TO ALL RESIDENTS No. 28

FEBRUARY 1983

POSTAGE PAID UPPER BEACONSFIELD

BEACONSFIELD UPPER ASSOCIATION ANNUAL GENERAL MEETING

WEDNESDAY, 2nd FEBRUARY at 7.45 at the VILLAGE HALL

AGENDA:

7.45 p.m. Minutes, correspondence, etc. available

8.00 p.m. ANNUAL GENERAL MEETING :

Minutes of previous Annual General Meeting President's Report Treasurer's Report

ELECTION OF COMMITTEE

General Business with new Committee, Minutes, etc.

Reports from Sub-Committees :

- 1) D.V.A./B.U.A./Shire Environmental Study Public discussion, hearing of recommendations.
- 2) Village Fair
- 3) Youth Club/BMX
- 4) Citizen of the Year
- 5) Other Business

Nominations for the B.U.A. COMMITTEE were invited in the previous Village Bell and forms provided.

CHRISTMAS EVE, CAROLS BY CANDLELIGHT

Vic Greenaway

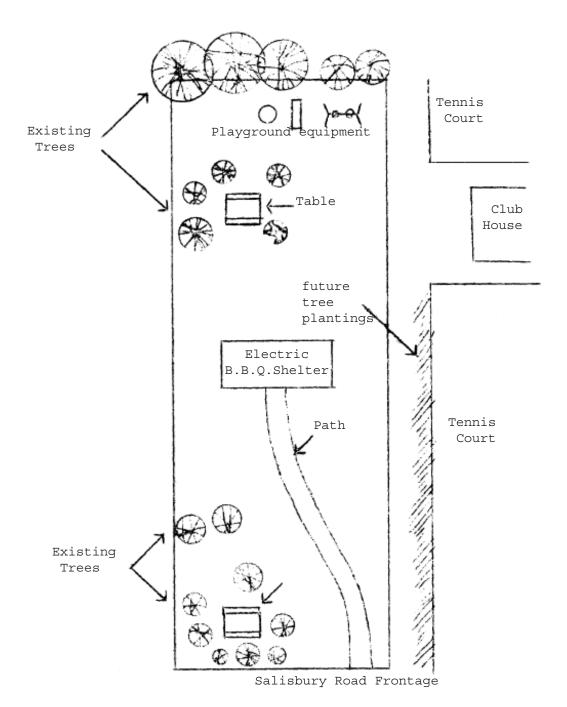
Upper Beaconsfield turned out in vast numbers again this Christmas to celebrate "carols by candlelight", held at the Rotunda in the centre of the Village on Christmas Eve.

This event has certainly proved to be a special one for the community and is destined to be an annual occurrence at Christmas. There were a number of people who worked to make all this possible. I wish to take this opportunity to thank all these who gave up their time, particularly those who helped assemble and dismantle the lights.

A special 'thank you' to our Fire Brigade members and to Ross Hales (our music man), School staff and children, Mother's Club, Ian Johnson (Father Christmas), Brian Fiddes (our sparky), Keith Ewenson and the Shire of Pakenham. Also to Ed Greenaway who joined the singing group for the carols, and the committee members for the event - Judy Greenaway, Pat Finn, Ray & Elva Ratcliff.

Earlier in the evening Malcolm Graham played Father Christmas to the folk at the two hospitals and Joyce Bumpstead led a small choir who sang carols there.

* * * * *



A PICNIC AREA FOR UPPER BEACONSFIELD?

Eric Bumpstead

A suggested use for the block of land between the tennis courts and telephone exchange is for 2 picnic tables, covered B.B.Q. shelter and playground equipment.

The area could be landscaped with flower beds and tree plantings to screen the tennis courts.

Envisaged usage : Tennis Club - Playground and B.B.Q. facilities,

Visitors to Salisbury Gully,

General Public,

Pleasant area for visitors to take patients from $% \left(1\right) =\left(1\right) +\left(1\right) =\left(1\right) =\left$

local hospitals.

Some of the Citizens of the Year are prepared to act as Committee of Management.

* * * * *

B.U.A. PRESIDENT'S REPORT 1982

Matt McDonald

The Upper Beaconsfield Association has plodded through 1982 without having to deal with many controversial matters. This may be one major reason for a fall-off in the numbers attending general meetings. However the work went on and there has been much quiet achievement. The summaries below witness to a few matters successfully resolved and many proceeding satisfactorily.

B.U.A. General Meetings were held on February 10, April 7, June 2, August 4, October 6, December 1.

The Village Bell emerged from publication prior to each of these meetings; an amazing feat, given the hard work and inevitable panic that goes into each issue. The content and reader interest in the Village Bell speak for themselves. It is into its fifth year of publication and twenty-eighth edition.

Thanks are due to those who write for, type for, edit, collect from and collate the Village Bell. Also to Pakenham High School for helping with printing and to the growing number of advertisers who support the V.B. and whom "the Bell" asks you to support.

 $\underline{\text{SUB-COMMITTEES}}$: Much of the work of the Association is done through subcommittees. The status and tasks of sub-committees were clarified during 1982 and there are at present six sub-committees:

Youth Club/BMX Christmas Decorations

Rainbow Lake Sutherland Road Open Space

Village Fair Re-cycling

All those who have worked on these committees deserve our thanks, as do the members of the executive committee: Secretary Laura Levens, Treasurer Ray Ratcliff, Vic Greenaway. Jeanette Ballinger, Keith Ewenson, Lynda Brodie, Murray Erwin, Nick Griffin and Roy Perry.

<u>VILLAGE FAIR & CITIZEN OF THE YEAR</u> - The Fair was a successful and enjoyable day once again, and Brian Dickinson was a worthy recipient of the Citizen of the Year Award. A Village Dance followed the Fair and was an evening of family fun.

YOUTH CLUB/BMX - This recently combined group has been very active mainly in providing film nights and BMX activities. Their achievements include the construction of the BMX track and the erection of the Community Notice Board.

COMMUNITY NOTICE BOARD - You will find this on the median (nature) strip near the General Store. This Board provides a new dimension to one of the B.U.A.'s main works - that of communication between groups in the community and residents.

<u>BOTTLE DEPOT</u> - A new site had to be found, and was found, for the disposal of bottles, formerly situated near the Village Hall, now in the yard of the Pine Grove Hotel - "Many Happy Returns", to quote one resident!

QUARRY IMPACT COMMITTEE - This is a combined working group of B.U.A. members and members of the Officer Progress Association. This group was re-activated after further proposals were made by Hillview Quarries to Pakenham Council. The group conducted a survey which assured them of strong community support in opposing a quarry in the proposed position.

BRENNAN'S ESTATE FIREBREAK - The B.U.A. played a central role in encouraging liaison between the Shire and the local Fire Brigade to provide a fire break around the estate that would be as effective as possible without damaging the environment excessively. Some clearing has been done, and more work will soon be done.

B.U.A.'s President's Report (contd.)

 $\overline{\text{RECREATION SURVEY}}$ - Council officers conducted a survey of U.B. citizens to ascertain recreational needs. Upgrading of the Recreation Reserve seems to be the greatest need.

<u>RAINBOW LAKE</u> - The owner of the lake has offered the lake and some surrounding land for community use. Negotiations are still in their early stages.

EMERALD-BEACONSFIELD ROAD - Upgrading of the road between the ends of Stoney Creek Road is still some way off. If Stoney Creek Road residents and others wish to have this work take priority over other road works in the Shire, a lot of interest and public pressure will be needed.

CHRISTMAS DECORATIONS & FESTIVITIES - It was the second year of lights, Father Christmas on the fire truck, and carols around the Rotunda, with obvious community interest and enjoyment.

<u>D.V.A./B.U.A./SHIRE ENVIRONMENTAL STUDY</u> - After much delay, a summary of the report has been provided for our consideration and comments. Come to the Annual General Meeting and have your say.

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FIREBREAKS & COUNCIL SLASHING

Laura Levens

The following is an edited extract from a letter from Shire of Pakenham re Fire Hazards (22.12.82)

The fire break on north side of Brennan's Estate to be undertaken in mid January. Work at the western end of Brennan Ave and eastern side of Frazer Ave to be completed "within next two weeks". Sutherland Road open space is scheduled for entire slashing at same time as Brennan's Estate. Council properties will be slashed where necessary after inspection by the Proper Officer and Work's Engineer.

* * * * *

SALISBURY GULLY RE-VISITED

Jeanette Ballinger

I conducted friends along the Salisbury Gully track and was very proud to be able to say the work had been undertaken and maintained by local people. It is a real credit to the Committee of Management.

* * * * *

THE VILLAGE BELL

Masthead : Paul Reid

Printing : Charles Wilson

Editor : Jeanette Ballinger

Typing : Gilda Hansen, Shirley Floyd

Elva Ratcliff, Joyce Attreed

Collating : Venturers and Others

DEADLINE NEXT ISSUE : March 15 at the Post Office

Editor Next Issue : Graeme Kidd

* * * * *

VILLAGE FAIR

Saturday,

19th March, 1983

11 a.m.

PARADE

from Village Centre to Recreation Reserve.

HELP MAKE THE FUN

* COME AS A CLOWN

12 NOON ONWARDS

PREPARE A FLOAT WITH

NEIGHBOURS OR FRIENDS

THE VILLAGE FAIR AT THE RECREATION RESERVE

STALLS

GEOFF LORD'S JAZZ BAND

EATS & DRINKS

CITIZEN OF THE YEAR

BERWICK PIPE BAND

B.M.X. ACTIVITIES

'GROPPO' the CLOW

GAMES

FIRE BRIGADE ACTIVITY

PONY CLUB DISPLAY

* DRAW OF VILLAGE FAIR RAFFLE Prizes : 1st Gas BBO

2nd Set of Saucepans

3rd Computer Game

TICKETS ON SALE SOON

CAN YOU HELP ?????

- * Sell Raffle Tickets contact Jenny Kerr
- * Sponsor the Fair by donation of prize or money - contact Charles Wilson
- * Enter a float in the Parade contact - Peter Deering

WATCH THE COMMUNITY BOARD FOR FURTHER PLANS

T O Τ C O M EH EFAIR

NEW RESIDENTS: We welcome the following new residents to our Village -

St. Georges Road

:

:

:

:

:

:

Barry & Pauline DAVIES; Bruce & Val FLOOD

Stoney Creek Road

Colin BROOKS; Gerald & Pam DIXON;

David & Margaret EAKINS; Charles & Bessie TYERS;

Mr. & Mrs. G. VOGELS; Ken & Sandra SYPHERS;

cnr. Albers Rd. : Michael & Ann-Marie GRANGER

Grant Court

John & Ann BARKLA and family

Brennan Avenue

John & Anne DUNLOP

Quamby Road

Malcolm & Mary MALIN

McBride Road

Ian & Lynette HOLLICK; Mark & Angela SAUNDERS :

Young Street

Mark & Jan WILLIAMS; Mrs. LANGDON; Mr. P. JOHNSTON

Burton Road

Terry a Maria TREVENA; Ian & Jenny WAKEFIELD :

Lenne Read

Fergus & Cheryl O'GALLAGHER

Sutherland Road

Carole & David MCCULLOCH

Emerald Road

Terry & May HARRISON

Manestar Road

Robert & Carmel BURTON

Blue Ridge Road

James RING; M. WHITHAM; M. VINCENT

THE SCRAP BOOK OF THE DEWHURST PROGRESS ASSOCIATION

Diana Rocke Roy Harris John Milligan

This book comprises cuttings from the "Pakenham Gazette" and the "Dandenong Journal". Cuttings in 1957 show that as the original Dewhurst Public Hall was becoming inadequate the Hall Committee applied to the then Berwick Shire for funds. Committee members were George and Jessie Beattie, John and Lorna Hill, Ernest and Hazel Holt, Mirrion Matthews, Eric and Edith Moore, Joseph and Ethel Peart, Rubina Pratt, Stanley and Ursula Stephens, William and Maude Wade, Raymond and Myra Wilson. Construction plans and a quotation were provided by the State Housing Commission, and approved by Council, but the Hall Committee found that they could not utilise the grant of £600 by the expiry date and that they needed an extra £150. Crs Harris and Kilvington raised the matter in Council and with the State Lands Office, explaining that a quotation of £1,334 had been received for "partial construction". In July 1958 the Council Officers became dubious about the Hall Committee's intention to have part built by the Housing Commission, and to complete the rest themselves. An incompleted hall would not comply with regulations, and could not be used. But if incompleted and could not be used, the Committee would lose their principal way of raising funds to finish it. A vicious circle.

Shire Engineer, Ron Chambers, estimated that the total cost would be £3,800, so that Dewhurst would have to find the difference of £2,470; Council felt that the Hall Committee would be "biting off more than they could chew", which would leave Council with an unfinished and unusable Hall. The project was dropped, and the funds were diverted to other community Halls.

However in January 1966 the "Journal" reported that residents had added a kitchen to the Hall by working bees and fund-raising. A year or two later the Hall was sold, and removed, in preparation for the Cardinia Dam.

Dewhurst was in the news again in 1958/9 regarding the name of the road to Cockatoo. Was it Ladd Road or Stockyard Hill Road? At the time "Ladd Road" was said to be in common usage but Cr Harris, ex-President of the Shire, moved that the original name had been "Stockyard Hill Road", and this was adopted. Some residents demurred, but by then new sign-posts were up. When the Dam was made, the road was diverted and the name disappeared.

More important than the name was the condition of the road, which was like a bush track. Improvements were said to have been promised for seven years past. Local fire brigades strongly urged opening up the road to provide access to a fire-prone area of bushland. If a fire blocked the direct road from Upper Beaconsfield to Emerald, it would be necessary to go via Narre Warren North, Upper Pakenham, or Cockatoo, to connect places north and south of the fire. In August 1959 Cr Kilvington announced a CRB grant to construct a proper road for vehicular traffic, but a year later the job was deferred because quotations were £600 more than the grant. By March 1961 the road had been formed, and "it was hoped that there would be enough money to put a little metal on the formation". It may seem ironic that, after those delays and cost saving expedience, the re-routed road around the Dam is a fine piece of highway engineering, accomplished with massive earthworks, and at considerable expense.

<u>CLUB NEWS</u> - Two circumstances have combined this month - very little Club news because of the holiday season and very little space because of the Study Team Draft summary. The editors have felt for some time that the "Bell" was becoming so big no one would want to plough through from cover to cover and the advent of the Village Noticeboard gives the right place for Club news to be displayed. This month we are giving a summary of Club items and displaying them on the notice board. If you have views on this subject please come along to the Association Annual Meeting and make them known.

Ed.

* YAKKERBOO PRINCESS - Girls who turn 16 by 31.1.83 should start thinking about entering the Quest. The Dinner will be on March 4. \$13 single, \$26 double -at the Golf Club. Further details on Village Noticeboard.

Contacts - Dot Pockett 443 506 or Joyce Bumpstead 443 298

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* YAKKERBOO FESTIVAL - March 18-27, 1983, Calendar of Events on Noticeboard.

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* CITIZEN OF THE YEAR - Don't forget to vote by February 28.

* *

* SCOUTS NEW BOTTLE DEPOT - Check out the new site at the Pine Grove Hotel.

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* NEW BOOKMOBILE TIMETABLE - Upper Beaconsfield on Wednesday mornings. Copies of new schedule available at the Post Office, General Store & Village Board

* *

- * NEW INFANT WELFARE SCHEDULE -
 - Sr. V. Halse Mondays Upper Beaconsfield 9 a.m. 12.30 p.m.; 1.30 4.30 p.m. Further details on Village board

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* <u>C.W.A. - "WOORINYAN"</u> - Report of Annual General Meeting is on the Village Board. Contact person : Lurlire Wilson 443 779.

* *

* <u>C.W.A. - Afternoon Branch</u> - On the Village Board is a Report on the Christmas Break-up and the presentation to Mrs. Gerry Stutley who has moved to Queensland. NEXT MEETING in the Hall, Thursday, 3rd February. New members most welcome. Contact Person - Mrs. Margaret Hill 03 707 4681.

* *

* YOUTH CLUB - A successful BMX Meeting was held on 22.1.83 with 26 entries.
Also, selling of Christmas Trees was successful and we wish to thank the B.U.
General Store who sold them on our behalf completely free of charge. Watch the
Community Noticeboard for Film Nights to commence in April.

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COMMUNITY NOTICE BOARD

The Notice Board is new functional for dissemination of community information - NOT commercial use.

Special thanks to Alan Blackwell and Peter Willis.

USE IT FOR YOUR CLUB FOR POSTING OF NOTICES

SEE George Decelis at the General Store OR Ray Ratcliff at the Post Office.

ROSS HOLDEN (BERWICK)

Sales, Service, Parts, Body Shop Ross Neilson A/H: 44 3641

Bus: 707 2222

Used Cars-Alf Baker A/H 44 3446

NEIL NEILSON AUTO IMPORTS P/L

(BERWICK) (Next door to Ross Holden) Subaru, V.W., Audi, Fiat, Lancia, Renault.

Ross Neilson A/H: 44 3641 Bus: 707 2222

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CONTINENTAL CAKES made to Order, from \$6.00. Phone Gerda Moritz 44 3597.

TANK 2000 gal. for sale. G.C. \$250. Phone 44 3874

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STATE SWIMMING CHAMPION

R. Ratcliff

In the recent State Swimming Championships two local girls fared very prominently in the results.

Winner of the Womens open 100 metre and 50 metre Freestyle titles was JAQUI HODY (17 yrs) who also came third place in the 50 metre Butterfly event.

CAROLINE (15 1/2 yrs) recorded a great performance in running 3rd in the open Breastroke event in the championships.

The Hody family live in Sugarloaf Rd and the girls attend St. Margaret's Girls School.

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INTERFERENCE WITH LETTER BOXES IN STONEY CREEK ROAD

R. Ratcliff

Several residents reported an incident of mail tampering in Stoney Crook Road on January 19. Numerous letters, cheques and envelopes were found scattered, on roadsides at East end of Stoney Creek Road and the matter has been placed in the hands of Berwick Police.

Australia Post have advised that security of mail once placed in letter boxes is the responsibility of householders. A check to see that your mail box is in a condition to keep the mail secure might be timely and could save loss or delay in receipt of your mail.

* * * * * * * *

BEACONSFIELD UPPER TRADES & SERVICES DIRECTORY

Charges \$5 per box per issue, \$25 per box per year (6 issues). Contact Jan Rutherford (44 3760) or Ray Ratcliff at Post Office.

(1)

(Number in brackets indicates future paid-up advertisements on special rate.)

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Ph. 44 3751

CHEMIST DELIVERY - Serviced Daily Now available to residents of Upper Beaconsfield. Ring Richard Edwards Narre Warren (03) 704 7563. Shop Open 9-8 pm

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Andrew Rowe _ SIGNWRITER
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"Fiddlewood", Lot 36 Berglund Rd. (2)

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ALL MECHANICAL & ELECTRICAL REPAIRS
Pumps, Washing Machines, Tape Recorders,
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BERWICK APPLIANCE SERVICE
Repairs to ALL Household Appliances
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Refrigeration - Laundry - DishwashersHeating, etc. Phone (03) 707 2780 (2)

A summary of the report has been made available to the B.U.A. and it is printed in full in this issue of the Village Bell. The survey received strong support from the local community, with more than 75% of residents returning the survey.

Because of this outstanding support, and the nature of the information presented, an opportunity will be given at the <u>Annual General Meeting</u> for comments and discussion on the paper. This will take the form of a workshop session in which everybody will be able to make their response.

Make sure you read the report before coming to the meeting on <u>Wednesday</u>, <u>2nd</u> <u>February</u> at the <u>Village Hall</u>. We hope to have representatives of the original study team at the meeting.

In the light of previous controversies and future planning for the Village, a number of issues may arise from this night.

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* Mr. Don Thompson, Chief Engineer-Manager, D.V.A., has kindly given permission for the following to be reproduced in the Village Bell. Editor.

Dandenong Valley Authority

MEMO to Chairman & Members Cardinia Creek Advisory Committee

FROM Chief Engineer-Manager

26.11.82

Enclosed herewith is a draft copy of a summary of the report on Upper Beacons-field by the Monash Study Team for perusal and comment, prior to it being prepared as a final document suitable for general distribution.

It is proposed that this final document will also include a resume of comments received including those of the project management team, together with a description of the steps involved in the next phase of the exercise.

In order to assist general discussion, my preliminary comments are as follows:-

- 1. The report provides good background information on "getting to know" what the Upper Beaconsfield Community is.
- 2. The report also identifies the majority opinion of what its needs and aspirations in regard to the development or improvement phase of existence at Upper Beaconsfield.
- 3. As far as the environmental condition of Stoney Creek and its tributaries are concerned, status quo is good. There is some need for improvement in the form of correction of past mistakes, and need for a continued vigilance to maintain status quo. The most significant detrimental actions are:
 - a) Discharge of domestic waste waters containing nutrients and other polluting material to the storm water system.
 - b) Destruction or elimination of the buffer areas along the creeks by tree felling and disturbance.
 - c) Erosion of waterways, gullies, and roadside drainage paths.
- 4. It is unrealistic to conceive that a township of this size and location should not have a water supply reticulation. Hence, the consequences of such a service provision and its eventual augmentation to most residences and small blocks in the area, has to be accepted.
- 5. If the population of the township can be contained to 2,500 or less over the next 15 years or so then a reticulated sewage system is not necessary as other methods of domestic waste disposal can be satisfactorily effected more cheaply.

contd....

Dandenong Valley Authority Memo contd.

- 6. It is considered that in framing the objectives of this Community in this century, one of the most important should be "That the population be contained to 2,500 by the year 2000".
- 7. Having regard to current studies by the Forests Commission in the field of waste disposal in tree plantations, it is considered that an adaption of this experience to areas downstream of town storm water outfalls is likely to be the most cost effective means of protecting downstream environmental conditions from upstream town pollution that inevitably enters the towns stormwater drainage system.
- 8. If a town sub-catchment contains properties that wholly dispose of domestic waste waters on site (i.e. they do not enter the town's drains) then roadside drains can take the form of grassed swales with or without a small low flow pipeline. However, if there is a continual flow of polluted waters along street channels it should be undergrounded to maintain satisfactory environmental and aesthetic conditions within the street areas.

The use of swales without a low flow pipeline to contain continuous flows is thus probably limited to very small catchments. Swales with a low flow pipeline is appropriate to streets which are not significant access-road drains having larger catchments but above this situation the normal 1 in 5 year piped drainage system would be necessary because of practical and economic reasons.

The concept of open earth lined ditches along residential streets is not an acceptable long term solution as it would conflict with the objectives of the town covering environmental, aesthetic and amenity goals as well as being an undesirable source of sediment and colloidal pollution to the downstream waterways.

- 9. The next steps are :
 - a) Circulate and receive comment on draft document
 - b) Publish document including comments for general circulation and community discussion purposes.
 - c) Investigate in some detail overall town drainage improvement including downstream "treatment" zones, to the stage of firm recommendations for works or action together with an implementation plan.
 - d) Establish a set of Community objectives consistent with the "No more than 2,500 population by the year 2000" philosophy.
 - e) Create a strategy plan as a means of furthering the attainment of the community's objectives.

* * * * *

From D.G. Thompson to the Secretary, Beaconsfield Upper association $\ensuremath{\mathsf{S}}$

8.12.82

"Enclosed for your comment is a draft copy of a summary of the Monash Study Team's Upper Beaconsfield Report together with a covering memo from the Authority's Chief Engineer-Manager. Comments on the draft are being sought from members of the Cardinia Creek Advisory Committee and other organisations involved with Upper Beaconsfield prior to publishing a document for general circulation and community discussion purposes.

Please forward your comments by the end of January, 1983.

Yours faithfully

** Ed. This date has been extended to the end of February, 1983

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UPPER BEACONSFIELD STUDY

SUMMARY OF REPORT BY MONASH STUDY TEAM

INTRODUCTION

The Upper Beaconsfield study is a joint D.V.A., Shire of Pakenham study aimed at preparing guidelines for water management and development of the area. It will consider a wide range of physical and environmental factors as well as the communities aims and aspirations. This report deals with work on the study by a group of post graduate students from Monash University who have been supported by the DVA/Shire Joint study leaders. The Monash group's objectives, strategy, information gathered, conclusions and recommendations are summarised in this paper and further details may be obtained from the full report.

THE STUDY AREA

The Upper Beaconsfield study area comprises the whole of the Stony Creek catchment plus an area to the south of St. Georges and Salisbury Roads that can purposefully be considered as part of the Upper Beaconsfield community. A plan showing the study area is appended.

AIMS AND OBJECTIVES

The overall study aims were:

- (i) To gather background information relevant to water management in the area.
- (ii) To identify and investigate possible servicing and development options for the area in terms of social and physical characteristics.
- (iii) To study the implications of those options for future developments.
- (iv) To study the environmental implication of the development options especially on downstream waterways and their environment.
- (v) To recommend strategies for future action.

Specific objectives were:

- (i) To understand the social and political forces that have shaped the development of the area.
- (ii) To describe the existing environment.
- (iii) To describe the existing community, land use, planning and resources.
- (iv) To identify future development and population capacity.
- (v) To identify potential servicing options (water supply, drainage and wastewater disposal) and compare their costs.
- (vi) To evaluate the implications of those options both to the community and the present environment.
- (vii) To identify community objectives and attitudes to future servicing options and ultimate development of the area.
- (viii) To present options which ought to be considered by decision makers, including the D.V.A. and the Shire of Pakenham when making decisions on future development within the Upper Beaconsfield district.

Methods adopted.

- (i) By reviewing the history and development of the area.
- (ii) Contact with individuals and organisations in the community,
- (iii) Researching, existing conditions, servicing options, census and social survey information.
- (iv) Reviewing options for development and servicing from both the cost and social point of view.
- (v) Drawing conclusions and making recommendations.

THE HISTORY OF THE STUDY AREA

Like many of the other Dandenong Ranges hill towns, Upper Beaconsfield was founded in the mid-1800's as a rural settlement but had by the turn of the century become a recreation resort for the well to do and the sick. The village which was well established by the turn of the century underwent its next major change around the 1950's and early 1960's when most of the subdivision of land into lots of less than 1 hectare occurred. Many of todays problems emerged as occupation of these small lots accelerated in the 1970's.

THE PHYSICAL ENVIRONMENT

The physical environment influences mans activities and uses of an area. The climate of Upper Beaconsfield is on average cooler and wetter than Melbourne with a mean annual rainfall in excess of 1000 mm. The major geological zones are the highlands formed during the Devonian Period of granite and granodiorite, and the steep foothills formed during the Silurian Period of steeply folded mudstones, siltstones and shales. The boundary between these two zones generally follows the ridge line along St. Georges and Salisbury Roads. Soils in the area have been formed by weathering of the local bedrock and hence the major divisions follow the same ridge line. Depth slope and local characteristics of the soil all effect its ability to absorb wastewater. The area has potential for extractive industry lying on the urban fringe with sizeable deposits of granitic rock.

The area has many small dams and swampy zones which are an important influence on the environment. Because of the underlying rock little deep ground water is available however some areas have good quality water at shallow depth often coming to the surface as springs.

The landscape quality of the area is very high with commanding views from the highlands over the southern plain. The retention of indigenous vegetation has also contributed to a pleasant landscape.

LAND USE

Land use falls into the three broad categories - (i) agricultural (ii) native forests (iii) urban development. Around 50% of the land has been or is currently being used for agricultural purposes such as grazing, dairying, orchards, horses and goats. Most of this activity could be classified as "hobby farming" and very few residents rely on the land for their principal source of income.

Although very little of the district is public land, almost 40% remains covered with native vegetation with much of it being in the steep inaccessible areas.

The urban development has largely followed the Beaconsfield, Emerald and Stoney Creek Roads with larger residential allotments along St. Georges and Salisbury Roads.

SERVICES

1. Water Supply

The State Rivers and Water Supply Commission has provided a reticulated water supply to serve the majority of residents in the study area. Prior to the commissioning of the reticulated supply in 1977 all residents relied on tank water as do those now in the less densely populated areas not serviced by the State Rivers and Water Supply Commission. Even though about 50% of those served by the reticulated system will retain their tank system as well, reticulated water consumption per holding is nearly double the M.M.B.W. design value.

2. Wastewater

Nearly all homes in the area have a wastewater system based on a septic tank with about half having the all waste type. Most dispose of effluent through soil absorption trenches, however, in some cases additional treatment such as a sand filter is provided prior to discharge to the drainage system. Unfortunately some sullage and septic effluent is discharged direct to the drainage channels.

ANIMAL AND PLANT LIFE

Although investigation into animal and plant life in the study area was somewhat limited the group did find that: ${\ \ }$

- 1. Little if any of the remaining native bushland has escaped the effects of man's activities.
- 2. Many birds and small mammals, including the rare helmeted honey-eater (Victoria's bird emblem) are to be found in the area.
- 3. The introduction of domestic animals has resulted in reduction of the quantity and diversity of native fauna.

STREAM ENVIRONMENT

The Stoney Creek is regarded as a stream of high environmental significance and its importance to the people of Upper Beaconsfield should not be underrated. The overall water quality of the stream was assessed through an integrated study of the physical, chemical and biological factors. The results of this study show that Stoney Creek is in very good condition and copes well with the very small quantities of pollutants and nutrients that reach the stream.

THE SOCIAL ENVIRONMENT

Apart from utilising the available information the Monash group undertook a major community survey with the help of the local association in distribution of questionnaires. The Upper Beaconsfield study area comprises the township and a closely integrated rural hinterland with total population of around 1.600 housed in 470 dwellings. Much of the housing has been built since 1970. The population differs from that of Melbourne in that it has: -

- 1. A high mobility, i.e. less than 50% of residents had lived in the area for five years.
- 2. A larger proportion of the population in the higher socio-economic groups.
- 3. A greater proportion of young families. This is consistent with the higher dwelling occupancy.
- 4. Population growth and the building of new dwellings going on at greater rate.
- 5. Very high proportion of population from anglo saxon origin.
- 6. More than twice the percentage of households owning two or more cars (75% for U.B., 33% for Melbourne Statistical Division).

PLANNING

The Shire of Berwick introduced an interim development order (I.D.O.) in 1960. In December 1971 the M.M.B.W. gazetted its I.D.O., Extension Area No. 2 which included the study area and in 1975 the Shire of Berwick I.D.O. was superseded by the Shire of Pakenham I.D.O. Both the M.M.B.W. and Shire of Pakenham I.D.O.'s still apply. Unfortunately a considerable number of small inappropriate subdivisions had been carried out prior to the introduction of these planning schemes. Current controls prevent further small lot subdivision and grant permission for dwellings subject to connection to an all waste septic tank and provided that no wastewater or polluted drainage is discharged beyond the boundaries of the land. Another relevant control is that no development shall take place within 100m of any stream except with the permission of Council.

DEVELOPMENT

Since the early 1970's the study area has experienced growth in the order of 6 - 10% per annum.

i.e. 1971 - 826 1976 - 1103 1981 - 1600

If this rate is continued the population capacity of the present planning scheme, 2664 will be reached during the 1980's. The actual population reached will affect the level of facilities required to service the community. The present level of population requires some remedial wastewater management measures particularly in the denser areas of population. Moderate growth (i.e. development in accordance with current planning scheme provisions) can reasonably be provided for, however, major growth is likely to result in demands for wastewater disposal beyond the capacity of the area.

THE COMMUNITY SURVEY

The Monash group undertook an extensive community survey in order to gain an up to date assessment of the community's aspirations and to extend the knowledge available through the Bureau of Statistics, the Shire, the local association and other interested parties. The questionnaires were designed by the group after consultation with the Upper Beaconsfield Association who assisted with distribution. The response rate of over 75% reflected a higher than average community interest by the residents. Although much of the material from the survey has been used throughout the report the following summarises its findings:

- 1. 95% of householders own or are buying their own home.
- 2. Over 85% of respondents lived on lots greater than 0.1 hectares in area.
- 3. For each householder citing a form of farming as their land use, three quoted residence.
- 4. Half the respondents had lived on their present property for less than five years.
- 5. Only about 7% of householders owned or leased other property in the study area.
- 6. Over 10% of householders were intending to sell.
- 7. Only 5% of respondents said that they would apply to subdivide their property.
- 8. The desired size of property was clearly greater than 0.1 hectares both for self and neighbours.
- 9. The attractiveness and rural lifestyle it offered families were the main reasons for people choosing to live in Upper Beaconsfield.
- 10. Over 60% considered that there were problems in living in Upper Beaconsfield. The most commonly listed problems were— no public transport, distance from facilities and high rates.
- 11. Most frequently sought changes were restrict subdivision, improve transport and community facilities.
- 12. The majority of respondents desired to preserve the rural village atmosphere and the bush nature of the area.
- 13. A strong response in favour of existing controls or a strengthening of controls over the environment was recorded.
- 14. The controls over the environment most often mentioned by respondents were subdivision, pets, houses, native tree clearing, noise, wastewater and drainage.
- 15. Only about half of those questioned answered the questions relating to groups and group involvement. About half the households have members belonging the various local groups like The Upper Beaconsfield Association, Service Clubs, Sports, Scouting and School Groups.

- 16. Many respondents considered that Upper Beaconsfield was larger than the study area and felt that additional land to the east should have been included.
- 17. Over 60% of the respondents had come to Upper Beaconsfield from the Melbourne area
- 18. Approximately 75% of respondents are connected to the State Rivers and Water Simply Commission water supply, however, of those not connected where supply is available 42% do not intend to connect.
- 19. Over 80% have automatic washing machines and nearly 40% have dishwashers.
- 20. Septic tanks are the predominant form of sewage treatment with nearly half being the all waste type. Most considered their current system satisfactory although 25% would ultimately prefer reticulated sewerage.
- 21. Over 20% admitted to discharging treated liquid wastewater beyond their site.
- 22. Less than 20% considered drainage a problem.
- 23. Nearly 30% had used Stoney Creek for recreational purposes.
- 24. Most of those using Stoney Creek for recreational purposes considered the water quality to be satisfactory.
- 25. Although 80% felt access to the creek was poor, 67% did not want improved access.
- 26. Almost all households had at least one licenced driver with over 85% having more than one.
- 27. More than 95% of households had a car with nearly 80% having more than one.
- 28. Almost all commuting to work is by car with little employment available at Upper Beaconsfield. Many people travel daily to Dandenong, Melbourne and its southern and eastern suburbs.
- 29. Although a majority of children attend primary school at Upper Beaconsfield they must commute to secondary schools, the closer ones being at Berwick, Pakenham and Dandenong. Transport is mainly by car with some bussing, walking and cycling.
- 30. Day to day shopping tends to be done locally with weekly shopping at Berwick and Fountain Gate with major purchases from Dandenong. Almost all shopping trips are by car, with a small number of people walking to the local shops.
- 31. Car was the major transport to entertainment with widely dispersed destinations of which Melbourne area accounted for about 25%.
- 32. The majority of respondents would prefer a population near the current level, however, a number indicated preference for an increase up to a maximum of 5,000 people.
- 33. The main reasons quoted for preferring the current population level was to retain the atmosphere and keep it rural.
- 34. The main criteria adopted by the respondents in arriving at an optimum population were capacity of existing facilities, environment, retention of large lots and utilities.
- 35. A little over half of the respondents desired improved facilities such as public transport, recreation, community and commercial facilities.
- 36. The respondents felt that an increased population would require the facilities listed in 35 above.
- 37. Although only two thirds of those surveyed responded to questions on salary it would appear that 75% of households have incomes over \$16,000 p.a.
- 38. Very few households earned a significant part of their income from their property.
- 39. The results showed a labour force with higher status occupations than the Australian labour force generally.
- 40. Currently the population has an above average number of young families but this is expected to level out over the next decade.

- 41. The community has a relatively high level of education with many females and most males having further education and training.
- 42. Over 60% of respondents were born in Australia with the only other sizeable group being from the United Kingdom.

THE DEMAND PRESSURES

The community's aspirations in terms of demands for goods and services will if implemented affect the environment, the population and wastewater management. The following discusses the demand pressures in Upper Beaconsfield.

New Subdivisions

Much of the study area is already subdivided into lots smaller than the minimum area requirements under the existing planning controls. Hence, little subdivision is likely unless servicing is upgraded or community facilities improved sufficiently to influence planners to relax controls.

Water Supply

The area relied on tank water until recently when the S.R. & W.S.C. provided a reticulated system which provides for the developed areas. It could be extended to include some of the country residential if development warrants but would be prohibitively expensive to provide water to the more isolated areas. Demand for quantity of water is steadily increasing and is expected to continue as more connections are made and a lesser number operate supplementary tank systems. Usage per head is already in excess of the Melbourne average and the cost of supply is considerably more expensive than the M.M.B.W. supply area. The increased availability of water puts pressure on the disposal system and hence the environment.

Drainage

A number of drainage problems exist in the denser population areas, however, although some residents are concerned few consider these problems serious enough to pay for improvements. As further development takes place the drainage problems are expected to worsen and create stronger pressure for improvement works.

Waste Disposal

The septic tank is the most commonly used system of wastewater disposal with approximately half having all waste types and the remainder toilet only system. Although many of the respondents considered a reticulated sewerage system most desirable it was unavailable and likely to be too expensive to establish. Some demand may arise in the closely settled areas where lots are too small for effective on site disposal. Some of these areas, which also have drainage problems are adversely affected by poor wastewater disposal adding to the water laying about the surface. The larger lots are served adequately with all waste septics - the system required by Council.

Community Services

Demand has been exhibited for a police station, technical school, better public transport and a pharmacy. Increase in population would necessitate increasing existing facilities such as kindergarten and school. Demands are also being applied regarding increased recreational facilities.

Servicing Options

In identifying options for servicing the varying needs of the area the probable development, the desire to retain the village atmosphere, the environment and the cost should be considered.

1. Water Supply

Much of the area is serviced by a S.R. & W.S.C. reticulated water supply system while the more remote properties rely on tank water and

have little opportunity of being economically serviced by extension of the reticulation.

2. Wastewater

As previously stated, septic tanks for sewerage only or the all waste type are the common method of waste disposal for the study area, however, other options have merit particularly for the denser areas of population.

- (a) <u>Reticulated sewerage</u>: Expensive and could only be used in the highly populated areas. It has a problem of concentrating nutrients.
- (b) <u>Partial Treatment System</u>: This system collects effluent from on site treatment and conveys it to a treatment plant for further treatment. Could be useful in our study area, however, Victorian Legislation precludes some grants and subsidies applicable to conventional sewerage system.
- (c) Individual Treatment and Disposal Systems: These often are the methods best suited when properties are large enough to dispose of their wastes on site. In the past the "pan system" was common for toilet waste with sullage being discharged through a grease trap to the drainage system. Gradually the septic tank took over from the pan and later the all waste septic, coupled with ground absorption or sand filter, has become the accepted way of satisfying council requirements. Another system which could play a role is the aerobic tank which is often suitable for treating wastewater from small commercial premises. Other systems have been tried but these are considered to be of little value in our study area.

Combined Wastewater and Drainage - Modified Drainage System

This is somewhat similar to the partial treatment system where partially treated effluent is collected in the storm water drains then further treated prior to final discharge to the water course. It is useful in areas of small allotments not served by a centralised sewerage system. The system relies on adequate on site treatment hence would require monitoring.

Other Means of Effluent Control

Such systems are swamps, macrophytes, lagoons, and grass filtration. Where large swampy areas exist, excellent results can be obtained provided wastewater flow to the swamp is kept at/or below 20 m3/day/ha of swamp. Fairly long residence times are necessary to ensure breakdown of organic material and absorption of nutrients. The macrophyte pond is an artificially created system which performs the same treatment functions that the swamp does. It has been estimated that about 0.5 ha 0.5m deep could treat septic effluent for 1,000 people given a residence time of more than 20 days. Lagoon systems are quite effective in treating septic effluent from the bacteriological point of view, however, they are not as efficient with nutrients, hence overland flow discharge from the lagoon is recommended. The storm water flows should be diverted away from these ponds or lagoons or the systems will be severely disrupted.

Land Absorption and Grass filtration

This is again a very effective way of treating effluent but it requires relatively large tracts of suitable land - in Upper Beaconsfield come of the larger areas of currently unused land could be used with considerable savings to the community.

MOST SUITABLE SCHEME/SCHEMES FOR UPPER BEACONSFIELD.

For the larger lots the all waste septic tank with disposal of the effluent by soil-absorption is preferred. The small lots not capable of this type of disposal could best be served by a form of common effluent drain or modified drainage system.

Stormwater Drainage

No one drainage scheme can be universally appropriate in an area as variable as Upper Beaconsfield. Certainly the urban areas will require a different approach to that of the rural lots. Elements of the drainage systems considered are:

- 1. <u>Piped Drain</u> high capital cost but suitable for urban use and don't impose on the landscape.
- 2. <u>Ditches and Grassed Channels</u> an efficient form of drain appropriate to rural use when well constructed and maintained.
- 3. <u>Artificial Retention</u> dams, tanks and retarding basins all act to attenuate the peak, flow of a storm and hence are valuable tools in flood mitigation.

IMPLICATIONS OF DEVELOPMENT AND SERVICING TO THE STREAM ENVIRONMENT

As a catchment is developed it undergoes changes in run off and water quality characteristics. A significant effect is the increase in peak flow accompanied by a reduction in base flow during dry periods. Development often leads to erosion and increased pollutant loadings to streams. Phosphorous and nitrogen levels will need to be watched as the population increases but are generally handled satisfactorily at present by ensuring effluent is absorbed on site or passes across undeveloped land before reaching the creek. The organic loading entering the Stoney Creek may deplete the dissolved oxygen in the stream particularly in periods of low flow, however, the situation is currently satisfactory. Sediment load in Stoney Creek is very much lower than in the more urban catchments of Blind and Dandenong Creeks.

While a watercourse such as the Stoney Creek would be capable of assimilating a certain amount of organic waste without adverse effects, its capacity to do so would only be small during dry periods and hence waste treatment should be confined to buffer areas rather than the creek. Authorities undertaking works within the area should preserve the beneficial uses of the waterway, i.e. recreation and aesthetic enjoyment. The managers responsible for controlling development must keep in mind the effects transmitted downstream. In the case of Stoney Creek this downstream effect could reach as far as Westernport Bay and its saltmarsh, mangrove and seagrass communities.

IMPLICATIONS OF DEVELOPMENT AND SERVICING TO THE SOCIAL ENVIRONMENT

The recommended servicing options have implications for the community lifestyle. For example, the reticulated water supply allows many of the conveniences of modern life such as automatic washers and dishwashers etc. This in turn encourages use of more water which creates more waste to be treated and disposed of. It can be shown that voluntary restraint in water usage will ease the tax of waste disposal. The study recommends relatively "low technology" options which are low energy and low maintenance solutions and certainly are less imposing on the landscape than sewerage treatment plants and the like. By adopting this approach we are in fact limiting future development to the capacity of the catchment to treat its waste in such a manner. To preserve this treatment capacity some constraints on land use will be necessary.

ASSESSMENT OF SERVICING OPTIONS

Criteria for the Selection of Suitable Water-Systems

As previously noted the reticulated supply serves most of the dwellings in the study area, however, some residents would prefer to use tank and dam water for their household and irrigation needs. Some landowners still have the option of rejecting mains supply (i.e. Brennan's Estate, McArthur Road).

Reasons for rejecting mains supply ares

- (i) The high cost of connection.
- (ii) The high cost of water supplied.
- (iii) The increased water usage and wastewater generated, (iv) Use of tank and dam waters is more in keeping with the rural environment and may alleviate drainage problems.

In most cases the convenience and reliability of a reticulated water supply has meant that most houses are already connected. From an environmental viewpoint the horse has already bolted.

Criteria for Selection of Suitable Drainage Systems

The options for drainage systems fall into the following categories:

- (i) piped drainage
- (ii) ditches, grassed swales
- (iii) on-site control

What is more usually found is some combination of the three. Options (i) and (ii) may include drainage of wastewater. In selecting the most appropriate options the following considerations are important.

Physical

- (i) Topography and climate the risk and extent of flooding
- (ii) Runoff characteristics of the area, extent of impervious areas.
- (iii) Potential for urbanization of the area the greater this is the more piped drainage may be necessary.
- (iv) Consequences of flooding these are usually higher in urbanized and commercial areas, therefore a higher degree of protection may be needed. Where consequences are minor no interference with natural drainage system is required.

Social

- (i) Public health there is a danger to health from open drains which receive household wastes if there is, then piped drainage is the preferred option.
- (ii) Community aspirations which form of drainage is more compatible with the type of development that the community wants.
- (iii) Population trends, capacity for dwellings and dwelling density.

Environmental

- (i) Effect of increased flows when piped drainage is adopted
- (ii) Environmental objectives which of the proposed options will have the least adverse effect on the environment.

Economic

- (i) What are the relative costs of each of the options.
- (ii) Do the benefits outweigh the costs and detriments.
- (iii) Does lack of drainage preclude subdivision and population increase.

Criteria for Selection of Suitable Wastewater Treatments

On-site retention and disposal will generally be the preferred option where land capability is adequate. Such a system preferably includes an all waste septic tank followed by soil absorption.

Where wastewater cannot be accommodated on-site, then further downstream treatment will be necessary.

The most feasible treatment options are:

- 1. Irrigation of grassed areas, pastures and forest.
- 2. Lagooning or maturation ponds followed by disposal to buffer area.
- 3. A conventional sewage treatment plant followed by disposal to buffer area.
- 4. Disposal to swampy areas.

The criteria that should be applied in making the final choice include:

- (i) Volume of waste generated the system must be able to cope with total flow and with daily and seasonal variation in load.
- (ii) Land requirement there should be adequate land to accommodate present and projected future needs without imposing on the landscape. The site should be near a natural drainage channel on level or gently undulating land.
- (iii) Nuisance Aspects odour, insects, noise. The disposal site should be far enough away from the residential development to prevent such nuisance but not so far as to prohibitively increase costs.
- (iv) Desired Effluent Quality each of the above systems will result in different effluent quality. It is worth noting that conventional sewage treatment plants will not significantly reduce the nutrients level, and passing effluent over land or through swamp prior to discharge to the stream is desirable.
- (v) Ease of operation and maintenance conventional package type sewage treatment plants may require continuous monitoring and maintenance and a high degree of operator skill.
- (vi) Capital and operating costs.
- (vii) Energy consumption.
- (viii) Public health aspects.

The following table gives a comparison of the characteristics of the above four options:

Criteria	Options				
	1.	2.	3.	4.	
Ability to cope with flow variation	Н	Н	M-L	Н	
Land Requirement	H	Н	L	Н	
Nuisance	L	M	M	L	
Effluent Quality	H	M	M	M	
Capital Cost	M	M	H	L	
Operating Cost	L	L	Н	L	
Maintenance	M	M	H	L	
Energy Consumption	L	L			
Risk to Public Health	L-M	M	M	L-M	
II II-ala Madina		т.	Т		

H - High M - Medium L - Low

Options: 1. Irrigation to grassed areas 3. Sewage Treatment Plant 2. Lagooning 4. Disposal to Swampy Area

The above table indicates that where land availability is not a constraint a conventional sewerage treatment plant is often the least preferred option. An analysis of the above type can be done for any part of the catchment or for a discrete area or subdivision.

CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations have been drawn from the body of the report and are presented in a summarized form under sub headings.

1. Development

The choice of servicing option is directly related to the form and extent of development within the study area.

Conclusions

More than half the survey respondents preferred the ultimate population in Upper Beaconsfield to be no more than 2,000.

Existing community services (for example, the kindergarten) will be severely strained if development and hence population increases substantially.

Development to the extent permissible under current planning controls will lead to an ultimate population of about 2,000.

There is a direct relationship between population and the amount of household wastes generated.

Recommendations

That no further rezonings be permitted.

That land in Fern Street be reassessed with the view to decreasing the potential number of lots.

That if rezonings are permitted, account should be taken of the servicing capacity of the area and the available options to improve servicing capacity.

2. Village Character

To the casual observer, the study area is attractive because of the village nature and presence of bush in Upper Beaconsfield.

Conclusions

Two-thirds of survey respondents wanted to retain the village and bush nature of the area. These attractions were their main reasons for coming to live in the area.

Recommendations

The village and bush nature should be protected and enhanced in any works carried out in the study area, in particular,

- * road improvements which should retain roadside vegetation; and
- * new public buildings

3. Servicing Options

Small-scale servicing strategies are particularly appropriate to a dispersed community.

Conclusions

Conventional sewerage treatment plants are not favoured for Upper Beaconsfield because:

- * nutrients are not removed
- * wastewater is concentrated at a single point creating disposal problems
- * development would be encouraged which is inconsistent with above recommendations and
- * there are comparatively high capital and operating costs and hence rates Whatever strategy is adopted it must meet the requirements of State Environmental Protection Policy W28.

Nutrient removal and erosion pose the major environmental problems with wastewater disposal.

The ultimate receiving water, Stoney Creek, flows largely through private land.

Recommendations

That all-wastes treatment systems be used.

That wastewater servicing be on a site specific basis, taking into account the following considerations:

- * whenever possible, on-site disposal methods should be used
- * where on-site disposal is not possible, secondary treatment, that is a sand filter should precede discharge to the modified drainage scheme; and

* where isolated houses exist, sand filters should precede discharge to the natural drainage system.

That buffer zones should exist between discharge point of drain and creek to enable nutrient removal to occur. The buffer zone should be a swale system guarded against erosion and if necessary acquired by the Responsible Authority.

4. Environmental Monitoring

It is important to monitor both on-site and general effects on the environment.

Conclusions

Environmental monitoring will be required in order to ensures

- * the maintenance of services
- * that no degradation of the environment is taking place, and
- * to preserve the flora and fauna of the area

Compliance with State Environment Protection Policy W28 is mandatory.

Septic tank systems are low maintenance but not maintenance free systems.

The retention of trees is important for a number of reasons, including wildlife preservation, character of area, prevention of erosion and microclimate.

Recommendations

That septic tank systems be monitored for effective functioning particularly those participating in modified drainage schemes. Further, it is recommended that an annual inspection take place to ensure that the individual treatment plants of the total system are performing satisfactorily and not jeopardising the whole system.

That the following measures be taken in order to preserve indigenous vegetations

- * no tree felling within 30m of a stream
- * present planning controls to be strictly enforced; and
- * replanting of indigenous vegetation be encouraged.

That continual monitoring of the local conditions and the decisions of Responsible Authorities be undertaken to enable ongoing reassessment of strategy and direction.

5. Environmental Responsibility

Although Responsible Authorities contribute to the overall standard of the environment, individual members of the community can do much to maintain and improve conditions.

Conclusions

The local population has much to offer in the decision making process.

Individual household water consumption and drainage practices play a significant role in wastewater generation and quality.

Swamps are important natural wastewater treatment areas.

Recommendations

That Responsible Authorities involve the public in decision making.

That the community be encouraged and educated to adopt sound water conservation and water use practices.

That further drainage of swamps be prohibited.

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