	975	12.7	1539	18.5	1952	17.6 +ive
Transport and Storage	316	4.1	424	5.1	621	5.6 +ive
Communications	81	1.1	95	1.1	110	1.0 +ive
Finance and Business Services	86	1.1	250	3.0	517	4.7 +ive
Public Administration	109	1.4	212	2.6	114	1.0 -ive
Community Services	407	5.3	468	5.6	799	7.2 +ive
Entertainment and Hotels	482	6.3	493	5.9	599	5.4 +ive
Other and Not Stated	129	1.7	265	3.2	923	8.3 +ive
Total in the Labour Force $\Delta$	7694	100.0	8308	100.0	11071	100.0 +ive

\* Participation rate of the total in Labour Force excluding Unemployed

 $\phi$  Increase (+ive) or decrease (-ive) since 1966 and 1971 censuses respectively $\Delta$  Excludes Unemployed

MACKEY CITY: INDUSTRIAL STRUCTURE OF LABOUR FORCE, 1966-1976

\*. Participation rate of the total in Labour Force excluding unemployed  
 Increase (+ive) or decrease (-ive) since 1966 and 1971 censuses respectively  
 A Excludes unemployed



of those employed in entertainment, hotels has remained steady over the period from 1966 to 1976.

## 4.4

OCCUPATIONAL STRUCTURE OF THE LABOUR FORCE

The occupational structure of the labour force of Pioneer Shire and Mackay City is presented on Tables 15 and 16.

The most notable point about the occupational structure of Pioneer Shire is that the tradesmen and labourers were the largest occupational group whereas the agricultural industry was the major employer. Those whose occupations were connected with farming and mining were only the second largest group.

The professional and technical occupation group showed a significant increase overall during the 1966 to 1976 period. The administrative and clerical sectors also showed considerable increases and in fact the only group to record a decrease was the Armed Services.

It is apparent that the overall changing occupational trends in the types of employment available point to an urbanisation of the Shire.

By contrast, about 30% of the labour force in Mackay City worked as tradesmen, trades assistants or labourers during the period 1966 to 1976. It is notable that the proportion of the labour force in this group has steadily declined from 32.6% to 29.6% since clerical workers whose numbers increased during 1971 to 1976.

Although the wholesale and retail trade sector employs more than 25% of the Mackay City's labour force, the number of people actually engaged in sales in 1976 was only 11% of the labour force.

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Professional and technical workers have experienced a steady increase during the 10 year period. The numbers engaged in farming and mining have fallen dramatically during the period 1966 to 1976.

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TABLE 15

PIONEER SHIRE: WORKFORCE BY OCCUPATION, 1966-1976

Industry	1966		1971			1976		
	Persons	% *	Persons	% *	Increase or Decrease $\phi$	Persons	% *	Increase or Decrease $\phi$
Professional & technical	333	4.3	482	5.8	+ive	710	6.41	+ive
Administrative and managerial	316	4.1	414	5.0	+ive	688	6.21	+ive
Clerical	558	7.3	737	8.9	+ive	1117	10.09	+ive
Sales	506	6.6	627	7.5	+ive	860	7.77	+ive
Farming and mining	2788	36.2	2107	25.4	-ive	2485	22.44	+ive
Transport & Communication	463	6.0	589	7.1	+ive	748	6.67	+ive
Tradesmen & Labourers	2140	27.8	2543	30.6	+ive	3005	27.14	+ive
Service, sport and recreation	455	5.9	551	6.6	+ive	621	5.61	+ive
Armed services	15	0.2	14	0.2	-	10	0.09	-ive
Inadequate or Not Stated	120	1.6	244	2.9	+ive	774	7.00	+ive
Total in the Labour Force $\Delta$	7694	100.0	8308	100.0	+ive	11071	100.00	+ive

\* Participation rate of the total in Labour Force excluding unemployed

 $\phi$  Increase (+ive) or decrease (-ive) since 1966 and 1971 censuses respectively $\Delta$  Excludes unemployed

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TABLE 16  
MACKAY CITY WORKFORCE BY OCCUPATION, 1966-1976

Industry	1966		1971			1976		
	Persons	% *	Persons	% *	Increase or Decrease $\phi$	Persons	% *	Increase or Decrease $\phi$
Professional & technical	684	9.0	782	10.3	+ive	973	11.2	+ive
Administrative	575	7.6	577	7.6	-	592	6.8	+ive
Clerical	1148	15.1	1227	16.2	+ive	1430	16.5	+ive
Sales Workers	877	11.5	845	11.1	-ive	954	11.0	+ive
Farmers, miners, etc.	325	5.6	213	2.8	-ive	244	2.8	+ive
Transport & communications	653	8.6	616	8.1	-ive	716	8.3	+ive
Tradesmen, etc.	2484	32.6	2321	30.6	-ive	2570	29.6	+ive
Service workers	641	8.4	631	8.3	-ive	710	8.2	+ive
Armed services	12	0.2	19	0.3	+ive	9	0.1	-ive
Others and Not Stated	110	1.4	354	4.7	+ive	433	5.6	+ive
Total in the Labour Force $\Delta$	7609	100.0	7585	100.0	-ive	8681	100.0	+ive

\* Participation rate of the total in Labour Force excluding unemployed

$\phi$  Increase (+ive) or decrease (-ive) since 1966 and 1971 censuses respectively

$\Delta$  Excludes unemployed



## 4.5 POPULATION PROJECTION - PIONEER SHIRE (URBAN)

### 4.5.1 Introduction

In the previous Sections 4.0 to 4.5 information from the 1966, 1971 and 1976 census was presented. This information provides the background for the projection of the population beyond 1976.

This section provides a range of forecasts of the population and age/sex structure for the Pioneer Shire (Urban) from 1976 to 2001. These forecasts of the population are necessary so that a sound approach to the regional planning may be effectively adopted.

The method used for projecting the population was based on the cohort survival method using assumptions on survival, fertility and migration. The results have been compared with the projections in the Report to Mackay Regional Co-ordination Council "Towards a Strategic Plan for the Mackay Region" 1976.

### 4.5.2 Projection Method

The cohort-survival method has been used to determine the age/sex structure of the population for the Pioneer Shire (urban) to the year 2001.

This method is not a pure migration technique; it combines the effects of mortality and nett migration so as to project changes in age composition.

The technique involves advancing the population within each age group and by sex from base year, 1976 in this study, using appropriate survivorship rates. These figures are then supplemented by births calculated from age-specific fertility rates. The nett migration level assumed is then

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added to the population derived from natural increase alone. The population model developed from the technique is of course limited by the assumptions built into the model.

The calculations used in this study provide 30 year projections from the base year 1976 (census year). Calculated age/sex numbers and totals for 5 year intervals (1976/81, 1981/86, 1986/91, 1991/96, 1996/2001) are given in Table 19.

#### 4.5.3 Projection Assumptions

##### 4.5.3.1 General

The assumptions used in the projection models affect the accuracy of the final estimate. In this model, constant values have been assumed for the various survival rates, fertility rates and migration rates. The greater the length of time over which the forecasts extend, the more likelihood is there for changes to occur in the assumptions.

For this reason it will be necessary to make periodic revisions of these predictions when census data becomes available.

Table 7 gives the details of the age/sex relationships for the 1976 population structure for Pioneer Shire (urban). This relationship is also shown on Figure 9 which details the population pyramids for Pioneer Shire.

##### 4.5.3.2 Natural Increase

The natural increase in the population is simply the number of births less the number of deaths. However a number of assumptions related to the births and survival must be made.

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In general, the birth rate in Queensland has been declining from 29.11 per 1000 average population in 1915 to 16.7 per 1000 average population in 1976. There was a slight upward trend from 19.65 per 1000 in 1966 to 21.23 per 1000 average population in 1971. It is not anticipated that an increase of any great significance will occur in the future.

In order to determine the births for the model the age specific fertility rates for Queensland were used. There was not enough available data for Pioneer Shire (urban) on births to determine age specific fertility rates.

The 1976 age-specific fertility rates were adopted because this year provided the best correlation to the Pioneer Shire available data. Social factors, such as equal pay for women, provision of family planning clinics, school sex education, use of oral contraceptives and continuing trend towards small families all tend to suggest that long term fertility rates will fall to a low level in Queensland.

The estimates of births are separated into male and female births assuming a fixed masculinity of births. For this study the masculinity of births has been assumed constant at 105 males per 100 female births.

Survival of infants is estimated by assuming fixed infant mortality rates. Over the past ten years the infant mortality rate has fluctuated between about 1.8 and 2.1 per 100 live births. This study has assumed for stillbirths a rate of 1 per 100 live births.

Death rates have declined for Queensland from 10.01 per 1000 average population in 1915 to 8.71 per 1000 in 1976. Over the past 10 years the death rate has fluctuated

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between 9.29 per 1000 and 7.88 per 1000 average population. For the purposes of this study the 1976 average specific death rates for Queensland have been adopted. Table 17 illustrates the age-specific death rates adopted for this study.

TABLE 17  
QUEENSLAND - AGE SPECIFIC DEATH RATES 1976

Age Last Birthday	Age Specific Death Rates				
	Deaths 1976		No. of Persons $\times 10^3$	1976	
	Males	Females		Males	Females
0 - 4	354	297	187.3	1.89	1.59
5 - 9	41	41	192.9	0.21	0.21
10 - 14	42	36	191.8	0.22	0.19
15 - 19	176	60	183.7	0.96	0.33
20 - 24	156	56	165.5	0.94	0.34
25 - 29	124	38	164.3	0.75	0.23
30 - 34	94	63	137.7	0.68	0.46
35 - 39	142	84	117.4	1.21	0.72
40 - 44	206	121	103.8	1.98	1.17
45 - 49	341	191	108.5	3.14	1.76
50 - 54	560	276	107.8	5.19	2.56
55 - 59	765	360	95.1	8.04	3.78
60 - 64	1087	543	89.2	12.19	6.09
65 - 69	1309	615	72.4	18.08	8.49
70 - 74	1356	821	51.6	26.38	15.91
75 +	3195	3689	68.2	46.85	54.09

The age specific death rates for the year 1976 have been adopted because they corresponded closest with the available data on deaths for Pioneer Shire.

#### 4.5.3.3 Migration

From the available data migration has comprised a significant proportion of the population increase in the urban areas of the Pioneer Shire. The nett migration and migration rates have fluctuated considerably.

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At present Pioneer Shire is experiencing a significant growth period in which the migration rates are very high. It is expected that migration will continue but at a reduced rate.

The migration rates adopted have been derived using all the available data for Pioneer Shire and correlating this data with long term migration rates for Queensland. Consequently the prediction of migration rates is a subjective exercise.

For projection purposes, no migration, 0.6 percent and 1.0 percent migration rates have been assumed. Each of these rates was held constant over the length of the projection period. As a result, the number of migrants in each projection, except for no migration, increases in proportion to total population increases.

The Australian Bureau of Statistics does not have available concise data related to the migration structure. This has made the prediction of the migration rate very difficult.

The migration was calculated using a residual method. Migrants in each age group for the intercensal period were modified by intercensal births and age specific deaths. The adopted migration rates are detailed in Table 18. Fluctuations will probably occur in the proportionate distributions of the age groups in the migration structure over the projection period. It is difficult to predict these changes, so to estimate variations in the age/sex structure of migration would probably provide no increase in the accuracy of the final population estimate.

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TABLE 18  
PIONEER SHIRE URBAN - ASSUMED MIGRATION RATES/AGE

Age last Birthday	Proportion in Each Age Group	
	Males	Females
0 - 4	0.00132	0.00249
5 - 9	0.06900	0.06310
10 - 14	0.06430	0.05730
15 - 19	0.02920	0.02800
20 - 24	0.02920	0.02330
25 - 29	0.03747	0.03040
30 - 34	0.02570	0.04000
35 - 39	0.03740	0.04583
40 - 44	0.02920	0.03000
45 - 49	0.03539	0.03500
50 - 54	0.02400	0.02547
55 - 59	0.02350	0.02800
60 - 64	0.02970	0.04210
65 - 69	0.03707	0.02800
70 - 74	0.00935	0.00935
75+	0.00584	0.00467

#### 4.5.4 Projection Calculation

An example of a five year projection calculation is given in Appendix A. It is for the 1976 to 1981 period with 1.0 percent migration. A brief explanation of the calculations is also included.

#### 4.5.5 Projected Population

Three projections have been calculated with vital statistics assumptions held constant except for migration. The migration rates assumed are no migration which is actually a national increase, 60 percent migration and 100 percent migration.

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Only the expected projection, that is 60 percent migration, has been detailed in Table 19. Results of the three projections are given on Figure 10.

Results of the study indicate that the expected population should approach 44,533 by the year 2001. Achievement of this population will only occur if the assumptions used for the period are realised. It is quite possible that the actual values, especially those related to migration and fertility could be outside the range assumed.

This method of projection has not taken into consideration other factors which may have a distance bearing on the future population growth of the Shire. These factors include employment opportunities, available land for development, fluctuations in the growth of sugar and coal industry and the effect of tourism in the area.

These factors were considered in a report to the Mackay Regional Co-ordination Council in 1976 titled "Towards a Strategic Plan for the Mackay Region". In this report a forecast of the future population was done on a work-force forecast basis which may be defined as the Export Base Theory.

This study forecast an expected population of 65,523 by the year 1990 for the Mackay Regional Study Area. The prediction for the year 1990 for the Pioneer Shire (urban) was 23,000 persons, and for the rural plus urban was 34,500. The prediction for the Pioneer Shire (urban) has been shown on Figure 10.

From the comparison of the two forecasts it would appear that the migration constitutes a very important factor in the prediction of the future population.

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TABLE 19  
 EXPECTED PROJECTION AGE/SEX STRUCTURE 1976 - 2001  
 PIONEER SHIRE (URBAN)

AGE GROUP	1976	1981	1986	1991	1996	2001
FEMALES						
0 - 4	1,075	1,022	1,131	1,363	1,744	2,022
5 - 9	1,119	1,065	1,013	1,121	1,350	1,728
10 - 14	953	1,357	1,291	1,228	1,359	1,636
15 - 19	789	1,134	1,615	1,536	1,462	1,617
20 - 24	842	856	1,230	1,752	1,666	1,586
25 - 29	908	900	916	1,316	1,874	1,782
30 - 34	808	994	985	1,002	1,440	1,050
35 - 39	539	908	1,118	1,108	1,127	1,619
40 - 44	477	616	1,038	1,277	1,266	1,288
45 - 49	377	516	666	1,124	1,383	1,372
50 - 54	393	412	564	726	1,230	1,511
55 - 59	315	414	432	593	762	1,296
60 - 64	307	330	433	451	621	796
65 - 69	216	329	353	463	480	663
70 - 74	143	214	330	354	464	478
75+	163	193	264	405	514	681
TOTAL	9,424	11,260	13,379	15,819	18,742	22,125
MALES						
0 - 4	1,171	1,071	1,187	1,430	1,832	2,122
5 - 9	1,191	1,151	1,055	1,170	1,409	1,805
10 - 14	977	1,472	1,472	1,303	1,444	1,740
15 - 19	792	1,189	1,791	1,736	1,585	1,757
20 - 24	766	857	1,287	1,940	1,880	1,716
25 - 29	991	828	928	1,393	2,102	2,036
30 - 34	787	1,103	922	1,033	1,551	2,340
35 - 39	676	846	1,185	990	1,109	1,666
40 - 44	515	749	936	1,313	1,095	1,227
45 - 49	447	552	803	1,001	1,406	1,171
50 - 54	401	483	596	869	1,077	1,517
55 - 59	324	409	495	609	889	1,094
60 - 64	285	320	403	491	601	883
65 - 69	225	271	305	384	472	575
70 - 74	158	205	240	272	340	428
75+	147	197	242	280	303	335
TOTAL	9,853	11,697	13,802	16,214	19,095	22,408
TOTALS						
0 - 4	2,246	2,093	2,318	2,793	3,576	4,144
5 - 9	2,309	2,220	2,068	2,291	2,759	3,533
10 - 14	1,929	2,829	2,718	2,531	2,803	3,276
15 - 19	1,581	2,323	3,406	3,272	3,047	3,374
20 - 24	1,608	1,713	2,517	3,692	3,546	3,302
25 - 29	1,900	1,728	1,844	2,709	3,976	3,818
30 - 34	1,596	2,097	1,907	2,035	2,991	4,390
35 - 39	1,215	1,754	2,303	2,098	2,236	3,285
40 - 44	992	1,365	1,974	2,590	2,361	2,515
45 - 49	824	1,068	1,469	2,125	2,789	2,543
50 - 54	794	895	1,160	1,595	2,307	3,028
55 - 59	639	823	927	1,202	1,651	2,390
60 - 64	592	650	836	942	1,222	1,679
65 - 69	441	600	658	847	952	1,238
70 - 74	301	419	570	626	804	906
75+	310	380	506	685	817	1,012
TOTAL	19,276	22,957	27,181	32,033	37,837	44,533

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## 5.0 REVIEW OF SOCIAL GEOGRAPHY

### 5.1 INTRODUCTION

Two studies have been undertaken by Dr. R G Munro for the Pioneer Shire Council. The titles and contents of these reports may be briefly summarised as follows:-

1. "An Evaluation of the Current Social Environment and Expected Social Impact of Future Planning in the Pioneer Shire and Mackay City Region", April 1975 (James Cook University). The aim of this report was to undertake a study of the social geographic needs in the present urban environment and social impacts of further urban development within the urban lands of Pioneer Shire.
2. "Social Planning Needs and Options in Pioneer Shire and Mackay City", January 1980 - Northern Rivers College of Advanced Education. The aim of this report being to undertake a study of the social planning needs and options in the present urban environment and to evaluate the social impact of further development within the urban lands of Pioneer Shire and Mackay City.

The purpose of the January 1980 study was to provide the Pioneer Shire Council the opportunity of monitoring the progress made in reducing the percentage level of urban dissatisfaction as measured in the April 1975 social study.

The following summarises these reports and presents the conclusions reached by the author, Dr. R.G. Munro.

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## 5.2 DEMOGRAPHIC CHARACTERISTICS OF PIONEER SHIRE AND MACKAY CITY: 1961-1976

Both studies presented the demographic characteristics of Pioneer Shire and Mackay City which were available from the censuses taken in 1961, 1966, 1971 and 1976.

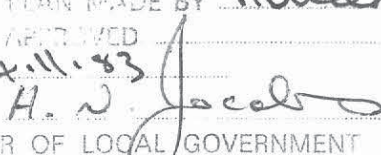
Section 2 of this report covers all the information that was presented by Dr. R.G. Munro in his studies and no further elaboration is required in this Section.

## 5.3 SAMPLE METHODOLOGY

Both the James Cook University Study 1975 (J.C.U. Survey) and the Northern Rivers College of Advanced Education Study 1979 (N.R.C.A.E. Survey) were focused on the following urban centres.

1. Andergrove
2. Bakers Creek
3. Beaconsfield
4. Blacks Beach
5. Bucasia
6. Eimeo
7. Glenella-Farleigh
8. North Mackay
9. Racecourse
10. Shoal Point
11. Slade Point
12. Walkerston
13. Mackay City

The primary objective of the studies was an information gathering exercise in order to provide a variety of social input data for use in future planning exercises undertaken in Pioneer Shire.

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The survey population was selected on the basis of a 12% simple random sample from each primary sampling unit areas in the J.C.U. Survey. A 10% survey population was selected for the N.R.C.A.E. Survey. The sample sizes were selected for both studies using normal statistical procedures to be of sufficient size in terms of the number of potential respondents within each primary sampling unit.

The major difference in the two surveys was that for the J.C.U. Survey the data was collected using a personal interview approach whereas the N.R.C.A.E. Survey adopted a "drop off - call back" interview procedure in order to provide residents with as much time as possible to evaluate the content of the questionnaire.

#### 5.4 QUESTIONNAIRE DESIGN

The questionnaire design utilised in the studies was based on a standardised sociological approach. Essentially, a fourfold methodological approach was taken:-

- (1) An in depth analysis of the sociological and migration patterns of respondents.
- (2) An evaluation of the consumer and occupational pattern of the respondents.
- (3) An assessment of the urban environment as perceived by the respondents.
- (4) An analysis of the future developmental pattern of Mackay City and Pioneer Shire as perceived by the respondents.

The questionnaire used in the N.R.C.A.E. Survey contained several questions which did not appear in the J.C.U. Survey. These additional questions were in respect to shopping information, education profile, occupational profile,

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migration reasons, and priority rating for future recreational facilities.

## 5.5 SOCIAL ATTITUDES IN PIONEER SHIRE

A total of 589 interviews were conducted throughout the Pioneer Shire for the N.R.C.A.E. Survey. The refusals recorded were 88 and were subsequently not included in the final analysis. These figures compared favourably with the J.C.U. Survey where 585 interviews were conducted with 72 refusals recorded. The observed difference in the response rate would be attributable to different interview procedures discussed in Section 3.3

### 5.5.1 Sociology of the Shire

In the N.R.C.A.E. Survey a total of 289 males (57.68%) and 206 females (41.12%) were interviewed with a further 6 persons (1.2%) in the no response category. The age distribution of the sample generally accords with the distribution as measured in the 1976 census.

These figures indicate a largely youthful population with 57.49% of the population in the 18 to 40 year age grouping. In the earlier J.C.U. Survey the age distribution closely paralleled that of the N.R.C.A.E. Survey, as shown in Table 20.

TABLE 20

Age Groups	J.C.U. Survey	N.R.C.A.E. Survey
	%	%
Less than 20 years	2.6	-
20 - 39 years	58.0	57.50
40 - 65 years	31.0	27.55
Over 65 years	8.4	13.77

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This age analysis was reinforced when the sociological structure of the households was examined. A comparison for the two surveys is given in Table 21.

TABLE 21

Household Structure	J.C.U. Survey	N.R.C.A.E. Survey
	%	%
1. Single person	4.7	7.78
2. Couple without children or none living at home	16.8	22.35
3. Family or parent with one or more infant children	22.7	17.17
4. Family or parent with one or more primary school children	11.4	16.57
5. Family or parent with one or more teenage children	9.5	9.98
6. Family or parent with mixed aged children	29.4	15.37
7. Two or more unrelated persons	3.0	3.19
8. Two or more related persons	-	4.39
9. Other	2.6	0.20
10. Non-response	-	2.99
<u>TOTAL</u> :	100.0	100.00

It was evident from both surveys that a dual social pattern exists within the Shire. Categories 3, 4 and 6 in Table 21 reflect the very strong familial structure which when considered with the youthful population, a degree of instability was evident in some areas. The importance of the single family group, as a basic sociological unit of the Shire, was further reinforced by the figures in Table 22 from the N.R.C.A.E. Survey which indicates the number of persons in each household.

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TABLE 22

Number in Household	Number	Percent
1. One	38	7.58
2. Two	127	25.35
3. Three	105	20.96
4. Four	122	24.35
5. Five	65	12.97
6. Six	26	5.19
7. More than six	13	2.59
Non-response	5	1.00

Tables 23 and 24 provide an educational and occupational profile of the Shire from the N.R.C.A.E. study which, when viewed together, give a useful guide to the socio-economic status of the Shire as a whole. No comparable information was available from the J.C.U. Study.

TABLE 23

Educational Profile	Number	Percent
1. No schooling	7	1.40
2. Primary level	114	22.75
3. Junior Secondary level	214	42.71
4. Senior Secondary level	82	16.37
5. Tertiary College level	45	8.98
6. University level	30	5.99
Non-response	9	1.80

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TABLE 24

OCCUPATIONAL PROFILE	NUMBER	PERCENT
1. Professional, administrative or clerical worker	103	20.56
2. Sales worker	38	7.58
3. Farmer or agricultural worker	27	5.39
4. Miner, quarry or mineral worker	4	0.80
5. Manufacturing or industrial plant-worker	21	4.19
6. Transport worker	15	2.99
7. Communications or technical services worker	15	2.99
8. Armed services or police	4	0.80
9. Tourist or entertainment industry worker	7	1.40
10. Tradesman or craftsman (e.g. builder or plumber)	68	13.57
11. Housewife (full-time)	118	23.55
12. Student (full-time)	1	0.20
13. Pensioner or retired person	58	11.58
14. Unemployed	9	1.80
15. Other	1	0.20
Non-response	13	2.59

Pioneer Shire has experienced spectacular growth and it was not surprising to find that the majority of respondents (58.08%) have only resided in the current location for a period of five years or less. Figures from the earlier survey reinforce this view as is evident by the comparisons given in Table

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TABLE 25

OCCUPANCY PERIOD	J.C.U. Survey	N.R.C.A.E. Survey
	%	%
1. Less than 1 year	20.30	20.76
2. 1 to 2 years	22.10	17.36
3. 3 to 5 years	18.80	19.96
4. 6 to 10 years	19.30	19.16
5. 11 to 20 years	10.00	11.98
6. Over 20 years	9.50	9.18
Non-response	-	1.60
<u>Total</u> :	100.00	100.00

The longer established neighbourhoods such as North Mackay, Walkerston, and Andergrove have larger numbers in the higher categories although even in these centres there is an exceptionally high level of recent settlement.

In both surveys, migrants into respective neighbourhoods have come mainly from local sources within Pioneer Shire or Mackay City. Table 26 illustrates the view that quite a high level of population relocation was occurring throughout the region.

TABLE 26

MIGRATION SOURCES	J.C.U. Survey	N.R.C.A.E. Survey
	%	%
1. Elsewhere in Mackay City	27.9	25.94
2. Elsewhere in Pioneer Shire	39.6	43.71
3. Other North Queensland areas	11.1	10.38
4. Other Southern Queensland areas	11.1	6.19
5. New South Wales	-	3.59
6. Other states	7.3	4.59
7. Overseas Countries	3.0	2.59
Non-response	-	2.99
<u>Total</u> :	100.0	100.00

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It was also illustrated in Table 26 that North Queensland and Southern Queensland along with other States are significant sources of migrants to the area. This would imply a widely desired area of settlement and a likelihood that the current inflow of migrants from external sources will continue into the future.

The major reasons advanced for migration into particular neighbourhoods were employment, retirement and recreational. The strength of these in each neighbourhood clearly varies, but it would appear as if the predominant rationale for migration still involves the occupational and post-occupational behaviour of the region's residents.

A total of only 51.50% of respondents in the N.R.C.A.E. survey indicated that they had no further intention of moving from their current residence. A significant group (24.35%) indicated that they would move. This later group along with the 22.55% who were undecided, would suggest that some degree of community instability existed throughout the Shire. The corresponding figure from the J.C.U. survey were 75.9% (no intention to move) and 18.4% (will be moving). This indicated that the community instability was a growing trend. This trend was more evident in some primary sampling unit areas than others and is particularly relevant when it was considered that 14.37% of the recently interviewed households have already lost members, compared to 10.8% from the earlier survey. It is also important to recognize that instability is a function of the "youthfulness" of the population and changing socio-economic relation within the community.

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Table 27 details information from both surveys on the number of respondents who are renting accommodation. These figures also provided a useful guide to the degree of instability that could be attributed to the inherent mobility of a population occupying rented accommodation. This Table was helpful in explaining the increased instability levels apparent and would suggest that a fair proportion of dwelling construction in the Shire since 1975 may be speculative rather than for normal residential purposes.

TABLE 27

ACCOMMODATION CHARACTERISTICS	J.C.U. SURVEY	N.R.C.A.E. SURVEY
	%	%
1. Owner occupied	83.2	78.45
2. Rented	14.7	21.76
3. Rented for holiday purposes only	0.4	0.20
4. Other	1.7	-
Non-response	-	3.59
<u>Total</u> :	100.0	100.00

#### 5.5.2 Consumer Patterns in the Shire

Table 28 lists the consumer behaviour patterns found in the N.R.C.A.E. survey

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TABLE 28

Location of Usage	% Food Supplies	% Clothing Supplies	% Household Needs	% Chemist Services	% Vehicle Needs	% Medical Services	% Dental Services
1. Caneland	21.16	33.73	18.76	8.18	-	-	-
2. Mackay City Shopping Centre	44.31	63.67	66.67	58.48	33.53	65.87	91.82
3. Outlets in North Mackay	29.54	0.60	8.38	29.14	-	28.74	3.99
4. Other Outlets in Shire	3.79	0.60	3.19	1.20	58.08	1.40	0.40
5. Non-response	1.20	1.40	2.19	2.99	8.38	3.99	3.79

It is clear from Table 28 that except for food supplies and vehicle needs, the shopping patterns were dominated by Mackay City. However, this current dominance was considerably less than that measured in the J.C.U. survey (see Table 29) and suggests that Caneland and the North Mackay shopping area have diverted a relatively large volume of trade away from the city centre since 1975.

TABLE 29

Location of Usage	% Food Supplies	% Clothing Supplies	% Household Needs	% Medical Facilities	% Dental Facilities	% Chemist Facilities
Mackay City Centre	59.9	96.3	88.8	99.0	100.0	99.0
Outlets in Pioneer Shire	39.3	1.6	10.6	0.0	0.0	1.0
Other urban centres outside Pioneer Shire	0.8	2.2	0.6	1.0	0.0	0.0

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The advent of Caneland has influenced shopping in the Shire in a number of ways, the most important relating to convenience (48.87%), range of goods offered (21.29%) and price advantages (19.89%).

### 5.5.3 Future Social Planning in the Shire

A total of 90.22% of respondents to the N.R.C.A.E. survey indicated that they liked living in the Shire generally, although some significant elements of dissatisfaction were apparent. This figure compares with the 94.7% of respondents in the J.C.U. survey who liked living in the Shire. In both surveys, the issues that appeared to polarise opinion across the whole of the Shire were broadly similar.

The ten issues which scored the highest levels of dissatisfaction in the N.R.C.A.E. survey were:-

1. The condition of roads and paths (66.47% compared with 60.5% in the J.C.U. survey).
2. Entertainment facilities for young people (56.49% compared to 72.4% in the J.C.U. survey).
3. Job opportunities for women and girls (53.29% compared to 38.9% in the J.C.U. survey).
4. Shopping facilities for clothing (52.10% compared to 60.1% in the J.C.U. survey).
5. Public transport facilities (51.10% compared to 71.6% in the J.C.U. survey).
6. Cultural amenities (48.70% compared to 52.2% in the J.C.U. survey).
7. Parks and playgrounds (47.50% compared to 56.9% in the J.C.U. survey).

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8. Job opportunities for men (46.91% compared to 27.8% in the J.C.U. survey).
9. Shopping facilities for other household needs (45.71% compared to 52.3% in the J.C.U. survey).
10. Shopping facilities for food (41.92% compared to 38.4% in the J.C.U. survey).

Despite the importance of these issues, it was clear that in the four years since the James Cook University survey was conducted, a noticeable improvement had occurred in the mean "level of satisfaction" in the Shire taken as a whole. That is, the mean level for "dissatisfaction" fell from 41.3% to 33.95% while the mean level for "satisfaction" rose from 39.6% to 44.12%. The mean level for those respondents who were "undecided" rose only slightly from 19.1% to 21.92%.

Of the ten issues only four of the issues had measured levels of dissatisfaction increased from the J.C.U. survey. However, there were three other issues which caused dissatisfaction levels to increase and these were :-

1. The water supply system (from 12.9% up to 23.75%).
2. Quietness of the area (from 16.6% up to 24.35%).
3. Cleanliness of the area (from 16.8% up to 18.96%).

The issues where the level of dissatisfaction fell and the level of satisfaction rose were as follows:-

- . Access to medical services (up to 60.08% from 41.3% in the J.C.U. survey).
- . Street lighting (up to 72.85% from 46.0% in the J.C.U. survey).
- . Sewerage system (up to 54.09% from 36.4% in the J.C.U. survey).

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- . Secondary school facilities (up to 48.70% from 39.0% in the J.C.U. survey).
- . Access to chemist services (up to 55.49% from 49/3% in the J.C.U. survey).
- . Cultural amenities up to 27.94% from 15.9% in the J.C.U. survey).

All of the high dissatisfaction issues identified in the analysis are closely linked to the young, familial structure of the Shire's population. In fact, recognition of this point is possibly the single most important prerequisite for social planning action within the Shire.

With respect to the future planning of recreational facilities in the Shire, the following responses shown in Table 30 were recorded in order of priority. No directly comparable questions were asked in the earlier J.C.U. survey.

TABLE 30

PRIORITY RATING FOR FUTURE RECREATIONAL FACILITIES	PRIORITY ORDER	TOTAL NO. 1'S
1. Community hall (for bingo, card evenings and other functions)	4	57
2. Playing fields (league, soccer, etc.)	2	64
3. Theatre for cultural activities	6	43
4. Tennis courts	3	15
5. Art centre (for potters, hobby clubs, painters, etc.)	7	26
6. Squash courts	8	8
7. Parkland (free recreation areas)	1	129
8. Swimming pool	5	43
9. No new facilities should be built	9	22
10. Other facilities	10	14

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This table provides useful data for determining Shire-wide priorities for planning of future recreational facilities.

In response to the question of whether the district Local Authorities should build a joint theatre centre in the Mackay urban area only 28.14% of the respondents were in favour, with 49.70% against the proposal and 18.96% undecided.

A similar response was recorded by Shire residents when asked if they were in favour of the Council building a small Drama Theatre capable of seating 600 people.. Only 21.36% were in favour of the Drama Theatre with 56.69% against and 18.56% undecided.

In the J.C.U. survey of 1975 the problem of accessibility to consumer facilities and services and work locations was identified as being of prime concern in respect to social planning. The N.R.C.A.E. survey included questions related to the establishment of a public transport system. The results were that the majority of the Shire respondents felt that a public transport system should be developed.

This view could not be supported when the results of the question requesting the opinions on potential usage of the system were examined. Only 27.94% of the respondents indicated they would use public transport to travel to work, 44.31% for shopping trips.

The results of the question regarding funding of the system further supported the view that the establishment of a public transport system for the region may be premature at this particular time.

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5.6

SOCIAL PLANNING GUIDELINES AND OPTIONS

There were a variety of environmental deficiencies which exhibit themselves across the Shire, and within particular neighbourhoods. The problems that have arisen relate exclusively to the rapid rate of urbanisation that has occurred within the Shire in recent years. Community services and facilities have been stretched and many neighbourhoods are only now developing any real community infrastructure.

The rapidity of urban development and the youthful, familial sociology are still creating some very specific growth problems. The more critical of these problems being -

- (a) The condition of roads and paths
- (b) The lack of adequate and accessible shopping facilities.
- (c) Job opportunities for women and girls
- (d) Job opportunities for men
- (e) The lack of cultural and entertainment facilities (especially for young people)
- (f) The lack of adequate parks and playgrounds

As with the J.C.U. survey the two most critical social planning considerations that affect the Shire are the youthfulness of its population and the accessibility of community infrastructure to this population. Each of the above six problems outlined above are directly or indirectly related to the accessibility issue or the social needs of the youthful population.

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SAMPLE CALCULATION FOR POPULATION PROJECTION

The basic assumptions have already been discussed in Section 2.5.3. The computation sequence is as follows -

- (1) Initial population is listed with the relevant age grouping.
- (2) The initial population was used to calculate the number of deaths during the period using the age specific death ratio.
- (3) The initial population is adjusted by subtracting the number of deaths.
- (4) The nett numbers of migrants are calculated using the expected population and the migration rate.
- (5) Final population is determined by adding nett migrants, and births (from fertility computation sequence, below) to the survived population.

Fertility Computation Sequence

- (1) Local births are calculated by multiplying nett reproduction rates by the mean number of females in each age group during the projection interval.

Nett reproduction rates refer to the number of daughters that would be born to a cohort of new-born girls during their lifetimes, assuming the continuation of the age-specific fertility and mortality rates of the given period. They give a better measure of generation replacement in that they take into account that some women will die before or during the reproductive age span.

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- (2) Local births are then halved to obtain the number of female births.
- (3) The fertility for the nett migration population is then calculated. Fertility rates are adjusted to the midpoint of the projection level.
- (4) Final female births are determined by adding the local female births to the migrant births.
- (5) Male births are calculated by multiplying the female births by the adopted sex ratio, in this case 105 males to 100 females.
- (6) Female and male births are then adjusted for still-born births to derive the survived births.

The following three tables show the computation sequence used in tabular form.

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PIONEER SHIRE (URBAN)  
BASIC COMPUTATION SEQUENCE  
FEMALES - 1976-1981

Starting Age	Starting Total Population	Age Specific Death Ratio	No. of Female Deaths	Starting Female Population	Expected Population	Migration Rate per Annum	Net Nos. of Migrants	Survived Births	Predicted Female Population	Final Age
-(0-4)								1081	1081	0-4
0-4	2246	0.00159	18	1075	1057	0.00249	13		1070	5-9
5-9	2309	0.00021	2	1119	1117	0.06310	398		1515	10-14
10-14	1929	0.00019	2	953	951	0.05730	305		1256	15-19
15-19	1581	0.00033	3	789	786	0.02800	116		902	20-24
20-24	2608	0.00034	3	842	839	0.02330	102		941	25-29
25-29	1900	0.00023	2	908	906	0.03040	146		1052	30-34
30-34	1596	0.00046	4	808	804	0.04000	174		978	35-39
35-39	1215	0.00072	4	539	535	0.04583	134		669	40-44
40-44	992	0.00117	6	477	471	0.03000	75		546	45-49
45-49	824	0.00176	7	377	370	0.03500	69		439	50-54
50-54	794	0.00256	10	393	383	0.02547	51		434	55-59
55-59	639	0.00378	12	315	303	0.02800	45		348	60-64
60-64	592	0.00609	18	307	289	0.04210	66		355	65-69
65-69	441	0.00849	19	216	197	0.02800	29		226	70-74
70-74	301	0.01591	25	143	118	0.00935	6		124	75+
75+	310	0.05409	93	163	70	0.00467	2		72	
Total	19276		228	9424	9196		1731		12008	

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PIONEER SHIRE (URBAN)  
BASIC COMPUTATION SEQUENCE  
MALES - 1976-1981

Starting Age	Starting Total Population	Age Specific Death Ratio	No. of Male Deaths	Starting Male Population	Expected Population	Migration Rate per Annum	Net Nos. of Migrants	Survived Births	Predicted Male Population	Final Age	Total Population
-(0-4)								1134	1134	0-4	2215
0-4	2246	0.00189	21	1171	1150	0.00132	8		1134	0-4	2215
5-9	2309	0.00021	2	1191	1189	0.06900	471		1158	5-9	2228
10-14	1929	0.00022	2	977	975	0.06430	356		1660	10-14	3175
15-19	1581	0.00096	8	792	784	0.02920	121		1331	15-19	2587
20-24	1608	0.00094	8	766	758	0.02920	177		905	20-24	1807
25-29	1900	0.00075	7	991	984	0.03747	199		875	25-29	1816
30-34	1596	0.00068	5	787	782	0.02570	106		1183	30-34	2235
35-39	1215	0.00121	8	676	668	0.03740	135		888	35-39	1866
40-44	992	0.00198	10	515	505	0.02920	78		803	40-44	1472
45-49	824	0.00314	13	474	434	0.02920	82		583	45-49	1129
50-54	794	0.00519	21	401	380	0.03539	48		516	50-54	955
55-59	639	0.00804	26	324	298	0.02400	37		428	55-59	862
60-64	592	0.01219	37	285	248	0.02350	39		335	60-64	683
65-69	441	0.01818	42	225	183	0.02970	36		287	65-69	642
70-74	301	0.02628	42	158	116	0.03707	5		219	70-74	445
75+	310	0.04685	80	147	67	0.00935	2		121	75+	245
						0.00584			69		141
Total	19276		332	9853	9521		1840		12495		24503

THIS IS PAGE 66 OF THE STATISTICAL MADE BY Pioneer  
Shire COUNCIL APPROVED  
BY THE GOVERNOR IN COUNCIL 24.11.83  
H. N. J. ...  
DIRECTOR OF LOCAL GOVERNMENT



PIONEER SHIRE (URBAN)

FERTILITY COMPUTATION - 1976-1981

Starting Age	Starting Female Population	Expected Female Population	Starting Plus Expected Female Population	Net Reproduction Rate	Local Births	0.5 X Local Births	Migratory Sequence			Female Births	Sex Ratio	Male Births
							Female Migrants	Reproduction Rate	Births to Migrants			
10-14	953	951	1904	0.00022	2	1	305		-	1	1.05	1
15-19	789	786	1575	0.02067	170	85	116	0.01044	6	91		96
20-24	842	839	1681	0.06690	642	321	102	0.04378	24	345		362
25-29	908	906	1814	0.06782	704	352	146	0.06736	56	408		428
30-34	808	804	1612	0.03278	282	141	174	0.05030	48	189		198
35-39	539	535	1074	0.01189	64	32	134	0.02233	16	48		50
40-44	477	471	948	0.00271	14	7	75	0.00730	3	10		11
45-49	377	370	747	0.00022	-	-	69	0.00150	-	-		-
Total	5693	5662	11355		1878	939			1092			1146

Still-born births - 11

- 12

Survived births 1081

1134

THIS IS PAGE 67 OF THE OFFICIAL RECORD MADE BY  
 SHIRE CO. LD  
 BY THE GOVERNOR IN OCT. 1983  
 H. N. Jacobs  
 DIRECTOR OF LOCAL GOVERNMENT

CENSUS	PIONEER SHIRE				MACKAY CITY			
	PERSONS	INTERCENSAL NATURAL INCREASE	INTERCENSAL NET MIG'N	GROWTH RATE % P.A.	PERSONS	INTERCENSAL NATURAL INCREASE	INTERCENSAL NET MIG'N	GROWTH RATE % P.A.
1966 to 1971	19,900	1970	455	2.3	18,640	1042	-587	0.5
1971 to 1976	22,561	2059	2761	3.8	19,148	1026	399	1.4
	26,938				20,224			

THIS IS PAGE 68 OF THE STRATEGIC PLAN MADE BY Pioneer  
Shire COUNCIL AND APPROVED  
 BY THE GOVERNOR IN COUNCIL ON 24.11.83  
H. J. Jacobs  
 DIRECTOR OF LOCAL GOVERNMENT



BAKERS CREEK		BLACKS BEACH		BUCASIA		EIMEO		FARLEIGH		GLENELLA		OUTER NORTH MACKAY		PORT OF MACKAY		RACECOURSE		SHOAL POINT		SLADE POINT		NORTH MACKAY	
NO.	PROP%	NO.	PROP%	NO.	PROP%	NO.	PROP%	NO.	PROP%	NO.	PROP%	NO.	PROP%	NO.	PROP%	NO.	PROP%	NO.	PROP%	NO.	PROP%	NO.	PROP%
300	51.1	91	22.9	236	21.6	59	29.5	122	47.5	93	18.0	447	29.4	54	15.0	154	26.2	48	33.6	793	34.5	5083	50.9
53	9.0	56	14.1	167	15.3	24	12.0	8	3.1	87	16.9	246	16.2	36	10.0	79	13.5	19	13.3	300	13.0	1101	11.0
103	17.6	130	32.7	231	21.1	57	28.5	90	35.0	174	33.7	508	33.4	112	31.2	241	41.1	34	23.8	612	26.6	2079	20.8
54	9.2	45	11.3	226	20.7	28	14.0	13	5.1	58	11.2	72	4.7	78	21.7	23	3.9	8	5.6	171	7.4	529	5.3
4	0.6	17	4.3	71	6.5	2	1.0	0	0.0	37	7.2	22	1.4	24	6.7	11	1.9	17	11.9	89	3.9	171	1.7
0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
72	12.3	59	14.8	162	14.8	30	15.0	24	9.3	67	13.0	223	14.7	55	15.3	79	13.5	17	11.9	337	14.6	1016	10.2
586	100.0	398	100.0	1093	100.0	200	100.0	257	100.0	516	100.0	1519	100.0	359	100.0	587	100.0	143	100.0	2302	100.0	9979	100.0

THIS IS PAGE 69 OF THE 1983-84 YEAR MADE BY  
 BY THE GOVERNOR IN COUNCIL  
 20.11.83  
 H. N. JACOB  
 DIRECTOR OF LOCAL GOVERNMENT