



CITY OF SANDRINGHAM

BICYCLE STRATEGY PLAN

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BICYCLE STRATEGY PLAN

Prepared by :

The City Engineer's Department

October 1978

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INTRODUCTION

In August, 1977 the Council of the City of Sandringham adopted a policy of improving the safety and convenience of bicycle riders and in support of this policy directed that the staff prepare a Bicycle Strategy Plan for the Municipality.

The main objective of this study was to determine how the goals of increased bicycle safety and usage could be achieved in the Municipality.

This study has utilized many of the findings and recommendations of both:

- (1) the Melbourne Bike-Way Plan, and
- (2) the Geelong Bike Plan.

The Geelong Bike Plan was a pilot study for adaption to the Melbourne Metropolitan area. The Sandringham Bicycle Strategy Plan has endeavoured to review the recommendations and conclusions of that Plan for applicability to this Municipality and where appropriate undertake supplementary surveys and investigations.

Both of the abovementioned studies have fully investigated and documented the need for bicycle facilities and the anticipated future growth of cycling. Having regard for these studies and the social benefits of cycling such as improved health, energy conservation etc. the basic need for an improved cycling environment has not been questioned by this study.

The results of this study show how the Council can provide for safer cycling within the Municipality. The report describes the 4 E's program approach developed by the Geelong Bike Plan - Engineering, Education, Enforcement and Encouragement and concludes with a series of Action Plans for consideration by the Council.

- (1) The Melbourne Bikeway Plan - prepared by the Centre of Environmental Studies at the University of Melbourne for the Department of Youth, Sport & Recreation.
- (2) Geelong Bike Plan - prepared for the Victorian Government by the Geelong Bikeplan Study Steering Committee.

THE STRATEGY PLAN APPROACH

At the direction of the Council this Strategy Plan Study has been undertaken by the City of Sandringham staff assisted by a committee of local cyclists and cycling supporters to provide cycling experience and local knowledge inputs.

The Strategy Plan Committee were recruited from a meeting to which all local schools, Government and other organizations likely to have an interest in bicycle planning were invited.

Strategy Plan Committee

		EDUCATION AND RECREATION
		Since formation in 1976
Mr. C. Bates	-	R.O.S.T.A.
" T. Cariigg	-	Student, Highett High School
Ms. B. Engdahl	-	Student, Beaumaris High School
Mrs. G. Gibbs	-	Bayside Bicycle Club
Mr. R. Greaves	-	Bayside Bicycle Club
Mr. R. Jerard	-	Teacher, Sandringham Technical School
" A. Parker	-	Bicycle Institute of Victoria
" W. Pattinson	-	M.M.B.W. Transport Planning
" K. Richardson	-	Proprietor, Sandringham Cycles,
" A. Ross	-	Teacher, St. Leonards College
Mrs. E. Sayers	-	Teacher, Hampton Primary School

Valuable comment and input has also been received from:

Chief Inspector E. Sutton - Victoria Police Department
 Mr. I. Bett - Victorian Railways

City of Sandringham Staff

Mr. J. Sherring	-	City Engineer
" G. Barrow	-	Design Engineer
" G. Dummett	-	Town Planning Officer
" G. Henshall	-	Municipal Recreation Officer

The Committee generally met about once a month from April 1978 to October 1978 to review and comment on the plan as it progressed as well as providing useful comment on bicycle riders' needs and the promotion of safer cycling.

KEY PRINCIPLES

As mentioned previously the Geelong Bike Plan has been used as a model for the Sandringham Strategy Plan. To fully appreciate the current thinking on bicycle planning and the underlying principles in the preparation of this plan readers are referred to the Geelong Bike Plan.

Summary of Principles

1. INCREASED BICYCLE USE MUST BE PARALLELED BY INCREASED BICYCLE SAFETY.
2. SAFER CYCLING REQUIRES EDUCATION AND ENFORCEMENT BEHAVIOURAL PROGRAMS. Since marginal engineering improvements cannot be expected to bring about the fundamental improvements in road behaviour that are necessary for better integration, it will be necessary to resort to behavioural programs and this means better education and enforcement of correct driving practices of both motorists and cyclists.
3. ENGINEERING FOR SAFER CYCLING MEANS IMPROVING THE ROAD SYSTEM NOT REPLACING IT.
Every street is a cycle street.
4. ENGINEERING, EDUCATION AND ENFORCEMENT ALL NEED TO BE BACKED UP BY AWARENESS AND ENCOURAGEMENT PROGRAMS.
This plan will detail requirements, investigations and proposals for Council involvement under each of these aspects from which will be developed a series of action plans.

INVESTIGATIONS

The investigations for this Plan have included the following surveys, research and public involvement programs.

- * Questionnaire survey of bicycle riders - distributed to all local schools, Council libraries and printed in the local press.
- * Advertisement in the local press seeking submissions on Bicycle Planning - failed to gain any response.
- * Review of accident statistics.
- * Review of recent papers, articles and literature on Bicycle Planning.
- * Field counts.
- * Route surveys conducted by the Bayside Bicycle Club.
- * Review of existing bicycle storage facilities and likely generators of storage needs.
- * Survey of Bicycle Theft conducted by Mr. T. Carrigg.

ENGINEERING

The engineering aspects of this Strategy Plan have been developed on the basis of improving conditions for cyclists on the road as well as investigating new systems. As part of the Study the following investigations and surveys have been undertaken:

- (i) Survey of routes and problems experienced by cyclists
- (ii) Review of R.O.S.T.A accident data
- (iii) Road inventory Survey (saddle survey)
- (iv) Survey of Bicycle Theft.

REQUIREMENTS

- Improve safety at intersections.
- Remove hazards from the road system (e.g. bad rail crossings, squeeze points).
- Enhance safety of neighbourhood riding.
- Plan safer facilities in new areas.
- Provide for safer access to schools.
- Provide opportunities for recreational riding.
- Provide opportunities to ride on paths or routes away from heavy traffic.
- Improve road maintenance of routes frequently used by cyclists.
- Introduce adequate shared lane width on main roads where practical.
- Improve access across barriers to cycle movement.
- Provide mid-block through-routes where possible in areas of high demand.
- Assist cyclists to identify and ride in safe, scenic or cultural routes.
- Introduce secure bicycle parking facilities.
- Provide opportunities to avoid steep gradients and detours.

N.B. A squeeze point is a location of a high stress road where the road suddenly narrows causing the cyclist to move into the traffic path because adequate lane sharing width is not available.

GENERAL OBSERVATIONS.

1. Danger from traffic is the most significant factor preventing greater use of bicycles as indicated by responses to questions 5(b) and 7 of the Strategy Plan Survey.
(See Appendices D and E).
2. As observed in the Geelong Bike Plan, cyclists use main roads. Apart from Beach Road and South Road the road hierarchy as developed from motor vehicle usage was observed to apply to bicycles in this municipality.
3. Study of ROSTA accident statistics indicates that about 80% of accidents occur on main roads/frequently used bicycle routes, and about 50% of accidents occur at intersections.
4. Generally the Sandringham Municipality has a comprehensive network of fully constructed residential streets with good bike riding surfaces.
5. Provided both motorists and cyclists take adequate care at intersections, the existing residential street system should be suitable for cyclists and this will be further improved with the full implementation of the STATCON system.
6. The survey of bicycle theft experienced by students of one secondary school in the area indicated:
 - (i) 62% of bicycle owners had experienced an incident of theft in the past year.
 - (ii) 44% of those owners had locked their bicycles.
 - (iii) 8% of owners recovered the stolen article.
 - (iv) About 60% of thefts occurred at school and about 30% of thefts occurred in a public place, e.g. shops, railway station etc.

POSSIBLE IMPROVEMENTS

Those streets where bicycle usage, traffic volume and perceived danger are greatest have been the

subject of a further detailed investigation and analysis,
the results of which are as follows:-

A. CONSIDERATION OF POSSIBLE MAJOR IMPROVEMENTS

Balcombe Road - Traffic volume of about 9,700 vehicles per 12 hour day. Squeeze point at the intersection of Balcombe Road and Reserve Road. Congestion at Black Rock shopping centre and Bluff Road intersection.

Possible Improvements

Detailed investigation required of possible improvements of the above intersections. Consideration could be given to the introduction of bike lane/parking lanes (see fig 1) depending upon the success of trials at other more suitable locations.

Bay Road - Traffic volume of about 10,000 vehicles per 12 hour day with a high commercial vehicle content. A large proportion of cyclists travelling to Highett High School or Sandringham Technical School. Saddle Survey indicates a high degree of perceived danger.

Possible Improvements

As there appears to be little scope for improvement within the road reserve, a possible improvement would be to discourage the volume of commercial vehicles. Some improvement may be obtained with the widening of Nepean Highway, particularly if non local truck traffic could be banned from Beach Road, but this could be more than offset by the proposed Myer Target Store.

Consideration has been given to banning of kerbside parking during periods of high bicycle usage. As well as being likely to meet resident opposition it may have the adverse effect of increasing general motor traffic.

It is therefore suggested that cyclists be encouraged to use alternative routes such as Sandringham Road and Holloway/Wangara Roads and that Sandringham Road is adequately treated to ensure that it is not used by through vehicle traffic.

Beach Road - Very high traffic volume of about 20,000 vehicles per 12 hour day with a significant proportion of commercial vehicles. A high degree of perceived danger relating particularly to the speed of the traffic.

Possible Improvements

Having regard for its foreshore environment, the area is particularly suited to a recreational bike path, which would also suit commuting traffic. It is noted that a beach front bicycle path ranked equal second in the priority list presented in the Department of Youth Sport and Recreation's Melbourne Bikeway Plan. Reduction of the present heavy use of Beach Road as a through route by commercial vehicles is also recommended.

Bluff Road - Traffic volume of about 6,000 vehicles per 12 hour day. Highest number of bicycle accidents for any section of road in the Municipality. A lot of intermittent parking, partly as a result of the large number of small shops and groups of shops along this road. The above causes cyclists to frequently move in and out of the kerb side lane.

Possible Improvements

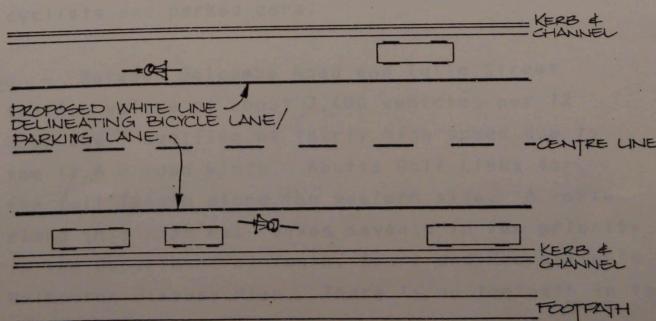
There appears to be little scope for improvements within the road reserve. Once again it is recommended that cyclists be encouraged to find alternative routes.

An alternative route on the east side of Bluff Road for part of its length could be developed using residential streets, Council reserves and laneways if a link was provided between Cheltenham Road and Tulip Street. The obvious link is a connection between Glenvill Court and McKay Avenue and also a path through the F.G. Tricks Reserve to connect with Fern Street/Garnet Leary Avenue.

Consideration could be given to purchase of residential properties or easements to enable development of a route parallel to the northern end of Bluff Road.

Detailed investigation required of the squeeze points at the Bluff Road/Hightett Road and Bluff/Bay Road intersections.

Some members of the Committee considered that a 'parking lane/bike lane' (see fig 1) could be provided on Bluff Road. Having regard to the characteristics of Bluff Road and the speed and volume of traffic it is suggested that this proposal should be the subject of further investigation prior to implementation.



TYPICAL BIKE LANE/PARKING LANE

FIG. 1

Hampton Street - Traffic volume of about 7,600 vehicles per 12 hour day through a very busy shopping centre. A high degree of perceived danger relating particularly to the parking of vehicles.

Possible Improvements

There is little scope for improvements within the road reserve, but there is quite a good network of off street carparks at the rear of the shops and it is suggested that these should be considered as alternative routes. It would appear desirable to obtain a link between Willis Street and Thomas Street. However it must be recognised that the Hampton Street shops often represent the destination of the cyclists trip.

Ludstone Street - A particularly wide collector road (12.8 m) with a traffic volume of about 900 vehicles per 12 hour day.

Possible Improvements

As the pavement width appears to be excessively wide for a residential collector street although it is noted to carry a bus service there would appear to be ample opportunity to delineate a parking lane/bicycle lane on the existing pavement possible in the form of a wide unbroken painted white line about 2.9 m wide to accommodate both cyclists and parked cars.

Reserve Road - Between Balcombe Road and Tulip Street traffic volume of about 7,400 vehicles per 12 hour day travelling at fairly high speed due to the 12.8 m road width. Abutts Golf Links for the full length along the western side. A route along this road was ranked seventh in the priority list in the Department of Youth, Sport and Recreation's Melbourne Bikeway Plan. There is no footpath in the western naturestrip.

Difficult to cross Reserve Road in peak hour traffic.

Possible Improvements

As the existing pavement width is wider than what would seem necessary and in the absence of any real need for kerbside parking the provision of a separate bike lane along the western side of Reserve Road is certainly feasible. By utilising the existing pavement construction and thereby reducing the width of pavement available to motor vehicles, an additional benefit could be the possible reduction of general traffic speed.

For two way bicycle traffic the bike lane would need to be separated from the motor traffic by a permanent physical barrier such as a spiked concrete kerb.

Alternatively a one way parking lane/bike lane painted on each side of the road could be provided.

Particular investigation of Reserve Road/Park Road and Reserve Road/Tulip Street intersections to enable easier crossing of Reserve Road is required.

Tulip Street - Traffic volume of about 3,600 vehicles per 12 hour day, but expected to increase with the opening of the Family Leisure Centre. Abuts the Municipal Golf Course for most the southern side.

There is a footpath in the southern naturestrip for about half the street length.

A route along this road was ranked seventh in the priority list in the Department of Youth Sport and Recreation's Melbourne Bikeway Plan. Use by cyclists is likely to increase along this route with the opening of the Sandringham Leisure Centre.

Possible Improvements

As there is a footpath for the full length of the street on the northern side, it is considered that the footpath on the south side should be extended as far as opposite the Tulip Street Reserve, and the length between the Reserve and Reserve Road designated as a bike path with appropriate provision for crossing Tulip Street at Reserve Road and George Street.

To adequately cater for use by students the existing path should be increased to 2.45 m width as recommended in the Geelong Bike Plan.

N.B. A change in the Road Traffic Regulations will be required before this path can be implemented.

All the other streets shown on the plan, Appendix B as being frequently used by cyclists could be considered minor residential type streets where no particular improvements seem to be required apart from the introduction of the STATCON system.

Four intersections which are of an unusual shape and should be the subject of detailed investigations are:-

Littlewood Street/Hood Street

Sargood Street/Hightett Road

Bamfield Street/Bridge Street

Abbott Street/Nelson Street

B. CONSIDERATION OF POSSIBLE MINOR IMPROVEMENTS

In addition to the list of hazards derived from the Strategy Plan Survey an initial saddle survey of the main bicycle user routes has been undertaken by the Bayside Bicycle Club. The results of this survey are shown in Appendix K.

Having regard to the number and type of problems indicated in those surveys, it would seem desirable that a more comprehensive saddle survey to progressively cover the whole municipality be undertaken in conjunction with a Council program of upgrading the various trouble spots.

C. CONSIDERATION OF THE LEGAL ASPECTS

Currently it is illegal for bicycles to be ridden on the footpath. In addition there is no provision in the road traffic regulations for the provision of any sort of bicycle lane, route or path in the road reserve.

However the State Bicycle Committee has recently requested the Chief Secretary to undertake amendments to the Road Traffic Regulations to cater for bicycles in the following manner:

- (i) Allow bicycles on specific bicycle tracks in the road reservation
- (ii) Separate the footpath by signposting for use by pedestrians and cyclists at squeeze points such as signalized intersections
- (iii) Signpost the footpath for joint usage by both pedestrians and cyclists at squeeze points such as bridges..

BICYCLE ROUTES FOR RECREATIONAL USE

In regard to the provision of recreational bicycle routes it is anticipated that the foreshore area would have the greatest attraction for most residents.

As mentioned earlier a foreshore bicycle route was ranked second in a list of priorities for bicycle paths in the Department of Youth, Sport and Recreation Melbourne Bikeway Plan.

It should be noted that a path suitable for bicycles has already been constructed along the foreshore between Small Street and New Street Hampton.

Other areas which are likely to generate recreational bicycle use would be Council reserves and particularly the Family Leisure Centre.

The attraction of this Centre would further justify special provision for cyclists in Reserve Road and Tulip Street.

Elsewhere the existing street network with improvements mentioned in sections (A) and (B) should cater for most other recreational usage needs, although the planned development of a circuit for leisure rides combining the Reserve Road/Tulip Street provision with a designated route back to Balcombe Road through residential areas east of Bluff Road appears feasible and desirable in the long term.

BICYCLE STORAGE FACILITIES

One of the conclusions of the Melbourne Bike Plan and verified by this study's questionnaire is that fear of theft is a major deterrent to greater use of bicycles. A study carried out at Highett High School (see appendix J) further illustrates the magnitude of this problem.

Appendix I gives an indication of those locations where bicycle storage facilities by observation are either already needed or a need is likely to be generated.

To these locations should of course be added most public buildings such as Council Offices, Hospitals, Libraries etc. and the foreshore.

With the increased cost of motoring it is considered likely that residents who work locally could be encouraged to forego the use of the motor vehicle in lieu of the bicycle if secure and sheltered storage facilities were available.

In this regard local employers should be encouraged to provide facilities and this provision should also be considered during the town planning stages of any new development. For city commuters adequate bicycle storage should be provided at the local Railway Stations.

Recent inspection of storage facilities at the Railway Stations indicated that:-

Hampton Station - 17 racks on the north side of which 7 are under cover.

generally fully utilized.

13 racks on the south side, none are under cover and generally poorly utilized.

It would appear that additional under cover racks should be located on both the north and south sides of the railway line.

Additional racks should be of a type that permit locking of the frame to the rack.

Sandringham Station - Under cover hanging type racks for about 60 bikes with about 40% utilization on the day of inspection.

It was noted that a number of bikes particularly the smaller ones were not in the racks possibly because the owners were not strong enough to lift them up.

It would appear desirable that additional under cover racks should be provided for those unable to use the existing racks.

In the consideration of the type of facilities to be provided at the various locations the following points are considered important.

- (1) Long term storage facilities should be protected from the weather and preferably the same should apply to short term facilities.
- (2) Storage facilities should be designed such that the frame of the bicycle can be locked to them.

The STATION system will assist the achievement of this situation and further improvements might be possible with the introduction of 40 mph speed limits in all residential areas. The introduction of 40 mph speed limits without intersection controls however would be unlikely to achieve significant improvements in motorist behaviour.

Apart from introducing restrictions on a trial basis the creation of isolated precincts as recommended in the Beaumaris Primary School Plan is not recommended as it would be likely to be detrimental to adjacent areas.

As there are indications that the introduction of 40 mph restrictions are unlikely to achieve significant effects and that most accidents occur at intersections it is suggested that intersection controls via signing

REVIEW OF BEAUMARIS PRIMARY SCHOOL PLAN

As requested by the Council in the initial brief a review has been undertaken of the Beaumaris Primary School Bicycle Plan developed in 1974.

The key feature of the plan was to establish a precinct bounded by Balcombe Road, Beach Road and Cromer Road with the erection of warning signs regarding the use of bicycles in the precinct. Signs would need to be erected at each street entrance to the precinct.

The Road Safety and Traffic Authority was not in favour of the scheme but undertook to give it further consideration.

A similar type of scheme has been introduced in Corio as part of the Geelong Bike Plan whereby a particular area has been designated as a 40 kph precinct. The precinct proposal is currently under review by the RSTA.

Perhaps the ultimate solution is that all residential streets throughout Melbourne should be used as residential streets i.e. low speed and no through traffic.

The STATCON system will assist the achievement of this situation and further improvements might be possible with the introduction of 40 kph speed limits in all residential areas. The introduction of 40 kph speed limits without intersection controls however would be unlikely to achieve significant improvements in motorist behaviour.

Apart from introducing restrictions on a trial basis the creation of isolated precincts as recommended in the Beaumaris Primary School Plan is not recommended as it would be likely to be detrimental to adjacent areas.

PROPOSAL

As there are indications that the introduction of 40 kph restrictions are unlikely to achieve significant effects and that most accidents occur at intersections it is considered that intersection controls e.g. signing

roundabouts etc. should be implemented at all residential intersections as soon as possible.

It is only then that 40 kph restrictions should be introduced into residential areas and preferably on a metropolitan wide basis.

In addition every attempt should be made to improve cyclist and motorist behaviour (refer to section Education).

- (a) Improve the riding ability of all cyclists
- (b) Increase cyclists knowledge and observance of road rules
- (c) Increase motorists' knowledge of bicycle operating characteristics and cyclists rights.
- (d) Improve cyclists knowledge of bike maintenance and replacement requirements
- (e) Update professional planners and engineers to include bicycle requirements in the planning of new areas and in maintenance and construction programs.

EDUCATION

Any education program for safer rider education should take into consideration the three main target groups - primary cyclists, adult cyclists and others (motorists and parents).

The most appropriate avenue of student cyclist education is via the schools and while Council may consider encouraging the State Government to introduce education programs (and encourage local schools to make use of them) Council should probably concentrate on the other target groups.

Having regard to the limited resources of Council, the following programs are suggested:-

EDUCATION

It is evident from the Geelong Bike Plan that a serious problem exists with the road behaviour of young cyclists, who initiate more than two-thirds of the accidents they are involved in. There is also a considerable problem with the behaviour of motorists who pose the major safety threat to cyclists.

REQUIREMENTS

- (a) Improve the riding ability of all cyclists
- (b) Increase cyclists knowledge and observance of road rules
- (c) Increase motorists' knowledge of bicycle operating characteristics and cyclists rights.
- (d) Improve cyclists knowledge of bike maintenance and equipment requirements
- (e) Educate professional planners and engineers to include bicycle requirements in the planning of new areas and in maintenance and construction programs.

PROPOSALS

Any education program for safer rider education should take into consideration the three main target groups - student cyclists, adult cyclists and others (motorists and parents).

The most appropriate avenue of student cyclist education is via the schools and while Council may consider encouraging the State Government to introduce education programs (and encourage local schools to make use of them) Council should probably concentrate on the other target groups.

Having regard to the limited resources of Councils the following programs are suggested:-

- (1) Visual displays - e.g. posters featuring aspects of safe cycling. These can be mounted in Council buildings such as Libraries, Infant Welfare Centres etc.
- (2) Promotion of bicycle programs - an interschool competition on bicycle handling and safety.
- (3) Encourage (or pay for) a safety program in the local press. For example Bicycle safety hints could be invited from the public with a small prize for each weeks hint printed in the local press.
- (4) School holiday programs - e.g. workshop on bikes assisted by local bikeshops, local clubs and "big names" in bicycle sport.
- (5) A few eyecatching signs at strategic locations to warn motorists to give consideration to the safety of cyclists e.g. Sandringham - A bicycle city - Motorists Please take care.
- (6) Consideration could be given to serializing the "Sprocket Man" comic in the local press.

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ENCOURAGEMENT

condition and to promote student awareness of road rules.

- (3) As it is now possible to buy a new bicycle without proper safety equipment such as a bell or horn it is considered that the Council should strongly urge
 - (a) the State Government to introduce legislation prohibiting the sale of an inadequately equipped bicycle.
 - (b) local bicycle retailers to co-operate with a policy of selling only properly equipped bicycles in accordance with the Australian Standards.
- (4) As there are numerous instances of bicycles being ridden at night without lights, in regard to the above, adequate equipment should include front and rear brakes, rear mudguard with reflector, a bell or horn, pedal reflectors and side reflectors (i.e. fixed to the spokes).
- (5) The Council should request the State Government to fully investigate the merits and methods of introducing both a bicycle registration scheme and a Bicycle licence scheme as recommended for investigation by the Geelong Bike Plan.
- (6) To facilitate the recovery of stolen bicycles, bicycles need an identification mark and these marks or numbers should be centrally registered. Manufacturers should therefore be required to number each bicycle and until there is a state registration scheme cyclists should be encouraged to register their bicycles with the Bicycle Register Company.

1. Promotion of bicycle safety and bicycle laws of the municipality organized through the Council Reception Officer.

2. A bicycle fair may should be prepared with points of local interest.

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1. Promotion of bicycle safety and bicycle laws of the municipality organized through the Council Reception Officer.

2. A bicycle fair may should be prepared with points of local interest.

- 2*
3. Provide adequate storage facilities at all Council buildings e.g. Libraries, Municipal Offices, etc.
 4. Encourage both private and Government Institutions to provide secure bicycle storage facilities - the Council has considerable influence in this regard through its Town Planning powers.
 5. Provision for cyclists in future subdivisions and land developments - through Council subdivisional and Town Planning powers.
 6. School Holiday Programs (see under Education)
 7. Publicity of the improvements and programs being undertaken by the Council.
 8. Support local recreational cycling organisations by way of publicity assistance.
 9. Promotion of cycling by the Municipal Recreation Officer through his column in the local press.

ACTION PLANS

As evidenced in the body of this report there are numerous opportunities in a variety of forms for the City of Sandringham to promote and provide a safer environment for cyclists.

These opportunities have been developed into a series of recommendations as follows:-

POLICY DECISIONS - no direct cost to the Council.

1. Seek financial support from the Department of Youth, Sport and Recreation and the Ministry of Transport under the 1974 Road Grants Act towards the construction of a foreshore bicycle path.
Adopted with amendment at Council Meeting 21/11/1978.

2. Request the Victorian Railways to provide additional covered bicycle storage facilities at both Hampton and Sandringham Stations as recommended in the report.
Adopted at Council Meeting 21/11/1978.

3. Request the State Government to amend the existing legislation to adequately cater for bicycles in the road reservation in accordance with the State Bicycle Committees request.
Adopted with amendment at Council Meeting 12/12/1978.

4. Request the State Government to ask the Standards Committee to review Australian Standard for Bicycles in regard to requiring all bicycles being equipped with pedal reflectors and front and rear brakes.
Adopted at Council Meeting 21/11/1978 with the amendment that "dual braking systems" be inserted for the words "front and rear brakes".

5. Request the State Government to introduce legislation prohibiting the sale of any bicycle not equipped in accordance with the Australian Standard.
Adopted at Council Meeting 21/11/1978 with the addition of the words "applicable initially to the sale of new bicycles".

6. Request the State Government to fully investigate the merits and methods of introducing both a Bicycle registration scheme and a Bicycle licence scheme as recommended for investigation by the Geelong Bike Plan.

Deleted at Council Meeting 21/11/1978.

7. Request the M.M.B.W. to amend the Melbourne and Metropolitan Planning Scheme to recognise provision for bicycles, bicycle ways and bicycle parking.

Adopted at Council Meeting 21/11/1978.

8. Seek the co-operation of the Victorian Police Department in paying special attention to cyclist and car driver behaviour in the municipality if possible by the establishment of a special metropolitan police bike team.

Adopted at Council Meeting 21/11/1978.

9. Seek the co-operation of local retailers in selling only properly equipped bicycles in accordance with the Australian Standards.

Adopted at Council Meeting 21/11/1978.

10. Seek the co-operation of the local police force in undertaking regular check inspections of bicycles in the schools.

Adopted at Council Meeting 21/11/1978.

11. Seek the co-operation of local employers in providing covered bicycle storage facilities.

Adopted at Council Meeting 21/11/1978.

12. Request the Municipal Recreation Officer to endeavour to provide a "workshop on bicycles" as part of future school holiday programs.

Adopted at Council Meeting 21/11/1978.

13. Encourage all local schools to participate in the bicycle education programs being developed by the ROSTA.

Adopted at Council Meeting 21/11/1978.

14. Adopt a policy of considering the provision of bicycle storage facilities when reviewing town planning applications.

Adopted at Council Meeting 21/11/1978.

15. Adopt a policy of requiring adequate provision for cyclists in all future subdivisions, land developments and road closure schemes.

Adopted at Council Meeting 21/11/1978.

16. Adopt a policy of reviewing the progress of this plan every September.

Adopted at Council Meeting 21/11/1978.

17. Request the staff to progressively investigate all the details/proposals in the plan requiring further investigation for further report to the Council.

Adopted at Council Meeting 21/11/1978.

A provision of £1,000 is suggested as the first stage of the programme.

Moved at Council Meeting 21/11/1978 to be financed from 1978/79 General Fund.

2. Undertake a program of removing the various minor hazards listed to Appendices C and D.

A provision for £6,000 is suggested for this programme.

Moved at Council Meeting 21/11/1978 to be financed from 1978/79 General Fund.

3. Encourage a review of the local bicycle safety programme in the local areas.

A provision of £1,000 is suggested for this item.

Moved at Council Meeting 21/11/1978 to be funded from 1978/79 General Fund.

4. Encourage a promotion of safe cycling with the granting of relevant powers to Council authorities. A provision of £4,000 is suggested for this item.

Moved at Council Meeting 21/11/1978 to be funded from 1978/79 General Fund.

5. Start a number of crashatching sites as recommended in the Model of Street Improvement Plan. A provision of £1,000 is suggested for this item.

Moved at Council Meeting 21/11/1978 to be funded from 1978/79 General Fund.

6. Local bicycle tour route mapping prior to local street audit and redesigning cycle riding routes in the catchments. A provision of £100 is suggested for this item.

Moved at Council Meeting 21/11/1978 to be funded from 1978/79 General Fund.

7. Undertake a cycle rally with associated publicity for the promotion of Council's bicycle programme.

A provision of £500 is suggested for this item.

Moved at Council Meeting 21/11/1978 to be funded from 1978/79 General Fund.

8. Undertake a project of generating public awareness of cycling safety by presenting programmes to Council officials and the "fourth estate" through a series of lectures.

Moved at Council Meeting 21/11/1978 to be funded from 1978/79 General Fund.

MINOR WORKS AND IMPROVEMENTS

1. Adopt a policy of providing adequate bicycle storage facilities at all appropriate Council facilities and shopping centres.

A provision of \$2,000 is suggested as the first stage of the program.

Adopted at Council Meeting 21/11/1978 to be financed from 1978/79 General Funds.

2. Undertake a program of removing the various minor hazards listed in Appendices. C and K.

A provision for \$6,000 is suggested for this program.

Adopted at Council meeting 21/11/1978 to be funded from 1978/79 General Funds to a limit of \$5,000.

3. Encourage a bicycle safety program in the local press.

A provision of \$1,000 is suggested for this item.

Adopted at Council Meeting 21/11/1978 to be funded from 1978/79 General Funds.

4. Undertake a promotion of safe cycling with the mounting of visual displays in Council buildings. A provision of \$400 is suggested for this item.

Adopted at Council Meeting 21/11/1978 to be funded from 1978/79 General Funds.

5. Erect a number of eyecatching signs as recommended in the report at strategic locations. A provision of \$2,000 is suggested for this item.

Referred to 1979/80 Estimates.

6. Local bicycle tour maps featuring points of local interest and recommended safe riding routes in the municipality. A provision of \$800 is suggested for this item.

Referred to 1979/80 Estimates.

7. Undertake a bicycle rally with associated publicity for promotion of Councils Bicycle programs.

An amount of \$500 is suggested for this item.

Referred to 1979/80 Estimates.

8. Undertake a program of generating public awareness of cycling safety by promoting safe driving on Council notices such as "non burnable rubbish" notices.

Adopted at Council Meeting 21/11/1978.

MAJOR WORKS

As the provision of bicycle lanes, paths etc. is not recognised under the current Road Traffic Regulations and the construction of permanent facilities is an expensive exercise it is considered that the provision of parking lanes/bicycle lanes could be provided on a trial basis in a number of locations.

The staff have received an indication that a research grant of \$5,000 is likely to be available from the Ministry of Transport for a study project in Sandringham. As a result of discussions with a member of the State Bicycle Committee the installation of trial parking lanes/bicycle lanes in Reserve Road and Ludstone Street would seem a suitable project.

1. Provision of a painted bicycle lane/parking lane in Reserve Road between Balcombe Road and Tulip Street (estimated to cost \$1,000). The research grant to cover the cost of the review of the trial lanes.
2. Provision of a painted bicycle lane/parking lane in Ludstone Street, Hampton. (estimated to cost \$1,000). The research grant to cover the cost of the review of the trial lanes.
Items 1 and 2 adopted at Council Meeting 21/11/1978 to be funded by the State Government Grant.
3. Provision of a 2.45 m. wide path along the south side of Tulip Street partly utilising the existing footpath. (Estimated to cost \$10,000). Amendment of the Road Traffic Regulations required for use of the path by bicycles.

Referred to Loan Schedule.

4. (a) Construction of a bicycle track through the F.G. Tricks Reserve.
- (b) Construction of a bicycle track through the Glenvill Estate. (A total provision of \$6,000 is suggested as a second stage development).

Referred to Loan Schedule.

APPENDIX "A"
BICYCLE STRATEGY PLAN SURVEY

30

In order to provide an improved environment for cyclists the City of Sandringham is preparing a Bicycle Strategy Plan which will make recommendations about bicycle routes, storage facilities, safety and other matters. Your assistance in completing this questionnaire will help the Strategy Plan Committee to formulate its recommendations.

Answers

1. AGE OF BICYCLE RIDER

2. USUAL DESTINATION

- School _____ (trips week)
- Shops _____
- Recreation Area _____
- Work _____
- No Destination _____
- * Other _____

3. MARK ROUTE OF THE TWO MOST FREQUENT TRIPS
on the map reverse side of this survey.

4. BICYCLE USED PRIMARILY ON:
(tick response)

- WEEKDAYS _____ (trips/week)
- WEEKENDS _____
- NIGHT _____

5. WHAT SPECIFIC BICYCLE HAZARDS DO YOU ENCOUNTER?

- a) On your bicycle route (e.g. rough ground)
(Please mark hazards on the map)

- b) Generally (e.g. traffic travels too fast,
parked cars etc.)

6. HOW FAR WOULD YOU TRAVEL TO LINK IN WITH A SAFE BICYCLE
ROUTE? km. -

- None _____
- ¼ km. (1 minute) _____
- ½ km. (2 minutes) _____
- More _____

7. WHAT PREVENTS MORE USE OF BICYCLES?
(Rate in order 1 to 5)

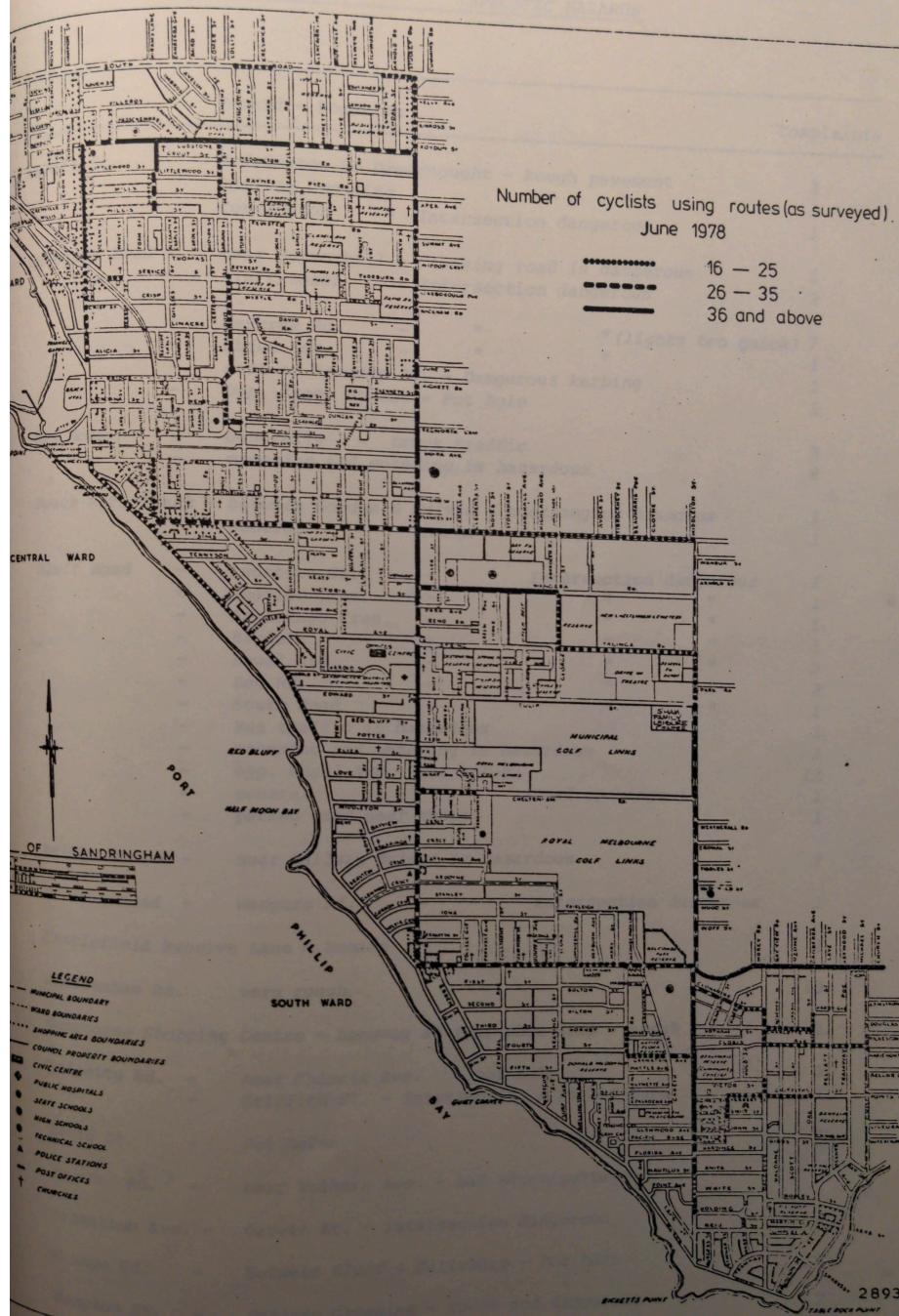
- Danger from Traffic _____
- Fear of Theft _____
- Lack of Storage Facilities _____
- Weather Conditions _____
- Other - specify _____

8. ANY OTHER COMMENTS.

Thank you for your co-operation.
Please return this questionnaire to: The City Engineer,
Municipal Offices,
Royal Avenue,
Sandringham, 3191

APPENDIX "B"

CYCLE USER ROUTES - (AS SURVEYED)



APPENDIX "C"

SURVEY SUMMARY - SPECIFIC HAZARDS

Hazard - Location			Complaints
Abbott St.	- Codrington to Dreadnought	- Rough pavement	1
	- Railway Crossing	" "	1
	Codrington	- Intersection dangerous	1
Balcombe Road	- near Summerhill	- Crossing road is dangerous	1
	- Bluff/Beach	- Intersection dangerous	2
	- Reserve Rd.	- " "(lights too quick)	7
	- Ebden Ave.	- "	1
	- east of Reserve Rd.	- Dangerous kerbing	1
	- Opp. Green Street	- Pot hole	5
Bay Road	- Generally	- truck traffic	2
	-	crossing and entering is hazardous	8
Beach Park Track	- between Gordon & Sylvia	- overhanging branches	1
	- general	- thorns	1
Bluff Road	- Ludstone St.	- Intersection dangerous	1
	- Seaview Cres.	- " "	1
	- Arkaringa Cres.	- " "	1
	- Hightett	- " "	1
	- Royal Ave.	- " "	2
	- Bay Rd.	- " "	2
	- South Road	- " "	1
	- Bus traffic is hazardous		1
	- crossing and entering is hazardous		3
	- opp. Royal Ave	- Pot holes	11
	- general	- " "(road openings)	1
	- parked cars near shops		1
Bridge Street	-	near Railway Bridge is hazardous	2
Brixton Road	- Wangara Rd.	- intersection dangerous	1
Castlefield Reserve Lane	-	Unmade	1
Cheltenham Rd.	very rough		10
Concourse Shopping Centre	- Laneway at rear shoe shop	- rough	1
Dalgetty Rd.	- near Chloris Ave.	- pot hole	2
	- Griffith St.	- Intersection & parked cars	1
David St.	Pot holes		1
Fewster Rd.	- near Walkers Ave.	- bad edges/gutters	1
Gramatten Ave.	- Gareth St.	- intersection dangerous	1
Grange Rd.	- between Bluff & Salisburg	- Pot hole	1
Hampton St.	- Railway Crossing	- rough and dangerous	2
	- Holyrood	- intersection rough	1

Hazard - Location		Complaints
Haydens Rd.	- Pot hole	1
	- Poor lighting	1
Herbert St.	- near school - parked cars	1
Hightett Rd.	- Sargood St. - dangerous intersection	2
	- Generally " "	1
	- Parked cars "	1
	- Too narrow	1
Holloway Rd.	- near school - parked cars	1
	- near road closure - rough	3
Hood St.	- Littlewood - Intersection dangerous	2
Iona Street	- Pot holes	1
Keating St.	- Hornby to Stawell - unmade	1
Linacre Rd.	- Orlando St. - intersection rough	5
	- General - pot holes	1
Ludstone St.	- Fast traffic	1
Middleton St.	- Bluff Rd. - Intersection dangerous	1
Miller St.	- Holloway Rd. to Bay Rd. - Parked cars	2
Pellat St.	- Hardy Grove - Intersection dangerous (sight)	1
Railway Cres.	- fast traffic	1
Raynes Park Rd.	- rough	1
Reserve Rd.	- Park Rd. - intersection dangerous	1
	- Weatherall Rd. " "	1
	- General - Pot holes and valve holes	1
	- Cemetery entrance	1
R.O.W.	- between Victor and Edith - rough	1
Seaview Shopping Centre	- Angle Parking - reversing cars	1
	- Bike racks - vulnerable to cars	1
	- Pedestrian crossing	1
Small St.	- fast traffic	1
Teddington Rd.	- Kingston to May - rough edges to gutter	1
	- Kingston - Intersection dangerous	1
Thomas St.	- too narrow	1
Walker Ave.	- rough	1

APPENDIX "D"

SURVEY SUMMARY - GENERAL HAZARDS

Hazard	No. of Complaints
Parked Cars	
Volume of cars	231
Speed of Cars	123
Inconsiderate Drivers	123
Rough Roads	112
Dogs chasing bikes	94
Broken Glass	92
Steep Hills	52
Drivers opening car doors in front of bikes	41
Cars - General (no specific observation)	45
Pot Holes (locations not specified)	37
Car drivers failing to give priority at intersections	37
Crossing roads (particularly major roads)	41
Buses/Trucks - general (no specific observation)	31
Corners/Intersections	29
Cars reversing and parking manouvers	34
Narrow roads (e.g. Thomas with buses)	23
Pedestrians	20
Broken edges (gutters to pavement join)	15
Weather conditions	14
Slippery Roads (especially after rain)	12
Cars tooting horns - (frighten bike riders)	9
Failure to use head lights	7
Inadequate street lighting	6
Speed traps (C of Moorabbin - east side Golf Course)	4
Factory Smells	4
Litter	4
Other cyclists	3
Traffic signals inoperative	3
General observations - passing cars, cars cutting corners, rough footpaths, pollution, nails, thorns, etc.	2 each
General observations - visibility of cars, overhanging trees, buses pulling out from "bus stops", women drivers, burning leaves in gutters, cars collecting children outside schools, cars parked too close to corners, unmade streets, "dinking", traffic signs, level crossings, rubbish bins, depressions around manholes, fire plugs etc., cars on footpaths.	1 each

APPENDIX "D"

SURVEY SUMMARY - GENERAL HAZARDS

Hazard	No. of Complaints
Parked Cars	
Volume of cars	231
Speed of Cars	123
Inconsiderate Drivers	123
Rough Roads	112
Dogs chasing bikes	94
Broken Glass	92
Steep Hills	52
Drivers opening car doors in front of bikes	41
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Failure to use head lights	7
Inadequate street lighting	6
Speed traps (C of Moorabbin - east side Golf Course)	4
Factory Smells	4
Litter	4
Other cyclists	3
Traffic signals inoperative	3
General observations - passing cars, cars cutting corners, rough footpaths, pollution, nails, thorns, etc.	2 each
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APPENDIX "F"

SURVEY SUMMARY - SUGGESTIONS

<u>Suggestion</u>	<u>No.</u>
Bike paths required on:	
all busy roads	24
Beach Park Reserve	6
Reserve Road	1
Ludstone Street	1
Tricks Reserve	1
Bay Road	1
To City	1
Resurface Cheltenham Road	
Crossings Required :	
Bridge St. near railway bridge	1
Brixton near Avoca	1
General	1
Bike paths required as installed:	
in Europe	1
in Chelsea	1
Request for : "Bike Parks" (as in car parks)	
"Book of Rules"	1
More Stop Signs	1
Bike Racks at Beaumaris Community Centre	

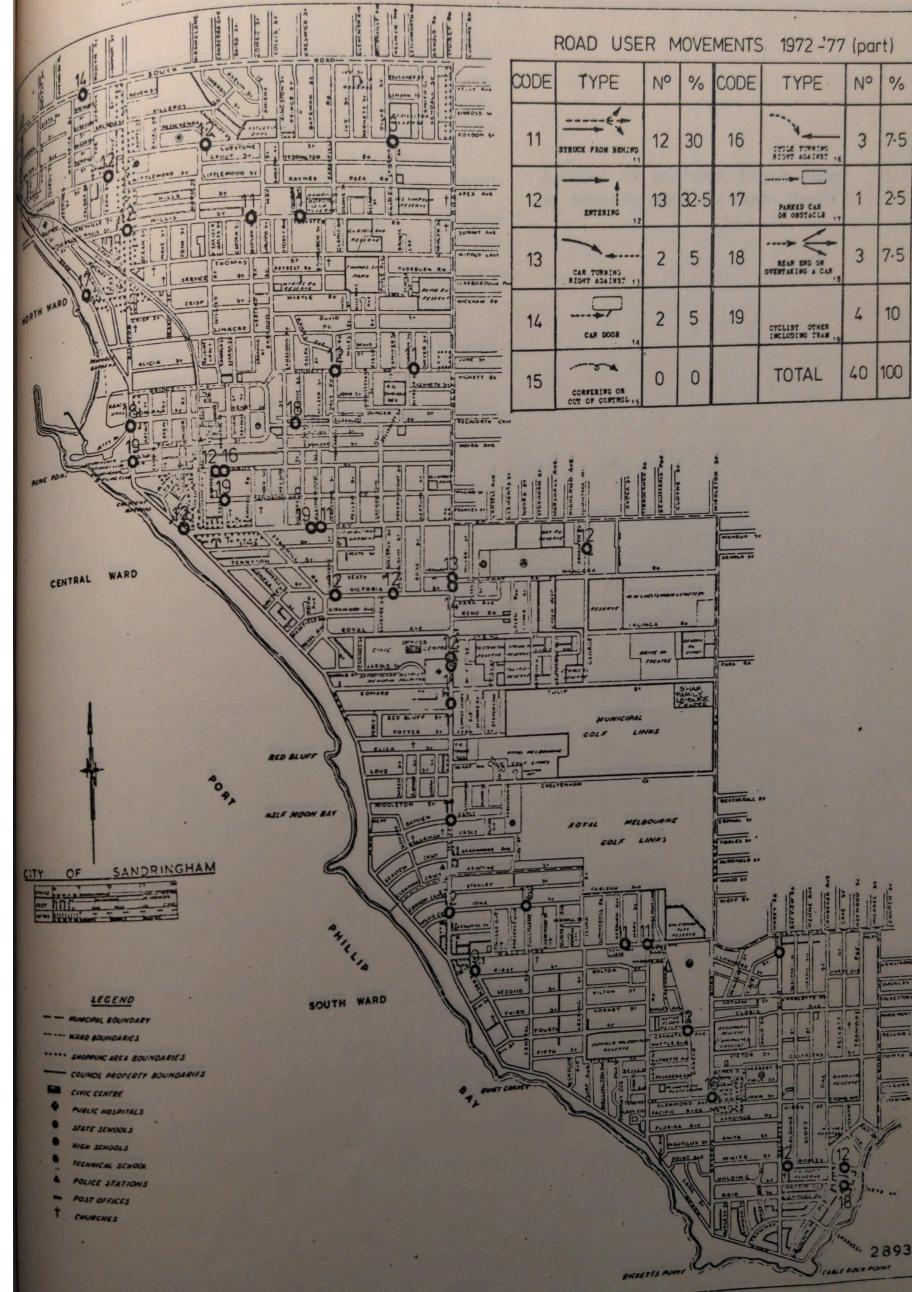
APPENDIX "G"

SURVEY SUMMARY - COMMENTS

<u>Comments</u>	<u>No.</u>
More Bike Racks required in shopping centres	5
full Rider education required - i.e. laws, skill, safety etc.	3
Bike paths will reduce accidents	3
Bikes should have equal status to cars	2
Railway crossings are generally rough and dangerous	2
Children under 10 y.o. to use footpaths until proficient	2
Need for a Traffic school for bike riders	2
Heavy traffic is dangerous	2
Children should be more careful	1
Bike riding is more dangerous than some years ago	1
Need to provide areas for "learners"	1
Need for more bicycle clubs	1
Bike racks damage wheels	1
Pitcher K & Ch. is dangerous	1
Riding is an enjoyable family recreation	1
Car movements near school grounds are dangerous	1
Riding on footpaths is dangerous	1
Thomas St. is particularly dangerous - narrow & hilly	1
There is nowhere to ride on busy roads	1
Bike paths would encourage more usage	1
Motorists ignor bikes	1
Ped. Crossing in Beach Rd. north of Clock Tower dangerous	1
Bike Racks in Concourse Shopping Centre are useless	1
Hand brakes in wet are useless	1
Dangerous when stopping down steep hills	2

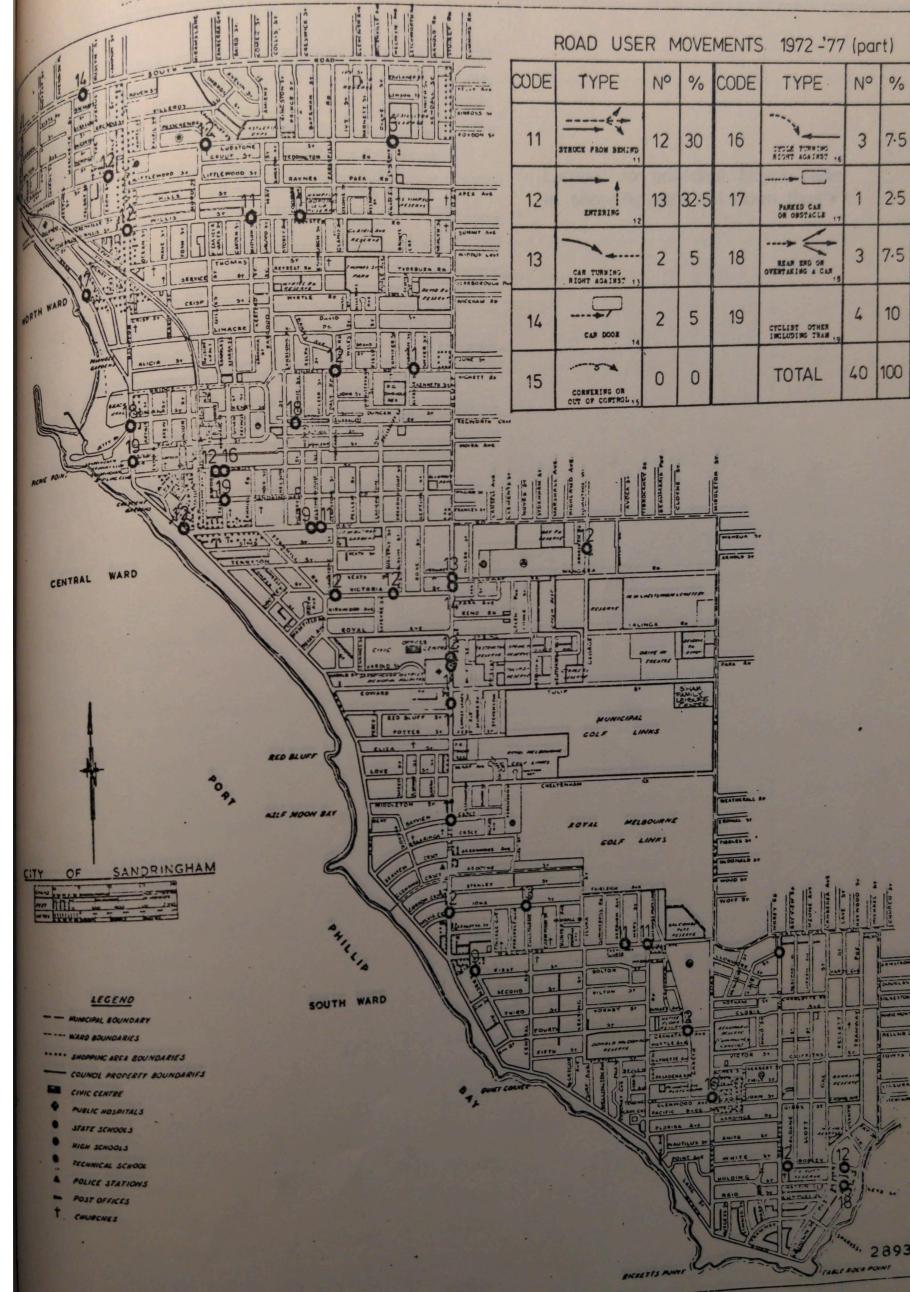
APPENDIX "H"

RESUME OF ROSTA BICYCLE ACCIDENT STATISTICS



APPENDIX "H"

RESUME OF ROSTA BICYCLE ACCIDENT STATISTICS



APPENDIX "J"

SURVEY OF BICYCLE THEFT

40

population surveyed
Survey conducted by
date

54 students at Hightett High School
Tom Carrigg
June 1978

Have you had a bicycle or its access- ories stolen during the last year?	Description of item stolen	Value	Where it was stolen	Was it locked?	Was it reported to the Police?	Was it recovered?
Yes	Bike	\$40	Sand.station	No	Yes	No
Yes	Chain Valves					
	Light	\$4	School	No	No	No
Yes	Bike	\$40	School	Yes	No	No
Yes	Bike	\$140	School	No	Yes	No
Yes	Valves,Light	\$10	Beach Oval	No	No	No
Yes	Bike	\$30	Sacred Heart Church	No	No	No
Yes	Bike	\$110	Shops	No	Yes	Yes
Yes	Light,Speedo	\$15	Sand.Hospital	No	No	No
Yes	Chain	\$2	School	No	No	No
Yes	Globe out of Light	\$1	School	No	Yes	No
Yes	Pump	\$2	School	Yes	No	No
Yes	Valves	\$1	Sand.station	Yes	No	No
Yes	Gears	\$4	Residence	No	No	No
Yes	Valves	\$1	School	No	No	No
Yes	Light & Lock	\$10	School	Yes	No	No
Yes	Wing-nut	\$1	School	Yes	No	No
Yes	Valves	\$1	Beach Oval	Yes	No	No
Yes	Hand Grips	\$2	School	Yes	No	No
Yes	Chain	\$1	School	Yes	No	No
Yes	Back Wheel	\$20	Beach Oval	Yes	No	No
Yes	Bike	\$100	Turner Rd.	Yes	Yes	No
Yes	Bike	\$50	Shops	No	No	No
Yes	Valves	\$1	School	Yes	No	No
Yes	Hand Grips	\$2	School	Yes	No	No
Yes	Back Wheel	\$20	Sand.station	No	No	No
Yes	Pump	\$2	School	Yes	No	No
Yes	Chain	\$2	Beach Oval	No	No	No
Yes	Front Wheel	\$10	Residence	No	No	Yes
Yes	Both Wheels	\$20	School	No	No	Yes
Yes	Bike	\$50	Shops(Southland)	No	Yes	No
Yes	Bike	\$85	School	No	No	No
Yes	Valves	\$1	School	No	No	No
Yes	Valves	\$1	Sand.station	Yes	No	No
Yes	Valves	\$1	School	Yes	No	No
Yes	Handlebars	\$5				

June, 1978

41

- 2 -

18 students reported no incidence of theft.

CONCLUSIONS:

1. 62% of bike owners had experienced incident of theft in the past year.
2. 44% of those owners had locked their bikes.
3. 16% of those owners had reported the theft to the police.
4. 8% of the owners recovered the stolen article.

BIKEPLAN DEFICIENCIES & OPPORTUNITIES SURVEY FORM

DETAILED INFORMATION ON EVERY LENGTH OF MAIN ROAD (see below)

RECORD
ON SHEET

ON MAP

IN

THIS

SHEET

1. MAIN ROADS:

- Details on this sheet

- Rail Bridges

- Squeeze Pts.

- Intersections

2. FOOTWAYS

3. ALTERNATIVE ROUTES

4. CYCLING

5. BIKE LANE

6. BIKE PARK

7. BIKE STATION

8. BIKE RENTAL

9. BIKE PARKING

10. BIKE SHED

11. BIKE STATION

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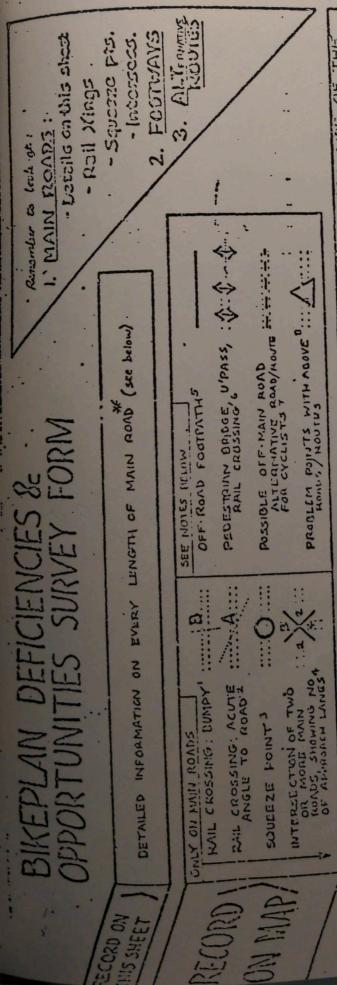
208. BIKE RENTAL

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BIKEPLAN DEFICIENCIES & OPPORTUNITIES SURVEY FORM

THIS SHEET

DETAILED INFORMATION ON EVERY LENGTH OF MAIN ROAD* (see below)



RECORD
ON MAP

INFORMATION ON EACH LENGTH OF MAIN ROAD†

NAME OF
MAIN ROAD

NAME OF
STREET

BETWEEN
INTERSECTIONS WITH:

NOTES

4. ONLY ON MAIN ROADS, DASHED LINE, SHOWS NO. 1 FOUNDED

5. POSSIBLE OFF-MAIN ROAD ALTERNATIVE ROAD/HOWARD FOR CYCLISTS

6. LEV. EXISTING WALK OR CROSSING, DASHED LINE, SHOWS NO. 2 FOUNDED

7. PREVIOUSLY GOOD, NO. 3 FOUND

8. PROBLEMS FOUND

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