SYSTEMS LTD

APPLICATION NO:
CON/2000/1844

LOCATION:
Met Office Experimental Site Easthampstead Park, Wokingham.

APPLICANT:
he Met.Office C/O Barton Willmore Planning

ROPOSAL:
onsultation from Bracknell Forest B C on 18/84 for proposed erection of HQ building, tudent accommodation and social facilities uilding for the Meterological office (total oorspace approx 73,465 sq m) with associated ecked car parking and vehicular access onto ine Mile Ride.

RLIEST DATE FOR DECISION:

PLICATION WILL HAVE EXPIRED ON:
07/2000

E OFFICER: **Angela Odell**

10.11.93

The Tel. 0118 974 6445 (Direct Line)
E-mail: Angela.Odell@wokingham.gov.uk
Date. 7 September, 2000
My ref. AO/CON/2000/1844
Your ref. 00/00608/18-84/CONS

Bracknell Forest Borough Council
Time Square
Market Street
Bracknell
Berks
RG12 1JD

Environmental Services Department
Planning Services
P.O. Box 157
Shute End, Wokingham
Berkshire RG40 1WR
Tel: (0118) 974 6000
Fax: (0118) 974 6484
Minicom No: (0118) 977 8909
DX: 33506 – Wokingham

Dear Sir/Madam

APPLICATION NUMBER: CON/2000/1844
CONSULTATION FROM BRACKNELL FOREST BOROUGH COUNCIL FOR PROPOSED ERECTION OF HQ BUILDING, STUDENT ACCOMMODATION AND SOCIAL FACILITIES BUILDING FOR THE METEOROLOGICAL OFFICE (TOTAL FLOORSPACE APPROX. 36,733 SQ.M.) WITH ASSOCIATED DECKED CAR PARKING AND VEHICULAR ACCESS ONTO NINE MILE RIDE UNDER CIRCULAR 18/84 AT THE MET OFFICE EXPERIMENTAL SITE, EASTHAMPSTEAD PARK, BRACKNELL

Thank you for consulting Wokingham District Council about the above application. I enclose the agenda report for the meeting Development Control Committee held on 6 September 2000. The Committee agreed the 'Suggested Action' in paragraph 6.03 and also that the observations in paragraphs 6.04-6.06 be forwarded to you.

Regarding 6.03 (2), the Committee resolved to also forward a holding objection on the grounds that the site is in an unsustainable location, the effect that the additional traffic which the development would generate on roads nearby in Wokingham District, that the issues of capacity and safety had not been satisfactorily addressed, and that there is a need for *public* transport provision.

The Committee also decided to forward the following observation:
That Bracknell Forest Borough Council should assess the ecological impact of the proposed development (particularly in relation to heathland on the site) and take the findings into account in both the assessment of the proposed development in principle under this outline application, and in the detailed design and siting of the buildings, if the proposal is accepted in principle.

I trust the above is clear, but if you require further clarification, please contact either the case officer Angela Odell or me.

Yours sincerely

John Mitchell
Development Control Manager

MINUTES OF A MEETING OF THE DEVELOPMENT CONTROL COMMITTEE HELD ON WEDNESDAY 6 SEPTEMBER 2000 FROM 7.00 PM TO 10.25PM

Present: Mr K.A Malvern, (Chairman) Mrs J.A Lissaman, (Vice-Chairman), Mrs D.C Beatty, Mr M.J Bryant, Mr T.P Dredge, Mr J.L Earnshaw, Mr R.F.N Eke, Mrs M.A Long, Mrs M Robertson and Fiona Rolls.

Also present under Standing Order 39: Mr G. Cowan, Mrs A.N.M.C Drake, Simon Etheridge, Mrs E.L.M Siggery and Mr A.W Spratling.

91. ORDER OF BUSINESS

With the agreement of the Committee, the order of business was varied so that those applications where members of the public had indicated a wish to speak could be dealt with first.

92. MINUTES

The Minutes of the meeting of the Committee held on 19 July 2000 were confirmed as a correct record and signed by the Chairman.

93. APOLOGIES FOR ABSENCE

Apologies for absence were received from Mr S.R Conway and Mr B.J.S Patman.

During the discussion of the proposal Members raised concerns relating to the effect of the proposal on the loss of open heathland and green gap between Bracknell and Wokingham.

RESOLVED: To advise Bracknell Forest Borough Council that the Council objects to the proposal on the grounds referred to in paragraphs 6.03 to 6.06 set out on Agenda pages 1000 to 1001 with the additional objections relating to the;

1) loss of heathland and green gap.

117. APPLICATION NO: CON/2000/1844 CONSULATION FROM BRACKNELL FOREST FOR PROPOSED ERECTION OF HQ BUILDING, STUDENT ACCOMODATION AND SOCIAL FACILITIES, NINE MILE RIDE EASTHAMPSTEAD PARK BRACKNELL, FOR THE METEOROLOGICAL OFFICE.

The Committee considered a report on this application as set out on Agenda pages 1000 to 1009.

In explaining the report, the Head of Planning and Transportation reminded Members that Bracknell Forest Borough Council was not the determining authority in this case, as the application had been made by the Crown.

6.00 APPLICATION NUMBER: CON/2000/1844
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Purpose of the Report

6.01 In the interests of clarity Members are advised that Bracknell Forest BC is **not** the determining Authority in this case. The application is made by the Crown, and development by the Crown does not require planning permission. Government policy, expressed in Circular 18/84, is that the relevant Council should handle the proposal as though it were a planning application in terms of publicity etc, and should forward its views, and those of consultees and respondents, to the developing Department, in this case the Meteorological Office, which is part of the Ministry of Defence.

6.02 To inform members of a consultation which has been received from Bracknell Forest Borough Council on the above application.

Suggested Action

6.03 To advise Bracknell Forest Borough Council that Wokingham District Council objects to the application on the grounds that:

1. The proposal would be inappropriate development of the site which is outside a settlement boundary and in the gap/green wedge between Bracknell, Wokingham and Crowthorne. The proposed development would have an urbanising effect and would have a harmful effect on the character and appearance of the area. It would also consolidate and intensify existing sporadic development in the green gap/wedge, significantly eroding its effectiveness in the separation of the settlements. The proposal is therefore contrary to Berkshire Structure Plan Policies C2 and C6, to Bracknell Forest Local Plan Policies EN8 and EN10 and to PPG7.

2. Any objection which may be made by the highway officer on highway grounds.

6.04 To also forward the following observation:

The applicants, in consultation with Bracknell Forest Borough Council, are recommended to propose a substantial reduction in the amount of B1 floorspace and a high number of residential units in the Planning Brief for the proposed future development of the London Road site.

6.05 To advise Bracknell Forest Borough Council that the above observations should be forwarded to the applicants and the Secretary of State.

6.06 To advise Bracknell Forest Borough Council that the application should be advertised as a Departure from the Development Plan and, if they determined to forward no objection in principle to the proposal at Beaufort Park, they enter into a legal agreement with the applicants comprising:

(i) implementation of a Green Travel Plan;

(ii) off-site highway works, including the new roundabout at the proposed access from Nine Mile Ride;

and (iii) a landscape management plan.

(To also request Bracknell Forest BC that they consult WDC on the contents of the Green Travel Plan.)

Site Description

6.07 The site is 23 ha. in size and is mainly open grassland, heathland and woodland. There are existing mainly single storey research laboratory and workshop buildings, ancillary offices in mainly terrapin buildings together with parking located towards the south-east of the site. Testing equipment and a few, small associated buildings are scattered on the open part of the site. The overall floorspace is estimated to be 3,413m². Access to the site is from Nine Mile Ride (B3430) via South Road.

Proposal

6.08 Is to demolish the existing buildings and to erect similar accommodation as that proposed on the Shinfield Park site, with similar indicative design for the main headquarters building (33,351m² headquarters building, 1,115m² social building and 2,266m² of student accommodation). The site would be directly accessed from Nine Mile Ride via a new roundabout. A 750 space decked car park is also proposed. Part of the conifer plantation would be felled to accommodate the proposed buildings and car park.

6.09 The applicants propose to devise and operate a Green Travel Plan. The consultants advise that this could include a shuttle bus link between Wokingham, Beaufort Park, Bracknell, and foot and cycle route linkages. A new roundabout would be provided from the B3430 Nine Mile Ride and other minor highway improvements. A landscape management plan for the site is also proposed.

6.10 The applicants' planning consultants have submitted information explaining the need for the proposal. This is set out in paragraphs 5.15-5.5.20 of the report on the proposal for Shinfield Park in this agenda. (Paragraph 5.17 is not applicable here as it refers to the particular locational benefits of the Shinfield Park site).

6.11 **Consultations**

- *Wokingham Without Parish Council :* "The majority of the committee felt that the development should not be permitted as it was over development of a rural area, and the generation of traffic would contribute further to existing problems."

- *Highway Officer :* Comments to be reported.

- *Joint Strategic Planning Unit :* Letter attached.

Appraisal

6.12 Main issues are:

A. Principle of Proposal - Land Use Allocation (Berkshire Structure Plan Policies C2 and C6; Bracknell Forest Local Plan Policies EN8 and EN10; PPG7).

B. Principle of Proposal - Employment Policies (Berkshire Structure Plan Policy BU1).

C. Traffic, Transport and Highway Issues (Berkshire Structure Plan Policies T1-T6; PPG13).

D. Concerns of Wokingham Without Parish Council.

A. Principle of Proposal - Land Use Allocation

6.13 The site is outside a settlement and in the green gap/wedge between Bracknell, Wokingham and Crowthorne. Whilst there is already some existing development on the site (which would be replaced), this is of a very much smaller scale than the proposed development. The proposed development would be largely screened from views from outside the site by existing tree belts, but would be visible through the new access, which would itself be visually intrusive. It is therefore considered that the proposal would be inappropriate and large scale development in the countryside.

6.14 The proposal would have an urbanising effect on the character and appearance of the area. It would also consolidate and intensify existing sporadic development in the green gap/wedge and would erode the effectiveness of the site in separating the settlements. The proposal would therefore be contrary to Berkshire Structure Plan Policies C2 and C6 and to Bracknell Forest Local Plan Policies EN8 (countryside) and EN10 (gaps/green wedges).

6.15 Paragraph 2.58 of Policy EN8 states:

> *"In exceptional circumstances, proposals not in accordance with this policy may be given favourable consideration if major benefits are provided by the development which could not be provided by other means. The Borough Council will have to be satisfied that the community, or other, benefits are sufficient to outweigh any disadvantages and the general presumption against development."*

6.16 However, as it has not been satisfactorily demonstrated that a more suitable alternative site cannot be found, it is considered that the circumstances are not sufficiently exceptional to qualify under this policy. Indeed, the applicants' proposed alternative site at Shinfield Park is considered suitable in land use allocation terms as it complies in principle with relevant national and local policies. The proposal is therefore considered unacceptable on these grounds.

Principle of Proposal - Employment Policies

6.17 It is considered that the key policy is Berkshire Structure Plan Policy BU1. The appraisal of the proposal in relation to Policy BU1 in general terms and the effect on housing pressures set out in paragraphs 5.25-5.35 of the report on the proposal for Shinfield Park in this agenda similarly applies to the Beaufort park proposal. (The last sentence of paragraph 5.32 is not applicable in this case as the Beaufort Park site is nearer the homes of the majority of existing staff).

6.18 To avoid significant pressure on the Central Berkshire housing supply, it is considered important that redevelopment of the London Road site comprises a high proportion of residential units and a low proportion of offices. It is therefore considered that Wokingham District Council's observations on the current application should include a recommendation to this effect.

Transport

6.19 Apprisal to be reported.

Concerns of the Parish Council

6.20 These have been addressed above.

Conclusion

6.21 The Meteorological Office is an important organisation both nationally and locally and consider it is essential they relocate to new headquarter premises. National and local policies in principle support such proposals, subject to their not giving rise to unacceptable effects.

6.22 However, it is considered that the objections to the proposed development at the Beaufort Park site in terms of its impact on the countryside and gap/green wedge, together with any concerns about highway matters, outweigh the benefits of the proposal on this site when a more suitable alternative location (Shinfield Park) is available.

Financial Implications

6.23 See main body of report.

Environmental Implications

6.24 See main body of report.

Consultation with Parish and Town Councils/Voluntary Sector Organisations

6.25 See main body of report.

Equal Opportunities Implications

6.26 The proposed development, including the social building, would be expected to take account of the needs of the disabled at the detailed design stage.

Community Safety Implications

6.27 The site would be a secure installation.

Time Constraints

6.28 It is understood that Bracknell Forest Borough Council intend to consider the application at the meeting of their Planning Committee on 14th September 2000.

Background Papers	Dept. Where held
Consultation CON/2000/1844	Environmental Services

Angela Odell

The Berkshire Unitary Authorities'

JOINT STRATEGIC PLANNING UNIT

St. Mary's House, c/o Town Hall, St. Ives Road, Maidenhead SL6 1RF
Tel. 01628 796749 Fax. 01628 796739

Head of Strategic Planning and Transport: Stuart Hylton

Please ask for: Phil Gill
Direct Line: 01628 796518
Email: phillip.gill@rbwm.gov.uk
Our Ref: M/3/1
Your Ref: 00/00608/18_84/CONS

Martin Bourne,
Planning & Transportation,
Bracknell Forest Borough Council,
Time Square,
Market Street,
Bracknell,
RG12 1JD.

4 August, 2000

Dear Martin,

Proposed Met Office Relocation to Beaufort Park

Thank you for consulting the Joint Unit on this proposal. I note that it is a consultation under Circular 18/84 and therefore not legally a planning application. For this reason I am not phrasing this letter in the normal form of object/not object; rather I am merely commenting on the issues raised and their relationship to strategic planning policy.

These comments have now been approved by the Chairman and Vice Chairmen of the Joint Committee. Please ensure that these comments are passed on to the relevant Secretary of State.

Location

The location is outside the urban area. It is debatable whether the site should be classified as brownfield or greenfield. Certainly the Met Office has previously developed parts of this large site but the scale of activity appears to be small, and most of the remainder is rural in appearance. Indeed I understand that it forms part of a defined gap between settlements in your Local Plan. The proposed development is not one of the rural uses allowed for under Structure Plan Policy C2, and is inappropriate development in the countryside. The proposal as a whole conflicts with Policies OS1, LD1 and C2. I have also seen no evidence that a sequential test has been carried out as required by PPG6 (paragraph 1.15). Only sites already owned by the applicant appear to have been examined as options for the proposed relocation (this site and Shinfield Park, Reading). PPG6 requires a much wider assessment to be undertaken. In this case a search for sites within the urban areas of Bracknell (including Amen Corner), Reading, Wokingham, Camberley and possibly Maidenhead would seem appropriate.

It is also important to note that permission should not be granted for development on both of the proposed sites. This would give tacit approval to the principle of commercial development on whichever site was not taken forward for the Met Office relocation. Certainly in the case of Beaufort Park this would be inappropriate. In locational and transport terms, the Beaufort Park site appears to be inferior to the alternative proposal at Shinfield Park.

Employment

The new Met Office building in itself would appear to accord with Policy BU1. As a development to meet the needs of an existing "firm" in Berkshire it accords with the criteria in the first part of the policy. On the assumption that the scheme is a straight relocation and involves no increase in staff across the Met Office's sites in Berkshire, then the second part of the policy, which seeks to ensure that extra housing and transport pressures are not created, would also be satisfied.

My concern is with the future use of the site the Met Office plan to vacate in London Road. The above reasoning on BU1 will only be correct if there is no significant employment development on the London Road site once the relocation takes place. I understand that your Council is currently preparing a development brief for the London Road site, and I am hopeful that this will reflect the strategic employment issues. This is a crucial issue which must be considered by the decision maker in this case, whom I understand to be the Secretary of State for the Environment, Transport and the Regions.

Transport

A number of points in the Transport Assessment (TA) require further analysis or justification. Strategic matters are as follows.

The agents have agreed the principle of providing a Green Travel Plan, and this is welcomed. Given the large scale and potential impact of the development, the principles of such a Plan should be firmly established before any decision is taken to proceed with the development. In particular, staff surveys to establish travel needs and preferences will need to be carried out before the move. The Plan would benefit from incentives for staff to relinquish a parking space and from a commitment to the provision of real time public transport information, and should also contain a commitment to limit the number of car journeys to and from the site. Until the Plan is secured by legal agreement the proposal will conflict with Policy T1.

Improvements to pedestrian and cycle access should be provided in advance of the development to accord with Policies T2 and T3, and these will need to be more extensive than suggested in the TA. Similarly, to accord with Policy T4, high quality bus services will be required.

The TA appears to have overestimated the number of staff who would readily switch from car use to more sustainable modes. As a result there is insufficient attention given to parking management (on and off site), contrary to Policy T6. To comply with this policy there would need to be an indication as to what parking restrictions were to be imposed locally.

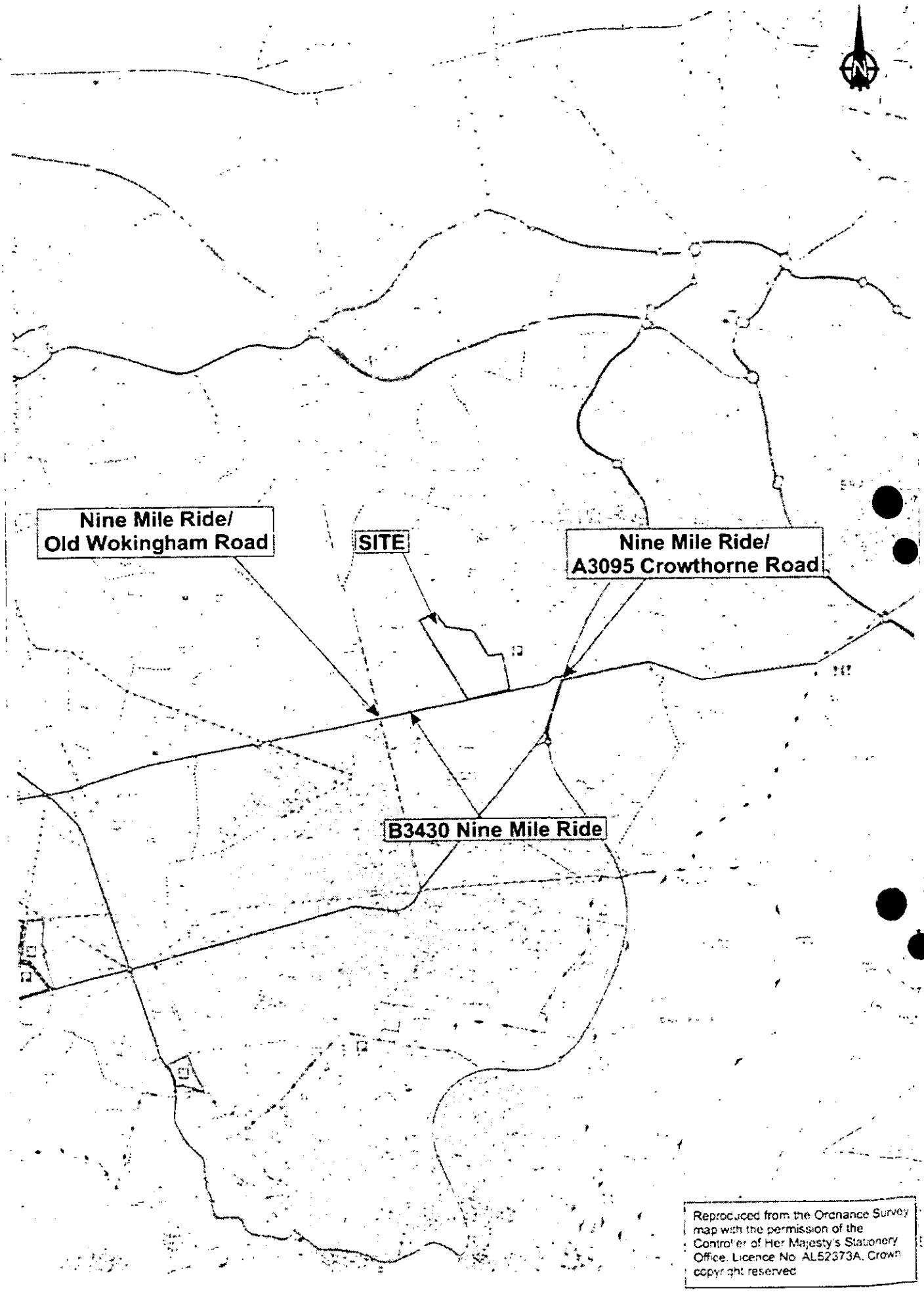
I trust the above will be useful to you. I will be responding separately to Wokingham District Council on the companion proposal to this one (relocation to Shinfield Park, Reading).

Yours sincerely,

P. A. Gill

Phillip Gill
Senior Planner

cc Angela Odell, WDC



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WSP

The Met. Office - Beaufort Park

SITE LOCATION PLAN

1007

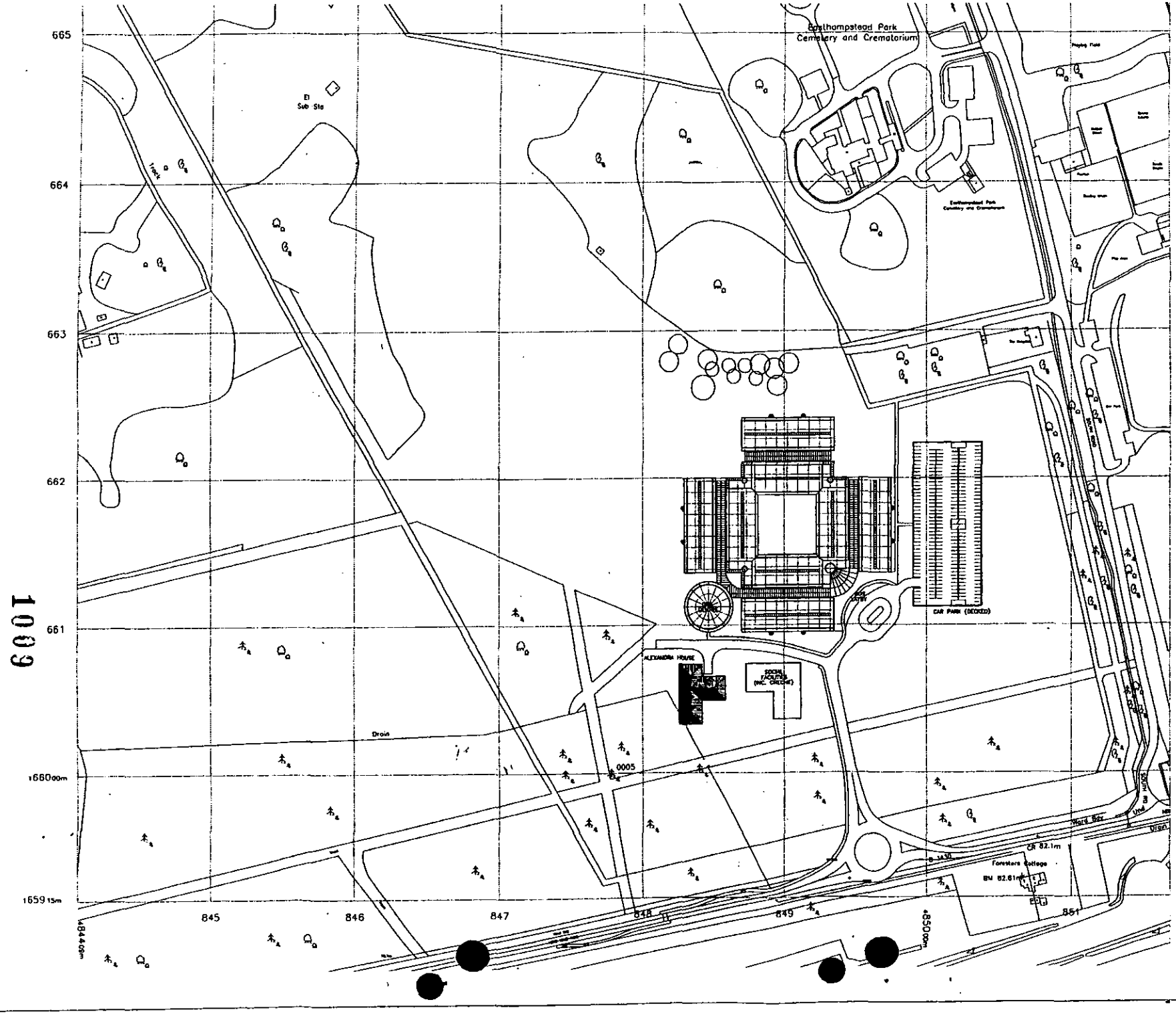


BEAUFORT PARK
MET OFFICE RELOCATION
SITE LOCATION PLAN

9908 P2 -

Barton Willmore
Planning

1008



Revision		Date	By
A	Layout Amended	05.05	NRC
B	Layout Amended	05.05	NRC
C	Residential & Social Facilities Buildings Added	05.05	NRC

Project
Met. Office relocation
Beaufort Park, Bracknell

Drawing title
Sketch Site/Building Footprint Layout
Option B1

Date	Scale	Drawn by
05.04.05	1:1250 (A1)	NRC

Project No	Drawing No	Revision
9906	SK001	C

Barton Willmore
Architecture

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Angela Odell

The Berkshire Unitary Authorities'

JOINT STRATEGIC PLANNING UNIT

St. Mary's House, c/o Town Hall, St. Ives Road, Maidenhead SL6 1RF
Tel. 01628 796749 Fax. 01628 796739

Head of Strategic Planning and Transport: Stuart Hylton

Please ask for: Phil Gill
Direct Line: 01628 796518
Email: phillip.gill@rbwm.gov.uk
Our Ref: M/3/1
Your Ref: 00/00608/18_84/CONS

Martin Bourne,
Planning & Transportation,
Bracknell Forest Borough Council,
Time Square,
Market Street,
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It is also important to note that permission should not be granted for development on both of the proposed sites. This would give tacit approval to the principle of commercial development on whichever site was not taken forward for the Met Office relocation. Certainly in the case of Beaufort Park this would be inappropriate. In locational and transport terms, the Beaufort Park site appears to be inferior to the alternative proposal at Shinfield Park.

Employment

The new Met Office building in itself would appear to accord with Policy BU1. As a development to meet the needs of an existing "firm" in Berkshire it accords with the criteria in the first part of the policy. On the assumption that the scheme is a straight relocation and involves no increase in staff across the Met Office's sites in Berkshire, then the second part of the policy, which seeks to ensure that extra housing and transport pressures are not created, would also be satisfied.

My concern is with the future use of the site the Met Office plan to vacate in London Road. The above reasoning on BU1 will only be correct if there is no significant employment development on the London Road site once the relocation takes place. I understand that your Council is currently preparing a development brief for the London Road site, and I am hopeful that this will reflect the strategic employment issues. This is a crucial issue which must be considered by the decision maker in this case, whom I understand to be the Secretary of State for the Environment, Transport and the Regions.

Transport

A number of points in the Transport Assessment (TA) require further analysis or justification. Strategic matters are as follows.

The agents have agreed the principle of providing a Green Travel Plan, and this is welcomed. Given the large scale and potential impact of the development, the principles of such a Plan should be firmly established before any decision is taken to proceed with the development. In particular, staff surveys to establish travel needs and preferences will need to be carried out before the move. The Plan would benefit from incentives for staff to relinquish a parking space and from a commitment to the provision of real time public transport information, and should also contain a commitment to limit the number of car journeys to and from the site. Until the Plan is secured by legal agreement the proposal will conflict with Policy T1.

Improvements to pedestrian and cycle access should be provided in advance of the development to accord with Policies T2 and T3, and these will need to be more extensive than suggested in the TA. Similarly, to accord with Policy T4, high quality bus services will be required.

The TA appears to have overestimated the number of staff who would readily switch from car use to more sustainable modes. As a result there is insufficient attention given to parking management (on and off site), contrary to Policy T6. To comply with this policy there would need to be an indication as to what parking restrictions were to be imposed locally.

I trust the above will be useful to you. I will be responding separately to Wokingham District Council on the companion proposal to this one (relocation to Shinfield Park, Reading).

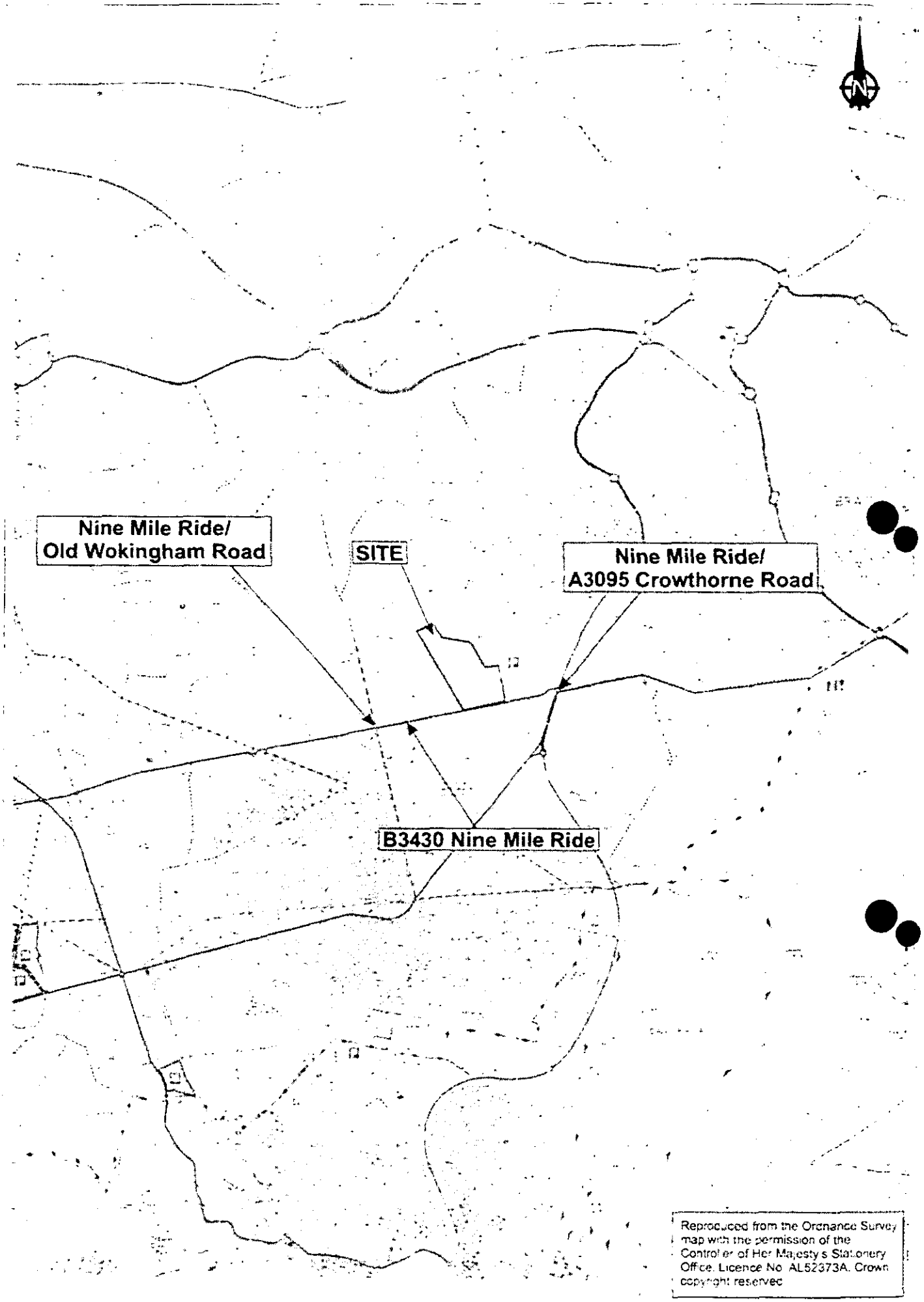
Yours sincerely,

P. A. Gill

Phillip Gill
Senior Planner

cc Angela Odell, WDC

1006



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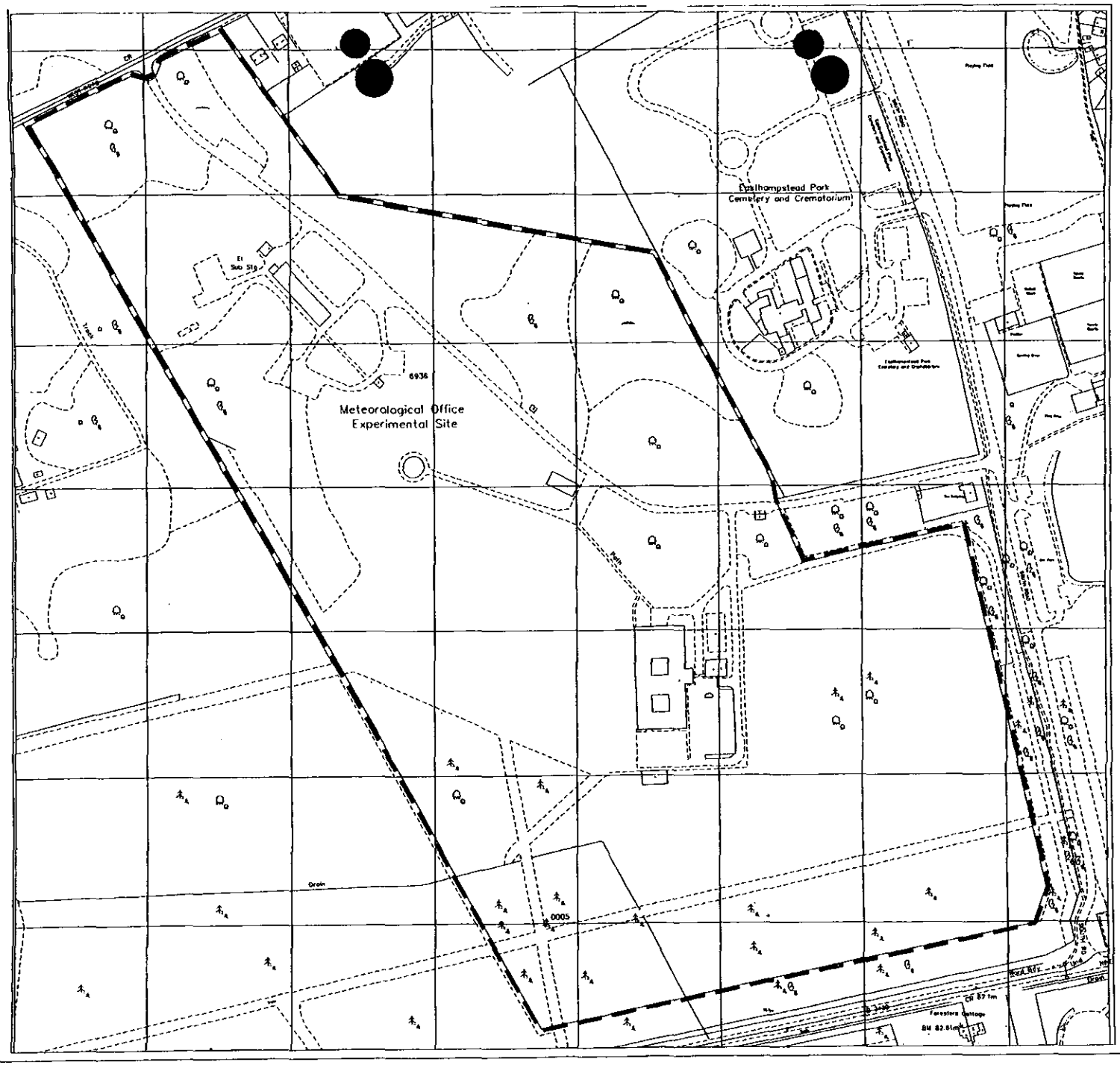
WSP

The Met. Office - Beaufort Park

SITE LOCATION PLAN

1007



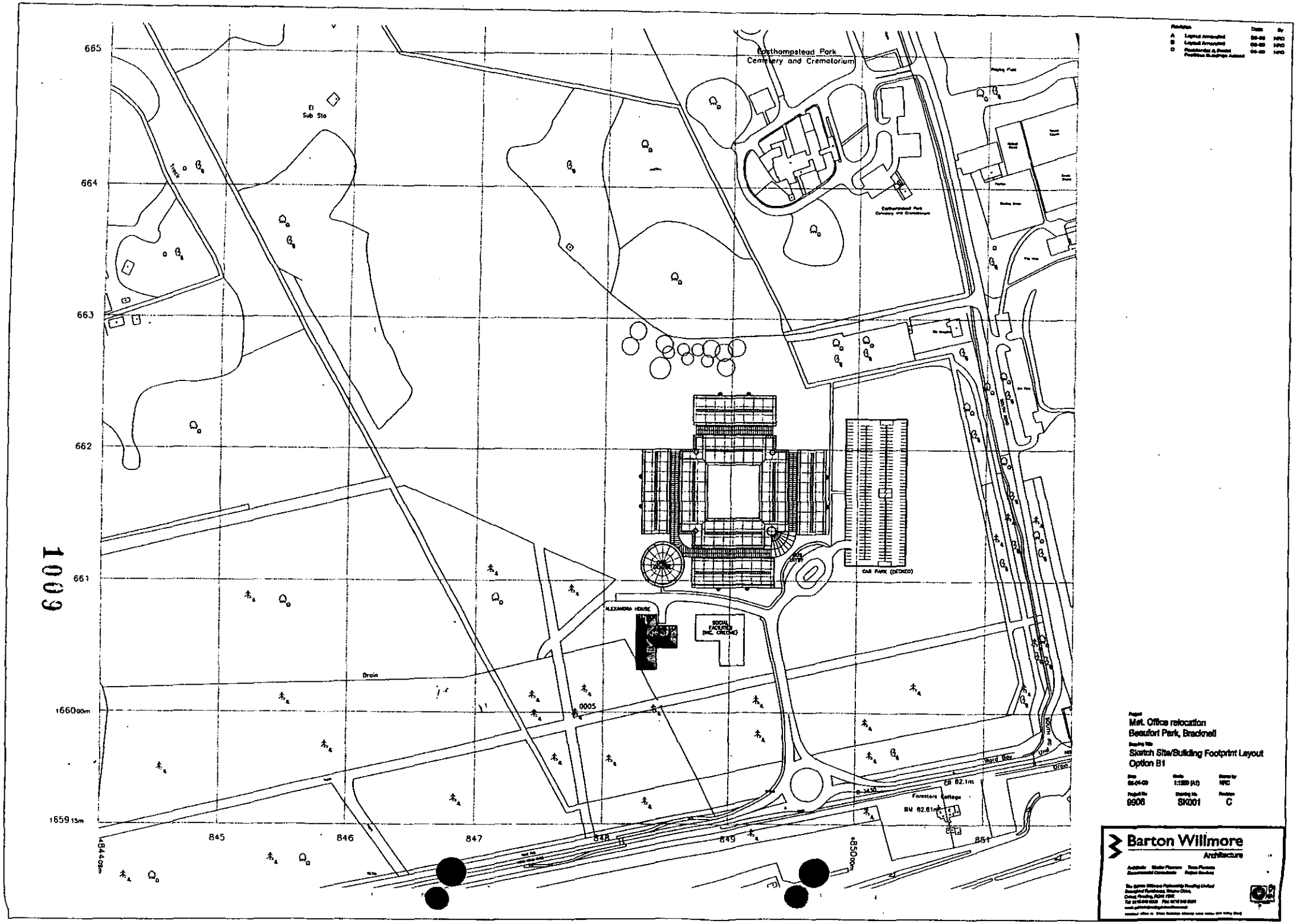
BEAUFORT PARK
MET OFFICE RELOCATION

SITE LOCATION PLAN

9906 P2

Barton Willmore
Planning

1008



Easthampstead Park
Cemetery and Crematorium
El Sub Sta
Track
Drain
ALEXANDRA HOUSE
SOCIAL FACILITIES (INC. CRECHE)
CAR PARK (DECKED)
0005
Foresters Cottage
CR 82.1m
BM 82.61m
665
664
663
662
661
1660.00m
1659.15m
845
846
847
848
849
851
Revision
Date
By
A Layout Amended
B Layout Amended
D Residential & Social Facilities Buildings Added
Project
Met. Office relocation
Beaufort Park, Bracknell
Drawing Title
Sketch Site/Building Footprint Layout
Option B1
Date
Scale
1:1250 (A1)
Drawn by
NRC
Project No
9906
Drawing No
SK001
Revision
C
Barton Willmore
Architecture

1009

The Berkshire Unitary Authorities'

JOINT STRATEGIC PLANNING UNIT

St. Mary's House, c/o Town Hall, St. Ives Road, Maidenhead SL6 1RF
Tel. 01628 796749 Fax. 01628 796739

Head of Strategic Planning and Transport: Stuart Hylton

Please ask for: Phil Gill
Direct Line: 01628 796518
Email: phillip.gill@rbwm.gov.uk
Our Ref: M/3/1
Your Ref: 00/00608/18_84/CONS

Martin Bourne,
Planning & Transportation,
Bracknell Forest Borough Council,
Time Square,
Market Street,
Bracknell,
RG12 1JD.

4 August, 2000

Dear Martin,

Proposed Met Office Relocation to Beaufort Park

Thank you for consulting the Joint Unit on this proposal. I note that it is a consultation under Circular 18/84 and therefore not legally a planning application. For this reason I am not phrasing this letter in the normal form of object/not object; rather I am merely commenting on the issues raised and their relationship to strategic planning policy.

These comments have now been approved by the Chairman and Vice Chairmen of the Joint Committee. Please ensure that these comments are passed on to the relevant Secretary of State.

Location

The location is outside the urban area. It is debatable whether the site should be classified as brownfield or greenfield. Certainly the Met Office has previously developed parts of this large site but the scale of activity appears to be small, and most of the remainder is rural in appearance. Indeed I understand that it forms part of a defined gap between settlements in your Local Plan. The proposed development is not one of the rural uses allowed for under Structure Plan Policy C2, and is inappropriate development in the countryside. The proposal as a whole conflicts with Policies OS1, LD1 and C2. I have also seen no evidence that a sequential test has been carried out as required by PPG6 (paragraph 1.15). Only sites already owned by the applicant appear to have been examined as options for the proposed relocation (this site and Shinfield Park, Reading). PPG6 requires a much wider assessment to be undertaken. In this case a search for sites within the urban areas of Bracknell (including Amen Corner), Reading, Wokingham, Camberley and possibly Maidenhead would seem appropriate.

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My concern is with the future use of the site the Met Office plan to vacate in London Road. The above reasoning on BU1 will only be correct if there is no significant employment development on the London Road site once the relocation takes place. I understand that your Council is currently preparing a development brief for the London Road site, and I am hopeful that this will reflect the strategic employment issues. This is a crucial issue which must be considered by the decision maker in this case, whom I understand to be the Secretary of State for the Environment, Transport and the Regions.

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I trust the above will be useful to you. I will be responding separately to Wokingham District Council on the companion proposal to this one (relocation to Shinfield Park, Reading).

Yours sincerely,

P. A. Gill

Phillip Gill
Senior Planner

cc Angela Odell, WDC

HIGHWAYS CONSULTATION SHEET

From: Angela Odell **Date:** 04 July 2000

Application Number: CON/2000/1844

Proposal: Consultation from Bracknell Forest B C on C18/84 for proposed erection of HQ building, student accommodation and social facilities building for the Meterological office (total floorspace approx 73,465 sq m) with associated decked car parking and vehicular access onto Nine Mile Ride.

Parish:

Site Address:
Met Office Experimental Site, Easthampstead Park, , Wokingham.

Applicant:
The Met.Office C/O Barton Willmore Planning.

Your observations are required in respect of this application within **7 days** of the above date.

✓ below as applicable;

1) ☐ Recommend refusal for the reason(s) **stated below**;
2) ☐ Recommend approval but with condition(s) & reason(s) **stated below**;
3) ☐ Recommend approval with **no** condition(s) or reason(s).

CAN I PLEASE HAVE COPIES OF THE TRAFFIC IMPACT ASSESSMENT ASSOCIATED WITH THIS PROPOSAL.

IF A TIA HAS NOT ALREADY BEEN REQUESTED BY BFBC – CAN YOU PLEASE REQUEST THAT ONE BE CARRIED OUT TO ASSESS THE LIKELY IMPACT OF THE DEVELOPMENT TRAFFIC UPON WOKINGHAM.

IT SHOULD BE NOTED THAT IN THE ABSENCE OF A TIA THE WOC H.A WILL RECOMMEND REFUSAL OF THE PROPOSAL

Signed: _____ **Print name:** _____

JR 28/7/2000

To:
Policy And Plans Section

31407 19/7

REPLY REQUIRED

CG

From: Angela Odell

Date: 04 July 2000

Application Number: CON/2000/1844

Proposal: Consultation from Bracknell Forest B C on C18/84 for proposed erection of HQ building, student accommodation and social facilities building for the Meterological office (total floorspace approx 73,465 sq m) with associated decked car parking and vehicular access onto Nine Mile Ride..

Site Address:
Met Office Experimental Site, Easthampstead Park, , Wokingham.

Applicant:
The Met.Office C/O Barton Willmore Planning.

E J Gibbons 18/7/00

Your observations are required in respect of this application within **7 days** of the above date.

The proposal should be advertised as a departure from the development plan
Site development as proposed would be contrary to policies OS1, LD1 + possibly LD5 of the BSP as it is to all intents purposes greenfield (not accepted by Barton Willmore) + located poorly in relation to facilities + public transport provision. It is likely therefore unless local public transport is improved (buses) and connected to rail flows facilities in Wokingham + Bracknell that there will be an increase in car use in a vicinity that currently suffers from peak hour congestion.
Contrary to BSP policies C2 + C6. The scale, character + intensity of the use proposed with its associated buildings is inappropriate in the countryside. ~~which will~~ It represents both a visual intrusion and physical incursion. Visual impact is likely to be exacerbated by the provision of a new access + the potential cropping of the plantation. Additional landscaping of the site should be considered. Height of the buildings should be restricted.
The site has not been allocated for the purpose in the BF Local Plan + unless the sites vacated in the built up area of Bracknell are used for purposes other than employment the proposal will lead to a pressure for housing which is contrary to BU1 of BSP. BFBC should be asked to control this aspect if harm is not to be caused or if possible to seek redevelopment of near more of the sites for the MET OFFICE as part of a phased programme.
If the MoD wish to pursue the Beaufort Park proposal in preference to the Shinfield Park proposal they should be asked to provide improvements in local public transport including a bus link to Wokingham Town Centre + station. Improvements for cyclists on Nine Mile Ride should also be considered + possible public transport improvements to Crowthorne / Finchampstead

Wokingham Without Parish Council Consultation Sheet

Officer	Angela Odell
No	CON 2000 1844
Proposal	ADJOINING PARISH erection of HQ bldng, student accomodation, social facilities bldng 73465 sq m tot, plus decked car parking and access to Nine Mile R
Site	Beaufort Park Experimental site, Easthampstead Pak.

PLANNING SERVICES	HPT	3174
POL	TLS	
DC	ENF	
APP		
CS		
13 JUL 2000		
COPIES TO:	ACK:	
	FILE:	

Committee's Comments

The majority of the committee felt that the development should not be permitted as it was over development of a rural area, and the generation of traffic would contribute further to existing problems.

Signed : _____
Clerk to Wokingham Without Parish Council

11 July 2000

WOKINGHAM D.C. DEVELOPMENT CONTROL

Start date: 30/6/00	
Officer: AD	Application No. (ON/2000/1844

Map No. ..... Site .....
Easting: ..... Flood Pln .....
Northing: ..... Mineral .....

Level: ☑ Sub Committee ☐ Delegated ☐ Sec. State
☐ Incorrect Fee ☐ Invalid ☐ PD

Description:
C18/84 Proposed erection of headquarters building Student accommodation & Social facilities building for the meteorological office (total floorspace approx 73,465 sq.m.) with associated decked car parking & vehicular access onto Nine Mile Ride

Location: Land at S Road

Parish: Bracknell Ward: .....

Applicant: MET OFFICE

Fee Received..... Required ..... Additional ..... Refund .....

Enforcement Section to be notified ☐ tick if required

Additional information required for validation

		Reason	Requested	Received
1	1:2500 OS location plan showing property edged in blue/red			
2	1:500 block plan showing existing & proposed dev. + adj. Properties			
3	Forms unsigned			
4	Correct S 66 certificate			
5	Elevation plans			
6	Floor plans			
7	Metric scale disclaimer			
8	Encroachment letter			
9	Miscellaneous			

APPLN NO. _____

ACTION REQUIRED BY DEVELOPMENT CONTROL

Conservation Area .....

Listed Building 1 2 2*

Advertisement Required .....

Date Site Notice Sent : ..... Parish Council Informed - YES / NO

INTERNAL CONSULTATIONS

Building Control : .....
Landscape .....
Trees .....
Conservation Officer .....
Environmental Health .....
Housing .....
Leisure & Cultural services .....
Public Rights of Way .....
Property .....
District Secretary (only if called in by SOS) .....
Policy & Plans ✓.....
Strategic Planning (JSPU) .....
Minerals (BABTIE) .....
Archaeological Site (BABTIE) : .....
Education .....
Social Services .....
Highways ✓.....

EXTERNAL CONSULTATIONS

Adjacent D P A : ✓.....
Adjacent Parish work w/out : .....
Southern Electricity Board .....
British Gas .....
PSA Oil Pipeline .....
Transco : .....
Environment Agency .....

Rail Track .....
Police Arch. Liaison Officer .....

HERITAGE BODIES

The Georgian Group .....
Ancient Monuments Society .....
Council for British Arch. .....
RCHME .....
Telecommunications (NRPB) : .....
Sport England : .....

OTHERS:

.....
.....
.....

NEIGHBOURS:

.....
.....
.....
.....
.....
.....
.....
.....
.....

Planning & Transportation

Director of Planning & Transportation : George Kingston MA (Oxon) DipTP MRTPI
Borough Planning Officer : Mike Holmes BSc (Econ) DipTP MRTPI

This matter is being dealt with by: Martin Bourne (01344) 351129

28th June 2000

Our Ref: 00/00608/18_84/CONS

Director of Environmental Services
Wokingham District Council
Planning Department
PO Box 15
Shute End
Wokingham
Berkshire
RG11 1WR

PLANNING SERVICES	HPT
POL	TLS
DC JRM	ENF
APP	
CS	31224
30 JUN 2000	
COPIES TO:	ACK:
	FILE:

BRACKNELL FOREST BOROUGH COUNCIL

Time Square
Market Street
Bracknell
Berkshire
RG12 1JD
☎ 01344 424642
Fax 01344 351104
DX 33611 Bracknell
Minicom 01344 352045
www.bracknell-forest.gov.uk

Dear Sir/Madam

DESCRIPTION: Erection of headquarters building, student accommodation and social facilities building for the for the meteorological office (total floorspace approximately 73,465 sq m) with associated decked car parking and vehicular access onto
Nine Mile Ride (consultation on Notice of Proposed Development under Circular 18/84).

LOCATION: Land At South Road Bracknell

REFERENCE: 00/00608/18_84

CASE OFFICER: Martin Bourne (01344) 351129

Town and Country Planning Act 1990

Please find enclosed a copy of the above planning application.

I shall be grateful if you would consider the proposal and advise me of any relevant views you may have. Any comments should be expressed in writing and received within 21 days of the date of this letter.

Please do not hesitate to contact the Case Officer, Martin Bourne, on direct line (01344) 351129, should you have any queries on this matter.

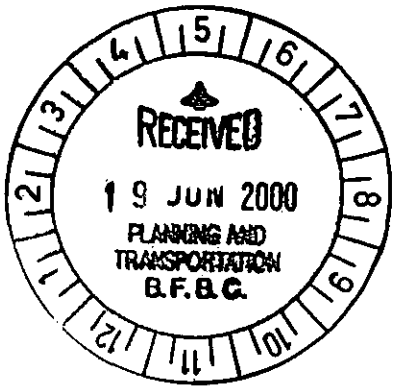
Yours faithfully

M.C. Bourne

For Borough Planning Officer

Enc.

The Barton Willmore Planning Partnership - Reading
Beansheaf Farmhouse, Bourne Close, Calcot,
Reading, RG31 7BW.
Tel 0118 943 0000 Fax 0118 943 0002
e-mail: planning@reading.bartonwillmore.co.uk



Barton Willmore
Planning

Director of Planning and Transportation,
Bracknell Forest Borough Council,
Time Square,
Market Street,
Bracknell,
BERKSHIRE. RG12 1JD

00603

9906/A3/WD/SLH

16th June 2000

Dear Sir,

PROPOSED MET OFFICE RELOCATION TO BEAUFORT PARK, EASTHAMPSTED
TOWN AND COUNTRY PLANNING ACT 1984
DEPARTMENT OF THE ENVIRONMENT CIRCULAR 18/84
NOTICE OF PROPOSED DEVELOPMENT BY THE MET OFFICE

On behalf of The Met. Office we herewith enclose a consultation under the above Circular relating to the proposed relocation of their headquarters building from Bracknell to Beaufort Park.

Part IV of the above Act sets out the arrangements by which Government Departments will consult with Local Planning Authorities concerning their proposals for development before proceeding with development which would otherwise require planning permission.

We attach a letter of authority from the Defence Estates dated 26th May 2000 that we may submit such a Notice of Proposed Development on behalf of The Met Office. Under this procedure we seek clearance for the development and not planning permission. At this stage the proposals are in "outline" rather than in "detail", and we seek the Council's views as to the principle of such a development on this site in terms of the quantum of floorspace proposed. Detailed plans have not been prepared, although indicative plans, elevations and cross sections of the building illustrate how such a development might appear on the site.

In support of this consultation we enclose six copies of:

1. A planning statement which includes a design statement;

2. A Landscape Appraisal and Assessment, including an Ecological Appraisal;

3. A Transport Report incorporating procedures for a "Green Transport/Travel Plan".

We would also advise you that the Met. Office are undertaking a similar consultation with Wokingham District Council relating to a proposed relocation to Shinfield Park, Reading, presently the site of the Met. Office College.

Should you wish to discuss any aspect of the proposal in further detail, please do not hesitate to contact either Ian Tant (Planning Partner) or the writer in the first instance.

Yours faithfully,

W R Dawes

W.R. DAWES
Senior Planner

DEFENCE ESTATES
Delivering Estate Solutions to Defence Needs

South East & Germany
Blandford House, Farnborough Road
Aldershot, Hampshire GU11 2HA
Telephone: Direct dial: 01252 348907
DFTS: (9)4217 3907
Facsimile: 01252 348932
Mil Fax: (9)4217 3932
Stephen Rice BSc FRICS
Manager South East & Germany

code

Mr B Dawes
The Barton Willmore Planning partnership
Beansheaf Farmhouse
Bourne Close
Calcot
Reading RG317BW

Your reference

Our reference
DE SE/BRLM/284

Date
26 May 2000

READING
RECEIVED
30 MAY 2000
WD
Doc/AT
Noted
WD 30/5

Dear Mr Dawes

TOWN AND COUNTRY PLANNING ACT 1984 (DOE CIRCULAR 18/84) – NOTICE OF PROPOSED DEVELOPMENT BY THE MINISTRY OF DEFENCE ON BEHALF OF THE METEOROLOGICAL OFFICE.

Part IV of the above Act sets out the arrangements by which Government Departments will consult Local Planning Authorities about their proposals for development before proceeding with development, which would otherwise require planning permission.

It has been confirmed by the Meteorological Office, being part of the Ministry of Defence that you have been instructed to issue a Notice of proposed Development for the construction of a new headquarters office building and associated car parking provision at the Met office site, Beaufort Park, Easthampstead, Berkshire. You are hereby authorised to submit the Notice of proposed Development, a copy of which must be sent to this office.

The enclosed copy of this letter must accompany your submission to confirm that you have been authorised to do so by the Ministry of Defence.

Would you please provide me have a copy of the Local Planning Authority's decision in due course, or return this letter of authorisation with an accompanying letter if it is decided not to proceed with the consultation.

Yours sincerely

K M Howlett

K M HOWLETT BSc (Hons)
Senior Estate Surveyor (RAF & Met Office Built Estate)
DE (SE&G)

CC: Mr G. Cooper Met Office Relocation Team PD House – Bracknell
CC: Mr K. Scott – (Head of Property & Office Services) Met Office PD House Bracknell

00608

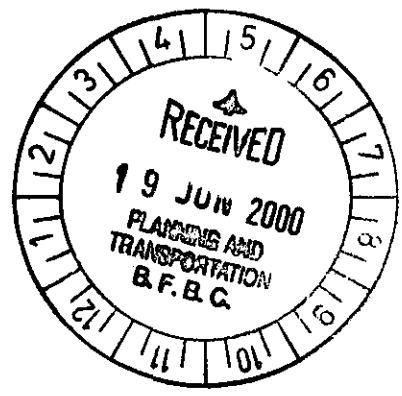
FIRST DRAFT

MET OFFICE RELOCATION
BEAUFORT PARK,
EASTHAMPSTEAD, BRACKNELL

THE MET OFFICE

LANDSCAPE APPRAISAL

June 2000



FIRST DRAFT

THE MET OFFICE

PROPOSED RELOCATION OF THE MET OFFICE TO BEAUFORT PARK, EASTHAMPSTEAD, BRACKNELL

LANDSCAPE APPRAISAL

Barton Willmore Environmental,
Beansheaf Farmhouse,
Bourne Close,
Calcot,
Reading, Berkshire
RG31 7BW

Tel: 0118 943 0000
Fax: 0118 943 0003
E-Mail : environmental@reading.bartonwillmore.co.uk

Ref: BWE/9906/L2/MDC.JEP
Date: 13 June 2000

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CONTENTS

1.0 Introduction

2.0 Site Context

3.0 Subject Site Appraisal

4.0 Landscape and Visual Appraisal

5.0 The Development Proposals and Landscape Strategy

6.0 *Landscape and Visual Impact Assessment*

7.0 Summary and Conclusions

ILLUSTRATIVE MATERIAL

Figure 1 : Site Context Plan at 1:5000 scale

Figure 2 : Site Appraisal Plan at 1:1250 scale

Figure 3 : Landscape Proposals Plan at 1:1250 scale

Figure 4 : Landscape Sections at 1:500 scale

APPENDICES

Appendix 1 : Site Appraisal Photographs

Site Context Photographs

Appendix 2 : Bioscan Environmental Consultancy Ecological Report May 2000

1.0 INTRODUCTION

1.1 Barton Willmore Environmental (BWE) were instructed by The Meteorological Office in March 2000 to advise on the landscape and visual matters relating to their proposal to construct some 37,160 sq m (400,00 sq ft) of new office accommodation at the Technical Development and Instrumentation Division of the Meteorological Office at Beaufort Park, Easthampstead, Bracknell. At that time, BWE undertook an appraisal of the Subject Site and its surroundings and this report has been prepared to support the consultation for the development under the former Department of the Environment Circular 18/84.

1.2 More specifically, our brief was as follows: -

a) To carry out an appraisal of the Subject Site and its surroundings and to assess the visibility of the site and its relationship with adjacent areas.

b) To advise the architects (Barton Willmore) on the layout of the proposed development on the site in terms of landscape and visual impact constraints, with specific reference to the existing trees, broadleaved woodlands and coniferous plantations on the site, and the relationship of the site with adjacent roads and properties.

c) To assess the landscape and visual impacts of the proposed development.

d) To give consideration to the development of the site in the context of the relevant environmental policies of the emerging Local Plans.

e) To advise on a landscape strategy for the site.

1.3 An appraisal of the site and its surroundings was carried out, including an assessment of the visibility of the site from the surrounding area. Consideration was given to the suitability of the site for the proposed development.

1.4 Information is presented on the following plans appended to this report:-

- Figure 1: Site Context Plan at 1:5,000 scale
- Figure 2: Site Appraisal Plan at 1:1250 scale
- Figure 3: Landscape Proposals Plan at 1:1250 scale

- Figure 4: Landscape Sections at 1:500 scale

2.0 SITE CONTEXT

2.1 The Subject Site, which comprises the Technical Development and Instrumentation Division of the Met Office at Beaufort Park, is located to the south-west of the built up area of Easthampstead. The site is located immediately north of Nine Mile Ride (B3430), to the south of the Downshire Golf Course and to the south-west of Easthampstead Park Cemetery and Crematorium. The Technical Development and Instrumentation Division of the Met Office comprises a number of buildings set within an area of woodland, coniferous plantations and "parkland". To the east of the site are the residential areas of Great Hollands. To the south of Nine Mile Ride is the Transport and Road Research Laboratory and to the west the Water Pollution and Control Centre. The extent of the Subject Site and its relationship with adjacent development is shown on Figure 1, Site Context Plan at 1:10,000 scale.

2.2 Topographical variation in the area surrounding the Subject Site is slight, and the major ridgelines and contours are highlighted on Figure 1. The site occupies gently sloping land at between approximately 70 and 83 metres AOD, which rises south-eastwards towards Nine Mile Ride (B3430), before rising prominently southwards towards Hut Hill and Caesars Camp. To the north of the site, the topography rises gently from the valley floor within which the Downshire Golf Course is located towards Easthampstead Park Educational Centre.

2.3 The existing vegetation in the landscape surrounding the Subject Site has been plotted on Figure 1 and this demonstrates that there are a number of significant areas of vegetation present. There are substantial coniferous plantations and broadleaved woodland areas associated with Bracknell Forest to the south, east and west of the site. These woodlands continue southwards and eastwards beyond Nine Mile Ride to surround the built up edge of Easthampstead. A coniferous hedgerow surrounds and separates Easthampstead Park Cemetery and Crematorium from the site and the Downshire Golf Course. The woodland vegetation surrounding the site is an important feature, and effectively controls and curtails views towards and into the site.

2.4 In terms of landscape planning context, on the Proposals Map of the Bracknell Forest Borough Local Plan (Deposit Draft 1996) and Further Proposed Changes 1997, the Subject Site is included within development on land outside defined settlements (Policy EN 8). The objective of this Policy is to maintain the distinction between built up areas and the countryside by controlling the spread of inappropriate development outside settlements. Policy EN 8 states that: -

> **"Outside the defined settlement boundaries, development will only be acceptable where it would not adversely affect the character and function of the land or be damaging to landscape quality"**

2.5 The Subject Site is also included within Significant Land between Settlements designation (Policy EN 10). The objective of this policy is to maintain the visual and physical separation of significant land between settlements by resisting development which would threaten their open and undeveloped character and narrow or erode the physical and visual gap between settlements. Policy EN 10 states that: -

> **"Within the defined significant land between settlements, development will only be acceptable where it would not be prejudicial to maintaining the open, rural or undeveloped *character of the defined Significant Land.*"**

2.6 Some 500 metres to the south-east of the Subject Site there is a proposed Special Protection Area (Policy EN 3(I)) which forms part of an extensive area of land between Bracknell and Crowthorne. This designation is intended to protect the *habitats of threatened species of wildlife.*

2.7 The boundary of Wokingham District is located some 500 metres to the west of the site, along the Old Wokingham Road. On the Proposals Maps of the Wokingham District Local Plan (Deposit Draft 1997), the land immediately beyond the district boundary is designated as Green Gaps and Wedges (outside the Metropolitan Green Belt) (Policy WCC 2). The objective of this policy is to maintain a physical and visual separation between settlements and is therefore similar in its objectives to Policy EN 10 of the Bracknell Forest Borough Local Plan.

2.8 The public rights of way in the locality are marked on Figure 1 and this demonstrates that there are a limited number of public paths around the site. Public Footpath No. 11 is located to the south-east of the Subject Site and extends from Bracknell Road (B3348) northwards linking to Nine Mile Ride (B3430). To the east of Bracknell Road, a number of public rights of way traverse the coniferous plantations of Bracknell Forest. Figure 1 also shows that Public Footpath Nos. 15 and 16 traverse the landscape to the north of the Subject Site.

2.9 Figure 1 also shows the location of a number of Listed Buildings in the vicinity of the site. There is a group of buildings some 450 metres to the north of the site which were formerly known collectively as Old Oak Cottages and which are Grade II listed. Further north is Easthampstead Park Educational Conference Centre which is also Grade II listed.

3.0 SUBJECT SITE APPRAISAL

3.1 The existing features and layout of the Subject Site are shown on Figure 2, Site Appraisal Plan at 1:1250 scale. This drawing is based on an Ordnance Survey Superplan, and shows in detail the features on the site including existing vegetation, buildings, areas of car parking, boundary features and buildings and roads in close proximity to the site.

3.2 The Subject Site comprises 23.0 hectares (56.85 acres) of land and contains several buildings associated with the Technical Development and Instrumental Division of the Met Office. The buildings are used for a variety of purposes, including research and ancillary office buildings, laboratories and workshops. Other features include anemometer towers, a rotating balloon shed, a rifle range, a helicopter landing area, an electricity sub-station, a cycle and buggy shed, areas of car parking and internal roads, broadleaved woodlands, coniferous plantations, groups of mature individual trees and ecologically important semi-improved acid grassland and heathland. As shown on Figure 2, the main buildings are predominantly located within the south-eastern part of the site and are surrounded by woodland and "parkland". To the west of the existing buildings there are extensive areas of open grassland, heathland and marshy grassland, beyond which there are substantial areas of mature coniferous plantations and mixed woodlands. The boundary of the Subject Site is

defined by a chain link security fence which surrounds the perimeter of the site. However, due to the dense woodland vegetation surrounding the site, the boundary fence is mainly obscured by vegetation, except for along the northern boundary of the site where it visibly separates the site from the Downshire Golf Course car park, and where there is no existing vegetation associated with the boundary. The southern, south-eastern and south-western boundaries of the site are defined by the coniferous plantations which flank Nine Mile Ride and South Road. The northern boundary is defined by West Road and the Downshire Golf Course. The north-eastern boundary is defined by the Easthampstead Cemetery and Crematorium, which is obscured by deciduous woodland. The western and north-western boundaries of the site are also defined by deciduous woodland areas. Access to the site is obtained from South Road, via Nine Mile Ride (B3430) to the east of the site. A disused emergency access links from West Road, to the north of the site.

3.3 In terms of topography the site occupies gently sloping land at between approximately 70 and 83 metres AOD, which gradually slopes south-eastwards from the valley area to the north of the site where the Downshire Golf Course is located towards Nine Mile Ride.

3.4 Within the site there are a number of substantial broadleaved woodlands, coniferous plantations, groups of individual mature trees and areas of ornamental planting associated with the car parking areas, and the extent of these is shown on Figure 2. Along the south-eastern and south-western boundaries of the site are mature pine plantations, some 20 – 25 metres in height and between 70 and 180 metres in width, with a shrub layer of Rhododendron species. Bioscan UK Limited, a firm of specialist environmental consultants, were commissioned in April 2000 to carry out a detailed ecological survey of the site. Their report, which is included at Appendix 2, demonstrates that the coniferous plantations have limited ecological value, are invaded by naturalised alien rhododendron species which pose a threat to other habitats of greater value nearby, and have a sparse ground flora. The eastern and western sides of the Subject Site are defined by broadleaved or predominantly broadleaved woodland, and comprise mainly oak, silver birch, rowan and holly species with some sycamore, hawthorn and elder species. Collectively the pine plantations and broadleaved woodland areas provide physical and visual containment and separation between the site and The Downshire Golf Course, the

Easthampstead Park Cemetery and Crematorium and adjacent roads and properties. To the north of the main building is a group of individual mature oak and silver birch trees. Groups of tree and scrub vegetation are also found to the north of the site adjacent to the rifle range and helicopter landing area.

3.5 The buildings on the site are generally one and two storeys high, and are of a temporary construction. However they are more than 20 years old and have had some rendering and re-cladding works carried out to the external walls.

3.6 A number of photographs of the Subject Site (A – F inclusive) are included in Appendix 1 to this report. The Site Appraisal Photographs were taken from locations within the site as shown on Figure 2. They serve to demonstrate the character of the site as existing and have been annotated for ease of reference.

4.0 LANDSCAPE AND VISUAL APPRAISAL OF THE SUBJECT SITE

4.1 A visual appraisal of the site was carried out and consideration was given to the visibility of the site and the buildings on it in views from the surrounding roads, footpaths and publicly accessible areas. In association with this assessment, consideration was given to the suitability of the site for the development proposed and the effect that this would have on the landscape and visual characteristics of the area. In addition, consideration was given to the appropriateness of developing the site in the context of the planning policy framework, that is the site's location on the built up edge of Easthampstead within the "gap" between Bracknell and Crowthorne. A series of coloured photographic panoramas were taken in the area surrounding the site and are included in Appendix 1 to this report. These comprise a number of views taken from the area immediately surrounding the site, including from roads and public rights of way.

Near Distance Views

4.2 There are a limited number of near distance views towards the Subject Site from publicly accessible areas, views into the site only being obtained from a short section of South Road opposite the existing site entrance, from the car park of the Downshire Golf Course, and from a short section of West Road opposite the disused

emergency access. Views towards the Subject Site from the residential area of Great Hollands to the east are curtailed by the tree belts and woodland vegetation associated with South Road and the Playing Field and Recreation Ground to the east, the Easthampstead Cemetery and Crematorium and the Downshire Golf Course. Views towards the Subject Site from Nine Mile Ride (B3430) to the south, Old Wokingham Road to the west and West Road to the north are curtailed by the extensive woodland areas which form part of Bracknell Forest. Views towards the Subject Site from Easthampstead Park Educational Conference Centre to the north are restricted by the "parkland" vegetation and woodland areas which "wrap around" this listed building and by the vegetation associated with the Downshire Golf Course.

4.3 The first of the near distance photographs, **Photograph No. 1**, is taken from a location about 50 metres to the south of the Subject Site, from the verge on Nine Mile Ride (B3430) opposite the junction with South Road. The photograph demonstrates the wooded nature of the area on the southern side of the site, and this vegetation acts as a substantial physical and visual buffer, curtailing views towards the site. These woodlands would assist in screening views towards the proposed development from Nine Mile Ride.

4.4 Moving to the north of the site, **Photograph No. 2** is taken some 10 metres to the north of the Subject Site on West Road, opposite the disused emergency access to the site. The photograph demonstrates the containment provided by the woodlands surrounding this part of the site. Partial views of portakabins in the northern part of the site are visible through gaps in the trees. However, it is difficult to perceive the other buildings on the site due to distance and the intervening woodland vegetation. It is intended that this woodland vegetation would be retained and managed and reinforced with additional planting to provide additional screening to the proposed development.

Middle Distance Views

4.5 Consideration was given to middle distance views towards the Subject Site from the surrounding area, including from the Downshire Golf Course car park to the north of

the Subject Site and from the Easthampstead Cemetery and Crematorium to the east of the site.

4.6 The first in this sequence of photographs, **Photograph No. 3**, is taken from the car park of the Downshire Golf Course, some 80 metres to the north of the Subject Site. The photograph demonstrates that views towards the southern part of the site are curtailed by the woodland on its eastern side. The rotating balloon shed and solar radiation building are seen in this view due to the lack of vegetation along the north-eastern boundary of the site. However, it is intended that these structures will be removed and the provision of new planting within the site would assist in screening views towards the proposed built development.

4.7 Moving southwards, **Photograph No. 4** is taken from within the Easthampstead Park Cemetery and Crematorium, some 100 metres to the north of the Subject Site. The photograph illustrates the substantial coniferous hedgerow along the boundary of the cemetery which provides physical and visual separation between the Easthampstead Park Cemetery and Crematorium and the Subject Site. This vegetation would screen views towards the proposed development.

4.8 Moving southwards along South Road, **Photograph No. 5** is taken from the verge opposite the main site access, some 150 metres to the east of the Subject Site. The photograph demonstrates that none of the existing buildings or structures on the Site are visible, with the woodlands flanking South Road and the substantial hedgerow associated with the Easthampstead Cemetery and Crematorium effectively screening views into the site. It is intended that the built development would be located on the site of the existing buildings within the southern part of the site, and the coniferous plantations which surround and contain this part of the site would screen views towards the proposals.

4.9 Moving northwards along South Road, **Photograph No. 6** is taken from the junction of South Road and West Road, some 320 metres to the north-east of the Subject Site. The photograph demonstrates that views towards the site are restricted by distance and by the substantial coniferous hedgerow and fencing which separates the Easthampstead Cemetery and Crematorium from the Downshire Golf Course driving range.

Long Distance Views

4.10 There are no longer distance views towards the site due to the screening provided by the woodlands and coniferous plantations associated with Bracknell Forest and by the built forms in the area surrounding the Subject Site, Providing that the proposed development is sensitively designed and set within the existing landscape framework on the site, it would have no effect on views towards the site from the wider area.

Summary

4.11 The visual appraisal concludes that the Subject Site has a high degree of visual enclosure, which is provided by the coniferous plantations and broadleaved woodlands on its boundaries and within the surrounding area. The woodland areas associated with Bracknell Forest to the south, east and west of the site provide screening from the residential areas of Great Hollands to the east. The substantial hedgerow which provides containment and enclosure to the Easthampstead Park Cemetery and Crematorium is also important in providing screening towards the site from South Road and the playing field on the western edge of the built up area of Great Hollands. In addition, the extensive woodlands on the southern side of Easthampstead, forming part of Bracknell Forest, controls and curtails views towards the Subject Site. Views towards the site are dominated by the mature broadleaved woodland areas and coniferous plantations which surround and envelop the Subject Site, and development on the site would be screened by these woodland areas.

4.12 There are no middle or longer distance views towards the existing buildings on the site, as the site is screened by dense woodland vegetation and by coniferous plantations to the south, east and west. The Rotating Balloon Shed and Solar Radiation Building are visible from the car park of the Downshire Golf Course, due to the absence of vegetation along the north-eastern boundary of the site. However it is intended that these existing structures are removed as part of the development proposals. Providing that additional planting is introduced within the site, and that the proposed development is sensitively designed and set within the existing

landscape framework, it would have no effect on middle or longer distance views towards the site.

5.0 THE DEVELOPMENT PROPOSALS AND LANDSCAPE STRATEGY

5.1 The Landscape Proposals Plan, Figure 3, illustrates the proposed development on the Subject Site. This drawing is based on Barton Willmore's Drawing No 9906/SK001B which illustrates a main headquarters building providing 33,351 sq.m. (359,000 sq.ft.) of office and ancillary systems accommodation. It would comprise four 3-storey pavilion buildings some 15 metres in height, linked by an internal glazed covered walkway, with tensile canopies covering a central courtyard area. The curved roof form, the glazed entrance, the tensile membrane canopies and the provision of a feature tower on the south-eastern corner of the building would ensure that the building presents an attractive façade to visitors. The 'stepped' corners of the building would provide space for additional feature courtyards. The design of the building would ensure that future users would obtain views of the surrounding landscape, including the broadleaved woodlands and coniferous plantations and the "parkland" setting.

5.2 An Operations Centre would be located in the south-western corner of the main building and would comprise a 3-storey building with a secure glazed covered walkway linking it to the main building. The elevational treatment of this built form would be different to the main building, with its external appearance expressing its internal 'hi-tech' use.

5.3 A building providing residential accommodation would be sited to the south of the operations centre and would comprise a two storey building. A building housing social facilities would be located immediately to the east of the accommodation building. The social facilities unit would comprise a single storey building, and include social and sports facilities, a creché and information centre.

5.4 The main car parking area for the proposed development would be located to the east of the building, and comprise a car park providing some 750 parking spaces. The design of the car park would ensure a modern, secure, open parking

environment. The existing coniferous plantation which surrounds the car park would minimise the visual impact of this built form on the surrounding area.

5.5 With regard to external circulation within the site, an internal road, some 6.0 metres in width, would extend northwards from the proposed access to the site. Along the southern side of the proposed building the road would diverge westwards to provide access to the Operations Centre and eastwards to provide access to the car park.

5.6 The landscape strategy for the site is shown on Figure 3. This drawing illustrates a scheme of landscape measures for the site which would result in the enhancement of the natural features on the site which exist at present, and which would provide an attractive setting for the proposed built development. The landscape objectives for the proposals are as follows:

- To retain and protect as much woodland, coniferous plantation, groups of trees and existing good quality individual trees on the site as possible.

- To "contain" the proposed built development within a framework of existing and proposed planting.

- To retain/provide landscape buffers between the proposed built forms on the site and adjacent areas including residential properties and roads. This would ensure that the visual effect of the development on adjacent properties and land uses is minimised.

- To provide a high quality landscape setting to the proposed development through the provision of a robust landscape infrastructure, incorporating the use of appropriate hard landscape features.

5.7 Figure 3 illustrates that the groups of mature individual trees on the site and the majority of the woodland areas within the site and along its boundaries would be retained, and that these would provide a framework for the proposed built development. However, a swathe of pine plantation, some 1.35 hectares in area, would need to be removed to accommodate the proposed development and the car park. In addition, a strip of plantation some 20 metres wide and 160 metres long

would need to be removed to accommodate the proposed access to the development from Nine Mile Ride (B3430). However, it is considered that the overall loss of these areas of vegetation, although substantial, would not affect the visual containment of the site. The ecological survey also demonstrates that these plantations have limited ecological value and have been invaded by naturalised "alien" rhododendron species which poses a threat to other habitats of greater value nearby.

5.8 The layout shown on Figure 3 would result in the retention of the majority of the woodlands and plantations along the boundaries of the site, and these would provide a framework for the proposed built development. The most important areas of woodland and plantation vegetation, in terms of their visual amenity and screening function, would be retained, together with the group of mature individual trees within the "parkland" to the north of the existing buildings in the south-eastern part of the site. However, as described above, substantial areas of coniferous plantation in the southern and south-eastern part of the site would need to be removed to accommodate the proposed built development, the car park and the access arrangements into the site.

5.9 It is proposed that new tree planting would be introduced to in part off-set the loss of areas of existing broadleaved woodland and coniferous plantation. Advanced nursery stock trees (up to 5.0 metres in height) would be planted in groups surrounding the north-western, southern and south-eastern sides of the proposed built development and to reinforce the "parkland" character of the site. Nursery stock trees (up to 3.0 metres in height) and ornamental shrubs would be planted within the courtyards associated with the building. A belt of woodland mix planting comprising standards up to 3.0 metres in height at the time of planting, and whips and feathered trees up to 1.8 metres in height would be introduced along the eastern and north-eastern sides of the building to provide a landscape buffer between the building and the car park.

5.10 Additional planting would be introduced within the existing woodlands along the northern boundary of the site to complement the structure of vegetation which exists at present, and to provide separation between the proposed development and West Road and the Downshire Golf Course. This planting would provide screening below

the existing trees and ensure a succession of tree cover as the existing trees mature. This planting and the retained woodland would provide an appropriate interface between development on the site and areas to the north. The new planting would comprise locally indigenous species such as those found in the woodlands, coniferous plantations and tree groups on and adjacent to the site. This planting would complement the existing tree cover in the locality and provide nature conservation interest. Consideration was given to introducing new planting along the north-eastern boundary of the site to curtail view towards the proposed development from the Downshire Golf Course car park. However, after assessing the ecological value of this part of the site, and the fact that any views towards the proposed development would be substantially screened by the existing woodland to the east, it was considered unnecessary to disturb the semi-improved acid grassland along this boundary.

5.11 The majority of woodlands and plantations would be improved through a programme of selective tree surgery work to ensure their long term survival and health. The implementation of the landscape proposals shown on Figure 3 would result in the attractive and well-designed building being set within a framework of existing trees, broadleaved woodlands, coniferous plantations, parkland and new planting. A Landscape Management Plan would be developed for the site in consultation with the Local Planning Authority so that an appropriate landscape management regime is secured.

5.12 Two Landscape Sections have been prepared to demonstrate the relationship between the proposed development on the Subject Site and adjacent areas and how the existing boundary vegetation and new planting would provide an attractive setting and landscape framework to the new development. The location of the Sections are shown on Figure 4.

5.13 The Sections on Figure 4 demonstrate that the existing woodlands and coniferous plantations along Nine Mile Ride, South Road and West Road would continue to screen views into the site and provide enclosure and containment. As a result views of the proposed building would be negligible, if any. As the proposed and existing trees mature and gain stature, views towards the proposed built forms would be

more effectively curtailed and long term benefit would be gained from the additional planting proposed as part of the development.

5.14 Lighting columns and fittings chosen to prevent excessive light pollution at night and concealed lighting from the car park, would spill out beyond the proposed office building line. This, combined with the lighting from the office building, should provide enough illumination for pedestrian thoroughfare. However, it is suggested that localised low level bollard lighting positioned in strategic hard and soft landscape areas could also be provided. In any event, the lighting associated with the proposed building would be predominantly obscured by the existing planting which surrounds and contains the site, and the new planting would act as visual screens or "curtains", ensuring that the lighting to the building and car park would not "spill out" into the adjacent areas.

6.0 LANDSCAPE AND VISUAL IMPACT ASSESSMENT

6.1 In this section of the report, consideration is given to the effects of the proposed development on the landscape in terms of the impact on landscape features and landscape character, as well as assessing the visual impact of the proposals. As described in the previous paragraphs, the Subject Site is surrounded and contained by existing coniferous plantations and broadleaved woodlands. Development on the site as proposed would be enclosed by these woodlands, and it would not adversely affect the character or function of the surrounding landscape, nor would it prejudice the fairly open character of the site. Development on the site would take place within an existing landscape structure on land which is currently occupied by an extensive footprint of built forms.

Impact on Existing Vegetation

6.2 As set out in Section 3.0 of this report, there are substantial coniferous plantations, broadleaved woodlands and groups of trees on the site, and sections of these would need to be removed to accommodate the proposed built development, the access arrangements to the site and the car park. As set out in the report prepared by Bioscan Environmental Consultancy, the conifer plantations at present have limited ecological value and are a commonplace replacement of the former heathland in

this locality. During the design process, detailed consideration was given to the alignment of the access arrangements and internal roads and the layout of the proposed buildings, in order to minimise the impact of these built structures on the existing woodlands and plantations. However, in order to accommodate any form of redevelopment on the site, it is inevitable that there would be some tree loss.

Visual Impact

6.3 The proposed development on the Subject Site, as shown on Barton Willmore's Drawing Nos. 9906/SK001B to 9906/009 inclusive, would affect the views from a number of locations as follows.

Photograph No. 1: Views towards the proposed development would be screened by the coniferous plantations flanking Nine Mile Ride. However, views of the proposed access arrangements, including the roundabout junction on Nine Mile Ride, would be obtained from this viewpoint. New planting, to be introduced in association with the access arrangements, would assist in curtailing views towards the main access in the longer term.

Photograph No. 2: Views towards the proposed development would be substantially curtailed by the existing woodlands flanking this section of West Road. It is proposed that the existing woodlands would be supplemented with further planting to reinforce and strengthen the existing planting structure, and as a result, in the longer term, the proposed development would not be readily perceptible due to the screening effect of intervening vegetation.

Photograph No. 3: As mentioned in paragraph 5.10, consideration was given to the provision of new planting along the north-eastern boundary of the site. However, after assessing the ecological value of this part of the site, and the fact that views towards the proposed development would be substantially screened by the existing woodland to the east, it was considered unnecessary to disturb the semi-improved acid grassland along this boundary. At present, views are obtained into the site towards the Rotating Balloon Shed and Solar Radiation Building and the proposed development (which would be set back into the south-eastern part of the site) would be seen in the context of these existing structures.

Photograph No. 4: The substantial coniferous hedgerow and existing woodland which provide physical and visual separation between the Easthampstead Park Cemetery and Crematorium and the Subject Site, would restrict views towards the proposed development. As a result the impact on views from this viewpoint would be negligible, if any.

Photograph No. 5: The woodland and coniferous plantation flanking South Road would substantially curtail views towards the proposed development, and as a result the impact on views from this viewpoint would be negligible, if any.

Photograph No. 6: The proposed development would not be readily perceptible from this viewpoint as the gentle rise in topography, the substantial coniferous hedgerow, which separates the Easthampstead Park Cemetery and Crematorium from the Downshire Golf Course, and other intervening vegetation would screen views towards the new built forms. As a result the impact of the development on middle distance views would be negligible, if any.

6.4 Consideration has been given to the development proposals for the site in the context of the environmental policies of the emerging Local Plan, including Policy EN 8 which considers the impact of development in areas outside defined settlement boundaries between built up areas and the countryside. Policy EN 10 is also relevant to this consultation and considers the impact of development on the "gaps" between settlements. Development on the Subject Site would have no impact on the boundary features such as the woodlands or coniferous plantations which maintain the distinction between built up areas and the countryside, and the physical and visual gap between the settlements of this locality.

6.5 Consideration has also been given to environmental issues related to the layout of the proposed development and to the criteria set out in Policies EN 8 and EN 10, as follows: -

- The proposed development would be appropriate in scale and character to the local area as the design of the new building has been carefully considered to ensure that it would "sit" comfortably within the site. In

addition, due to the extensive woodland areas and coniferous plantations surrounding the Subject Site, there would be no adverse impact on nearby properties or on properties within the residential areas of Great Hollands to the east. As a result the proposed development would be integrated into its local context without detriment to the amenities of adjoining land uses and occupiers, or adversely affect the character and function of the land.

- The proposed development would not have a significantly detrimental impact upon landscape and nature conservation features, although a substantial area of coniferous plantation would be lost to accommodate the development. The development would take place within the established landscape framework to the site, which would be enhanced by additional planting. The development would not be prejudicial to maintaining the open, rural or undeveloped character of the defined significant land. The design of the building would be high quality and would respect the local context by virtue of its siting, layout, massing, materials, colour and texture. The attractive design of the building would ensure the protection of local visual amenity and would not adversely affect the character and quality of the surrounding landscape.

7.0 SUMMARY AND CONCLUSIONS

7.1 The Subject Site, which comprises the Technical Development and Instrumentation Division of the Met Office at Beaufort Park, is located to the south-west of the built up area of Easthampstead. The site is located immediately north of Nine Mile Ride (B3430), to the south of the Downshire Golf Course and to the south-west of Easthampstead Park Cemetery and Crematorium. The Technical Development and Instrumentation Division of the Met Office comprises a number of buildings set within an area of woodlands, coniferous plantations and "parkland". To the east are the residential areas of Great Hollands. To the south of Nine Mile Ride is the Transport and Road Research Laboratory and to the west the Water Pollution and Control Centre.

7.2 The site occupies gently sloping land which rises south-eastwards towards Nine Mile Ride (B3430), before rising prominently southwards towards Hut Hill and Caesars

Camp. To the north of the site, the land rises gently from the valley floor, within which the Downshire Golf Course is sited, towards Easthampstead Park Educational Centre. There are substantial coniferous plantations and broadleaved woodland areas associated with Bracknell Forest to the south, east and west of the site. These woodlands continue southwards and eastwards beyond Nine Mile Ride to surround the built up edge of Easthampstead. A coniferous hedgerow surrounds and separates Easthampstead Park Cemetery and Crematorium from the site and the Downshire Golf Course. The woodland vegetation surrounding the site is an important feature, and effectively controls and curtails views towards and into the site.

7.3 As shown on Figure 1, the Subject Site is designated as land outside defined settlements and is therefore the subject of Policy EN 8 and Policy EN 10 of the Bracknell Forest Borough Local Plan (Deposit Draft 1996). Policy EN 8 considers the impact of development on areas outside defined settlement boundaries between built up areas and the countryside. Policy EN 10 considers the impact of development on the "gaps" between settlements. Both policies seek that all development proposals will have no effect on the open character of the land.

7.4 The Subject Site comprises 23.0 hectares (56.85 acres) of land and contains several buildings associated with the Technical Development and Instrumental Division of the Met Office. The buildings are used for a variety of purposes, including research and ancillary office buildings, laboratories and workshops. Other features include anemometer towers, a rotating balloon shed, an electricity sub-station, areas of car parking and internal roads, broadleaved woodlands, coniferous plantations, groups of mature individual trees and ecologically important semi-improved acid grassland and heathland. As shown on Figure 2, the main buildings are predominantly located within the south-eastern part of the site and are surrounded by woodland and "parkland". To the west of the existing buildings are areas of open grassland, heathland and marshy grassland, beyond which there are substantial areas of mature coniferous plantations and mixed woodlands.

7.5 The visual appraisal demonstrates that the Subject Site has a high degree of visual enclosure, which is provided by the coniferous plantations and broadleaved woodlands on its boundaries and within the surrounding area. The woodland areas

associated with Bracknell Forest to the south, east and west of the site provide screening from the residential areas of Great Hollands to the east. The substantial hedgerow which flanks South Road, and which provides containment and enclosure to the Easthampstead Park Cemetery and Crematorium, is also important in providing screening towards the site from South Road and the playing field on the western edge of the built up area of Great Hollands. In addition, the framework of extensive woodland vegetation on the southern side of Easthampstead, forming part of Bracknell Forest, controls and curtails views towards the Subject Site. Views towards the site are dominated by the mature broadleaved woodland areas and coniferous plantations which surround and envelop the Subject Site, and development on the site would be screened by these woodland areas. Middle or longer distance views towards the site are screened by dense woodlands and coniferous plantations to the south, east and west. Providing that the proposed development is sensitively designed and set within the existing landscape framework of the site, it would have no effect on views towards the site from the wider area.

7.6 The development layout on Figure 3 would result in the retention of areas of woodland and coniferous plantation along the boundaries of the site, and these would provide a framework for the proposed built development. The most important areas of woodlands and plantations, in terms of their visual amenity and screening function, would be retained, as would the groups of mature individual trees within the "parkland" to the north of the existing main buildings in the south-eastern part of the site. However, substantial areas of coniferous plantation in the southern and south-eastern part of the site would need to be removed to accommodate the proposed built development, the car park and the access arrangements into the site. However, it is considered that the loss of these areas, although substantial, would not affect or reduce the visual containment of the site. The ecological survey also demonstrates that these plantations have limited ecological value and that they have been invaded by naturalised "alien" rhododendron species which poses a threat to other habitats of greater value nearby.

7.7 The proposed development on the Subject Site would be contained and enclosed by the substantial existing woodlands and coniferous plantations which surround the site. As shown on Figure 3, the proposed building would be designed to "sit"

comfortably within the existing landscape framework and would be substantially screened by the existing woodlands around the perimeter of the development area and by new landscaping. As a result, the proposed development would not look out of place or discordant within its landscape setting nor would it affect the views from the surrounding areas. The proposed development would only be perceptible in views from West Road to the north of the site, and the new access arrangements would be seen from a section of Nine Mile Ride. The proposed development would not be perceptible in any other near, middle or longer distance views due to the screening provided by the mature vegetation surrounding the Subject Site.

7.8 Consideration has been given to the development proposals for the site in the context of the environmental policies contained in the Local Plan, most specifically Policy EN 8 which considers the impact of development on areas outside defined settlement boundaries between built up areas and the countryside, and Policy EN 10 which considers the impact of development on the "gaps" between settlements. Development on the Subject Site would not affect the visual amenity of the boundary features, such as the broadleaved woodlands or coniferous plantations which maintain the distinction between built up areas and the countryside, nor would it affect the physical and visual "gap" between the settlements of Bracknell and Crowthorne. The proposed development would be appropriate in scale and character to the local area and assimilate into the local context without detriment to the amenities of the adjoining land uses and occupiers.

7.9 In summary, the proposed development on the Subject Site would be assimilated into the existing landscape setting and would accord with the environmental policies set out in the emerging Local Plan. Although the development would comprise a substantial main building and associated car parking, it would "sit" comfortably within the existing landscape framework on the site, and would be contained, enclosed and substantially screened by the woodlands and coniferous plantations which surround the site.

ILLUSTRATIVE MATERIAL

APPENDIX 1

- **Site Appraisal Photographs**
- **Site Context Photographs**

APPENDIX 2

Ecological Report prepared by Bioscan UK Ltd
dated May 2000

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on behalf of

The Meteorological Office

BEAUFORT PARK, BRACKNELL

ECOLOGICAL APPRAISAL

May 2000

Bioscan Report No.
E0925R0

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1. SUMMARY

1.1 This report describes the results of an ecological appraisal of land at Beaufort Park, Bracknell, carried out by Bioscan on behalf of the Meteorological Office.

1.2 The appraisal comprised a desk study of available material and a field survey to an extended Phase 1 habitat survey level. Some existing information is still awaited from nature conservation consultees.

1.3 Aside from buildings and existing development, there is a small area of species-poor grassland. These areas have little nature conservation value.

1.4 The remainder of the site contains a small heathland remnant with associated marshy grassland, species-rich semi-improved acid grasslands, secondary woodland and conifer plantations. The woodlands are all likely to have developed or been planted on former heathland.

1.5 Attention is drawn to the high county value of the heathland remnant and to moderate county value of the acid grasslands and the habitat mosaic formed by heathland, grassland and the more open broadleaved woodland. Species found include adders, locally and one nationally scarce plant and invertebrate species, as well as typical heathland species and those characteristic of semi-natural acid grassland.

1.6 Recommendations are made to avoid impacts on significant areas by careful siting of development and for means to avoid or minimise indirect impact on nature conservation. In contrast, there is a very high potential for heathland restoration on the site, concentrating on the existing conifer plantations. This would provide an ecological benefit of high significance on the County scale.

2. INTRODUCTION AND METHODS

2.1 Bioscan (UK) Ltd were commissioned by Barton Willmore Environmental on behalf of the Met Office in late April 2000 to undertake an ecological appraisal of land at Beaufort Park, Bracknell, in connection with proposals for relocation of the Met Office Headquarters. The site at present contains the Technical Development and Instrumentation Division of the Meteorological Office.

2.2 The site lies on the south western edge of Bracknell, immediately north of the B3430. It is separated from the built up parts of the town by a crematorium and recreation ground. To the north of the site lies the Downshire Golf Course. Other surrounding land is predominantly forested, with a mixture of conifer plantations and secondary woodland on former heathlands. However the immediately adjacent woodlands also contain establishments such as the Water Pollution Control Centre, Transport and Road Research Laboratory and a mobile home site. Accordingly the site is separated by a minimum of 0.5km from woodlands not containing built development and by approximately 2km from the more extensive areas of remnant heathland north of Camberley.

2.3 The ecological studies reported on here comprised a desk study of in-house information and that obtained from nature conservation consultees, combined with an independent field survey carried out in early May 2000. The field survey comprised a habitat survey of the site to the level of English Nature's Phase 1 Habitat Survey[1], combined with an assessment of the likelihood or otherwise of protected or otherwise notable species using the site.

2.4 This report describes and evaluates the ecological baseline revealed by these studies and notes the location and extent of any habitats that might be sensitive to impacts should redevelopment take place. Opportunities for ecological enhancement are also noted as appropriate.

1

3. DEFINITION OF ECOLOGICAL VALUE

3.1 The site has been evaluated to identify the nature and extent of ecological interest of particular species and habitats there, using the standard practice laid out in this section. The nature of ecological interest is defined by reference to the criteria set out by Ratcliffe[2] in 1977 and further extended by the then Nature Conservancy Council (now English Nature and its regional equivalents) in 1989 for use as part of the process of selection of Biological SSSIs[3].

3.2 Primary criteria used for evaluation of a site are size, diversity, naturalness, rarity, fragility and typicalness. Recorded history, position in an ecological or geographical unit, potential value and intrinsic appeal are regarded as secondary criteria and only noted below if they make a special contribution to the interest of a particular area.

3.3 Scales of comparison vary from the international to the context of the local area. Occasionally, attention is drawn to the scarcity or abundance of features within the survey area and its immediate surroundings. It must be noted that some criteria are absolute and not relative to scale, e.g. an ancient woodland is fragile, irrespective of whether it is being considered in a local or international context.

3.4 Particular attention in the local context is paid to English Nature's Natural Area system, the relevant Natural Area, in this case the London Basin and, within it, the Character Area defined jointly by English Nature and the then Countryside Commission as the Thames Basin Heaths. The wider context of England, the UK and / or international value is referred to as appropriate.

4. LEGISLATION AND POLICIES FOR ENVIRONMENTAL CONSERVATION

4.1. International legislation

4.1.1 The Directive of the Council of the European Community on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats and Species Directive 92/43/EEC) lists habitats and species that are considered to require special conservation measures to ensure their continued survival. The Directive will be implemented by the designation of Special Areas of Conservation (SACs). Those species and habitats requiring protection within SACs are listed in Annex 1 and Annex 2, with the exception of birds, which have been addressed separately in the Directive on the Conservation of Wild Birds (Directive 79/409/EEC). That Directive is implemented in the UK by the designation of Special Protection Areas (SPAs).

4.1.2 In Britain, no Special Areas of Conservation (SACs) have been formally designated, although a candidate list has reached the "eligible" stage. Article 10 of this Directive also draws attention to nature conservation in the wider countryside outside protected areas, and the British response to the Directive is put forward in Planning Policy Guidance[4] and Regulations[5]. SPAs have been designated in the UK and further areas are at the "potential" stage and / or under review.

4.1.3 The Berne Convention on the Conservation of Wildlife and Natural Habitats came into force in June 1982. This requires contracting parties, including the UK, to maintain populations of wild flora and fauna and give particular protection to endangered and vulnerable species. In the UK this convention is implemented through various national policies for the protection of wildlife as discussed below.

4.1.4 Britain's responsibilities under the Biodiversity Convention, arising from the Rio de Janeiro summit in 1992, have been translated, in part, into national legislation through the provisions of the Wildlife and Countryside Act and through Planning Policy Guidance and Regulations. In addition, the UK Biodiversity Action Plan (1994) identifies Key and Broad Habitats and species for which Britain has particular

responsibilities. The local Biodiversity Action Plan (BAP) is Berkshire's Biodiversity Challenge, produced in 1996. A Bracknell Forest BAP is intended but has not yet been prepared[6]. The Berkshire Heathland Biodiversity Action Plan was however produced in 1998[7] and is used as relevant background to this report.

4.2. National designations and legislation

4.2.1 The Wildlife and Countryside Act (1981)

a) In the UK areas of nature conservation value considered to be of national importance can be designated as Sites of Special Scientific Interest (SSSIs) under the terms of the Wildlife and Countryside Act, 1981. Biological SSSIs are designated if they are of special interest by reason of their flora and/or fauna. In England SSSIs are designated by English Nature, the Government body with authority for nature conservation. European nature conservation sites are also designated SSSI.

b) The Wildlife and Countryside Act contains a number of Schedules on which are listed species in need of special protection in Britain, usually because they are rare or of restricted distribution, or their numbers have declined drastically in the recent past through persecution and/or habitat loss. Schedules 1-4 cover birds, Schedules 5 and 6 cover other animals, both vertebrate and invertebrate and Schedule 8 covers plants. Birds and other animals in the Schedules, depending on the specifications of the Schedule on which they appear, are variously protected against intentional killing, injuring or taking and their homes may also have legal protection. It is an offence to dig up, take or sell any part of any plant on Schedule 8.

c) The Schedules of the Wildlife and Countryside Act have undergone a quinquennial review in 1997. The review has resulted in added protection for some species, such as bluebells and water vole habitat.

4.2.2 Protection of Badgers Act 1992

This Act protects badgers and badger setts with provisions equivalent to those of the Wildlife and Countryside Act.

4.2.3 The Hedgerows Regulations 1997

These regulations give protection to certain hedgerows more than 30 years old that are judged to be of archaeological, historical, wildlife or landscape importance within prescriptive criteria set out in the Regulations. These criteria include hedges which contain a given number of specified species per sample section, or those which have other features suggesting they are likely to be ancient *i.e.* of ~~late~~ mediaeval origin or before.

4.3. Local or non-statutory designations

4.3.1 Country Parks

Country Parks are designated by Local Authorities often in conjunction with the Countryside Commission. Country Parks are designated to give large numbers of visitors access to the countryside together with other facilities e.g. refreshments and play areas. Typically they are close to large urban centres.

4.3.2 "Second-tier" sites

These sites (here Wildlife Heritage Sites) are typically designated by Local Authorities and/or by County Wildlife Trusts and consist of sites that do not quite fulfil the criteria necessary for designation as SSSIs, but are nevertheless of local or even regional interest (i.e. "substantive" value).

4.2.3 Ancient woodland

Ancient woodland sites are those which have been identified by English Nature as having been woodland since at least the Seventeenth Century and possibly much longer. They are valued for their rich and characteristic flora and fauna. Ancient semi-natural woodlands have declined considerably in the last fifty years.

4.2.4 Species

1 The Red Data Book System (United Kingdom rarity)

a) In the UK, the former Nature Conservancy Council, (now English Nature and its equivalents) and organisations such as the Royal Society for the Conservation of Nature and the Royal Society for the Protection of Birds, have been involved in the production of British Red Data Books. These apply standard criteria to assess the national importance of species, thus allowing the ecological significance of species records to be assessed.

b) The "Red Data Book" (RDB) system is a method of classifying the scarceness and conservation status of animal and plant species developed by the International Union for the Conservation of Nature and Natural Resources (IUCN). The RDB system classifies listed species as Extinct, Endangered (RDB1), Vulnerable (RDB2) and Rare (RDB3).

c) With regard to native plants, all those recorded in 15 or fewer 10 by 10 km squares from 1930 onwards are included in the Red Data Book. This list, compiled in 1983, has been updated on a more informal basis by the Nature Conservancy Council in 1989 and was extended to include scarce species (those occurring in 16 - 100 10 km squares in Britain) by the Botanical Society of the British Isles (BSBI) in 1990.

d) Invertebrates considered to occur in 100 or fewer 10 by 10 km squares of the National Grid are further classified as nationally scarce (Notable), divided into Notable A (16 - 30 squares) and Notable B (31 - 100 squares).

2 Birds of Conservation Concern

A consortium of wildlife groups, led by the RSPB (1996)[8] lists Birds of Conservation Concern which is split into three main sections: red, species of high concern; amber, species of medium concern; and green, all other species which are of lower concern. The criteria for assessing the level of concern includes the rate of decline in breeding populations during the recent past (5-25 year periods), as well as other national and international considerations.

Although the RSPB is a non-statutory consultee, birds on the red list are a significant ecological consideration for the statutory nature conservation consultees. Most Red List species are also UK BAP Priority Species (below).

3 The Biodiversity Action Plan system (UK species in international context)

In response to the Convention on Biological Diversity (Rio de Janeiro 1992) lists of Priority species have been prepared (as well as Key Habitats) that are considered the most important for the UK's responsibilities towards global biodiversity. These take into account international status as well as the national or local priorities within the UK. For vertebrate animals and plants, the Priority list is relatively fixed, but for other groups is published but remains under review as new knowledge is gained.

On a local level, local Biodiversity Action Plans take into account species and habitats of particular note to the local area covered by each Plan.

4 Other local considerations

English Nature recognises that particular areas of the country, defined at the "landscape ecology" level share common combinations of geology, geomorphology, history of land use, soils, climate and wildlife that give them a coherent nature conservation character. These *Natural Areas* are useful in defining the appropriate scope of habitats and species that might be expected within the area. Subsequently, the then Countryside Commission collaborated with English Nature to define similar areas of natural landscape character. The site lies within the Thames Basin Heaths character area, a subdivision of the London Basin Natural Area.

Progress has accordingly been made on the strategy for conserving heathland within the character area and within Berkshire in particular[7], as a habitat of great priority for the ecological landscape containing the site.

5. RESULTS

5.1. Desk study

5.1.1 The site contains an area of approximately 1ha of remnant heathland understood to be designated as a county Wildlife Heritage Site, but for which a definitive boundary is not available. This area was identified by the Berkshire Heathlands Project in 1997[9] but described only in summary, with the only species mentioned being petty whin, cross-leaved heath, bell heather and heather. Heathlands are priority habitats at both national and local BAP level. All heathlands are also habitats of European importance and some associated types are also European Priority habitats.

5.1.2 No other wildlife designations impinge upon the site itself. There are however other small remnants of heathland and acid grassland nearby. The nearest designations however involve the development of the Thames Basin Heaths proposed SPA. The present position regarding this is described below.

5.1.3 The European site boundary lies approximately 2km to the site, i.e. excluding the predominantly forestry areas immediately south of Bracknell but coincident with the Broadmoor to Bagshot Woods and Heaths SSSI. The area of plantation to the north, extending westward as far as the B3348 Bracknell Road, was considered for inclusion but later rejected. This area remains within the Thames Basin Heaths Important Bird Area defined by the Royal Society for the Protection of Birds (RSPB).

5.1.4 The area of the Transport and Road Research Laboratory is however understood not to have been considered for inclusion in a European site at any stage. At present therefore the site remains approximately 500m from the Important Bird Area and 2km from the SSSI and pSPA.

5.1.5 The focus of the above designations for birds has been populations of important heathland bird species, notably nightjar, woodlark and Dartford warbler. These birds can find permanent habitat in appropriately managed heathland but are transient during succession and regrowth after felling in forestry plantations.

5.2. Habitats and features

5.2.1 The distribution of habitats on the site is shown in Figure 1. These are described in turn below.

Buildings and hard standing

5.2.2 Parts of the site covered by buildings, car parks and other hard development are not of potential ecological interest. None of the buildings have structures with potential for bat roosts.

Species-poor semi-improved grassland

5.2.3 Small areas of grassland immediately adjacent to the buildings are closely mown grassland, dominated by meadow grass *Poa pratensis*, ryegrass *Lolium perenne* and other lawn grasses, with herbs restricted to common invaders of amenity grassland such as white clover Trifolium repens , daisy *Bellis perennis* and dandelions *Taraxacum* agg.

Semi-improved acid grassland

5.2.4 The majority of grasslands on the site are kept closely mown (Photo 1), but appear to have been little affected by any improvement for amenity or agriculture. They are rich in species of grasses, graminoids and herbs, although patchy in composition from place to place. In the south of the site they intergrade with patches with a significant heather cover (described under heathland below) and may all have been derived from mowing of heathland with little other interference.

5.2.5 The grass mixture is variously dominated by fescues *Festuca ovina* and *F.rubra* , common bent *Agrostis capillaris*, with locally sweet vernal grass *Anthoxanthum odoratum*, crested dogstail *Cynosurus cristatus* and Yorkshire fog *Holcus lanatus*. The

annual hair grass *Aira praecox* is a significant component in many places. Graminoids present include both heath and field woodrushes *Luzula multiflora* and *L.campestris* and occasionally the sedge *Carex pilulifera*.

5.2.6 The commonest perennial herbs in the sward include heath bedstraw *Galium saxatile*, common mouse-ear *Cerastium fontanum*, sheeps sorrel *Rumex acetosella*, lesser stitchwort *Stellaria graminea*, a hawkbit *Leontodon* sp., field mouse-ear *Pilosella officinarum*, a hawkweed *Hieracium* sp., birdsfoot trefoil *Lotus corniculatus* and more occasionally yarrow *Achillea millefolium*, tormentil *Potentilla erecta* and cat's ear *Hypochaeris radicata*.

5.2.7 In most areas, but especially around edges and disturbance, there is a strong component of annual and other short-lived species and specialists in short swards. These include characteristic acid grassland species such as birdsfoot *Ornithopus perpusillus*, parsley piert *Aphanes inexspectata*, the forget-me-nots *Myosotis discolor* and *M.ramosissima*, wall speedwell *Veronica arvensis* and biting stonecrop *Sedum acre*.

5.2.8 Overall the composition is close to a relatively species-rich community U1 (*Festuca ovina – Agrostis capillaris – Rumex acetosella* grassland) in the National Vegetation Classification[10].

5.2.9 Occasional patches show a more neutral influence, perhaps associated with a small amount of past liming or other attempts at improvement. In the vicinity of the former rifle range in the north of the site the grassland is also unmown, although rabbit grazed, with evidence of past disturbance and local enrichment. There are many open patches but also areas of disturbance with more robust ruderal plants such as mullein *Verbascum thapsus* and ragwort *Senecio jacobaea* in addition to the annuals listed above. Coarser patches contain false oat grass *Arrhenatherum elatius* and grade into tall ruderal nettle *Urtica dioica* patches, with bramble *Rubus fruticosus* agg. and encroaching scrub.

Heathland

5.2.10 Heathland on the site (Photo 2) is confined to an area west of the main buildings and immediately north of the extensive block of conifer plantation dominating the southern portion of the site. Isolated patches extend into the closely mown area around items of experimental equipment. Here the composition is similar to that of the acid grasslands described above with the addition of heather *Calluna vulgaris*.

5.2.11 The main area of heathland has however been defined by the Met Office with low wooden fences and is not mown with the rest of the grassland. It is understood to be managed by scrub cutting as necessary.

5.2.12 The composition reflects a small survival of both dry and wet heathland communities typical of the Thames Basin heaths. Characteristic species include heather, purple moor grass *Molinia caerulea*, wavy hair grass *Deschampsia flexuosa* and cross-leaved heath *Erica tetralix* increasing towards the wetter areas that grade into marshy grassland (below). Dwarf gorse *Ulex minor* is locally abundant and there are several patches of petty whin *Genista anglica* (Photo 3). Other associated species include common gorse *Ulex europaeus*, heath woodrush, tormentil, *Carex pilulifera* and *C.binervis*, heath bedstraw and sheep's sorrel.

5.2.13 This composition suggests dominance by community H2 (*Calluna vulgaris – Ulex minor* heath) in the National Vegetation Classification.

Marshy grassland

5.2.14 In undisturbed heathland wetter areas would be expected to grade into a wetter heath or mire community such as M16 (*Erica tetralix* wet heath). However, here the wetter component is represented by a marshy grassland with few of these components. There are no *Sphagnum* species and very few species of unimproved mire such as *Carex panicea*, *Juncus acutiformis* and bog stitchwort *Stellaria alsine*. In the more species-

rich parts of this area it is dominated by purple moor-grass tussocks with heather and heaths occasional. Elsewhere, especially in the north, it is dominated by Yorkshire fog and rushes (here mainly hard rush *Juncus inflexus*) with few associated species. This suggests that the water supplying the area is no longer the nutrient-poor acid supply that would have been expected in the original heathland.

5.2.15 The marshy grassland extends to a small extent into woodland rides but is mainly shaded out there.

Broadleaved woodland

5.2.16 Broadleaved or predominantly broadleaved woodland forms both the east and west fringes to the site in its northern half. The composition is relatively uniform and suggests natural colonisation of former heathland during the 20th century rather than plantation or ancient semi-natural origin.

5.2.17 The main species are oak *Quercus robur* and silver birch *Betula pendula*, with locally some rowan *Sorbus aucuparia* and holly *Ilex aquifolium*. Other associated woody species are sparse but include sycamore *Acer pseudoplatanus*, hawthorn *Crataegus monogyna* and elder *Sambucus nigra*. Very locally there is evidence of ornamental planting. In the north west there is also evidence of escape or naturalisation of garden plants such as a forget-me-not cultivar. There are no old coppice stools or veteran trees, although some areas show regrowth from a single coppice or merely a felling event.

5.2.18 The ground flora is generally species-poor, variously with the grasses *Holcus mollis* and *Deschampsia flexuosa* and the most widespread herb being wood sage *Teucrium scorodonia*. Although *H.mollis* can act as an "ancient woodland indicator" in some parts of southern England, it is a common and rapid invader of secondary woodland or even grassland in the Thames Basin Heaths area. True ancient woodland plants are few, although they include a helleborine orchid (*Epipactis* sp.) just emerging above ground in the western portion. The eastern portion exhibits a more open structure, with

open acid grassland and bracken *Pteridium aquilinum* glades between the canopy (Photo 4). Frequent herbs here, as well as the acid grassland species detailed above, include greater stitchwort *Stellaria holostea* and the woodland indicator bluebell *Hyacinthoides non-scriptus.*

Coniferous woodland

5.2.19 A solid block of mature pine plantation, dissected by relatively narrow rides, occupies the southern part of the site. Parts of this plantation, especially in the centre and west, have been heavily invaded by the naturalised alien rhododendron *Rhododendron ponticum* (Photo 5). In these areas there is very little ground flora or other associated vegetation.

5.2.20 Elsewhere, the vegetation is typical of mature and less intensely managed plantations on former heathland. The canopy is locally diversified by oak and birch, occasionally rowan, which have grown up with the pines. The ground layer is generally shaded and most diverse towards the edges, with bracken, wood sage, *Holcus mollis* and wavy hair grass regularly present. There are patches of both narrow *Dryopteris carthusiana*) and broad (*D.dilatata*) buckler ferns. On the northern edge there is a narrow fringe of scrub of common gorse and broom *Cytisus scoparius* over an acid grassland flora. Overall however the ground flora is sparse and poor in species under generally heavy shade.

5.2.21 Nests of a *Lasius* wood ant were observed scattered along ride edges.

5.3. Species considerations

5.3.1 The flora recorded contains no specially protected or rare plants but one nationally scarce species, dwarf gorse, and a number of more local species associated with heathland and acid grassland. Heathland loss in the Berkshire part of the Thames Basin heaths has been even more severe than in the neighbouring counties, so species once widespread in these habitats are now highly local and some are locally rare. Aside from dwarf gorse, the most notable species recorded is petty whin.

5.3.2 A number of these more local species have been indicated in a recent review of acid grasslands[11] Table 8 of this review gives a provisional indicator list, suggesting that 10 or more indicators would indicate high nature conservation significance. The site supports six: dwarf gorse, the grass *Aira praecox*, parsley piert, spring forget-me-not *Myosotis ramosissima*, birdsfoot and biting stonecrop.

5.3.3 Adders, protected from deliberate killing or injury under the Wildlife and Countryside Act, are known from the site. Suitable habitats are concentrated in the western part of the site, notably the heathland, associated marshy grassland and corridor of land extending up to the rifle range, where the banks (Photo 6) are likely to be important habitat. The open woodland in the east (Photo 4) also provides good adder habitat.

5.3.4 There is no suitable habitat for Dartford warbler on the site and human activity is likely to be too intense for other important heathland birds such as nightjar and woodlark. However, there is potential nightjar habitat in and around the surviving heathland fragment and in the open woodland.

5.3.5 Otherwise the bird fauna of note is likely to be restricted to still relatively abundant but declining species of scrub and woodland. The species of greatest interest noted was green woodpecker (Amber List), which favours the mixture of mature woodland with grassland with a good ant population.

5.3.6 Badgers tend to be at low density in areas such as this with naturally acid ground. The whole site was however searched for signs of badger activity. No setts were found and the only possible evidence of activity was a passage under the chain link fence in the west of the site, where the heathland patch meets the site edge. Although this passage was of a size suitable for badgers, no hair or prints were found. This suggests that if badgers use it use has not been recent or regular. There is no prime foraging habitat on the site.

5.3.7 Brown hares (BAP Priority species) use the site although the acid grasslands are likely to be of relatively low productivity for this species. Two hares were observed along the western margin.

5.3.8 There are no ponds or water bodies on the site suitable for amphibian breeding.

5.3.9 Potentially good foraging for bats occurs along the interface of rough grassland or heath with woodland. However there are no suitable building roost sites and the potential of trees on the site for roosts is strictly limited to a few of the more mature specimens.

5.3.10 The potential of heathland and open broadleaved woodlands for invertebrates is good. At the season of survey, invertebrate observations were limited but did note the Berkshire 100 butterfly small copper (*Lycaena phlaeas*) spread through the acid grasslands. The butterfly is associated with sheep's sorrel.

6. EVALUATION

6.1. Buildings, hard standing and the patch of improved grassland are not of substantive ecological value at any scale, being low in diversity and naturalness and not harbouring any species of note.

6.2. Areas of remnant heathland support locally and one nationally scarce plant species and have a high potential for a diversity of specialised invertebrates. Such semi-natural heathland remnants are rare in Berkshire outside statutory designated sites. Even small heathland remnants such as this are accordingly of very high value on the county scale.

6.3. Acid grasslands have often been derived from heathland, but relatively species rich grasslands such as those on the site have substantive value in their own right. The indicator diversity is not sufficient for high nature conservation value, but they are judged to be of moderate value on the County scale on account of the size of the remnant patches, the rarity of their habitats, diversity and relative naturalness.

6.4. The broadleaved woodlands are likely to be secondary developments on remnant heathland. Although they support a diversity of associated species, they are judged to have low value in their own right because of the abundance of similar habitat on former heathland nearby.

6.5. The mosaic of habitats provided by the heathland, acid grassland and especially more open parts of the broadleaved woodland, included associated banks and structures of the range, is however of moderate county value. This is because the juxtaposition of these habitats allows the potential for species such as adders, nightjar and foraging bats, as well as some invertebrates, that need more than one component to be present in close proximity, i.e. the addition of diversity including scarce or otherwise notable species.

6.6. This mosaic is however limited in value at present in the local context because of the overabundance of closed secondary woodland and closely mown grassland at the expense of heathland and grasslands of a more varied structure.

6.7. The conifer plantations at present have strictly limited ecological value. They are a commonplace replacement of former heathland locally. Otherwise notable species that can take advantage of conifer plantations are widespread in the area and the rarer and more specialised species are more properly associated with heathland successions that only appear after clear felling of plantations. Their value is limited to their potential for restoration of heathland, usually possible on the local soils. Further, the rhododendron invasion they contain poses a threat to other habitats of greater value nearby.

7. RECOMMENDATIONS

7.1 This section outlines recommendations for minimising any ecological impacts of redevelopment and securing ecological benefits where appropriate.

7.2 Development and associated infrastructure should avoid impacting or fragmenting any surviving heathland area. Any such impact on the small remnants would be a significant impact on a feature of high County value.

7.3 Development should also minimise land take on semi-improved acid grassland and more open broadleaved woodland areas. The first would remove parts of a feature of moderate county value and the second would remove potential for future enhancement and risk the need for rescue work on a partly protected species (adder).

7.4 In contrast, development should be restricted as far as possible to areas of existing development and species-poor grassland. If this could be done, it would avoid significant ecological impact and leave the potential for a major and appropriate ecological enhancement as described below.

7.5 For the same reason, any development affecting conifer plantation or closed broadleaved woodland should minimise the fragmentation of such areas in order to leave the greatest potential for heathland restoration in a contiguous block.

7.6 Site drainage should be organised so that nutrient rich or otherwise contaminated water is not passed to or through heathland or acid grassland areas.

7.7 The site is sufficiently remote from important bird areas for indirect impacts via noise and emissions to be minimal. However, the construction area should be securely fenced to prevent encroachment outside development areas during construction, and felling for habitat restoration should be left until after construction is completed. Normal good practice in the control of emissions should be followed.

7.8 There is a major opportunity for heathland restoration on the site in line with the aims of the national and local Biodiversity Action Plans. The target suggested for the site in the Berkshire Heathland BAP is 0.5ha but there may be considerably more potential than this especially if some areas currently under conifers can be included. Heathland restoration is likely to be easier on the conifer plantations than in deciduous woodland. Specific advice should be sought from the Berkshire Heathland Forum partners on both restoration and management, but the following principles are likely to apply.

1. Remove as much of the conifer plantations as is consistent with site landscape and screening requirements. Concentrate on areas nearest to existing retained heath. Underplanting can be used if necessary to reinforce screening in retained belts.

2. Grub out rhododendron, with arrangement for subsequent control of regrowth from fragments. Ground disturbance in these circumstances often assists heathland recolonisation.

3. Institute management for retained heathland and acid grassland areas. A less intensive management of most of the acid grassland is likely to be desirable, with some intensive mowing and / or limited disturbance to favour short-lived species of importance.

7.10 The net result would be a benefit to nature conservation high on the County scale and entirely appropriate to the local character area.

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Figure 1: Habitats on the site



Figure 1: Habitat on the Site

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Not to Scale	Ref: E0925F1
	Boundary of area studied
	Coniferous woodland
	Broadleaved woodland
	Bracken
SI	Semi-improved acid grassland
SI	Species-poor semi-improved grassland
	Marshy grassland
	Heathland
	Banks
	Tall ruderal (nettle)
	Buildings and hard standing

Photo 1: Semi-improved acid grassland



Photo 2: Heathland area



Photo 3: Petty whin within heathland



Photo 4: Open deciduous woodland with bracken



Photo 5: Conifer plantation with rhododendron invasion



Photo 6: Rifle range banks



THE MET. OFFICE RELOCATION TO BEAUFORT PARK

Transport Assessment

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THE MET. OFFICE RELOCATION TO BEAUFORT PARK

Transport Assessment

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THE MET. OFFICE RELOCATION TO BEAUFORT PARK

Transport Assessment

1. INTRODUCTION

1.1 WSP Development Ltd. have been appointed by Barton Willmore to carry out a transport assessment in support of proposals by the Met. Office to relocate the various Met. Office activities from their current buildings in the Bracknell area to a single location at Beaufort Park, south west of Bracknell town centre. As part of the proposal they would also relocate their College from Shinfield Park and their Meteorological Research Flight and Satellite Instrumentation Group from Farnborough to Beaufort Park.

1.2 The Beaufort Park site is currently used for office purposes by the Met. Office Technical Development and Instrumentation Division. It is considered an appropriate location for the Met. Office because it is already within their control, it is of a sufficient size to accommodate all their requirements and would result in the minimum disruption to staff.

1.3 This report describes the existing Met. Office activities, the current transport conditions in the area, the proposed development and activities at Beaufort Park, the proposed transport arrangements and the required parking provision. Assessments are made of the level of trip generation and distribution, pedestrian and bicycle access to the site, public transport use and the impact on the surrounding highway network.

2 EXISTING MET. OFFICE OPERATIONS

2.1 The Met. Office is an Executive Agency of the Ministry of Defence. It provides a national meteorological service for the UK, providing weather forecast information and climate data, and carrying out research into improving forecasting methods and assessing the long term implications of climate change. It is also expanding by providing services for overseas clients.

2.2 The Met. Office is based in a number of locations throughout the UK and overseas, however over half of the Met. Office staff are located in Bracknell. Over the years the Met. Office has increased in size and as a result has expanded into eight offices in Bracknell. There are approximately 1450 staff employed at these sites. Over 60% of the staff in Bracknell work in the London Road offices. Of these employees, 160 operate under a 12 hour shift system. The shifts start and end at 0800 and 2000 hours.

2.3 The Met. Office Meteorological Research Flight and Satellite Instrumentation group is currently located in Farnborough. 58 employees are based at the site at present, but they will all move to Bracknell prior to the possible relocation to Beaufort Park.

2.4 The Met. Office sites in Bracknell are shown in Appendix A. The Bracknell, Farnborough and Shinfield sites are listed in Table 1, along with a current estimate of staff at each location.

Table 1 Numbers of Staff at the Met. Office Sites

Location	No. of Staff
London Road, Bracknell	*895
Johnson House, Bracknell	64
Sutton House, Bracknell	117
Hadley Centre, Bracknell	116
Powell Duffryn House	72
Scott Building, Bracknell	7
Western Road, Bracknell	29
Beaufort Park, Wokingham	119
Farnborough	58
Met. Office College, Reading	25
TOTAL	**1502**

* Includes 160 shift workers

2.5 The Met. Office College is currently located at Shinfield Park and employs 25 permanent staff. The College would move to new facilities at Beaufort Park. The College mainly runs short courses and conferences for Met. Office staff, however their facilities are also made available to other organisations. Some of the courses are residential with accommodation provided on the site.

2.6 Table 2 shows the number of people attending courses and conferences at the College in March 2000. On average 15% of the delegates stay at the site.

Table 2 Met. Office College Delegates, March 2000

Week Commencing	Total no. of Delegates	Day Delegates	Residential
6 March	290	202	38
13 March	188	151	30
20 March	269	173	51
27 March	275	188	36

3. EXISTING CONDITIONS AT BEAUFORT PARK

3.1 It is proposed to relocate the Met. Office from a number of sites in Bracknell to Beaufort Park, south west of Bracknell, see Figure 1. The Met. Office College, which is currently located at Shinfield and the Met. Office Meteorological Research Flight and Satellite Instrumentation Group which is located in Farnborough will also be relocated. Beaufort Park is currently used by their Technical Development and Instrumentation Division.

3.2 The existing layout of the site is shown in Figure 2. The main access is from a simple priority junction from South Road. The access route passes a gatehouse on the left and then reaches a further priority junction where a road to the left goes to the main offices and car park on the site. These offices are currently occupied by 119 staff and there are 80 parking spaces.

3.3 The main access route continues past the Technical Training School on the left and various forecasting and monitoring equipment on both sides of the road before reaching a closed gate on the northern boundary which is not used.

3.4 In the north western corner of the site there is a rifle range and club hut. There is also a helicopter landing area, which is rarely used.

3.5 To the south and east of the main offices there is a large wooded area which extends to the boundary of the site on both the southern and eastern sides. There are smaller wooded areas on the northern side of the main access road and on the western part of the site, around the rifle range and helicopter landing area.

3.6 South Road is a narrow road providing vehicular access from the B3430 Nine Mile Ride to Beaufort Park, Easthampstead Park Crematorium and Cemetary and Downshire Golf Course. South Road is not an adopted highway, but is owned by Bracknell Forest District Council. South Road continues north passing a junction with West Road until it reaches a residential cul de sac. There are footpaths linking South Road with the Great Hollands residential area.

3.7 West Road continues west passing the northern side of Beaufort Park until it reaches a junction with Old Wokingham Road.

3.8 To the south, South Road meets the B3430 Nine Mile Ride at a simple priority junction. The B3430 Nine Mile Ride is a single carriageway road of variable width and speed limits. Nine Mile Ride links the A321 Lower Wokingham Road, south of Wokingham, with the A322 at Bracknell. The road is generally straight with occasional bends. A number of speed reduction/accident remedial measures have recently been introduced along the route.

3.9 To the east, the B3430 joins the A3095 Crowthorne Road at a roundabout junction. To the north, Crowthorne Road leads to Bracknell town centre and to the south it continues to Sandhurst. The B3430 then continues around the southern side of Bracknell joining the A329 London Road on the eastern side of the town.

3.10 To the west of the site, the B3430 Nine Mile Ride meets the Old Wokingham Road at a recently constructed roundabout junction. The junction previously operated as a signal controlled crossroads. To the north, Old Wokingham Road provides a link, over a level crossing, to Wokingham town centre. To the south it continues to Sandhurst and Camberley.

Base Traffic Flows

3.11 A manual classified turning count was undertaken on Wednesday 3 May 2000 at the B3430 Nine Mile Ride/A3095 Crowthorne Road roundabout junction, for the peak periods 0730 – 0930 and 1630 – 1830. The results of the survey are given in Appendix B. A classified turning count of the junction of the B3430 Nine Mile Ride with South Road was undertaken on the same day and the results are given in Appendix C.

3.12 A further count was undertaken at the junction of the B3430 Nine Mile Ride with Old Wokingham Road on Tuesday 16 May 2000. The results of the survey are given in Appendix D. During the afternoon peak period, some roadworks were undertaken at the junction resulting in considerable delay. For this reason, the afternoon survey was repeated on Monday 22 May 2000. Figure 3 gives the resulting base flows for both peak periods.

Accident Analysis

3.13 An assessment has been undertaken of the accidents that took place on Nine Mile Ride from a point 200 metres west of the B3430 Nine Mile Ride/ Old Wokingham Road junction to a point 200 metres east of the A3095 Crowthorne Road/ B3430 Nine Mile Ride roundabout. The analysis included the three year period from 1 January 1997 to 31 December 1999.

3.14 Figure 4 shows the locations of the accidents and Table 3 summarises the type of accidents at the two major junctions and on the road over the assessment period. It highlights the number of accidents involving pedestrians, motorcyclists and cyclists at each location.

Table 3 Accidents Analysis 1/01/97 – 31/12/99

Location	Type of Injury			Accidents Involving		
	Slight	Serious	Fatal	Motorcycle	Bicycle	Pedestrian
B3430 Nine Mile Ride/ A3095 Crowthorne Road Roundabout	13	0	0	1	0	0
B3430 Nine Mile Ride	4	2	0	0	1	3
B3430 Nine Mile Ride/Old Wokingham Road	5	0	0	0	0	0

3.15 There were no fatalities in the area over the assessment period, but there were two accidents on the B3430 Nine Mile Ride which resulted in serious injury. One involved a cyclist who was hit by a car west of the Old Wokingham Road junction, the other involved a pedestrian who was hit by a car at a location east of the Old Wokingham Road junction.

3.16 Half of all the accidents that took place over the three year period occurred at the B3430 Nine Mile Ride/ A3095 Crowthorne Road roundabout. None of these involved pedestrians or cyclists, one involved a motorcyclist. All of the accidents resulted in slight injury.

3.17 The B3430/Old Wokingham Road junction has recently been upgraded from a signal controlled crossroads junction to a roundabout. All of the accidents recorded at the junction took place before the improvement was completed.

3.18 The traffic count undertaken at the junction of the B3430 Nine Mile Ride with South Road was used to calculate traffic volumes on the B3430 Nine Mile Ride and hence the accident rate on the network. Table 4 gives the calculated link and junction accident rate for Nine Mile Ride, incorporating the roundabout junctions of the B3430 Nine Mile Ride with the A3095 Crowthorne Road and the B3430 Nine Mile Ride with Old Wokingham Road. The table compares the accident rate on Nine Mile Ride with the national average accident rate for a modern single carriageway road with a 50 mph speed limit.

Table 4 Combined Link and Junction Accident Rate, PIA/million veh km.

Link	Accident Rate	National Average Rate
Nine Mile Ride	0.851	0.274

3.19 The accident rate on Nine Mile Ride is significantly higher than the national average. The situation has clearly been recognised by the highway authority as during the assessment period accident remedial measures were introduced on Nine Mile Ride. The junction with Old Wokingham Road has also been improved, consequently it is likely that the future accident rate on the link could be lower.

Bus Services

3.20 Table 5 and Figure 5 summarise the bus routes in the area of the site. There are two routes that pass the site. One service operates between Bracknell and Camberley and the other route operates between Bracknell and London. Both services link the site with Bracknell and Crowthorne town centres and railway stations.

3.21 Service 193 runs between Wokingham and Crowthorne as shown on Figure 5. The service alternates between the two routes as shown on the plan, either passing Crowthorne railway station, or continuing east along Nine Mile Ride to New Wokingham Road, and then turning into Crowthorne. The route does not pass the site.

Table 5 Bus Services Operating Near to Beaufort Park

Service	Route	Frequency
194/174	Bracknell – Crowthorne – Sandhurst – Camberley	30 mins peak 60 mins off peak (0840 – 1740)
X7, X9, X37	Bracknell – Yateley – Camberley – Bagshot – London	60 mins (off peak only)

Rail Services

3.22 The nearest railway stations to the site are Crowthorne and Bracknell, see Figure 5. Services from Crowthorne operate to Reading, Wokingham and Guildford. During the peak hours there are two direct services per hour between Crowthorne and Reading and Crowthorne and Guildford.

3.23 Services from Bracknell operate to Reading and London Waterloo. During the morning peak period there are two services per hour between Bracknell and London Waterloo, during the afternoon peak hour there are four services from Bracknell to London Waterloo and two services from London Waterloo to Bracknell.

Pedestrians and Cyclists

3.24 Figure 6 shows existing pedestrian routes around the site. There is a footway on the western side of South Road between Nine Mile Ride and the north side of the crematorium. Pedestrian routes from South Road link into the Great Hollands residential area on the western side of Bracknell.

3.25 Figure 7 shows the existing and proposed cycle routes in the area of the site. There are no formal cycle routes along Nine Mile Ride in the vicinity of the site, but there are a number of routes in the Great Hollands residential area and there are proposed routes on the A3095 from Bracknell town centre and on the B3430 to the east of the site.

Other Developments

3.26 The only consented development in the area is for a number of residential units at Church Hill House hospital. The traffic generation from this site is unlikely to have a significant impact on Nine Mile Ride in the area of the site.

3.27 The Local Plan identifies other sites which could be brought forward for development. However these do not currently have consents and would need to be subject to separate assessments.

3.28 The Local Plan 0recognises the TRL as an employment site. This is because there are a significant number of empty offices on the site which could be the basis for future office use. There are currently no specific plans for these sites and any future use us likely to be restricted to the amount of floor area currently available.

4. TRANSPORT POLICY

4.1 In July 1998 the Government published a White Paper on the future of transport titled 'A New Deal for Transport: Better for Everyone.' The objective of the document is defined as being:

'to increase personal choice by improving the alternatives and to secure mobility that is sustainable in the long term.'

4.2 The White Paper outlines the Government's commitment to creating a more integrated transport system to address the problems of congestion and pollution. The objectives of the Government's integrated transport policy are:

'integration within and between different types of transport – so that each contributes its full potential and people can move easily between them'

'integration with the environment – so that our transport choices support a better environment'

'integration with land use planning – at national, regional and local level, so that transport and planning work together to support more sustainable travel choices and reduce the need to travel'

'integration with our policies for education and wealth creation – so that transport helps to make a fairer, more inclusive society.'

4.3 The above commitments are given the overall title of 'A New Deal for Transport' and are aimed at achieving the objectives of:

'cleaner air to breathe by tackling traffic fumes'

'thriving town centres by cutting the stranglehold of traffic'

'quality places to live where people are the priority'

'increasing prosperity backed by a modern transport system'

'reduced rural isolation by connecting people with services and increasing mobility'

'easier and safer to walk and cycle'

'revitalised town centres and cities through better town planning'

4.4 The Government White Paper is a national document targeted at implementation on a local scale through the establishment of 'Local Transport Plans'. Local Transport Plans will enable local authorities to set out their strategies for transport. It is intended that they will address issues such as :

'integrated transport strategies for local needs'

'local targets e.g. for improving air quality, road safety, public transport and road traffic reduction'

'more certainty of funding'

'greater use of traffic management'

4.5 Established national planning guidance on transport issues is contained in PPG 13 (Transport), published in 1994, although a revised Draft Policy Planning Guidance Note 13 was published for public consultation in October 1999. The objectives of the current guidance are to integrate planning and transport at national, strategic and local levels to promote more sustainable transport choices and reduce the need to travel, especially by car. These are endorsed by the recent Consultation Draft which also raises issues regarding parking standards which are currently being debated but are not yet part of the policy guidance.

4.6 The site is located within Bracknell Forest District, although it is close to the Wokingham District boundary. The transport policies of both authorities are of relevance to this site.

Bracknell Forest District Policies

4.7 The key transport objectives of the current Bracknell Forest Local Plan, Deposit Draft published in June1996 are:

- to reduce the need to travel through the integration of transport and land use planning
- provide alternatives to using the private car
- encourage pedestrian and cycle movements through the implementation of safety measures
- to invest in public transport

4.8 There are no specific policies in the plan that relate to the area of the site. However, the Local Plan states that developments within the district should provide adequate highway capacity where a material increase in pressure on the network is shown. Public transport facilities should be provided as necessary, and access proposals should accommodate the disabled.

4.9 The Local Plan recognises that there are gaps in the existing cycle and footway network and therefore any new development would be expected to provide convenient safe links to existing networks, thereby contributing to a wider footway and cycleway network in the district.

4.10 The aims of the Draft Bracknell Forest Provisional Local Transport Plan 2000 – 2005 are to develop a fully integrated transport system with more choice and increased opportunity for interchange and to promote accessibility for everyday facilities for all, especially those without a car. This includes the co-ordination of public transport services and the provision of service improvements.

4.11 The Provisional Local Transport Plan also suggests measures which may include:

'The requirement for Green Transport Plans for commercial developments as part of planning consent'

4.12 In addition to this, any new development should be easily accessible for cyclists, pedestrians and the mobility impaired. Developers will be required to fund any transport improvements needed to accommodate their travel needs.

Wokingham District Policies

4.13 Although this proposal is not in Wokingham District, it is near to the district boundary and it is therefore relevant to review the policies of the district. The key transport objectives of the current Draft Deposit Wokingham District Local Plan published in 1997 are:

- to improve the environment,
- reduce the amount of traffic,
- the effect it has on rural roads and congestion in built up areas,
- follow the principals of sustainable development
- minimise the need for travel by private car.

4.14 There are specific policies in the Draft Local Plan to ensure that access is provided for non car users and those with mobility handicaps. These include the necessary provision for pedestrians, cyclists and buses where the site is a significant size. The Plan also makes reference to the modal targets contained in the Berkshire Transport Plan.

4.15 The Plan considers that the reduction in car use should be achieved by applying:

"....positive measures to provide and to encourage the use of modes other than the private cars."

4.16 The 1999 / 2000 TPP produced by Wokingham District Council endorses the policies within the Draft Local Plan and identifies schemes throughout the District. There are references to the range of transport measures that should be applied, such as integrated public transport strategies, promotion of green commuter plans and cycle initiatives. However there are no specific items which are relevant to this proposal.

4.17 The Provisional Wokingham Local Transport Plan (LTP) for the period 2000 to 2005 provides further details on the transport strategy for the District. It discusses the relevant policies for the area and identifies the various strategies that need to be adopted.

5. DEVELOPMENT PROPOSALS

5.1 It has been proposed to relocate the Met. Office from a number of sites in the Bracknell area to one location at Beaufort Park. The Met. Office College that is currently located in Shinfield will be transferred to new facilities at Beaufort Park. A proportion of staff who are currently employed at the Met. Office Meteorological Research Flight and Satellite Instrumentation Group at Farnborough will also be relocated to the site. For the purpose of this report it has been assumed that all of the staff will relocate to Beaufort Park.

5.2 The proposed development may be summarised as follows. The main building will be 359,000 ft^2 (33,351 m^2) GFA which will include office space and ancillary accommodation. This will include 315,211 ft^2 (29,283 m^2) GFA of office use. This figure is the total area of accommodation required for the services relocated from the Bracknell area. It includes 50,000 ft^2 (4,645 m^2) for an operations room that will accommodate the upgraded equipment for the Met. Office, it will be occupied by a very small number of staff who will maintain the facility. The remaining new floor area will be for the Met. Office College.

5.3 Appendix E shows the indicative site layout. The access will be from a new roundabout junction from the B3430 Nine Mile Ride, see Figure 8. The access road leads to a long elongated roundabout with a bus drop off area directly in front of the main entrance. This will be the only vehicular access to the site. The existing access onto South Road at the north of the site will be closed. Similarly the access to West Road will be permanently closed.

5.4 A pedestrian footpath will be provided along the main access route. This will provide a route to bus stops and a pelican crossing on Nine Mile Ride. Bus provision is described later in the report and will include the option to bring buses into the site or alternatively the bus stops on Nine Mile Ride can be used. Appendix E shows proposed bus bays and a pelican crossing on Nine Mile Ride. There is insufficient space to construct bus bays at the location of the existing bus stops. The bus bays would therefore need to be located to the west of the new Met. Office entrance. It is acknowledged that they would then be located further away from South Road which serves the crematorium and cemetery and some leisure facilities. Consequently a footway could be constructed from the new bus bays to South Road. Alternatively the existing bus stops could be retained instead of constructing new bus bays. These details would be subject to more detailed negotiations.

5.5 Figure 9 shows possible pedestrian and cycle access to the development. A mixed use pedestrian/cycle route will be provided from the north east of the site to South Road along the existing site access. A mixed use pedestrian/cycle route from South Road to the existing route on Woodenhill could also be provided. There is already a footpath between South Road and Woodenhill, this could be widened to include a cycleway. Lighting would also be needed to provide some security. This would complete a cycle route between the site and the town centre.

5.6 A decked car park with 750 spaces will be accessed from an eastern arm of the elongated roundabout. This will provide parking both for the main office use and also for the Met. Office College. The main offices will be located to the north west of the roundabout. The operations centre will be situated on the south west corner of the main block. The operations centre will require occasional access by large vehicles and so a route is provided along the south of the main building. A turning head will be provided to enable these vehicles to turn around. An accommodation block will be located to the south of the operations centre and will provide accommodation for residential students attending the Met. Office College. To the east of the accommodation block there will be a 'social facilities' building, that will include a crèche.

5.7 Draft PPG13 proposes a maximum parking provision for office use of one space per 35 m^2 GFA. The current Bracknell Forest District Council's parking standard for office use is a maximum of one space per 25 m^2 GFA.

5.8 The total office space is nominally 29,283 m^2, however, the operations room will be used to house computer equipment and will therefore contain very few employees. This area should be excluded from the floor area used to calculate parking demand. The quantity of office space for calculating parking demand would therefore be 24,638 m^2.

5.9 If the current adopted local authority parking standards are used then 986 spaces should be provided on the site. However, the Met. Office fully supports Government policy with regard to transport matters and would wish to adopt the standards contained in Draft PPG13. With a GFA of 24,638 m^2 this results in the provision of 704 spaces.

5.10 There is no parking standard applicable to the Met. Office College use. Bracknell Forest District do have a standard for further education establishments equivalent to one space per permanent staff member and one space for every three students. There are 25 permanent staff at the College but the number of students is variable and it would therefore be difficult to apply this standard. The College currently have approximately 100 spaces at their site in Shinfield. It is recognised that the number of car trips to the College should be reduced and so the spaces nominally assigned for college use will be reduced to 46. As a result it is proposed that the total number of car spaces on the site will be 750 with 700 spaces allocated for the office use and 50 for the College.

5.11 Of the 700 spaces allocated for the office use, there will be at least ten spaces reserved for disabled drivers and a number will be available for visitors. In addition, it is proposed to reserve 100 spaces for people who car share, although this may change subject to demand and the success of the Green Travel Plan (GTP). These spaces will be located in the most convenient part of the car park.

6. TRANSPORT MODE ANALYSIS

6.1 Given the location of the site and national and local government policies, it is essential for this proposal that the number of car movements are restricted whilst the volume of trips by other transport modes is maximised. It is advantageous for the project that it involves the relocation of an existing local employer. It is therefore possible to obtain information on the travel patterns of the staff and seek to apply measures that encourage the use of non car modes.

6.2 A short travel questionnaire was issued to the Met. Office employees at the offices in Bracknell, Farnborough and at the College on Wednesday 26 April 2000. The survey form is given in Appendix F.

6.3 At the time of this report, 997 forms were returned from a total of 1502 current employees. This represents a 66% sample. Table 6 shows the current travel to work modes of all the staff excluding those employed at the Met. Office College.

Table 6 Employee Modal Split – Excluding College

Mode	Shift		Part Time		Full Time		Total	
	No.	%	No.	%	No.	%	No.	%
Car Driver	71	62	41	75	415	52	527	53
Pedestrian	15	13	3	5	102	13	120	12
Train	4	3	2	4	83	10	89	9
Bicycle	7	6	3	5	64	8	74	7.5
Car passenger with Met. Office staff	5	4	3	5	55	7	63	6
Car passenger with other	1	1	1	2	24	3	26	3
Bus	1	1	2	4	23	3	26	3
Motorbike	3	3	0	0	10	1	13	1.5
Other	8	7	1	0	27	3	36	4
Total	115		56		803		974	

6.4 The 'other' mode in Table 6 includes people who stated that they use a variety of modes, e.g. car or bicycle depending on the time of year or shift pattern. One respondent did not state a mode of travel and one respondent works from home.

6.5 Table 7 gives the modal split of employees of the Met. Office College. There is a slightly higher proportion of car drivers at the College, although the sample size is small. There are no shift workers at the College and only one staff member works part time.

Table 7 Employee Modal Split – College Staff Only

Mode	Total	
	No.	%
Car Driver	13	59
Pedestrian	3	14
Motorbike	2	9
Bicycle	2	9
Car passenger with Met. Office staff	1	4.5
Car passenger with other	1	4.5
Train	0	0
Bus	0	0
Other	0	0
Total	22	

6.6 It can be seen in Table 6 that 53% of employees who are not located at the College currently travel to work by car. If half the number of people who responded 'other' are included in this category, approximately 55% of staff travel to work by car at any one time. A higher proportion of shift and part time workers travel by car than full time employees. This is probably because shift workers prefer to use a car because of unsocial hours, and part time workers may not be restrained by peak hour congestion. In addition, approximately 9% of staff car share with either a Met. Office employee or with another driver.

6.7 Table 8 shows the arrival and departure times for all staff in the morning and evening peak periods from the questionnaire survey. It can be seen that the peak hours are 0800 to 0900 and 1630 to 1730.

Table 8 Met. Office Staff Arrival/Departure Patterns – All Employees.

Half Hour Beginning	ARRIVALS (%)	Half Hour Beginning	DEPARTURES (%)
0700	34 (3)	1500	6 (0.6)
0730	194 (19)	1530	9 (0.9)
0800	324 (32)	1600	74 (7)
0830	238 (24)	1630	192 (19)
0900	121 (12)	1700	292 (29)
0930	53 (5)	1730	170 (17)
TOTAL	**964 (97)**		**743 (75)**

6.8 Table 9 shows the arrival and departure profiles from the questionnaire survey for car drivers only during the peak periods.

Table 9 Office Staff Arrival/Departure Patterns – Car Drivers.

Time Beginning	ARRIVALS (%)	Time Beginning	DEPARTURES (%)
0700	23 (4)	1500	5 (0.9)
0730	139 (26)	1530	7 (1)
0800	184 (34)	1600	52 (10)
0830	101 (19)	1630	114 (21)
0900	48 (9)	1700	141 (26)
0930	29 (5)	1730	73 (13)
TOTAL	**524 (97)**		**392 (72)**

6.9 The peak hours for car drivers in Table 9 are 0730 to 0830 and 1630 to 1730. This concurs with information obtained from a video survey of the London Road car park. It suggests that car drivers arrive earlier to avoid traffic congestion or to obtain a parking space. The peak hour for departures is the same for all employees, regardless of the mode of transport.

6.10 For the relocation of staff to Beaufort Park it is important to ascertain where people live in relation to their accessibility. Appendix G shows the home locations of employees by postcode area obtained from the survey. It can be seen that the majority of employees live in the Bracknell and Wokingham areas.

6.11 Figure 10 shows one kilometre walk and cycle zones to all the stations in the area. The bus routes from Bracknell and Crowthorne to the site are also shown. In addition to this, a one kilometre walk zone and a five kilometre cycle zone are shown around the development site. A five kilometre cycle zone has been assumed from Beaufort Park as employees would be prepared to cycle further if this is the only mode required for their journey.

6.12 Employee home postcodes were used to assess the potential for travelling to Beaufort Park by non car modes. If the staff home locations are overlaid on the catchment plan, see Figure 11, it can be seen that the majority of Met. Office employees can access the site by public transport, bicycle, foot, or a combination of these modes.

6.13 From the postcode data obtained from the staff questionnaire survey, 2.9% of staff (43 people), live within walking distance of the site, 39.8% (588 people) live within cycling distance of the site.

6.14 From the questionnaire survey 7.5% of employees currently travel to work by bicycle. In addition, a number of people cycle to work occasionally depending on the time of year and the shift patterns being worked. If a similar level of use were to be achieved at the new site, 113 cycle stands would be required. Incentives associated with the Green Travel Plan should encourage further use of this mode.

6.15 The questionnaire survey results show that 53% of the staff, excluding those working at the College, currently drive to work by car. If this is applied to the 1477 Bracknell and Farnborough office staff that will be relocated, it suggests an existing parking demand of 783 vehicles for approximately 700 dedicated spaces. However, 160 of the staff based at the London Road site are shift workers and only approximately 40 of them work at any one time during conventional office hours, therefore the total parking demand is likely to be 53% of 1397, or 740 spaces.

6.16 In addition to this, 4% of employees use a combination of the car and other modes, depending on the season and shift patterns. An additional 29 spaces would be required to accommodate these employees, giving a total parking demand of 769 spaces. It follows that some further car restraint is required.

Future Transport Mode

6.17 Beaufort Park is not located very far from the majority of the existing offices in Bracknell. For this reason there is unlikely to be a significant change in the modal split of employees travelling to the site.

6.18 As the majority of employees homes are currently clustered in the Wokingham and Bracknell areas, it is likely that an organised car-share scheme would reduce the number of employees travelling to work by car. It may be possible to extend a car share scheme to include other employees in the area, thereby increasing the probability of matching people with similar home locations.

6.19 An assessment has been undertaken of the possible future mode of travel to the Beaufort Park site. College employees have been excluded from the assessment. The analysis has been based on peak hour arrivals at the site. Only the 40 shift workers that would arrive during the morning peak have therefore been included. The modal split of shift workers is slightly different from that of other employees, the modal split of staff arriving in the morning peak has been adjusted accordingly.

6.20 The number of employees that will walk to work at the new site has been based on the proportion of staff who currently walk to work, applied to the number of employees living within 1 kilometre of the new site.

6.21 Table 10 shows the number and percentage of all employees except those working at the College, living within the 1 km walk and 5 km cycle zones of the site obtained from the postcode data in Figure 11.

Table 10 Number of Staff Living within 1km and 5km zones of the site

Site	1 km Walk Zone	5 km Cycle Zone
London Road, Bracknell	125 (8.5%)	601 (41%)
Beaufort Park, Bracknell	43 (2.9%)	588 (39.8%)

6.22 From the questionnaire survey, at present 12.3% of staff walk to work. This represents 145% of those living within the 1km walk zone of the London Road offices. This implies that some staff walk more than 1km to work at present. If this percentage is applied to the number of people living within 1km of the Beaufort Park site, it would reflect the overall number who are likely to walk. This results in 57 pedestrian trips in the morning peak following relocation.

6.23 Similarly, 7.6% of staff currently cycle to work, while 41% live within the 5 km cycle zone. If this is applied to the number of employees living within 5km of Beaufort Park, approximately 100 people are likely to cycle to the new facility in the morning peak.

6.24 For the purposes of this assessment it has been assumed that the majority of the people who are likely to walk or cycle to the new site are currently walking or cycling to the existing offices. Those that are no longer able to walk or cycle as a result of the new location have been assumed to switch to using the bus service.

6.25 Those who currently car share, travel by motorcycle, bus, train, or 'other' modes have been assumed to continue to do so, although an additional bus link from Bracknell town centre may be required in some cases.

6.26 This leaves 725 car drivers, who would wish to travel to the site by car. Only 700 parking spaces will be available for office use at the new site, therefore the number of car trips needs to be reduced. Some parking provision will be required for visitors, for those who responded 'other', who occasionally drive to work, and to allow for additional parking demand at shift changeovers. If 7% of existing car drivers could be persuaded to change to other modes, 26 spaces would be available for these purposes. It has been assumed that 5% of car drivers could car share and 2% could travel by bus.

6.27 Table 11 shows the desired change in modal split of travel while Table 12 gives the resulting number of trips to the site by each mode. It follows from this analysis that suitable measures need to be provided to ensure that the modal split in Table 11 is achieved.

Table 11 Forecast Change in Modal Split- AM Peak Hour

	Future Mode no. (%)								
Existing Mode	Car Driver	Car Share (Met Office)	Car Share (Other)	Motorbike	Bicycle	Pedestrian	Bus	Train	Other
Car Driver	93	5					2		
Car Share (Met Office)		100							
Car Share (Other)			100						
Motorbike				100					
Bicycle					95		5		
Pedestrian						34	66		
Bus							100		
Train								100	
Other									100

Table 12 Future Modal Split - AM Peak Hour

	Modal Split	
Existing Mode	Existing (%)	Future (%)
Car Driver	725 (53)	674 (50)
Car Share (Met Office)	91 (7)	127 (9)
Car Share (Other)	38 (3)	38 (3)
Motorbike	16 (1)	16 (1)
Bicycle	105 (8)	100 (7)
Pedestrian	166 (12)	57 (4)
Bus	38 (3)	168 (12)
Train	131 (10)	131 (10)
Other	47 (3)	47 (3)
Total	1357	1358

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7. NON CAR TRANSPORT PROPOSALS

7.1 A number of measures will be incorporated into the design and operation of the development to enhance the accessibility of the site by non-car modes. These will be linked and incorporated into a Green Travel Plan (GTP).

7.2 Appendix E shows the indicative site layout. This includes a pedestrian/cycle path between the site and South Road which can link to existing footpaths from the north of South Road to residential areas on the western side of Bracknell. Footways on the main access road will link the site to bus facilities and a possible pelican crossing outside the site on the B3430 Nine Mile Ride, see Figure 9.

7.3 'Cycling in Berkshire', which was produced by Babtie for Berkshire County Council in March 1998 recommends one cycle space for every 8 parking spaces at office sites. There is no standard applicable to the Met. Office College use. If the office standard is applied to the full 750 parking spaces (including the College), it results in the need for 94 cycle stands. From the survey it is known that at present, 7.5 % of Met. Office employees travel to work by bicycle, requiring 113 stands. In addition, 4% of the staff responded that they use a variety of modes at different times, some of whom will require cycle parking. It is intended that the implementation of a GTP and improved facilities will increase the number of employees who travel to work by bicycle. For these reasons, approximately 150 cycle stands will be provided on the site.

7.4 There are existing cycleways that link the Great Hollands residential area with Bracknell town centre, see Figure 7. A cycle path could be provided from South Road south of the school linking to the existing cycle path on Woodenhill, this would complete a cycle route between the site and the centre of Bracknell.

7.5 A number of additional public transport measures will be considered in order to improve the overall accessibility of the site by non-car modes.

7.6 There are currently two bus routes that operate between Bracknell railway station, Beaufort Park and Crowthorne railway station. The journey between Bracknell town centre and Beaufort Park takes approximately 15 minutes. Service X7/X9/X37 only runs during the off peak period and is therefore unlikely to be used by many Met. Office employees to travel to work. Service 194/174 operates between Bracknell and Camberley every 30 minutes until 0840, then every hour until 1740, when it reverts to a 30 minute service until the end of the evening peak. This service provides a direct link between Bracknell and Crowthorne town centres and the site. It may be possible to increase the frequency of the service if there is sufficient demand.

7.7 In order to make the scheduled bus services more attractive it may be possible to divert the routes into the site. This provision could also be attractive to visitors using the other sites on South Road who could walk from the on site facility to South Road.

7.8 If the operators are unhappy about diverting their services into the site then new bus bays and a pelican crossing could be provided as shown on Figure 9 and Appendix E. Alternatively the existing bus stops at South Road could be retained with a footway link to the new entrance.

7.9 From Appendix G it can be seen that a number of the Met. Office staff live in the Wokingham area. These employees could travel to Bracknell using their existing mode and then use the bus from the town centre to the site. There are no direct bus services between Wokingham and the site, although it may be possible to divert service 193 past the site during some parts of the day.

7.10 An additional Met. Office bus link could be introduced to operate a route between Wokingham, Beaufort Park and Bracknell. This would supplement the existing Bracknell to Beaufort Park service and also provide a link from Wokingham. The service could operate at a 30 minute frequency and when combined with the existing scheduled service would provide a 15 minute frequency of service between Bracknell town centre and Beaufort Park. The service could also ensure that connections are made with the rail services.

7.11 Table 13 shows possible travel options for employees travelling from Bracknell and Wokingham to the site. From Appendix G it can be seen that the majority of employee homes are concentrated in this area. Table 13 should only be used for comparative purposes. Detailed analysis and costings would need to be undertaken when transport options are considered further and discussed with the relevant and interested parties.

Table 13 Transport Options

Route	Mode/Provider	Frequency (mins)	Length of journey (mins)	Return cost to traveller (£)	Journey Index	Cost of Subsidy	
						Capital	Running (per year)
1. Bracknell - Site	Car	N/A	12	2.41	12	0	0
2. Bracknell - Site	Scheduled Bus/Met Office Shuttle	15	15	2.30	25	100,000	15,000
1. Wokingham - Site	Car	N/A	12	3.50	12	0	0
2. Wokingham - Site	Train	20	7	2.3	-	0	0
	Scheduled Bus/Met Office Shuttle	15	12	4.6	42	100,000	15,000
3. Wokingham - Site *	Met. Office Shuttle	30	10		30	200,000	30,000

* Assumes bus continues to Bracknell

Notes:

1. Nominal frequencies are shown. Met Office shuttle would be timetabled to meet train and bus services.
2. Approximate peak period journey times are shown.
3. Car milage is based on 35p per mile
4. Journey Index is calculated as 'length of journey + 2/3 frequency of service at each change.'
5. Subsidy costs are indicative and are for comparative purposes only.

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7.12 Table 13 contains information for the Met. Office as an operator. It assumes that it will subsidise its own services but employees would pay the cost of public services. The Met. Office will need to consider its overall policy on travel as part of the implementation of the Green Travel Plan. For example it may subsidise employees for their fares, alternatively it may make a small charge for the cost of the shuttle service.

7.13 In Table 13 the cost of the subsidy for The Met. Office services has been based on a capital cost of £100,000 per vehicle and a £10 per hour operating cost. It has been assumed that the services will operate for three hours during each peak period. The shuttle services have been assumed to run every 30 minutes between the existing scheduled service. This should accommodate most employee journeys. In practice there could be a requirement to operate further services during the day for part time employees and other types of trips.

7.14 Table 13 also contains a 'journey index'. This is a simple means of assessing the attractiveness of the alternative journey modes. It has been based on the length of the journey and a factor of 0.67 applied to the frequency of service. The factor is derived from the average wait time for a service, which would be 0.5, but increased to represent the perceived inconvenience of changing service. It should be noted that the factor is applied at the start of the journey in Bracknell or Wokingham as well as other changes in order to incorporate the inconvenience of beginning the journey in Bracknell or Wokingham. In practice this may produce a larger value than is justified. For example, the bus frequency from Wokingham is 30 minutes and a factor of 0.67 is equivalent to a 20 minute wait time. Commuting staff can generally arrange their journeys to arrive just in time for the service and their wait time could be smaller.

7.15 From the 'journey index' in Table 13 it can be seen that, not surprisingly, the car journey would still be the most attractive mode from both Bracknell and Wokingham. A Met. Office shuttle service would provide a better service to the site from Wokingham than using a train to Bracknell and the connecting bus.

7.16 The cost of travelling to the site by car is higher than the existing bus fare on the scheduled services. The Met. Office shuttle would need to have a similar fare, or the scheduled service would need to be subsidised in order for the 15 minute frequency to be effective. However it is acknowledged that costs associated with starting a journey are not shown, for example paying for a remote car park. It should also be noted that car drivers do not always recognise the total cost of driving but merely calculate the fuel cost.

7.17 At the detailed stage it is possible to adjust the attractiveness of the various modes by financial mechanisms. For example single car drivers could be charged for parking on site and the money used to further subsidise other modes. These issues would be addressed in the Green Travel Plan.

7.18 There are a range of options available for providing non car modes of travel. Initially the preferred option would be to provide a Met. Office shuttle service from Wokingham to Bracknell via Beaufort Park. This service would benefit employees living in both towns. The Green Travel Plan will be used to monitor and review the transport services provided and they can be amended as circumstances change.

8. VEHICLE TRIP GENERATION, DISTRIBUTION AND ASSIGNMENT

Vehicle Trip Generation

8.1 The number of vehicle trips to the development will be restrained by the number of parking spaces. As described in Section 5 the parking provision will be based on the standards in the draft PPG13 proposals. Consequently there will be 700 parking spaces associated with the relocated uses in Bracknell. It is also proposed that there will be 50 spaces allocated for use by the Met. Office College. This is a reduction on the 100 spaces currently available to the College at Shinfield Park.

8.2 In order to assess the trip generation due to the 700 office spaces a survey was undertaken at the car park of the London Road office in Bracknell. This is the single largest Met. Office building and car park and should therefore provide the most accurate information on the number of vehicle movements generated during the peak periods for the proposed car park.

8.3 The car park has 255 spaces, but many cars double park and this results in a maximum of 290 cars parking on the site at any one time. The car park is fully utilised every day and it can therefore be assumed to operate in a similar manner to the proposed car park at Beaufort Park. The number of trips entering and leaving the car park on 4 April 2000 was assessed from a video of the peak hours. The results are given in Appendix H.

8.4 Peak arrivals at the car park were found to be between 0730 and 0830. There is a change of shift by approximately 40 employees between 0745 and 0815. Consequently there is a significant number of morning peak departures. In the evening peak the maximum number of departures occurred between 1630 and 1730. Table 14 shows the number of arrivals and departures during the peak hours at the London Road car park.

Table 14 Traffic Flows at London Road Car Park on 4 April 2000

Time	IN	OUT
0730 – 0830	203	50
1630 – 1730	21	142

8.5 It is known that some employees are dropped off in the car park, and some people enter the car park and then leave if they can not find a space. It was not possible to determine these trips from the survey and so they are included in the results. Consequently the survey overestimates the actual vehicle movements which will result in a robust analysis.

8.6 With the exception of two people who work over night at the Powell Duffryn building, all the shift workers are based at the London Road office. The shifts start and finish between 0745 and 0815, and between 1945 and 2015. The morning peak arrivals and departures at the London Road car park therefore include shift workers arriving for the day shift and leaving after the night shift.

8.7 The number of departures in the morning peak is relatively high as a result of the departing shift-workers. In calculating the flows at the proposed car park, these departures should not be increased in proportion with the larger car park size at Beaufort Park because the total number of shift workers will not change.

8.8 There are between 25 and 40 shift workers at the London Road office at any time. It has been assumed that if the shift workers were excluded, the exit flows between 0730 and 0830 would be similar to the entry flows between 1630 and 1730. Therefore in the morning peak it has been assumed that there are 29 shift workers leaving the car park. Table 15 gives the trips to the London Road car park excluding shift workers departing in the morning peak.

Table 15 Traffic Flows at London Road Car Park, 4 April 2000
Excluding morning peak shift departures

Time	IN	OUT
0730 – 0830	203	21
1630 – 1730	21	142

8.9 In order to estimate the peak hour arrivals and departures at the new site, the arrivals at the London Road car park have been factored by the difference between 290 spaces at the London Road car park, and 700 spaces allocated for office use at the proposed site at Beaufort Park. Table 16 shows the predicted peak hour arrivals and departures at the car park with the 29 shift workers added into the number of morning departures.

Table 16 Traffic Flows at London Road car park, factored to 700 spaces

Time	IN	OUT
0730 – 0830	490	51+29
1630 – 1730	51	343

8.10 The remaining 50 spaces at the site will be allocated for use by the Met. Office College only. The number of trips arriving at and departing from the Met. Office College from the survey undertaken on 22 March 2000 at Shinfield Park are given in Table 17.

Table 17 Traffic Flows generated by the Met. Office College 22 March 2000

Time	IN	OUT
0730 – 0830	20	1
1630 – 1730	4	19

Vehicle Trip Distribution and Assignment

8.11 The Met. Office have a staff database which includes information on staff home addresses. Appendix I shows the number of staff living in each of the postcode areas from the database. The staff questionnaire survey on travel characteristics was undertaken at a later date and was therefore not available for the detailed analysis. However a subsequent review of the information showed that the distribution is similar. Information from the staff database has been used to assess the likely distribution of generated trips on the network.

8.12 Figure 12 shows the likely routes to the site that will be taken by people living in each postcode area. It has been assumed that people travelling from areas shaded green on the south west of the site, and areas further to the east of the site will use the M3 and the A322 and therefore access the local road network from Nine Mile Ride east. The majority of employees travelling to Reading would use the A329 (M), therefore they would use the A3095 north from Nine Mile Ride. The resulting distribution of trips in the network is given in Figure 13.

8.13 The trips generated by the development have been assigned to the network using the calculated distribution. Figure 14 gives the number of generated trips in the morning and evening peak hours.

8.14 Trips which are generated by the existing Beaufort Park site are already on the network. These need to be removed from the traffic flows before the trips generated by the proposed development are included. The Beaufort Park site currently has 119 staff and 80 parking spaces. The proportion of vehicles currently travelling to and from the site during the peak hours has been calculated on the basis of the proportion of trips entering and exiting the Met. Office London Road offices. The morning peak pattern at the London Road office was not used for this exercise as it includes a shift change, the arrival and departure profile would therefore not be similar to other office developments. The evening peak profile was therefore used giving a total of 32 two way trips during the peak hour. Figure 15 gives the resulting flows currently generated by the Beaufort Park site, distributed in accordance with the information from the staff database.

8.15 The existing Beaufort Park trips have been removed from the base flows and the trips generated by the full development have been added to obtain base year flows with the development. The peak hours on the B3430 Nine Mile Ride are 0800 – 0900 and 1700 – 1800. The development peak hours are 0730 – 0830 and 1630 – 1730. Flows from the development peak have been added to flows from the network peak to obtain a robust assessment. Figure 16 shows the base year peak hour traffic flows with the development.

8.16 The only consented development in the area is Church Hill House Hospital which has consent for a number of residential units. Trips generated by the development are unlikely to have a significant impact on traffic flows on Nine Mile Ride, therefore it has not been considered in this assessment.

8.17 It is acknowledged that the area could be subject to changes in traffic flow due to other proposals in the area. Notably these could include developments at the TRL and other sites identified in the Local Plan. There are no outstanding consents at the TRL although there may be plans to redevelop the existing site. Similarly other sites in the Local Plan do not currently have consent and so they would need to be subject to separate assessments.

9 HIGHWAY IMPACT

9.1 The proposed development is located to the south of Bracknell. The local road network is subject to peak hour traffic demand. During the peak periods some queuing is experienced on the network, particularly on the A3095 Crowthorne Road/B3430 Nine Mile Ride junction during the morning peak, where northbound traffic travelling into Bracknell often queues back through the junction.

9.2 During the peak periods there is congestion and some queuing at both of the roundabout junctions on Nine Mile Ride. It is therefore reasonable to assume that there will not be any further traffic growth on the network during the peak periods. It follows that an analysis of the current flows will measure the impact of the proposed development.

A3095 Crowthorne Road /B3430 Nine Mile Ride Junction

9.3 ARCADY version 4.01 has been used to test the operation of the existing junctions with existing traffic flows. All of the computer results are shown in the Appendices. Figure 17 shows the existing A3095 Crowthorne Road/B3430 Nine Mile Ride junction. Table 18 shows the operation of the existing roundabout during the peak periods with the observed traffic flows.

Table 18 A3095 Crowthorne Road /B3430 Nine Mile Ride ARCADY Existing Junction, Existing Flows

Approach	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
A3095 Crowthorne Road	0.74	3	1.09	79
B3430 Nine Mile Ride (East)	0.78	4	1.24	121
A3095 Foresters Way	0.76	3	0.47	1
B3430 Nine Mile Ride (West)	0.98	16	0.75	3

9.4 It is known that during the morning peak on the day of the survey northbound traffic on the A3095 was queuing through the junction to the junction of the A3095 with Bracknell Road. It has not been possible to replicate this queue in the ARCADY model because the queuing is not created by the Nine Mile Ride roundabout. Although the model of the base case is not fully replicating the existing queues, the model can be used to assess the net change in the operation of the junction when the additional development flows are added.

9.5 Figure 18 shows the same junction with some minor amendments to the flaring on three approaches to enable it to operate more efficiently with the additional development flows. These amendments are subject to the limits of highway ownership at the junction. Table 19 shows the operation of the revised junction with full development flows for both peak periods.

Table 19 A3095 Crowthorne Road /B3430 Nine Mile Ride ARCADY Revised Junction, With Development

Approach	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
A3095 Crowthorne Road	0.82	5	1.04	47
B3430 Nine Mile Ride (East)	0.81	4	1.04	32
A3095 Foresters Way	0.90	8	0.49	1
B3430 Nine Mile Ride (West)	0.98	16	0.92	9

9.6 Table 19 shows that with the amended junction, the operation of the junction in the morning peak is similar to the existing operation without the development flows. In the evening peak the junction generally operates more efficiently than in the existing situation, although there is a small increase in the queue on the Nine Mile Ride West approach.

Old Wokingham Road/B3430 Nine Mile Ride Junction

9.7 Figure 19 shows the existing roundabout junction of the B3430 Nine Mile Ride with Old Wokingham Road. This junction has recently been upgraded from a signal controlled crossroads to a roundabout. The existing operation of the junction has been assessed using ARCADY and the results are given in Table 20.

Table 20 Old Wokingham Road/B3430 Nine Mile Ride ARCADY Existing Junction, Existing Flows

Approach	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
Old Wokingham Road (North)	0.37	1	0.97	16
B3430 Nine Mile Ride (East)	0.59	1	0.80	4
Old Wokingham Road (South)	1.02	29	0.47	1
B3430 Nine Mile Ride (West)	1.04	30	0.58	1

9.8 Table 20 shows that the junction generally operates at capacity during the peak periods although during the morning peak the junction operates just in excess of its capacity on two of the approaches.

9.9 The junction has been tested with the additional traffic generated by the development. The results of the assessment are given in Table 21.

Table 21 Old Wokingham Road/B3430 Nine Mile Ride ARCADY
Existing Junction, With Development

Approach	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
Old Wokingham Road (North)	0.41	1	0.98	18
B3430 Nine Mile Ride (East)	0.61	2	0.87	6
Old Wokingham Road (South)	1.04	35	0.49	1
B3430 Nine Mile Ride (West)	1.13	58	0.59	1

9.10 There is an increase in the queuing at the junction in the morning peak period, particularly on the Nine Mile Ride west approach, where the modelled queue has increased from 30 to 58 vehicles. In the evening peak there are also small increases in the queue but the junction operates within its capacity.

9.11 Given the recent roundabout construction and land constraints there is very little opportunity to carry out any improvements at the junction. Given that the development flows have not resulted in a significant worsening in the operation of the junction, no further improvements are considered to be practical or appropriate.

Site Access Junction

9.12 Figure 8 shows the proposed site access. As the proposed junction will be a new roundabout it has been tested for the year of opening 2003 and for 15 years later in 2018. As discussed above there is unlikely to be peak hour growth on Nine Mile Ride due to the constraints of the adjoining two junctions, However it is acknowledged that a new junction should be designed with future capacity as other highway improvements could be undertaken in due course. Low growth TEMPRO factors for Bracknell Forest District were applied to the traffic flows. The factors are given in Table 22, the resulting traffic flows are given on Figure 20. Tables 23 and 24 give the results of the assessments for 2003 and 2018 respectively.

Table 22 Low Growth TEMPRO growth factors.

Time Period	Factor
2000 – 2003	1.038
2003 – 2018	1.205

Table 23 Site Access Junction ARCADY 2003

Approach	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
B3430 Nine Mile Ride (West)	0.07	0	0.33	1
Site	0.75	3	0.54	1
B3430 Nine Mile Ride (East)	0.72	3	0.59	1

Table 24 Site Access Junction ARCADY 2018

Approach	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
B3430 Nine Mile Ride (West)	0.08	0	0.38	1
Site	0.85	5	0.64	2
B3430 Nine Mile Ride (East)	0.85	5	0.71	2

9.13 From Tables 23 and 24 it can be seen that the junction operates within its capacity in both peak periods in 2003 and 2018. In all cases the ratio of flow to capacity (RFC) is less than 85%.

10 GREEN TRAVEL PLAN FRAMEWORK

10.1 As discussed earlier in this report both national and local Government policies encourage the production of Green Travel Plans (GTP), also known as Travel Plans. Notably Central Government have indicated in their White Paper 'A New Deal for Transport' that Government Departments and Agencies will be introducing these plans.

10.2 The Met. Office fully support this policy and as part of the relocation it will establish a Green Travel Plan for the site and consult Bracknell Forest DC on its contents and implementation. The plan will be designed to provide measures to reduce the total number of car trips to the site and increase the accessibility of other transport modes. Due to the growth of the Met. Office, the use of a number of sites around the Bracknell area and the possible future relocation, the Met. Office has not yet produced a GTP. Consequently the relocation provides the opportunity to develop an up to date GTP.

10.3 The report has provided information on all transport aspects of the relocation to Beaufort Park. These will be used to formulate the GTP using the following framework.

10.4 Existing staff travel patterns have been determined from the staff travel survey. This will be used as a basis for initial measures and the assessment of opportunities. However a further survey will be undertaken shortly before the move in order to provide the latest information on staff locations. As the new site will be known, information on how staff would travel to the new site could be determined. Incentives to travel by non-car modes or to car share could be organised so that they are available at the time of occupation of the site.

10.5 Staff travel patterns are likely to alter as a result of the relocation, therefore a detailed questionnaire should ideally be issued a few months after occupation of the new development site, when travel patterns may have settled. This can be used to assess any change that has taken place and identify opportunities for improving the plan.

10.6 During this process information obtained from the surveys can be used to target further initiatives at those employees with the greatest potential for modal shift away from the car. Car share opportunities can be targeted at those who do not live in areas that are accessible by public transport.

10.7 After these initial surveys there should then be regular surveys of staff to assess and monitor the performance of the GTP. The measures incorporated in the plan could then be adjusted and revised targets set if necessary.

10.8 In advance of the relocation the first GTP would be prepared and should include the following:

- Appointment of a transport co-ordinator
- Car share scheme
- Incentives to use public transport - shuttle bus services, subsidised season tickets
- Provision of timetable information
- Provision of a pool car to use for work trips
- Interest free loans for purchasing bicycles
- Travel allowance for trips made by bicycle
- Increased opportunities for flexible working hours and teleworking
- Preferential parking for - visitors, disabled, car sharers
- Emergency backup transport
- On site facilities - showers and changing rooms
- Car parking restrictions

10.9 The implementation of many of these features has been discussed in this report and they will be used in the formulation of the detailed strategies. In addition to the basic journey to work options it is important that ancillary services are provided.

10.10 Pool cars are already available to Met. Office staff for work related trips. This avoids the requirement for people to drive to work because they need to attend a meeting elsewhere during the day. Emergency back up is necessary if people are required to work late or their car share driver is not available. This could be provided by the use of a pool car or the use of the shuttle buses outside peak times. Other trips during the day could be provided by the shuttle buses. For example there could be lunchtime services to the nearest shopping centre.

10.11 It can be seen that there are many items that need to be considered as part of the GTP. The importance and relevance of them is dependent on the results of the employee surveys and the ability of the organisation of provide and meet the aspirations of the staff.

10.12 It should also be emphasised that the GTP will be a working document and not a single document produced when the Met. Office moves. It will require continuous monitoring in order to assess whether targets are being met and changes should be made when necessary to reflect the current demands of the employees. Figure 21 summarises the management and constituent parts that are needed for the successful implementation of a GTP.

11. SUMMARY AND CONCLUSIONS

11.1 The Met. Office currently employs approximately 1500 staff in eight buildings in the Bracknell area with a further establishment in Farnborough. They also have a College which is based in Shinfield Park, to the south of Reading.

11.2 Due to its expansion over the years and the need to upgrade its computing capacity the Met. Office has established a need to relocate to a single, purpose built complex. For practical and economic reasons it has considered sites within its control and identified Beaufort Park as a possible location.

11.3 Beaufort Park is already used by the Met. Office to house their Technical Development and Instrumentation Division. There are office buildings, car parking facilities, forecasting and monitoring equipment already located on the site.

11.4 The existing public transport provision adjacent to the site is limited to two bus routes, although both routes link the site with Bracknell and Crowthorne, where there are connections to other public transport services.

11.5 The road network adjacent to the site currently suffers from peak hour congestion, particularly on the A3095 into Bracknell in the morning peak, where traffic often queues across the A3095 Crowthorne Road/B3430 Nine Mile Ride Junction.

11.6 The Met. Office proposals will include approximately 29,283 m^2 of office accommodation, and 4,645m^2 for a computer operations centre. Replacement college facilities will also be provided.

11.7 The Met. Office fully supports central and local Government policies regarding transport and intend to provide parking in accordance with the current draft PPG13 proposals. This will result in 700 spaces for the office use. At the same time they will reduce the number of College parking spaces from the 100 they currently have available at Shinfield Park to 50 spaces.

11.8 With up to 1500 staff to be relocated it follows that non car modes of transport will need to be used by many of the employees.

11.9 From a staff survey and investigation of current public transport infrastructure it is possible to implement transport strategies that can provide the necessary facilities.

11.10 As the majority of staff live in the Bracknell and Wokingham areas it is sensible to concentrate the measures on these employees. Rail services can be used by employees to travel to Bracknell town centre. The existing bus service from Bracknell town centre to Beaufort Park can be supplemented by a Met. Office shuttle bus to provide a 15 minute frequency of service. This service will be timed to meet rail services. An extension of the shuttle service to Wokingham would also be a possible option.

11.11 A new cycle route will link the site with existing cycleways to Bracknell town centre. Pedestrian links between the bus routes and the site will also be enhanced.

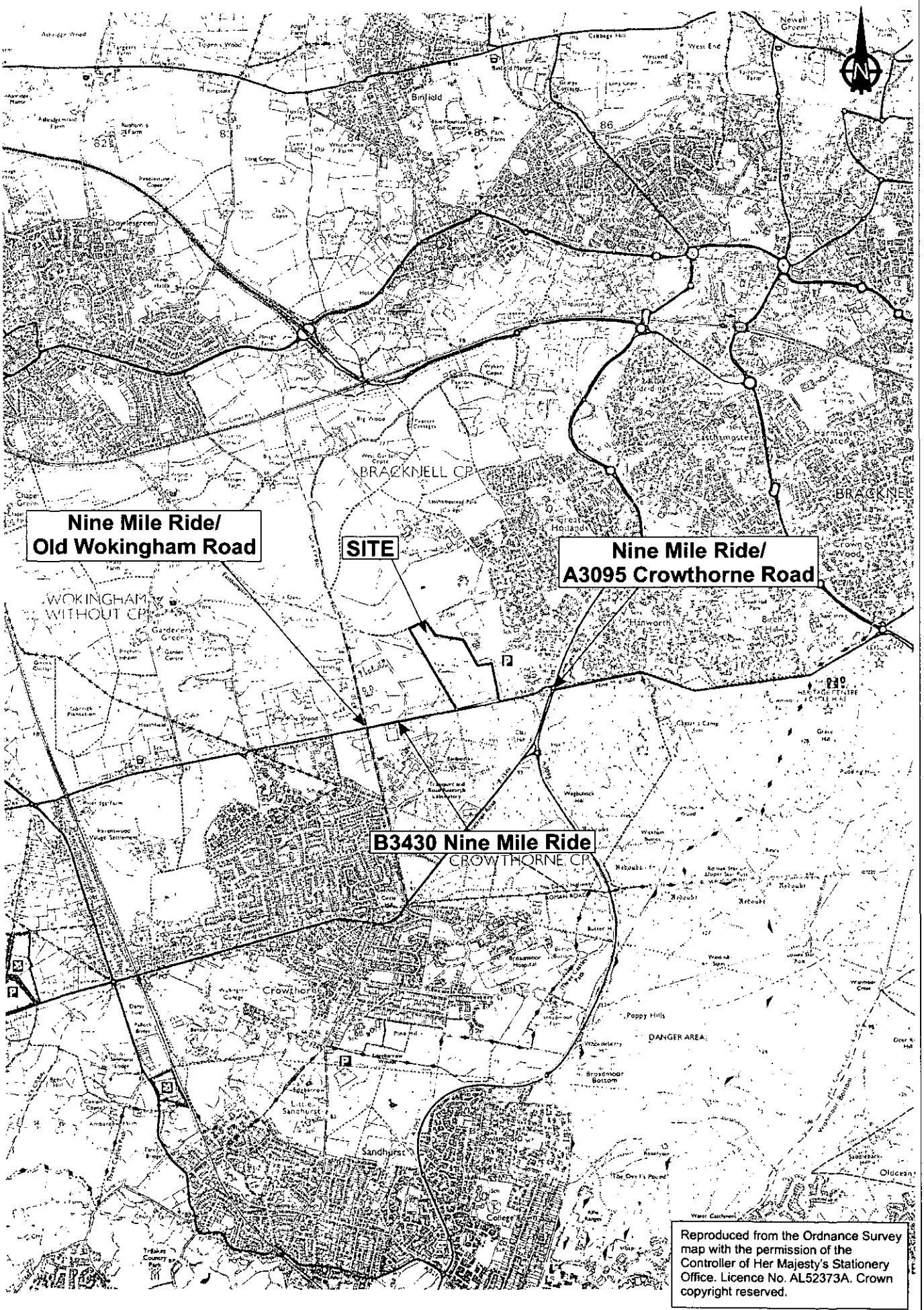
11.12 Any shuttle bus services would be integrated with other transport modes by the implementation of a Green Travel Plan (GTP). The GTP would co-ordinate all the transport modes and identify means of ensuring that alternative modes are attractive and used.

11.13 Despite the restriction of parking spaces on the site and the implementation of a GTP there will be some car generation on the local road network. An estimate has been made of the flows generated by the development and the impact on the local road network has been considered.

11.14 Minor improvements to the A3095 Crowthorne Road/ Nine Mile Ride junction will enable it to operate at a similar level of capacity as the existing situation. There is very little change in the operation of the Old Wokingham Road/B3430 Nine Mile Ride junction with the development. The site access junction has been shown to operate satisfactorily for a period of 15 years after opening the new facility. The Met. Office traffic can therefore be accommodated on the road network with some minor improvements to the A3095/Nine Mile Ride junction.

11.15 In conclusion, the relocation of the Met. Office to Beaufort Park can be achieved. It is possible to provide an opportunity to implement transport policies for the reduction in car use and to improve public transport, pedestrian and cycle routes in the area.

FIGURES



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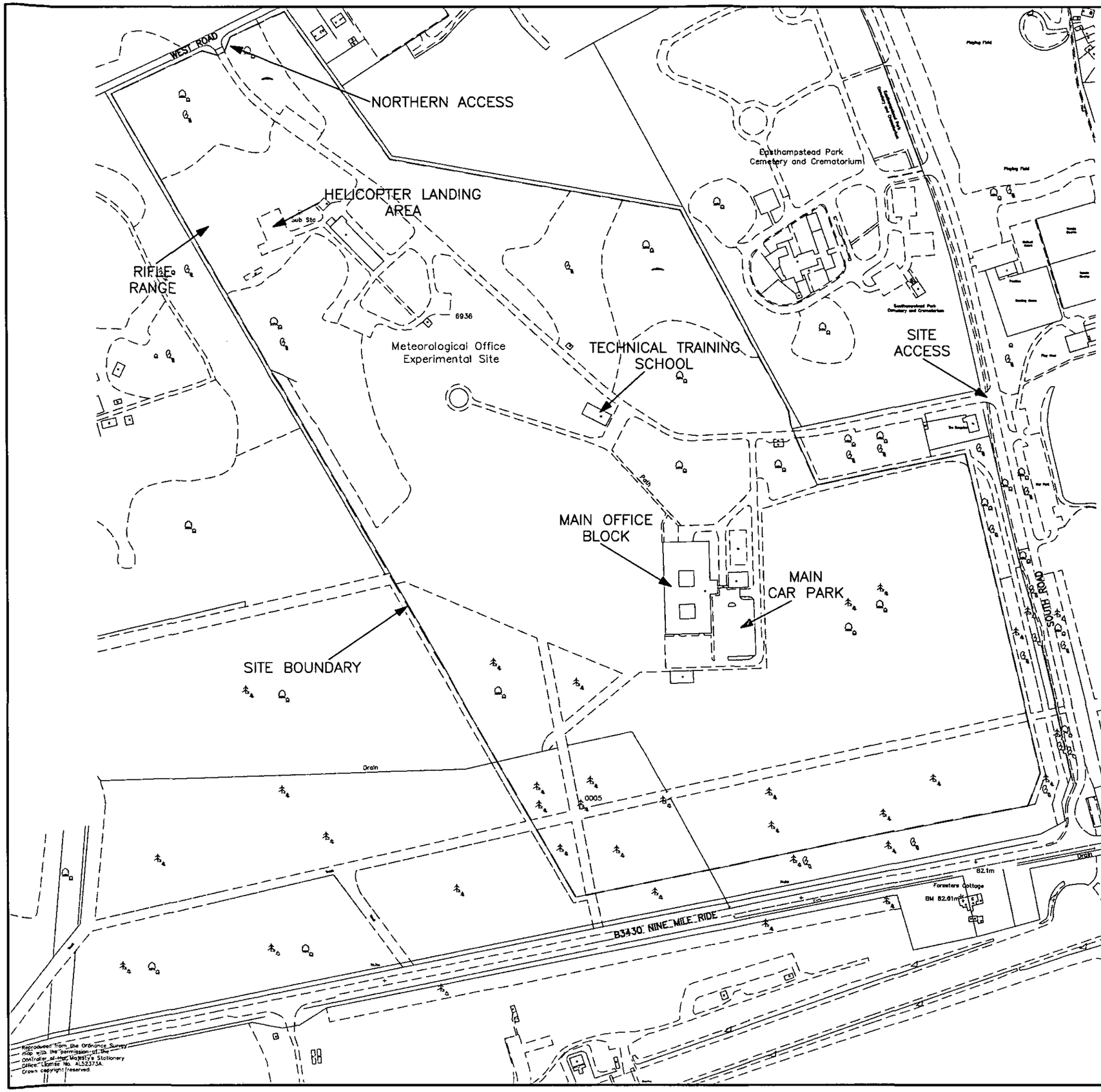
WSP

The Met. Office - Beaufort Park
SITE LOCATION PLAN

FIGURE No.
1



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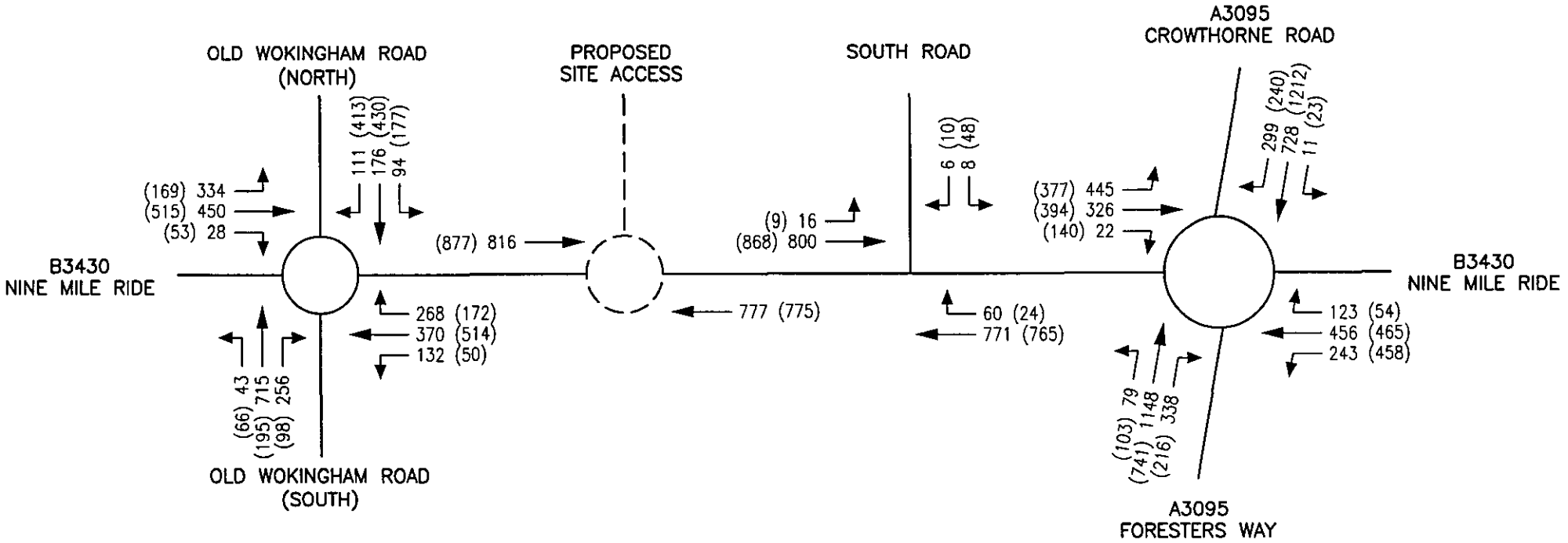
The Met. Office – Beaufort Park
EXISTING SITE LAYOUT

FIGURE No.

2



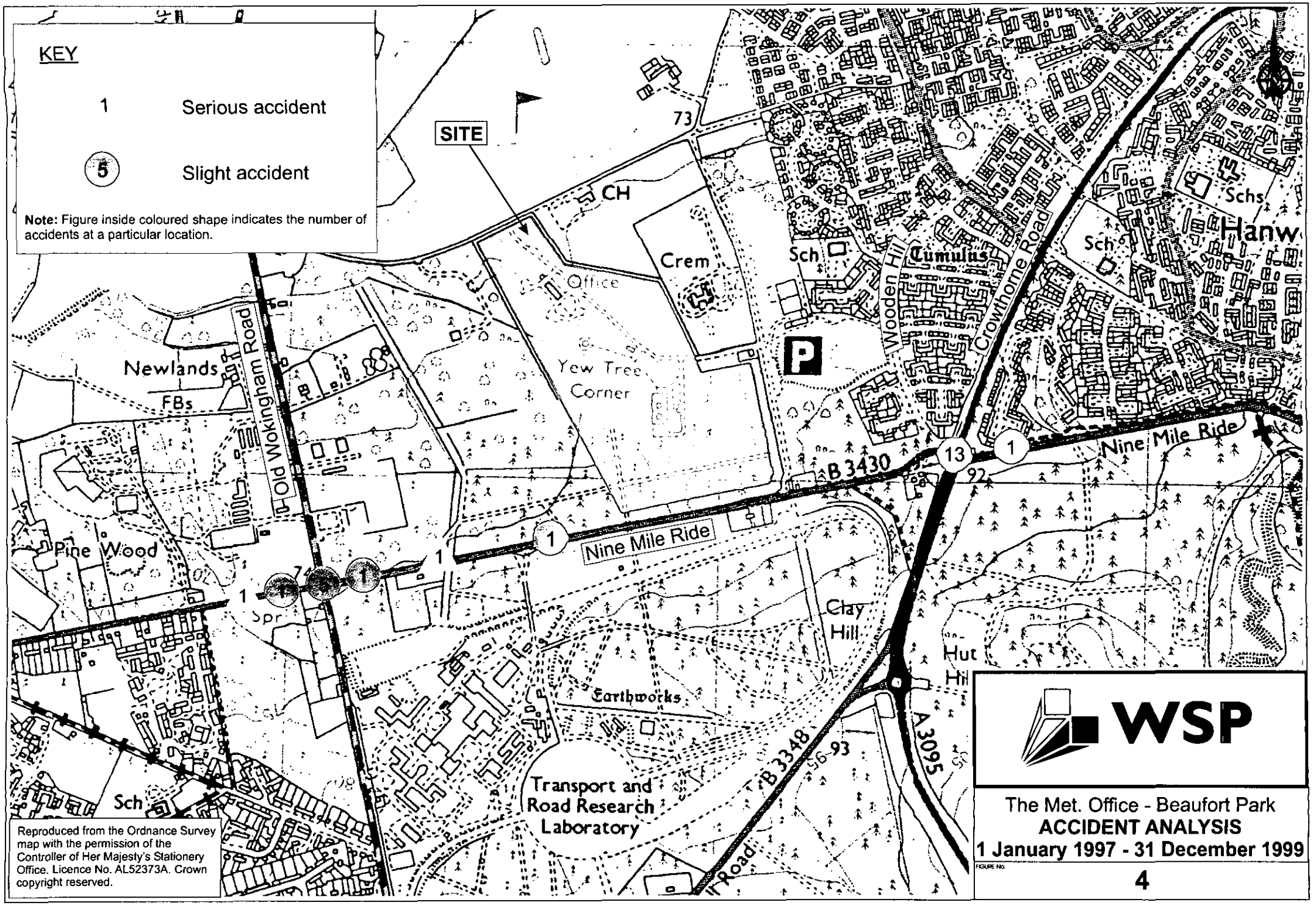
445 = AM PEAK (0800–0900)
(372) = PM PEAK (1700–1800)

ALL FLOWS IN PCU'S

WSP

The Met. Office – Beaufort Park
2000 EXISTING TRAFFIC FLOWS

FIGURE No. 3



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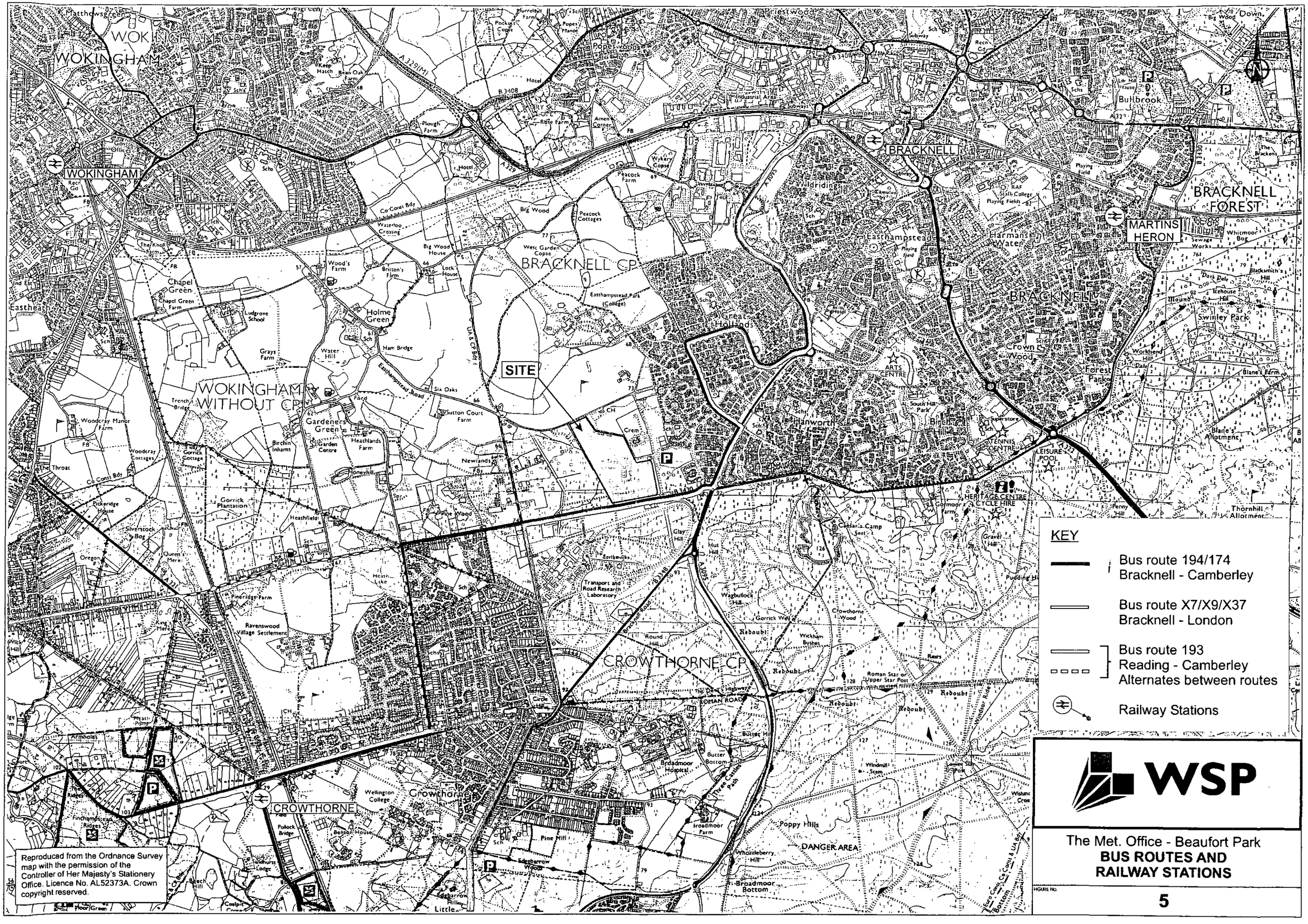
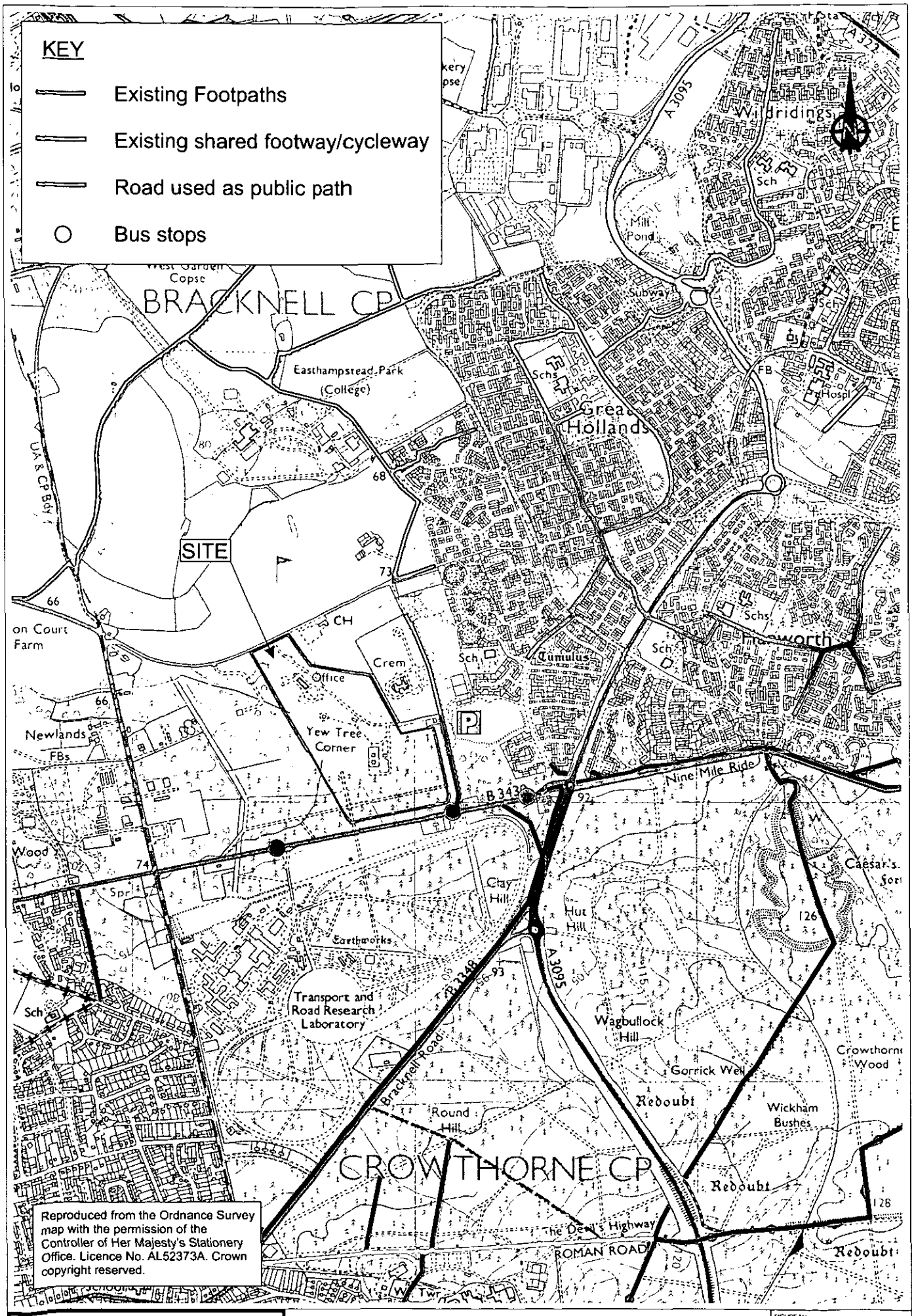

WOKINGHAM
WOKINGHAM CP
WOKINGHAM WITHOUT CP
BRACKNELL
BRACKNELL CP
BRACKNELL FOREST
MARTINS HERON
CROWTHORNE
CROWTHORNE CP
SITE
A329(M)
A329
A322
A3095
B3408
B3430
Bulbrook
Swinley Park
Crown Wood
Forest Park
Harmans Water
Easthampstead
Great Hollands
Holme Green
Chapel Green
Gardeners Green
Wokingham
Crowthorne
Broadmoor Hospital
Broadmoor Bottom
Poppy Hills
DANGER AREA
Caesar's Camp
Wellington College
Transport and Road Research Laboratory
Ravenswood Village Settlement
Heathfield
Gorrick Plantation
Finchampstead Ridges
Armholes
Roman Road
Ninemile Ride
Easthampstead Park (College)
Ludgrove School
Ham Bridge
Six Oaks
Sutton Court Farm
Newlands
Heathlands Farm
Peacock Farm
Peacock Cottages
Big Wood
Waterloo Crossing
Wood's Farm
Britton's Farm
Lock House
Grays Farm
Water Hill
Trenchy Bridge
Woodcray Manor Farm
Woodcray Cottages
Gorrick Cottage
Pickeridge House
Pine Ridge Farm
Silverstock Bog
Queen Mere
Oregon
Heath Lake
Pollock Bridge
Benson House
Broadmoor Farm
Pine Hill
Edgbarrow Hill
Edgbarrow Wood
Whortleberry Hill
Wagbullock Hill
Crowthorne Wood
Gorrick Well
Wickham Bushes
Round Hill
Butter Hill
Butter Bottom
Windmill Stem
Gay Hill
Hut Hill
Puddingstone Hill
Gravel Hill
Penny Hill
Thornhill Allotment
Blane's Allotment
Blane's Farm
Worldsend Hill
Dark Dale
Blacksmith's Hill
Icehouse Hill
Mount
Whitmoor Bog
Sewage Works
Playing Field
Recreation Ground
Cemetery
Industrial Area
Golf Course
Camberley
Eastheath
Finchampstead
Pinewood
Priestwood
Matthewsgreen
Big Wood Down
Ploughley Copse
Poppet Manor
Poppet Wood
Keep Hatch
Bean Oak Farm
Plough Farm
Rose Farm
Amen Corner
Wyrley Copse
West Garden Copse
Easthampstead Road
Ford
Heathlands
Honeyhill
Birchin Inhams
Garden Centre
Pollock Bridge
Sandhurst Lodge
Beech Hill
Coalpit Heath
Floor Green
Little
Armholes
Finchampstead Ridges
Pickeridge House
Silverstock Bog
Queen Mere
Oregon
Heath Lake
Ravenswood Village Settlement
Pine Ridge Farm
Gorrick Plantation
Heathfield
Wick Hill
Ridges
Throat
Woodcray Manor Farm
Woodcray Cottages
Gorrick Cottage
Pickeridge House
Trenchy Bridge
Grays Farm
Water Hill
Ham Bridge
Six Oaks
Sutton Court Farm
Newlands
Heathlands Farm
Honeyhill
Birchin Inhams
Garden Centre
Ford
Easthampstead Road
Holme Green
Chapel Green
Chapel Green Farm
Ludgrove School
Wood's Farm
Britton's Farm
Lock House
Waterloo Crossing
Big Wood
Big Wood House
Peacock Farm
Peacock Cottages
Wyrley Copse
West Garden Copse
Easthampstead Park (College)
Great Hollands
Harmans Water
Easthampstead
Wildridings
Bracknell
Bulbrook
Swinley Park
Crown Wood
Forest Park
Blane's Farm
Blane's Allotment



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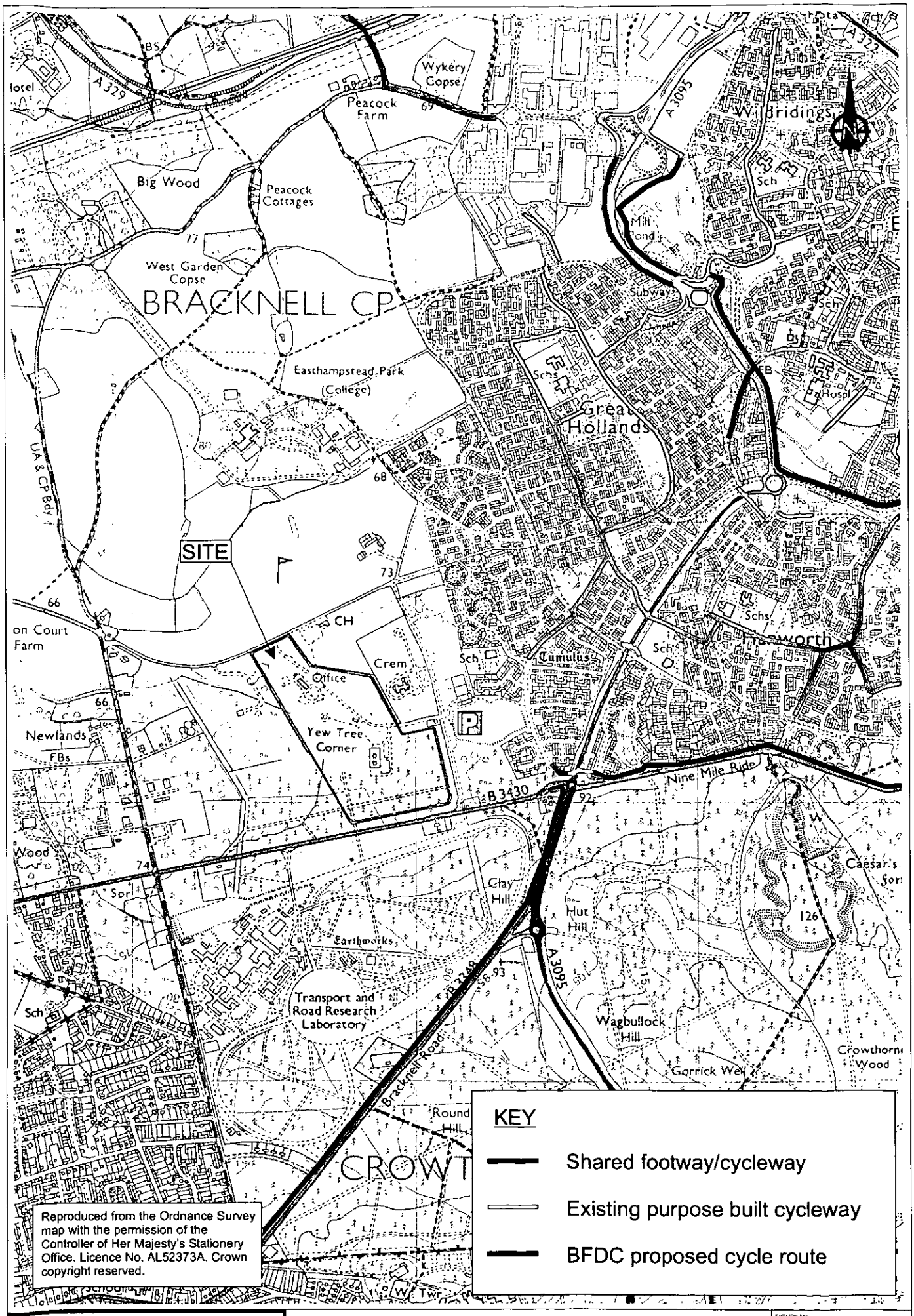
WSP

The Met. Office - Beaufort Park

EXISTING PEDESTRIAN FACILITIES

FIGURE No.

6



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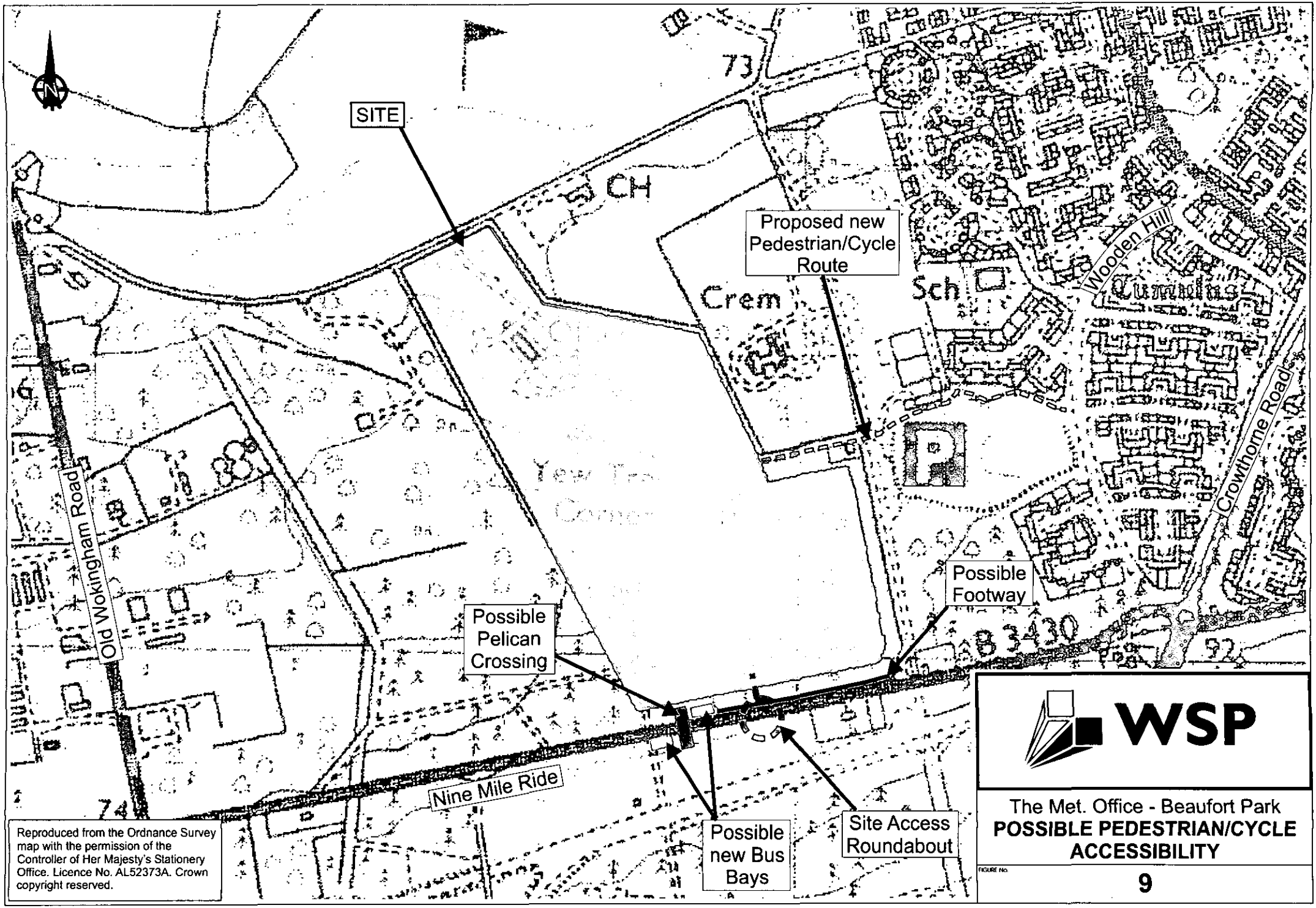
The Met. Office - Beaufort Park
CYCLE ROUTES

FIGURE No.
7



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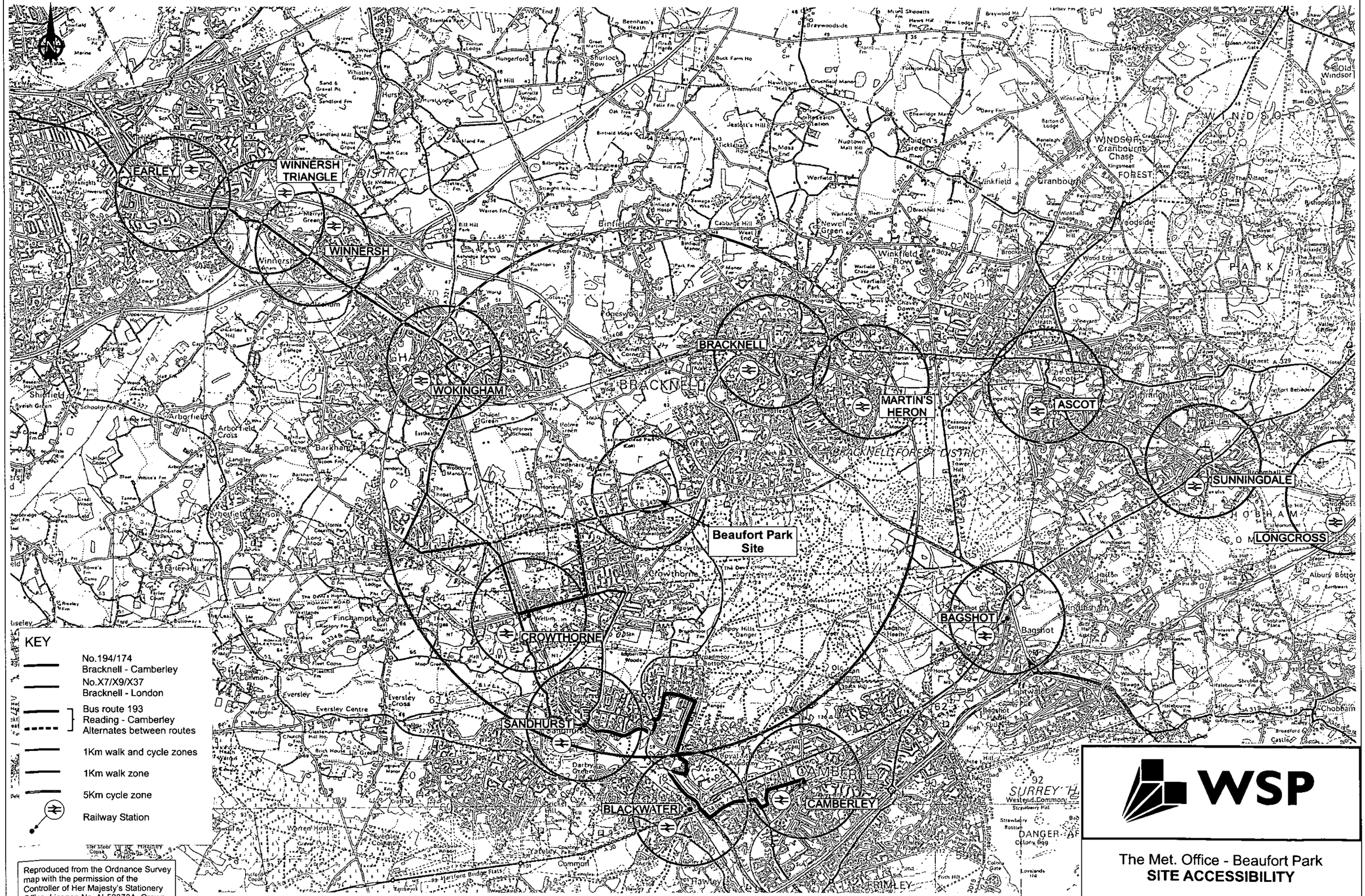
The Met. Office - Beaufort Park

POSSIBLE PEDESTRIAN/CYCLE ACCESSIBILITY

FIGURE No.

9



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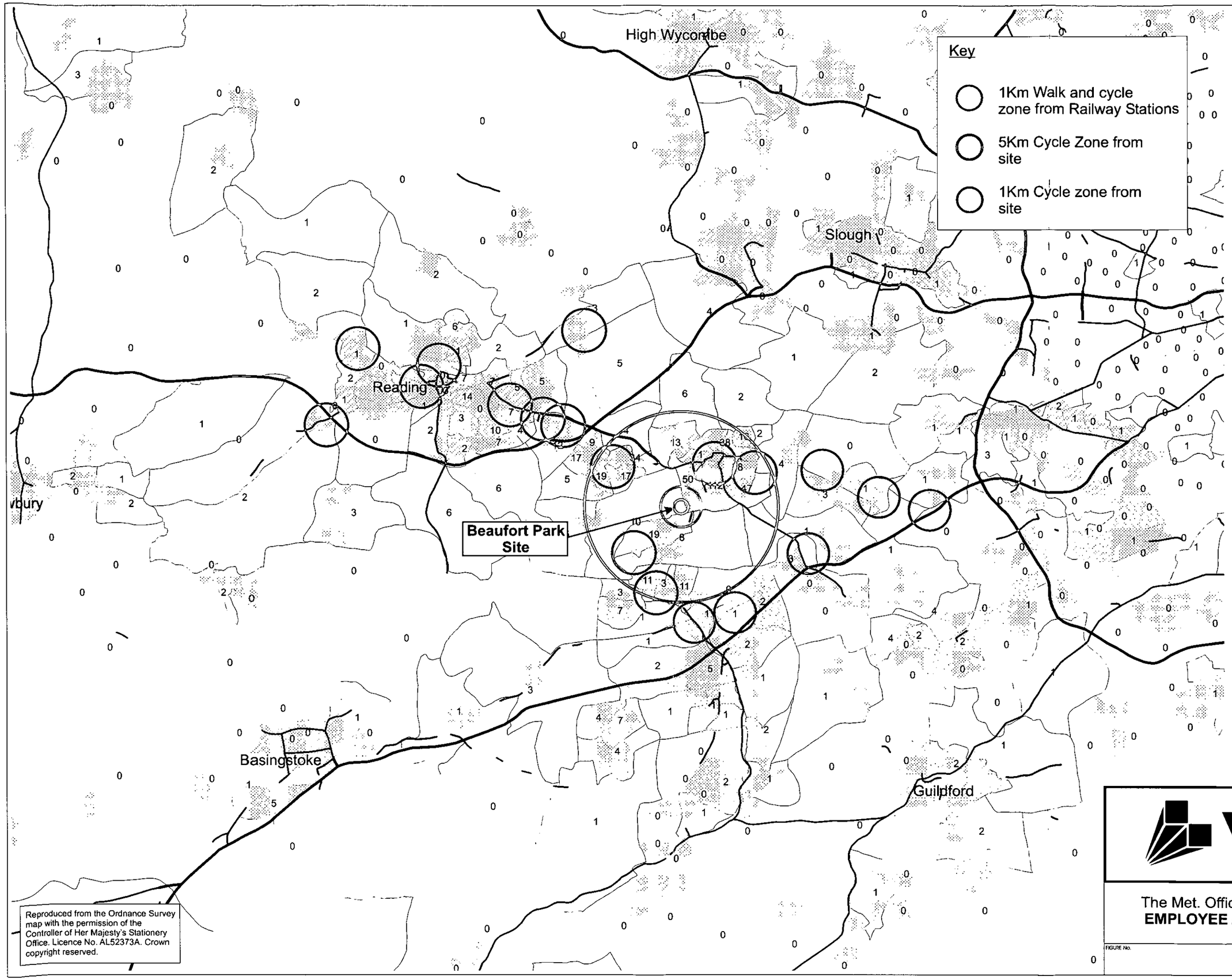
The Met. Office - Beaufort Park
SITE ACCESSIBILITY

FIGURE No.
10



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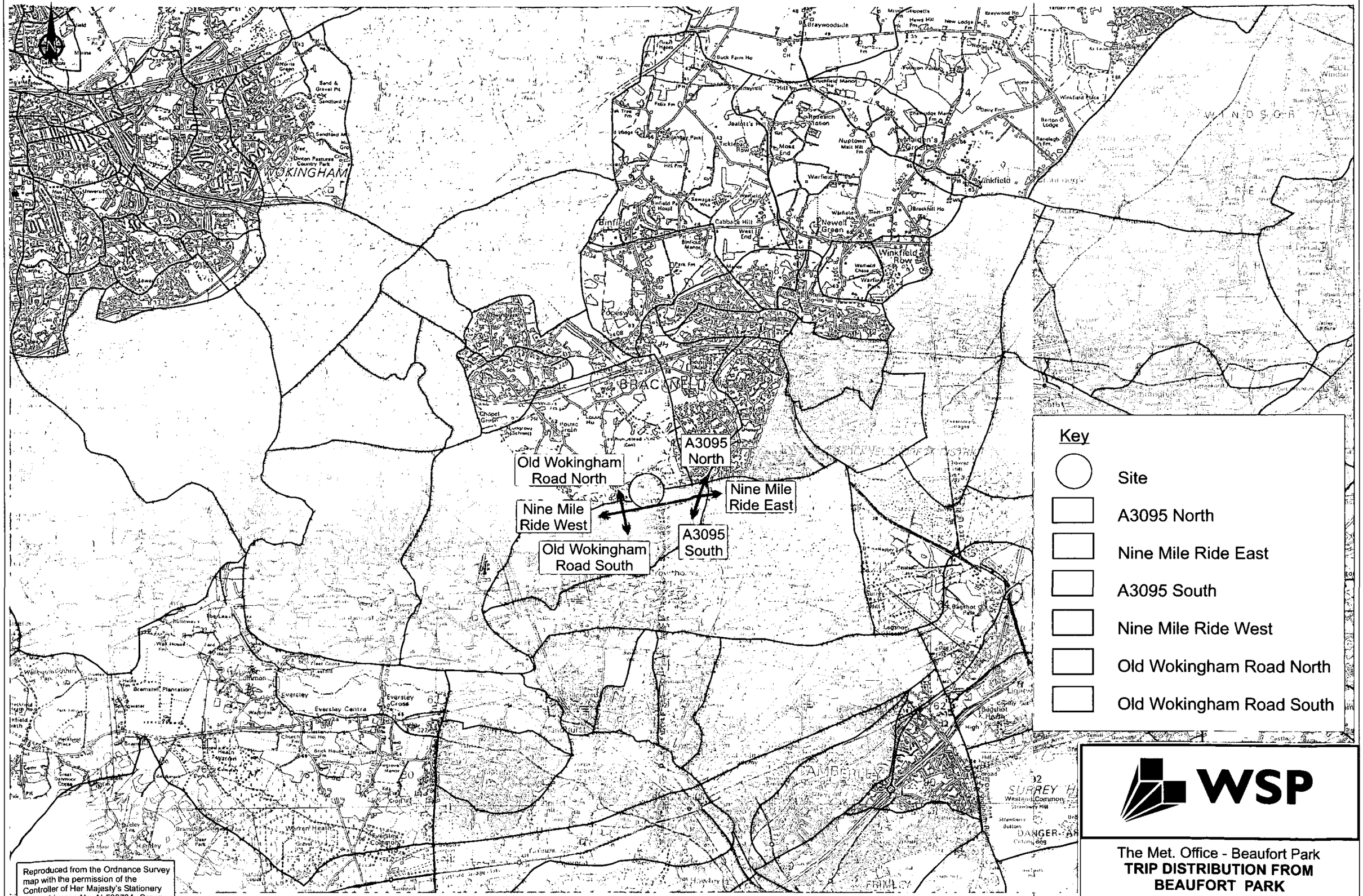
The Met. Office - Beaufort Park
EMPLOYEE ACCESSIBILITY

FIGURE No.
11



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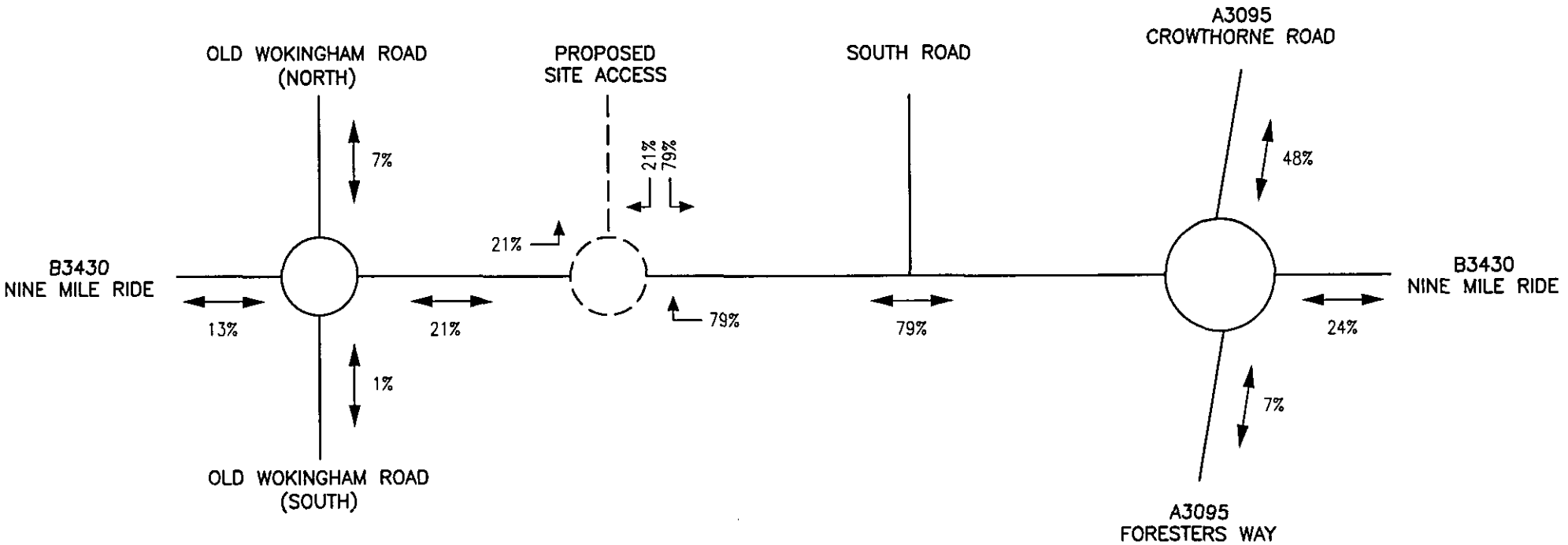
The Met. Office - Beaufort Park

TRIP DISTRIBUTION FROM BEAUFORT PARK

FIGURE No.

12



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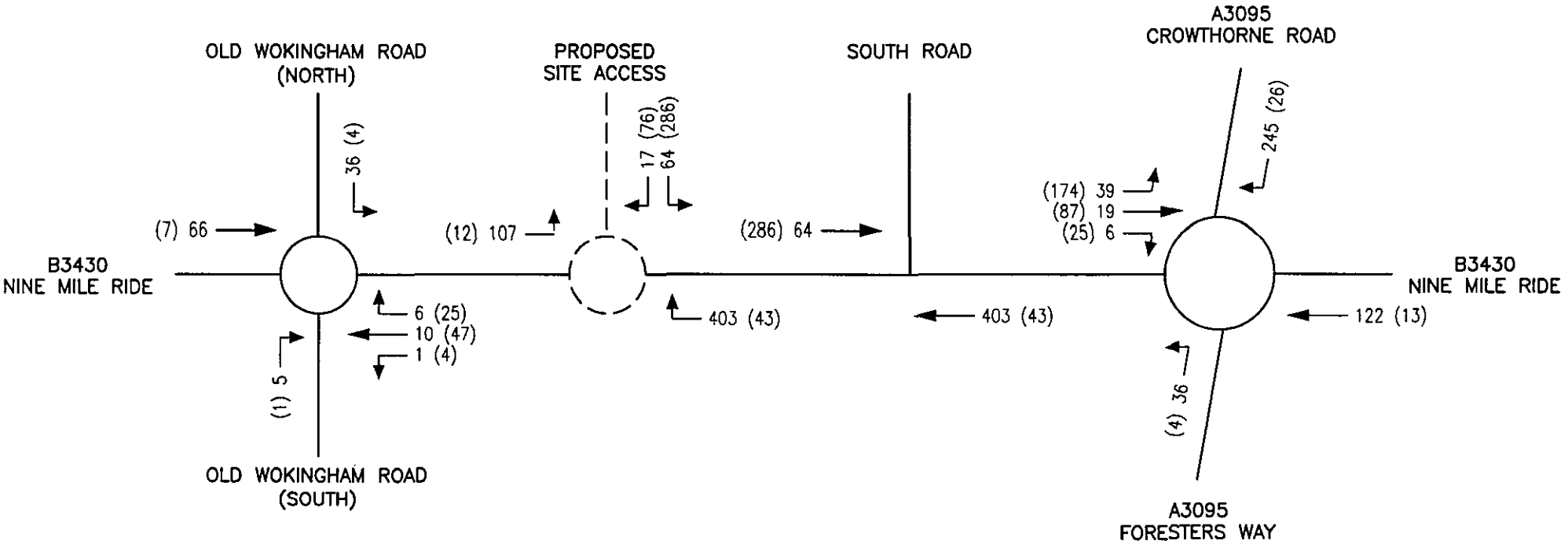
The Met. Office – Beaufort Park
DISTRIBUTION OF DEVELOPMENT TRIPS FROM BEAUFORT PARK

FIGURE No. 13



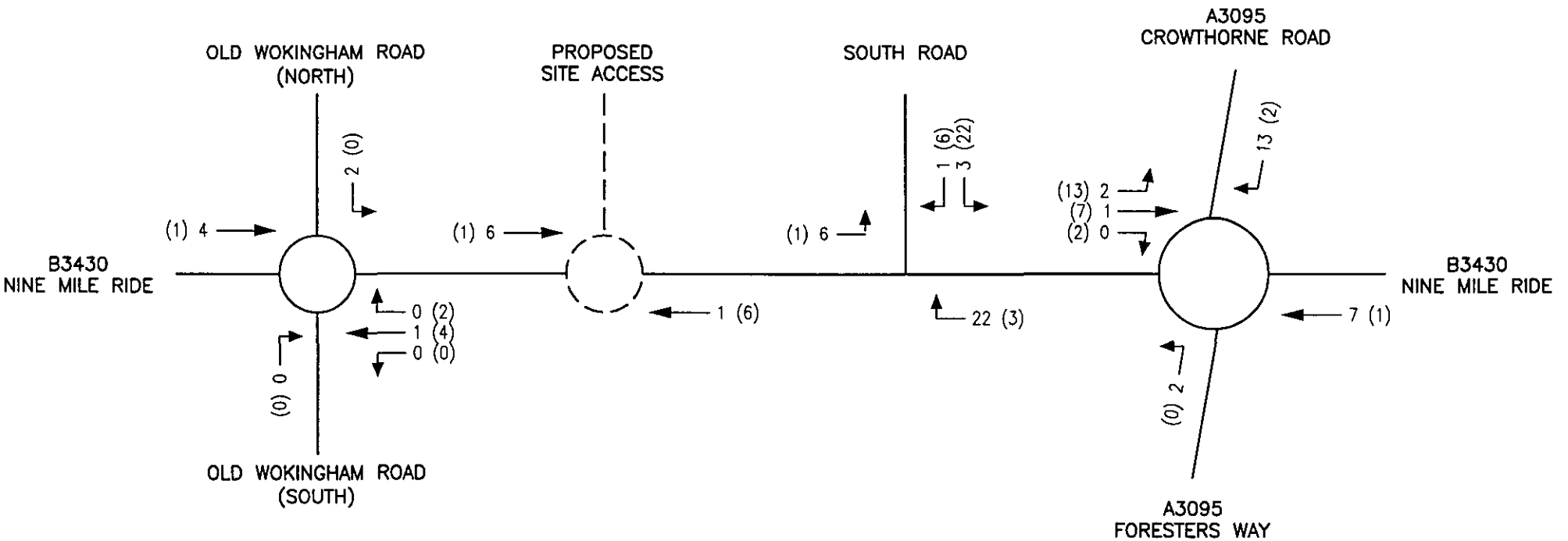
445 = AM PEAK (0800–0900)
(372) = PM PEAK (1700–1800)

ALL FLOWS IN PCU'S

WSP

The Met. Office – Beaufort Park
TRIPS GENERATED BY
MET. OFFICE DEVELOPMENT

FIGURE No. 14



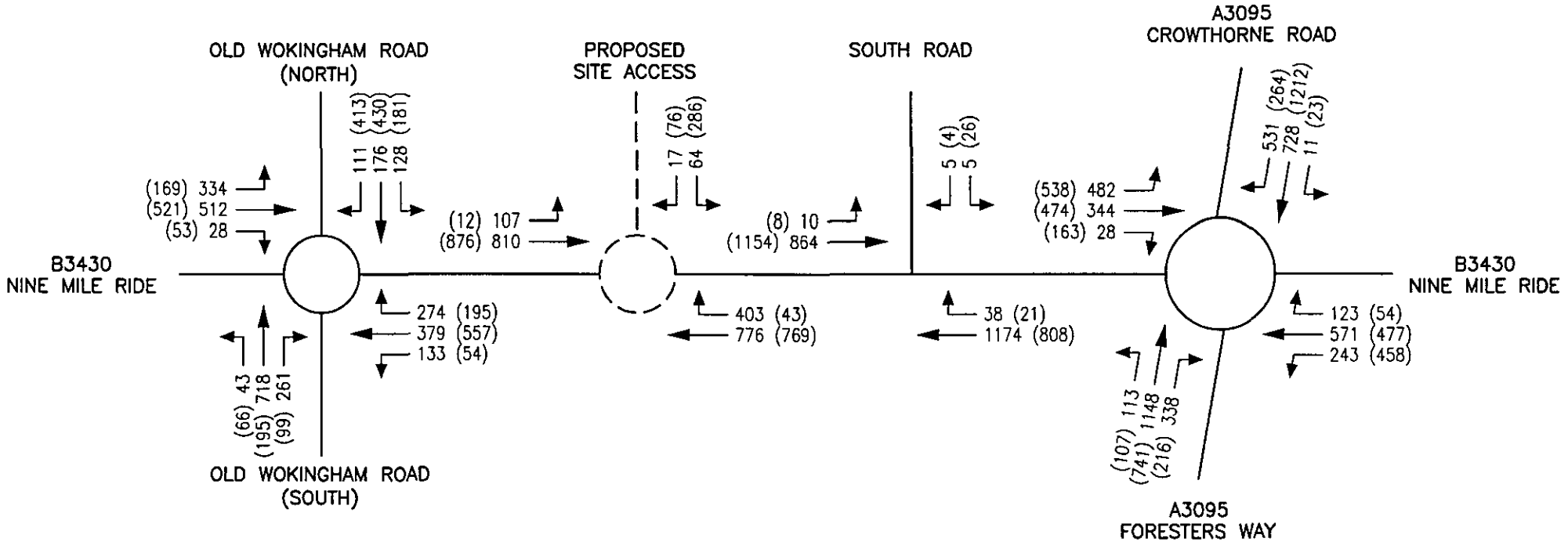
445 = AM PEAK (0800–0900)
(372) = PM PEAK (1700–1800)

ALL FLOWS IN PCU'S

WSP

The Met. Office – Beaufort Park
TRIPS GENERATED BY
EXISTING BEAUFORT PARK

FIGURE No. 15



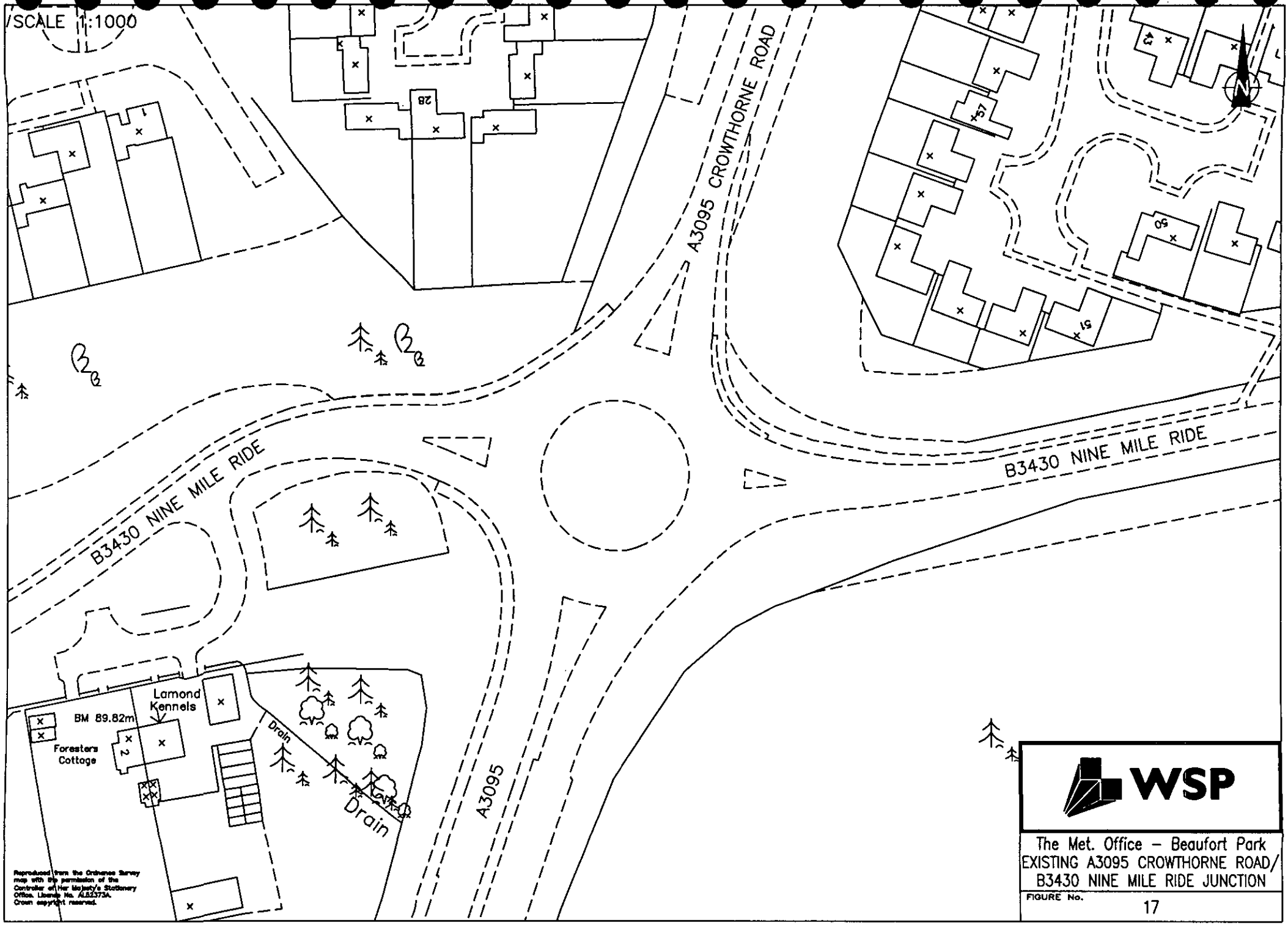
445 = AM PEAK (0800–0900)
(372) = PM PEAK (1700–1800)

ALL FLOWS IN PCU'S

WSP

The Met. Office – Beaufort Park
TOTAL TRAFFIC FLOWS
WITH DEVELOPMENT

FIGURE No. 16



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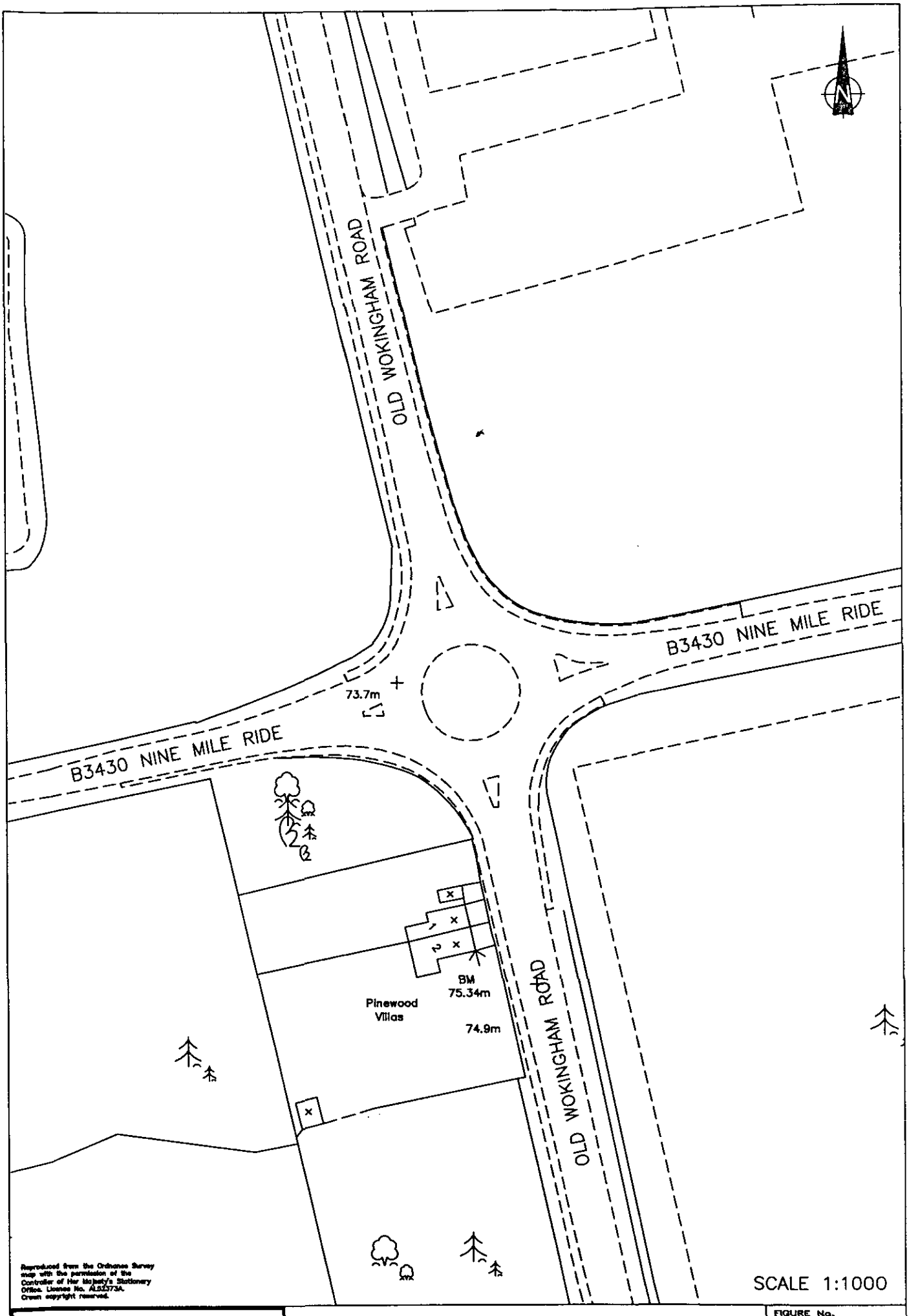
The Met. Office – Beaufort Park
EXISTING A3095 CROWTHORNE ROAD/
B3430 NINE MILE RIDE JUNCTION

FIGURE No.
17



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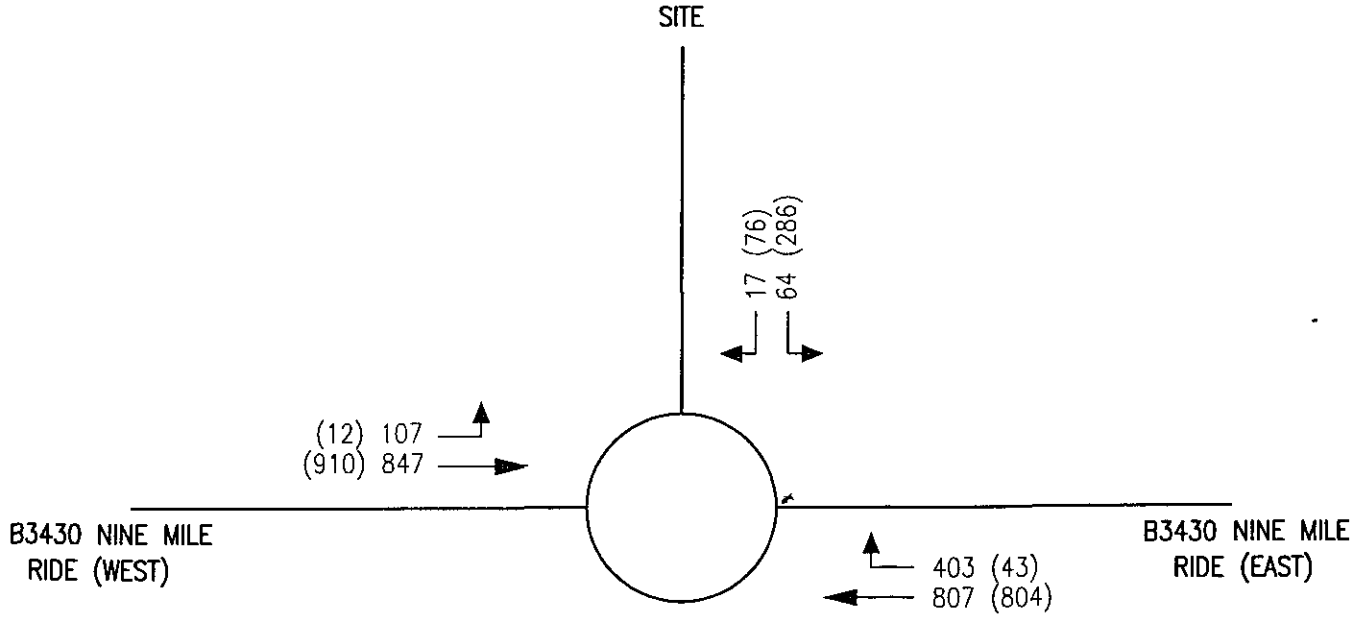
The Met. Office – Beaufort Park
EXISTING OLD WOKINGHAM ROAD/
B3430 NINE MILE RIDE JUNCTION

FIGURE No.

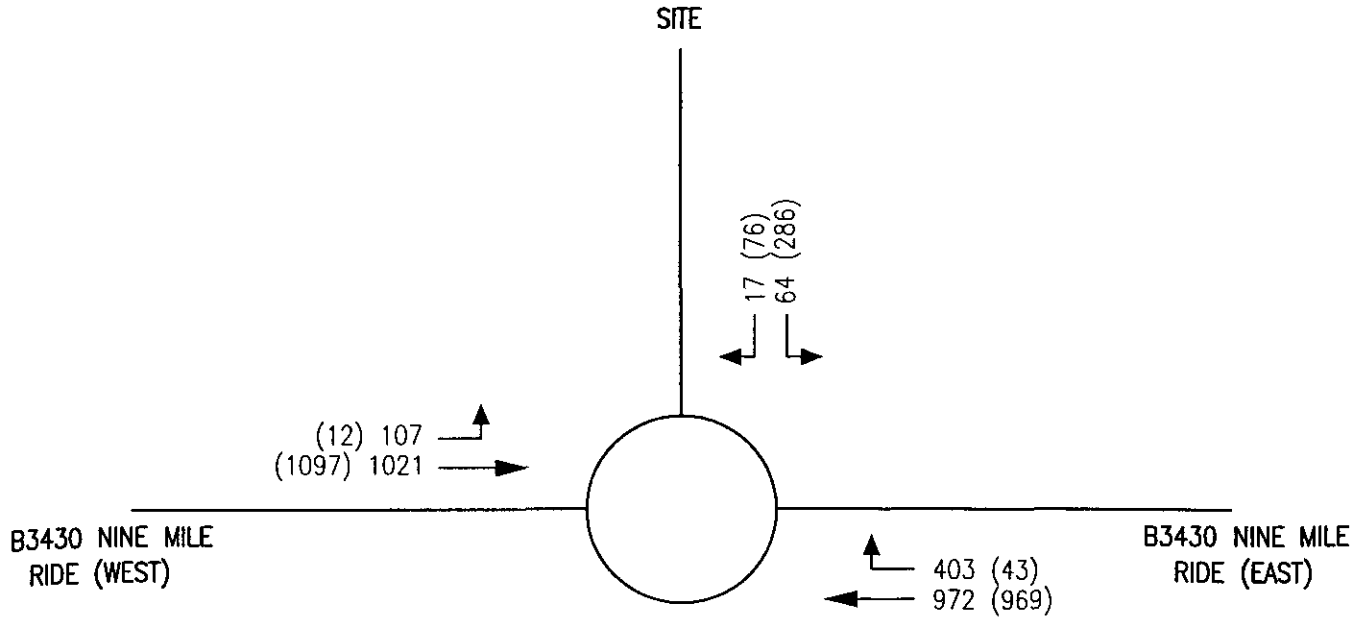
19

2003



ALL FLOWS IN PCU's
AM (0800 – 0900)
(PM) (1700 – 1800)

2018

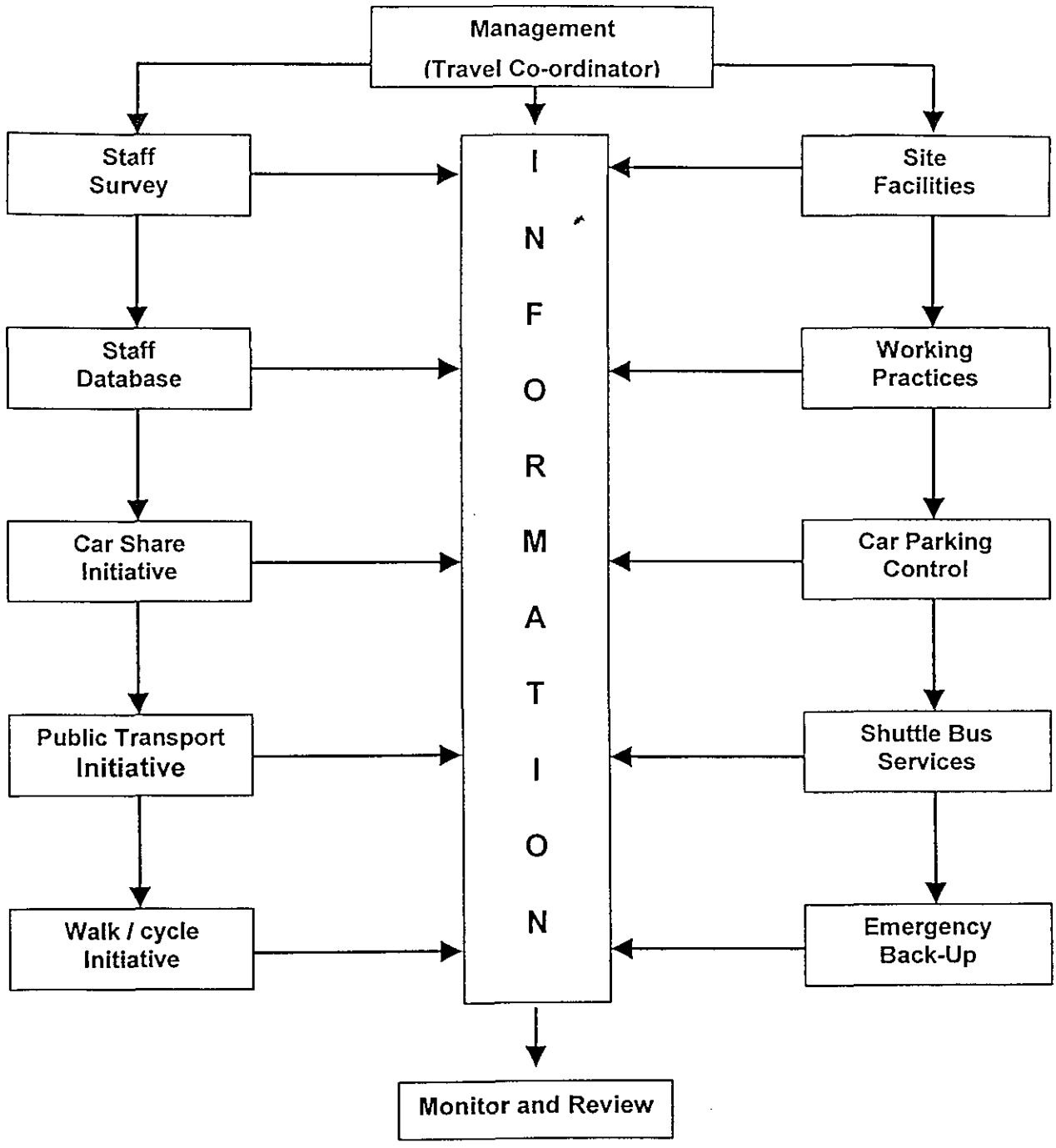


ALL FLOWS IN PCU's
AM (0800 – 0900)
(PM) (1700 – 1800)

WSP

The Met. Office – Beaufort Park
2003 & 2018 FLOWS
WITH DEVELOPMENT

FIGURE No.
20



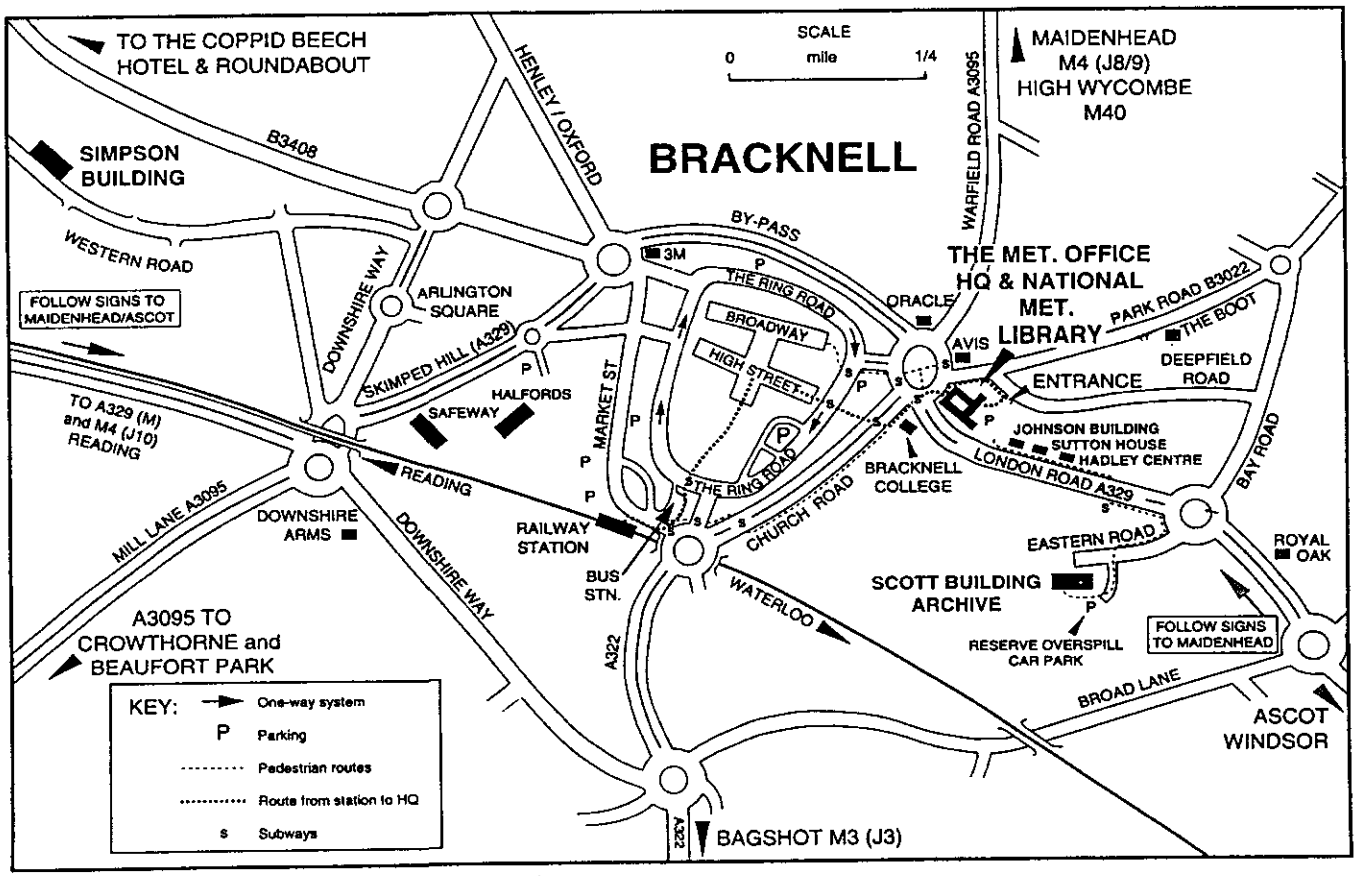
WSP

The Met. Office – Beaufort Park
IMPLEMENTATION OF A GREEN TRAVEL PLAN

FIGURE No.
21

APPENDIX A

The Met. Office - Locations in Bracknell


TO THE COPPID BEECH HOTEL & ROUNDABOUT
SCALE
0 mile 1/4
MAIDENHEAD
M4 (J8/9)
HIGH WYCOMBE
M40
BRACKNELL
HENLEY / OXFORD
WARFIELD ROAD A3095
B3408
SIMPSON BUILDING
BY-PASS
WESTERN ROAD
3M
THE MET. OFFICE HQ & NATIONAL MET. LIBRARY
FOLLOW SIGNS TO MAIDENHEAD/ASCOT
DOWNSHIRE WAY
ARLINGTON SQUARE
THE RING ROAD
ORACLE
PARK ROAD B3022
THE BOOT
BROADWAY
AVIS
SKIMPED HILL (A329)
HIGH STREET
ENTRANCE
DEEPFIELD ROAD
HALFORDS
SAFEWAY
MARKET ST
TO A329 (M) and M4 (J10) READING
JOHNSON BUILDING
SUTTON HOUSE
HADLEY CENTRE
LONDON ROAD A329
BAY ROAD
READING
MILL LANE A3095
DOWNSHIRE ARMS
DOWNSHIRE WAY
RAILWAY STATION
THE RING ROAD
BRACKNELL COLLEGE
CHURCH ROAD
EASTERN ROAD
ROYAL OAK
BUS STN.
SCOTT BUILDING ARCHIVE
WATERLOO
A322
RESERVE OVERSPILL CAR PARK
FOLLOW SIGNS TO MAIDENHEAD
A3095 TO CROWTHORNE and BEAUFORT PARK
BROAD LANE
ASCOT WINDSOR
KEY:
One-way system
P Parking
Pedestrian routes
Route from station to HQ
S Subways
A322
BAGSHOT M3 (J3)

APPENDIX B

MCC Data - B3430 Nine Mile Ride / A3095 Crowthorne Road

Bracknell - Manual Traffic Survey, Wednesday 3rd May 2000

Produced by The Paul Castle Consultancy

Junction 1: Crowthorne Road / Nine Mile Ride

Approach: Crowthorne Road

	Left to Nine Mile Ride (East)			Straight to Foresters Way			Right to Nine Mile Ride (West)		
TIME	Lights	Heavies	**TOTAL**	Lights	Heavies	**TOTAL**	Lights	Heavies	**TOTAL**
0730 - 0745	4	0	**4**	202	6	**208**	54	5	**59**
0745 - 0800	0	0	**0**	205	8	**213**	66	4	**70**
Hourly Total	**4**	**0**	**4**	**407**	**14**	**421**	**120**	**9**	**129**
0800 - 0815	0	0	**0**	206	8	**214**	61	1	**62**
0815 - 0830	2	0	**2**	183	6	**189**	76	3	**79**
0830 - 0845	4	0	**4**	166	5	**171**	76	2	**78**
0845 - 0900	5	0	**5**	135	5	**140**	74	2	**76**
Hourly Total	**11**	**0**	**11**	**690**	**24**	**714**	**287**	**8**	**295**
0900 - 0915	3	1	**4**	106	7	**113**	60	0	**60**
0915 - 0930	3	1	**4**	157	10	**167**	60	0	**60**
Hourly Total	**6**	**2**	**8**	**263**	**17**	**280**	**120**	**0**	**120**
Session Total	**21**	**2**	**23**	**1360**	**55**	**1415**	**527**	**17**	**544**
1630 - 1645	2	0	**2**	235	6	**241**	58	1	**59**
1645 - 1700	3	2	**5**	231	4	**235**	50	4	**54**
Hourly Total	**5**	**2**	**7**	**466**	**10**	**476**	**108**	**5**	**113**
1700 - 1715	3	0	**3**	269	4	**273**	56	0	**56**
1715 - 1730	7	0	**7**	295	4	**299**	53	2	**55**
1730 - 1745	6	0	**6**	313	2	**315**	62	0	**62**
1745 - 1800	7	0	**7**	299	3	**302**	61	1	**62**
Hourly Total	**23**	**0**	**23**	**1176**	**13**	**1189**	**232**	**3**	**235**
1800 - 1815	9	0	**9**	301	4	**305**	50	0	**50**
1815 - 1830	11	0	**11**	272	4	**276**	60	0	**60**
Hourly Total	**20**	**0**	**20**	**573**	**8**	**581**	**110**	**0**	**110**
Session Total	**48**	**2**	**50**	**2215**	**31**	**2246**	**450**	**8**	**458**

Bracknell - Manual Traffic Survey, Wednesday 3rd May 2000

Produced by The Paul Castle Consultancy

Junction 1: Crowthorne Road / Nine Mile Ride

Approach: Nine Mile Ride (East)

	Left to Foresters Way			Straight to Nine Mile Ride (West)			Right to Crowthorne Road		
TIME	Lights	Heavies	**TOTAL**	Lights	Heavies	**TOTAL**	Lights	Heavies	**TOTAL**
0730 - 0745	36	0	**36**	63	2	**65**	8	1	**9**
0745 - 0800	59	1	**60**	101	1	**102**	15	1	**16**
Hourly Total	**95**	**1**	**96**	**164**	**3**	**167**	**23**	**2**	**25**
0800 - 0815	58	1	**59**	104	0	**104**	18	2	**20**
0815 - 0830	60	1	**61**	113	1	**114**	22	5	**27**
0830 - 0845	64	0	**64**	118	0	**118**	33	3	**36**
0845 - 0900	54	2	**56**	117	0	**117**	27	3	**30**
Hourly Total	**236**	**4**	**240**	**452**	**1**	**453**	**100**	**13**	**113**
0900 - 0915	47	3	**50**	105	2	**107**	18	3	**21**
0915 - 0930	32	0	**32**	68	0	**68**	11	0	**11**
Hourly Total	**79**	**3**	**82**	**173**	**2**	**175**	**29**	**3**	**32**
Session Total	**410**	**8**	**418**	**789**	**6**	**795**	**152**	**18**	**170**
1630 - 1645	98	1	**99**	71	3	**74**	7	0	**7**
1645 - 1700	110	2	**112**	93	4	**97**	9	3	**12**
Hourly Total	**208**	**3**	**211**	**164**	**7**	**171**	**16**	**3**	**19**
1700 - 1715	105	0	**105**	101	5	**106**	10	1	**11**
1715 - 1730	110	1	**111**	107	3	**110**	10	3	**13**
1730 - 1745	109	1	**110**	113	3	**116**	11	0	**11**
1745 - 1800	114	1	**115**	112	0	**112**	12	0	**12**
Hourly Total	**438**	**3**	**441**	**433**	**11**	**444**	**43**	**4**	**47**
1800 - 1815	113	0	**113**	108	2	**110**	9	1	**10**
1815 - 1830	118	0	**118**	114	1	**115**	9	0	**9**
Hourly Total	**231**	**0**	**231**	**222**	**3**	**225**	**18**	**1**	**19**
Session Total	**877**	**6**	**883**	**819**	**21**	**840**	**77**	**8**	**85**

Bracknell - Manual Traffic Survey, Wednesday 3rd May 2000

Produced by The Paul Castle Consultancy

Junction 1: Crowthorne Road / Nine Mile Ride

Approach: Foresters Way

	Left to Nine Mile Ride (West)			Straight to Crowthorne Road			Right to Nine Mile Ride (East)		
TIME	Lights	Heavies	**TOTAL**	Lights	Heavies	**TOTAL**	Lights	Heavies	**TOTAL**
0730 - 0745	20	1	**21**	283	12	**295**	58	0	**58**
0745 - 0800	26	1	**27**	334	13	**347**	96	1	**97**
Hourly Total	**46**	**2**	**48**	**617**	**25**	**642**	**154**	**1**	**155**
0800 - 0815	23	0	**23**	337	9	**346**	86	1	**87**
0815 - 0830	16	1	**17**	272	7	**279**	93	1	**94**
0830 - 0845	19	0	**19**	254	7	**261**	86	1	**87**
0845 - 0900	19	0	**19**	237	9	**246**	75	0	**75**
Hourly Total	**77**	**1**	**78**	**1100**	**32**	**1132**	**340**	**3**	**343**
0900 - 0915	19	2	**21**	225	11	**236**	58	1	**59**
0915 - 0930	22	3	**25**	217	12	**229**	63	1	**64**
Hourly Total	**41**	**5**	**46**	**442**	**23**	**465**	**121**	**2**	**123**
Session Total	**164**	**8**	**172**	**2159**	**80**	**2239**	**615**	**6**	**621**
1630 - 1645	23	0	**23**	153	9	**162**	47	1	**48**
1645 - 1700	31	0	**31**	161	10	**171**	46	1	**47**
Hourly Total	**54**	**0**	**54**	**314**	**19**	**333**	**93**	**2**	**95**
1700 - 1715	25	2	**27**	176	6	**182**	58	2	**60**
1715 - 1730	27	1	**28**	185	4	**189**	47	1	**48**
1730 - 1745	22	0	**22**	176	8	**184**	52	0	**52**
1745 - 1800	24	0	**24**	158	10	**168**	52	0	**52**
Hourly Total	**98**	**3**	**101**	**695**	**28**	**723**	**209**	**3**	**212**
1800 - 1815	20	0	**20**	176	7	**183**	53	2	**55**
1815 - 1830	20	0	**20**	176	3	**179**	58	1	**59**
Hourly Total	**40**	**0**	**40**	**352**	**10**	**362**	**111**	**3**	**114**
Session Total	**192**	**3**	**195**	**1361**	**57**	**1418**	**413**	**8**	**421**

Bracknell - Manual Traffic Survey, Wednesday 3rd May 2000

Produced by The Paul Castle Consultancy

Junction 1: Crowthorne Road / Nine Mile Ride

Approach: Nine Mile Ride (West)

	Left to Crowthorne Road			Straight to Nine Mile Ride (East)			Right to Foresters Way		
TIME	Lights	Heavies	**TOTAL**	Lights	Heavies	**TOTAL**	Lights	Heavies	**TOTAL**
0730 - 0745	58	1	**59**	79	1	**80**	12	0	**12**
0745 - 0800	82	2	**84**	70	1	**71**	7	0	**7**
Hourly Total	**140**	**3**	**143**	**149**	**2**	**151**	**19**	**0**	**19**
0800 - 0815	101	5	**106**	73	1	**74**	9	0	**9**
0815 - 0830	124	0	**124**	82	2	**84**	8	0	**8**
0830 - 0845	111	0	**111**	82	2	**84**	4	0	**4**
0845 - 0900	105	3	**108**	84	2	**86**	5	0	**5**
Hourly Total	**441**	**8**	**449**	**321**	**7**	**328**	**26**	**0**	**26**
0900 - 0915	90	4	**94**	100	7	**107**	7	1	**8**
0915 - 0930	63	0	**63**	89	1	**90**	8	0	**8**
Hourly Total	**153**	**4**	**157**	**189**	**8**	**197**	**15**	**1**	**16**
Session Total	**734**	**15**	**749**	**659**	**17**	**676**	**60**	**1**	**61**
1630 - 1645	52	2	**54**	60	5	**65**	25	0	**25**
1645 - 1700	71	2	**73**	74	0	**74**	26	0	**26**
Hourly Total	**123**	**4**	**127**	**134**	**5**	**139**	**51**	**0**	**51**
1700 - 1715	85	4	**89**	86	1	**87**	33	0	**33**
1715 - 1730	81	2	**83**	98	2	**100**	44	0	**44**
1730 - 1745	97	2	**99**	100	1	**101**	31	1	**32**
1745 - 1800	98	1	**99**	102	0	**102**	26	0	**26**
Hourly Total	**361**	**9**	**370**	**386**	**4**	**390**	**134**	**1**	**135**
1800 - 1815	73	0	**73**	94	2	**96**	26	0	**26**
1815 - 1830	57	4	**61**	88	0	**88**	26	0	**26**
Hourly Total	**130**	**4**	**134**	**182**	**2**	**184**	**52**	**0**	**52**
Session Total	**614**	**17**	**631**	**702**	**11**	**713**	**237**	**1**	**238**

APPENDIX C

MCC Data - B3430 Nine Mile Ride / South Road

Bracknell - Manual Traffic Survey, Wednesday 3rd May 2000

Produced by The Paul Castle Consultancy

Junction 2: Crematorium Access / Nine Mile Ride

Approach: Nine Mile Ride (East)

	Straight to Nine Mile Ride (West)			Right to Crematorium Access		
TIME	Lights	Heavies	TOTAL	Lights	Heavies	TOTAL
0730 - 0745	134	8	**142**	3	0	**3**
0745 - 0800	177	6	**183**	16	0	**16**
Hourly Total	**311**	**14**	**325**	**19**	**0**	**19**
0800 - 0815	170	1	**171**	18	0	**18**
0815 - 0830	187	5	**192**	18	0	**18**
0830 - 0845	202	2	**204**	11	0	**11**
0845 - 0900	197	2	**199**	13	0	**13**
Hourly Total	**756**	**10**	**766**	**60**	**0**	**60**
0900 - 0915	172	4	**176**	12	0	**12**
0915 - 0930	136	3	**139**	14	0	**14**
Hourly Total	**308**	**7**	**315**	**26**	**0**	**26**
Session Total	**1375**	**31**	**1406**	**105**	**0**	**105**
1630 - 1645	145	4	**149**	7	0	**7**
1645 - 1700	164	8	**172**	10	0	**10**
Hourly Total	**309**	**12**	**321**	**17**	**0**	**17**
1700 - 1715	176	7	**183**	6	0	**6**
1715 - 1730	184	6	**190**	3	0	**3**
1730 - 1745	191	3	**194**	6	0	**6**
1745 - 1800	188	1	**189**	9	0	**9**
Hourly Total	**739**	**17**	**756**	**24**	**0**	**24**
1800 - 1815	173	2	**175**	5	0	**5**
1815 - 1830	191	1	**192**	3	0	**3**
Hourly Total	**364**	**3**	**367**	**8**	**0**	**8**
Session Total	**1412**	**32**	**1444**	**49**	**0**	**49**

Bracknell - Manual Traffic Survey, Wednesday 3rd May 2000

Produced by The Paul Castle Consultancy

Junction 2: Crematorium Access / Nine Mile Ride

Approach: Crematorium Access

	Left to Nine Mile Ride (East)			Right to Nine Mile Ride (West)		
TIME	Lights	Heavies	**TOTAL**	Lights	Heavies	**TOTAL**
0730 - 0745	0	0	**0**	0	0	**0**
0745 - 0800	1	0	**1**	1	0	**1**
Hourly Total	**1**	**0**	**1**	**1**	**0**	**1**
0800 - 0815	3	0	**3**	1	0	**1**
0815 - 0830	1	0	**1**	0	1	**1**
0830 - 0845	1	0	**1**	0	0	**0**
0845 - 0900	3	0	**3**	3	0	**3**
Hourly Total	**8**	**0**	**8**	**4**	**1**	**5**
0900 - 0915	4	0	**4**	0	0	**0**
0915 - 0930	8	0	**8**	1	0	**1**
Hourly Total	**12**	**0**	**12**	**1**	**0**	**1**
Session Total	**21**	**0**	**21**	**6**	**1**	**7**
1630 - 1645	15	0	**15**	1	0	**1**
1645 - 1700	10	0	**10**	2	0	**2**
Hourly Total	**25**	**0**	**25**	**3**	**0**	**3**
1700 - 1715	15	0	**15**	5	0	**5**
1715 - 1730	14	0	**14**	3	0	**3**
1730 - 1745	12	0	**12**	0	0	**0**
1745 - 1800	7	0	**7**	2	0	**2**
Hourly Total	**48**	**0**	**48**	**10**	**0**	**10**
1800 - 1815	9	0	**9**	2	0	**2**
1815 - 1830	3	0	**3**	1	0	**1**
Hourly Total	**12**	**0**	**12**	**3**	**0**	**3**
Session Total	**85**	**0**	**85**	**16**	**0**	**16**

Bracknell - Manual Traffic Survey, Wednesday 3rd May 2000

Produced by The Paul Castle Consultancy

Junction 2: Crematorium Access / Nine Mile Ride

Approach: Nine Mile Ride (West)

	Left to Crematorium Access			Straight to Nine Mile Ride (East)		
TIME	Lights	Heavies	**TOTAL**	Lights	Heavies	**TOTAL**
0730 - 0745	4	0	**4**	149	2	**151**
0745 - 0800	3	0	**3**	158	3	**161**
Hourly Total	**7**	**0**	**7**	**307**	**5**	**312**
0800 - 0815	4	0	**4**	180	6	**186**
0815 - 0830	3	1	**4**	213	2	**215**
0830 - 0845	4	0	**4**	196	2	**198**
0845 - 0900	3	0	**3**	188	5	**193**
Hourly Total	**14**	**1**	**15**	**777**	**15**	**792**
0900 - 0915	2	0	**2**	194	12	**206**
0915 - 0930	1	0	**1**	153	1	**154**
Hourly Total	**3**	**0**	**3**	**347**	**13**	**360**
Session Total	**24**	**1**	**25**	**1431**	**33**	**1464**
1630 - 1645	1	0	**1**	122	7	**129**
1645 - 1700	2	0	**2**	151	2	**153**
Hourly Total	**3**	**0**	**3**	**273**	**9**	**282**
1700 - 1715	2	0	**2**	194	5	**199**
1715 - 1730	2	0	**2**	228	4	**232**
1730 - 1745	3	0	**3**	206	4	**210**
1745 - 1800	2	0	**2**	219	1	**220**
Hourly Total	**9**	**0**	**9**	**847**	**14**	**861**
1800 - 1815	3	0	**3**	194	2	**196**
1815 - 1830	3	0	**3**	158	4	**162**
Hourly Total	**6**	**0**	**6**	**352**	**6**	**358**
Session Total	**18**	**0**	**18**	**1472**	**29**	**1501**

APPENDIX D

MCC Data - B3430 Nine Mile Ride / Old Wokingham Road

Bracknell - Manual Traffic Survey, Tuesday 16th May 2000

Produced by The Paul Castle Consultancy

Junction: Old Wokingham Road / Nine Mile Ride

Approach: Nine Mile Ride (East)

	Left to Old Wokingham Road (South)			Straight to Nine Mile Ride (West)			Right to Old Wokingham Road (North)		
TIME	Lights	Heavies	**TOTAL**	Lights	Heavies	**TOTAL**	Lights	Heavies	**TOTAL**
0730 - 0745	16	0	**16**	86	1	**87**	40	0	**40**
0745 - 0800	20	0	**20**	93	0	**93**	55	0	**55**
Hourly Total	**36**	**0**	**36**	**179**	**1**	**180**	**95**	**0**	**95**
0800 - 0815	33	1	**34**	95	0	**95**	75	0	**75**
0815 - 0830	25	1	**26**	96	0	**96**	70	0	**70**
0830 - 0845	36	0	**36**	86	0	**86**	63	0	**63**
0845 - 0900	35	0	**35**	91	1	**92**	60	0	**60**
Hourly Total	**129**	**2**	**131**	**368**	**1**	**369**	**268**	**0**	**268**
0900 - 0915	31	0	**31**	73	1	**74**	53	1	**54**
0915 - 0930	24	0	**24**	71	0	**71**	34	0	**34**
Hourly Total	**55**	**0**	**55**	**144**	**1**	**145**	**87**	**1**	**88**
Session Total	**220**	**2**	**222**	**691**	**3**	**694**	**450**	**1**	**451**
1630 - 1645	16	0	**16**	84	2	**86**	37	0	**37**
1645 - 1700	27	0	**27**	101	1	**102**	37	0	**37**
Hourly Total	**43**	**0**	**43**	**185**	**3**	**188**	**74**	**0**	**74**
1700 - 1715	31	0	**31**	92	0	**92**	33	0	**33**
1715 - 1730	26	0	**26**	94	0	**94**	32	0	**32**
1730 - 1745	39	0	**39**	96	0	**96**	33	0	**33**
1745 - 1800	28	0	**28**	80	0	**80**	31	0	**31**
Hourly Total	**124**	**0**	**124**	**362**	**0**	**362**	**129**	**0**	**129**
1800 - 1815	31	0	**31**	83	0	**83**	32	0	**32**
1815 - 1830	37	0	**37**	92	0	**92**	38	0	**38**
Hourly Total	**68**	**0**	**68**	**175**	**0**	**175**	**70**	**0**	**70**
Session Total	**235**	**0**	**235**	**722**	**3**	**725**	**273**	**0**	**273**

Bracknell - Manual Traffic Survey, Tuesday 16th May 2000

Produced by The Paul Castle Consultancy

Junction: Old Wokingham Road / Nine Mile Ride

Approach: Old Wokingham Road (North)

	Left to Nine Mile Ride (East)			Straight to Old Wokingham Road (South)			Right to Nine Mile Ride (West)		
TIME	Lights	Heavies	**TOTAL**	Lights	Heavies	**TOTAL**	Lights	Heavies	**TOTAL**
0730 - 0745	22	0	**22**	37	1	**38**	13	0	**13**
0745 - 0800	26	2	**28**	35	1	**36**	16	0	**16**
Hourly Total	**48**	**2**	**50**	**72**	**2**	**74**	**29**	**0**	**29**
0800 - 0815	24	0	**24**	43	1	**44**	21	1	**22**
0815 - 0830	23	1	**24**	51	1	**52**	25	0	**25**
0830 - 0845	22	0	**22**	40	0	**40**	32	0	**32**
0845 - 0900	23	0	**23**	40	0	**40**	31	0	**31**
Hourly Total	**92**	**1**	**93**	**174**	**2**	**176**	**109**	**1**	**110**
0900 - 0915	31	0	**31**	40	1	**41**	33	0	**33**
0915 - 0930	29	2	**31**	30	1	**31**	25	2	**27**
Hourly Total	**60**	**2**	**62**	**70**	**2**	**72**	**58**	**2**	**60**
Session Total	**200**	**5**	**205**	**316**	**6**	**322**	**196**	**3**	**199**
1630 - 1645	35	0	**35**	78	1	**79**	47	0	**47**
1645 - 1700	37	2	**39**	83	1	**84**	69	1	**70**
Hourly Total	**72**	**2**	**74**	**161**	**2**	**163**	**116**	**1**	**117**
1700 - 1715	39	0	**39**	110	0	**110**	67	0	**67**
1715 - 1730	50	0	**50**	129	0	**129**	68	0	**68**
1730 - 1745	54	0	**54**	146	0	**146**	84	1	**85**
1745 - 1800	53	0	**53**	132	3	**135**	79	0	**79**
Hourly Total	**196**	**0**	**196**	**517**	**3**	**520**	**298**	**1**	**299**
1800 - 1815	51	1	**52**	144	0	**144**	87	0	**87**
1815 - 1830	45	1	**46**	114	0	**114**	66	0	**66**
Hourly Total	**96**	**2**	**98**	**258**	**0**	**258**	**153**	**0**	**153**
Session Total	**364**	**4**	**368**	**936**	**5**	**941**	**567**	**2**	**569**

Bracknell - Manual Traffic Survey, Tuesday 16th May 2000

Produced by The Paul Castle Consultancy

Junction: Old Wokingham Road / Nine Mile Ride

Approach: Old Wokingham Road (South)

	Left to Nine Mile Ride (West)			Straight to Old Wokingham Road (North)			Right to Nine Mile Ride (East)		
TIME	Lights	Heavies	**TOTAL**	Lights	Heavies	**TOTAL**	Lights	Heavies	**TOTAL**
0730 - 0745	7	0	**7**	187	3	**190**	42	1	**43**
0745 - 0800	10	0	**10**	206	2	**208**	61	3	**64**
Hourly Total	**17**	**0**	**17**	**393**	**5**	**398**	**103**	**4**	**107**
0800 - 0815	13	1	**14**	192	2	**194**	71	1	**72**
0815 - 0830	8	0	**8**	182	2	**184**	68	1	**69**
0830 - 0845	9	1	**10**	179	2	**181**	59	1	**60**
0845 - 0900	10	0	**10**	144	4	**148**	52	0	**52**
Hourly Total	**40**	**2**	**42**	**697**	**10**	**707**	**250**	**3**	**253**
0900 - 0915	10	0	**10**	109	0	**109**	37	0	**37**
0915 - 0930	10	0	**10**	75	3	**78**	29	1	**30**
Hourly Total	**20**	**0**	**20**	**184**	**3**	**187**	**66**	**1**	**67**
Session Total	**77**	**2**	**79**	**1274**	**18**	**1292**	**419**	**8**	**427**
1630 - 1645	10	1	**11**	36	0	**36**	24	2	**26**
1645 - 1700	10	0	**10**	51	0	**51**	30	1	**31**
Hourly Total	**20**	**1**	**21**	**87**	**0**	**87**	**54**	**3**	**57**
1700 - 1715	16	0	**16**	53	0	**53**	40	0	**40**
1715 - 1730	16	0	**16**	42	0	**42**	32	0	**32**
1730 - 1745	13	0	**13**	41	0	**41**	33	0	**33**
1745 - 1800	12	0	**12**	49	1	**50**	25	1	**26**
Hourly Total	**57**	**0**	**57**	**185**	**1**	**186**	**130**	**1**	**131**
1800 - 1815	11	0	**11**	43	0	**43**	20	0	**20**
1815 - 1830	11	0	**11**	44	0	**44**	13	4	**17**
Hourly Total	**22**	**0**	**22**	**87**	**0**	**87**	**33**	**4**	**37**
Session Total	**99**	**1**	**100**	**359**	**1**	**360**	**217**	**8**	**225**

Bracknell - Manual Traffic Survey, Tuesday 16th May 2000

Produced by The Paul Castle Consultancy

Junction: Old Wokingham Road / Nine Mile Ride

Approach: Nine Mile Ride (West)

	Left to Old Wokingham Road (North)			Straight to Nine Mile Ride (East)			Right to Old Wokingham Road (South)		
TIME	Lights	Heavies	**TOTAL**	Lights	Heavies	**TOTAL**	Lights	Heavies	**TOTAL**
0730 - 0745	77	0	**77**	117	1	**118**	3	0	**3**
0745 - 0800	85	1	**86**	112	5	**117**	4	1	**5**
Hourly Total	**162**	**1**	**163**	**229**	**6**	**235**	**7**	**1**	**8**
0800 - 0815	76	2	**78**	98	3	**101**	4	1	**5**
0815 - 0830	84	1	**85**	116	4	**120**	7	0	**7**
0830 - 0845	85	2	**87**	113	4	**117**	7	0	**7**
0845 - 0900	82	3	**85**	107	4	**111**	8	0	**8**
Hourly Total	**327**	**8**	**335**	**434**	**15**	**449**	**26**	**1**	**27**
0900 - 0915	78	1	**79**	97	6	**103**	9	3	**12**
0915 - 0930	63	0	**63**	92	3	**95**	7	3	**10**
Hourly Total	**141**	**1**	**142**	**189**	**9**	**198**	**16**	**6**	**22**
Session Total	**630**	**10**	**640**	**852**	**30**	**882**	**49**	**8**	**57**
1630 - 1645	34	1	**35**	114	0	**114**	7	0	**7**
1645 - 1700	38	4	**42**	111	5	**116**	9	0	**9**
Hourly Total	**72**	**5**	**77**	**225**	**5**	**230**	**16**	**0**	**16**
1700 - 1715	30	4	**34**	118	9	**127**	14	1	**15**
1715 - 1730	32	1	**33**	109	2	**111**	12	0	**12**
1730 - 1745	30	1	**31**	118	1	**119**	13	0	**13**
1745 - 1800	21	0	**21**	133	3	**136**	11	0	**11**
Hourly Total	**113**	**6**	**119**	**478**	**15**	**493**	**50**	**1**	**51**
1800 - 1815	26	0	**26**	126	1	**127**	9	0	**9**
1815 - 1830	32	0	**32**	108	3	**111**	11	0	**11**
Hourly Total	**58**	**0**	**58**	**234**	**4**	**238**	**20**	**0**	**20**
Session Total	**243**	**11**	**254**	**937**	**24**	**961**	**86**	**1**	**87**

Bracknell - Manual Traffic Survey, Monday 22nd May 2000

Produced by The Paul Castle Consultancy

Junction: Old Wokingham Road / Nine Mile Ride

Approach: Nine Mile Ride (West)

	Left to Old Wokingham Road (North)			E/B to Nine Mile Ride (East)			Right to Old Wokingham Road (South)		
TIME	LIGHT	HEAVY	**TOTAL**	LIGHT	HEAVY	**TOTAL**	LIGHT	HEAVY	**TOTAL**
1630 - 1645	36	0	**36**	89	0	**89**	6	0	**6**
1645 - 1700	38	1	**39**	97	3	**100**	8	0	**8**
Hourly Total	**74**	**1**	**75**	**186**	**3**	**189**	**14**	**0**	**14**
1700 - 1715	39	0	**39**	115	0	**115**	11	0	**11**
1715 - 1730	43	2	**45**	145	2	**147**	14	0	**14**
1730 - 1745	41	1	**42**	132	0	**132**	13	0	**13**
1745 - 1800	42	0	**42**	121	1	**122**	15	0	**15**
Hourly Total	**165**	**3**	**168**	**513**	**3**	**516**	**53**	**0**	**53**
1800 - 1815	29	1	**30**	125	0	**125**	12	0	**12**
1815 - 1830	18	0	**18**	107	1	**108**	10	0	**10**
Hourly Total	**47**	**1**	**48**	**232**	**1**	**233**	**22**	**0**	**22**
TOTAL	**286**	**5**	**291**	**931**	**7**	**938**	**89**	**0**	**89**

Bracknell - Manual Traffic Survey, Monday 22nd May 2000

Produced by The Paul Castle Consultancy

Junction: Old Wokingham Road / Nine Mile Ride

Approach: Old Wokingham Road (South)

	Left to Nine Mile Ride (West)			N/B to Old Wokingham Road (North)			Right to Nine Mile Ride (East)		
TIME	LIGHT	HEAVY	**TOTAL**	LIGHT	HEAVY	**TOTAL**	LIGHT	HEAVY	**TOTAL**
1630 - 1645	8	0	**8**	47	0	**47**	16	2	**18**
1645 - 1700	11	0	**11**	44	0	**44**	19	1	**20**
Hourly Total	**19**	**0**	**19**	**91**	**0**	**91**	**35**	**3**	**38**
1700 - 1715	16	0	**16**	48	0	**48**	23	0	**23**
1715 - 1730	15	0	**15**	47	0	**47**	21	1	**22**
1730 - 1745	20	0	**20**	54	0	**54**	24	1	**25**
1745 - 1800	15	0	**15**	46	0	**46**	27	0	**27**
Hourly Total	**66**	**0**	**66**	**195**	**0**	**195**	**95**	**2**	**97**
1800 - 1815	10	0	**10**	33	0	**33**	32	1	**33**
1815 - 1830	12	0	**12**	35	0	**35**	33	1	**34**
Hourly Total	**22**	**0**	**22**	**68**	**0**	**68**	**65**	**2**	**67**
TOTAL	**107**	**0**	**107**	**354**	**0**	**354**	**195**	**7**	**202**

Bracknell - Manual Traffic Survey, Monday 22nd May 2000

Produced by The Paul Castle Consultancy

Junction: Old Wokingham Road / Nine Mile Ride

Approach: Nine Mile Ride (East)

	Left to Old Wokingham Road (South)			W/B to Nine Mile Ride (West)			Right to Old Wokingham Road (North)		
TIME	LIGHT	HEAVY	**TOTAL**	LIGHT	HEAVY	**TOTAL**	LIGHT	HEAVY	**TOTAL**
1630 - 1645	11	0	**11**	99	2	**101**	35	0	**35**
1645 - 1700	12	1	**13**	103	5	**108**	41	1	**42**
Hourly Total	**23**	**1**	**24**	**202**	**7**	**209**	**76**	**1**	**77**
1700 - 1715	9	0	**9**	105	3	**108**	43	0	**43**
1715 - 1730	13	0	**13**	114	6	**120**	41	0	**41**
1730 - 1745	11	0	**11**	124	1	**125**	37	1	**38**
1745 - 1800	14	1	**15**	141	2	**143**	47	0	**47**
Hourly Total	**47**	**1**	**48**	**484**	**12**	**496**	**168**	**1**	**169**
1800 - 1815	16	1	**17**	135	2	**137**	46	1	**47**
1815 - 1830	18	0	**18**	125	5	**130**	51	0	**51**
Hourly Total	**34**	**1**	**35**	**260**	**7**	**267**	**97**	**1**	**98**
TOTAL	**104**	**3**	**107**	**946**	**26**	**972**	**341**	**3**	**344**

Bracknell - Manual Traffic Survey, Monday 22nd May 2000

Produced by The Paul Castle Consultancy

Junction: Old Wokingham Road / Nine Mile Ride

Approach: Old Wokingham Road (North)

	Left to Nine Mile Ride (East)			S/B to Old Wokingham Road (South)			Right to Nine Mile Ride (West)		
TIME	LIGHT	HEAVY	**TOTAL**	LIGHT	HEAVY	**TOTAL**	LIGHT	HEAVY	**TOTAL**
1630 - 1645	36	1	**37**	66	1	**67**	55	1	**56**
1645 - 1700	38	1	**39**	73	0	**73**	66	0	**66**
Hourly Total	**74**	**2**	**76**	**139**	**1**	**140**	**121**	**1**	**122**
1700 - 1715	35	1	**36**	81	0	**81**	79	1	**80**
1715 - 1730	44	0	**44**	101	1	**102**	92	0	**92**
1730 - 1745	43	1	**44**	125	0	**125**	112	1	**113**
1745 - 1800	49	1	**50**	119	1	**120**	125	0	**125**
Hourly Total	**171**	**3**	**174**	**426**	**2**	**428**	**408**	**2**	**410**
1800 - 1815	51	0	**51**	112	1	**113**	134	1	**135**
1815 - 1830	55	1	**56**	115	0	**115**	129	1	**130**
Hourly Total	**106**	**1**	**107**	**227**	**1**	**228**	**263**	**2**	**265**
TOTAL	**351**	**6**	**357**	**792**	**4**	**796**	**792**	**5**	**797**

APPENDIX E

Indicative Site Layout

APPENDIX F

Questionnaire Survey Form

Met Office Staff Questionnaire

As part of our relocation proposals, there is a need to obtain information on how staff currently travel to work. This information meets the basic requirements of local authority planners. It will also be used to help with the planning and design of the new site to accommodate staff travel needs. Although travel arrangements may change, e.g. increased reliance on non-car travel this information will form the baseline for future work. I would therefore be grateful if you could spare a few minutes to complete the following questionnaire. The information should relate to a typical working week excluding Mondays, Fridays, Public Holidays and Weekends.

1. What is the postcode of your home address ? .....

2. Do you work :
   (please tick)
   a. Shifts ☐
   b. Part Time ☐
   c. Full time ☐

3. What time do you normally arrive at work ? (nearest half hour).....

4. What time do you normally leave work ? (nearest half hour).....

5. What is your normal means of transport to work (main part of journey) ?
   a. Car driver ☐
   b. Car passenger with another staff member ☐
   c. Car passenger with non-staff member ☐
   d. Motorbike ☐
   e. Bicycle ☐
   f. Pedestrian ☐
   g. Bus ☐
   h. Train ☐

   i. Other (please state which) .....

6. What is your current location?
   a. Main Building - London Road ☐ b. Johnson House ☐ c. Sutton House ☐
   e. Powell Duffryn ☐ f. Scott Building ☐ g. Simpson Building ☐
   h. Beaufort Park ☐ i. Shinfield Park ☐ j. Other (please specify).....
   k. Hadley Centre ☐

Thank you

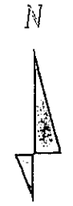
Graham Cooper – Relocation Team
Room PD13

APPENDIX G

Staff Home Locations from Questionnaire Survey


High Wycombe
Slough
Reading
Basingstoke
Guildford
N
Number of Met Office Staff
within each Postal Sector
100 to 200
50 to 100
25 to 50
5 to 25
1 to 5

Number of Staff with homes in each postal sector





Number of Met Office staff
by Postal Sector

- 100 to 200
- 50 to 100
- 25 to 50
- 5 to 25
- 1 to 5

Number within each sector denotes actual number of staff whose address is within the sector

APPENDIX H

London Road Car Park Survey

London Road Car Park Survey
4 April 2000

Time Beginning	IN	OUT
0730	69	3
0745	77	17
0800	40	20
0815	17	10
0830	19	14
0845	15	11
0900	21	12
0915	20	11
1630	7	47
1645	6	31
1700	2	41
1715	6	23
1730	6	24
1745	3	10
1800	3	11
1815	2	6

APPENDIX I

Staff Home Locations from Staff Database

APPENDIX J

A3095 /B3430 Nine Mile Ride Junction

ARCADY – Existing Situation

TRANSPORT RESEARCH LABORATORY

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CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

Visual ARCADY 4 ANALYSIS PROGRAM
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Run with file:- "w:\Met Office\Bracknell\DESIGN\ANALYSIS\ARCADY\A3095_B3430\a3095exam.vai" at 17:41:05 on Monday,

ROUNDABOUT CAPACITY AND DELAY

RUN TITLE

A3095/B3430 Junction - Do Minimum - AM Peak

INPUT DATA

ARM A - A3095 Crowthorne Road
ARM B - B3430 Nine Mile Ride (East)
ARM C - A3095 Foresters Way
ARM D - B3430 Nine Mile Ride (West)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/
ARM A	3.65	9.30	18.50	20.00	56.00	25.0	0.639	33.433
ARM B	3.15	9.50	14.50	37.00	56.00	17.0	0.629	31.239
ARM C	8.90	10.70	6.10	25.00	56.00	23.5	0.835	51.225
ARM D	3.05	8.90	24.00	45.00	56.00	17.0	0.663	34.312

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 07.45 AND ENDS 09.15
LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	12.98	19.46	12.98
ARM B	15.00	45.00	75.00	10.27	15.41	10.27
ARM C	15.00	45.00	75.00	19.56	29.34	19.56
ARM D	15.00	45.00	75.00	9.91	14.87	9.91

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
07.45 - 09.15					
	ARM A	0.000	0.011	0.701	0.288
		0.0	11.0	728.0	299.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.150	0.000	0.296	0.555
		123.0	0.0	243.0	456.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.734	0.216	0.000	0.050
		1148.0	338.0	0.0	79.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.561	0.411	0.028	0.000
		445.0	326.0	22.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
07.45-08.00								
ARM A	12.98	27.98	0.464		0.0	0.9	12.5	
ARM B	10.27	23.03	0.446		0.0	0.8	11.6	
ARM C	19.56	42.10	0.465		0.0	0.9	12.7	
ARM D	9.91	21.01	0.472		0.0	0.9	12.7	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
08.00-08.15								
ARM A	15.49	26.91	0.576		0.9	1.3	19.4	
ARM B	12.27	21.41	0.573		0.8	1.3	19.0	
ARM C	23.36	40.31	0.580		0.9	1.4	20.0	
ARM D	11.84	18.41	0.643		0.9	1.8	24.8	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
08.15-08.30								
ARM A	18.98	25.62	0.741		1.3	2.8	38.5	
ARM B	15.03	19.25	0.781		1.3	3.3	45.1	
ARM C	28.61	37.92	0.754		1.4	3.0	42.2	
ARM D	14.50	14.88	0.974		1.8	11.9	125.0	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
08.30-08.45								
ARM A	18.98	25.50	0.744		2.8	2.8	42.1	
ARM B	15.03	19.19	0.783		3.3	3.5	51.3	
ARM C	28.61	37.83	0.756		3.0	3.1	45.4	
ARM D	14.50	14.80	0.979		11.9	16.2	212.8	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
08.45-09.00								
ARM A	15.49	26.61	0.582		2.8	1.4	22.1	
ARM B	12.27	21.32	0.576		3.5	1.4	22.0	
ARM C	23.36	40.17	0.581		3.1	1.4	21.8	
ARM D	11.84	18.30	0.647		16.2	1.9	48.7	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
09.00-09.15								
ARM A	12.98	27.93	0.465		1.4	0.9	13.5	
ARM B	10.27	22.97	0.447		1.4	0.8	12.6	
ARM C	19.56	42.03	0.465		1.4	0.9	13.4	
ARM D	9.91	20.94	0.473		1.9	0.9	14.2	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.9	*
08.15	1.3	*
08.30	2.8	***
08.45	2.8	***
09.00	1.4	*
09.15	0.9	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.8	*
08.15	1.3	*
08.30	3.3	***
08.45	3.5	***
09.00	1.4	*
09.15	0.8	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.9	*
08.15	1.4	*
08.30	3.0	***
08.45	3.1	***
09.00	1.4	*
09.15	0.9	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.9	*
08.15	1.8	**
08.30	11.9	**********
08.45	16.2	**********
09.00	1.9	**
09.15	0.9	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
A	1423.3	948.9	148.1	0.10	148.2	0.10
B	1127.1	751.4	161.7	0.14	161.7	0.14
C	2145.9	1430.6	155.4	0.07	155.4	0.07
D	1087.4	724.9	438.2	0.40	438.2	0.40
ALL	5783.8	3855.8	903.4	0.16	903.5	0.16

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

[Printed at 17:41:13 on 05-22-2000]

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CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

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ROUNDABOUT CAPACITY AND DELAY

RUN TITLE

A3095/B3430 Junction - Do Minimum - PM Peak

INPUT DATA

ARM A - A3095 Crowthorne Road
ARM B - B3430 Nine Mile Ride (East)
ARM C - A3095 Foresters Way
ARM D - B3430 Nine Mile Ride (West)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/
ARM A	3.65	9.30	18.50	20.00	56.00	25.0	0.639	33.433
ARM B	3.15	9.50	14.50	37.00	56.00	17.0	0.629	31.239
ARM C	8.90	10.70	6.10	25.00	56.00	23.5	0.835	51.225
ARM D	3.05	8.90	24.00	45.00	56.00	17.0	0.663	34.312

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 16.45 AND ENDS 18.15
LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	18.44	27.66	18.44
ARM B	15.00	45.00	75.00	12.21	18.32	12.21
ARM C	15.00	45.00	75.00	13.25	19.88	13.25
ARM D	15.00	45.00	75.00	11.39	17.08	11.39

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15					
	ARM A	0.000	0.016	0.822	0.163
		0.0	23.0	1212.0	240.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.055	0.000	0.469	0.476
		54.0	0.0	458.0	465.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.699	0.204	0.000	0.097
		741.0	216.0	0.0	103.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.414	0.432	0.154	0.000
		377.0	394.0	140.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
16.45-17.00								
ARM A	18.44	27.47	0.671		0.0	2.0	28.2	
ARM B	12.21	18.81	0.649		0.0	1.8	25.1	
ARM C	13.25	43.37	0.305		0.0	0.4	6.5	
ARM D	11.39	25.95	0.439		0.0	0.8	11.3	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
17.00-17.15								
ARM A	22.02	26.29	0.837		2.0	4.7	63.3	
ARM B	14.58	16.41	0.889		1.8	6.3	77.5	
ARM C	15.82	41.92	0.377		0.4	0.6	8.9	
ARM D	13.60	24.32	0.559		0.8	1.3	18.1	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
17.15-17.30								
ARM A	26.96	24.72	1.091		4.7	44.0	383.9	
ARM B	17.86	14.56	1.227		6.3	57.5	485.3	
ARM C	19.38	41.50	0.467		0.6	0.9	12.8	
ARM D	16.65	22.19	0.751		1.3	2.9	39.8	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
17.30-17.45								
ARM A	26.96	24.68	1.093		44.0	79.2	924.9	
ARM B	17.86	14.39	1.241		57.5	109.7	1254.5	
ARM C	19.38	41.50	0.467		0.9	0.9	13.1	
ARM D	16.65	22.18	0.751		2.9	2.9	43.8	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
17.45-18.00								
ARM A	22.02	26.24	0.839		79.2	20.8	749.9	
ARM B	14.58	13.87	1.051		109.7	120.6	1727.6	
ARM C	15.82	41.55	0.381		0.9	0.6	9.4	
ARM D	13.60	24.32	0.559		2.9	1.3	20.2	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
18.00-18.15								
ARM A	18.44	27.43	0.672		20.8	2.1	55.5	
ARM B	12.21	17.95	0.680		120.6	36.8	1180.3	
ARM C	13.25	40.65	0.326		0.6	0.5	7.4	
ARM D	11.39	25.72	0.443		1.3	0.8	12.3	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	2.0	**
17.15	4.7	*****
17.30	44.0	**********
17.45	79.2	**********
18.00	20.8	**********
18.15	2.1	**

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.8	**
17.15	6.3	******
17.30	57.5	**********
17.45	109.7	**********
18.00	120.6	**********
18.15	36.8	**********

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.6	*
17.30	0.9	*
17.45	0.9	*
18.00	0.6	*
18.15	0.5	

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.8	*
17.15	1.3	*
17.30	2.9	***
17.45	2.9	***
18.00	1.3	*
18.15	0.8	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
A	2022.5	1348.4	2205.7	1.09	2205.7	1.09
B	1339.7	893.1	4750.5	3.55	4788.1	3.57
C	1453.5	969.0	58.1	0.04	58.1	0.04
D	1249.2	832.8	145.5	0.12	145.5	0.12
ALL	6064.9	4043.2	7159.8	1.18	7197.5	1.19

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

[Printed at 09:22:24 on 05-23-2000]

APPENDIX K

Revised A3095/B3430 Junction

ARCADY – With Development

TRANSPORT RESEARCH LABORATORY

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CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

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ROUNDABOUT CAPACITY AND DELAY

RUN TITLE

A3095/B3430 Junction - With Development - AM Peak

INPUT DATA

ARM A - A3095 Crowthorne Road
ARM B - B3430 Nine Mile Ride (East)
ARM C - A3095 Foresters Way
ARM D - B3430 Nine Mile Ride (West)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/
ARM A	3.65	9.30	30.00	20.00	56.00	25.0	0.676	36.864
ARM B	3.15	9.50	30.00	37.00	56.00	17.0	0.695	37.393
ARM C	8.90	10.70	6.10	25.00	56.00	23.5	0.835	51.225
ARM D	3.05	8.90	30.00	45.00	56.00	17.0	0.682	36.022

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 07.45 AND ENDS 09.15
LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	15.88	23.81	15.88
ARM B	15.00	45.00	75.00	11.71	17.57	11.71
ARM C	15.00	45.00	75.00	19.99	29.98	19.99
ARM D	15.00	45.00	75.00	10.68	16.01	10.68

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
07.45 - 09.15					
	ARM A	0.000	0.009	0.573	0.418
		0.0	11.0	728.0	531.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.131	0.000	0.259	0.609
		123.0	0.0	243.0	571.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.718	0.211	0.000	0.071
		1148.0	338.0	0.0	113.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.564	0.403	0.033	0.000
		482.0	344.0	28.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
07.45-08.00								
ARM A	15.88	30.89	0.514		0.0	1.0	15.2	
ARM B	11.71	26.26	0.446		0.0	0.8	11.6	
ARM C	19.99	38.49	0.519		0.0	1.1	15.6	
ARM D	10.68	22.36	0.477		0.0	0.9	13.1	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
08.00-08.15								
ARM A	18.96	29.73	0.638		1.0	1.7	25.0	
ARM B	13.99	24.07	0.581		0.8	1.4	19.7	
ARM C	23.87	35.99	0.663		1.1	1.9	27.9	
ARM D	12.75	19.69	0.647		0.9	1.8	25.4	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
08.15-08.30								
ARM A	23.22	28.32	0.820		1.7	4.3	57.7	
ARM B	17.13	21.16	0.809		1.4	3.9	52.5	
ARM C	29.23	32.68	0.894		1.9	7.3	92.7	
ARM D	15.61	16.21	0.963		1.8	11.2	121.0	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
08.30-08.45								
ARM A	23.22	28.19	0.824		4.3	4.5	66.0	
ARM B	17.13	21.05	0.814		3.9	4.2	61.1	
ARM C	29.23	32.54	0.898		7.3	8.0	116.2	
ARM D	15.61	16.00	0.976		11.2	15.6	204.6	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
08.45-09.00								
ARM A	18.96	29.38	0.645		4.5	1.9	29.5	
ARM B	13.99	23.89	0.585		4.2	1.4	23.0	
ARM C	23.87	35.78	0.667		8.0	2.0	34.0	
ARM D	12.75	19.38	0.658		15.6	2.0	48.3	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
09.00-09.15								
ARM A	15.88	30.84	0.515		1.9	1.1	16.5	
ARM B	11.71	26.17	0.448		1.4	0.8	12.6	
ARM C	19.99	38.39	0.521		2.0	1.1	16.9	
ARM D	10.68	22.26	0.479		2.0	0.9	14.5	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.0	*
08.15	1.7	**
08.30	4.3	****
08.45	4.5	****
09.00	1.9	**
09.15	1.1	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.8	*
08.15	1.4	*
08.30	3.9	****
08.45	4.2	****
09.00	1.4	*
09.15	0.8	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.1	*
08.15	1.9	**
08.30	7.3	*******
08.45	8.0	********
09.00	2.0	**
09.15	1.1	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.9	*
08.15	1.8	**
08.30	11.2	**********
08.45	15.6	**********
09.00	2.0	**
09.15	0.9	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
A	1741.4	1161.0	209.8	0.12	209.9	0.12
B	1284.8	856.5	180.6	0.14	180.6	0.14
C	2192.6	1461.7	303.4	0.14	303.4	0.14
D	1171.0	780.7	426.9	0.36	426.9	0.36
ALL	6389.8	4259.9	1120.7	0.18	1120.8	0.18

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

{Printed at 17:40:29 on 05-22-2000}

TRANSPORT RESEARCH LABORATORY

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CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

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ROUNDABOUT CAPACITY AND DELAY
****

RUN TITLE
****
A3095/B3430 Junction - With Development - PM Peak

INPUT DATA
****
ARM A - A3095 Crowthorne Road
ARM B - B3430 Nine Mile Ride (East)
ARM C - A3095 Foresters Way
ARM D - B3430 Nine Mile Ride (West)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/
ARM A	3.65	9.30	30.00	20.00	56.00	25.0	0.676	36.864
ARM B	3.15	9.50	30.00	37.00	56.00	17.0	0.695	37.393
ARM C	8.90	10.70	6.10	25.00	56.00	23.5	0.835	51.225
ARM D	3.05	8.90	30.00	45.00	56.00	17.0	0.682	36.022

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 16.45 AND ENDS 18.15
LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	18.74	28.11	18.74
ARM B	15.00	45.00	75.00	12.36	18.54	12.36
ARM C	15.00	45.00	75.00	13.30	19.95	13.30
ARM D	15.00	45.00	75.00	14.69	22.03	14.69

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15					
	ARM A	0.000	0.015	0.809	0.176
		0.0	23.0	1212.0	264.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.055	0.000	0.463	0.482
		54.0	0.0	458.0	477.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.696	0.203	0.000	0.101
		741.0	216.0	0.0	107.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.458	0.403	0.139	0.000
		538.0	474.0	163.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
16.45-17.00								
ARM A	18.74	29.69	0.631		0.0	1.7	24.0	
ARM B	12.36	23.23	0.532		0.0	1.1	16.1	
ARM C	13.30	42.97	0.309		0.0	0.4	6.6	
ARM D	14.69	27.43	0.536		0.0	1.1	16.5	
17.00-17.15								
ARM A	22.37	28.28	0.791		1.7	3.6	49.7	
ARM B	14.76	20.48	0.721		1.1	2.5	34.6	
ARM C	15.88	41.38	0.384		0.4	0.6	9.2	
ARM D	17.54	25.74	0.681		1.1	2.1	29.7	
17.15-17.30								
ARM A	27.40	26.48	1.035		3.6	28.4	266.7	
ARM B	18.08	17.73	1.020		2.5	19.1	185.5	
ARM C	19.45	39.82	0.489		0.6	0.9	14.0	
ARM D	21.48	23.47	0.915		2.1	8.3	99.8	
17.30-17.45								
ARM A	27.40	26.35	1.040		28.4	47.3	570.2	
ARM B	18.08	17.43	1.037		19.1	32.4	388.7	
ARM C	19.45	39.67	0.490		0.9	1.0	14.3	
ARM D	21.48	23.45	0.916		8.3	9.3	132.8	
17.45-18.00								
ARM A	22.37	28.08	0.797		47.3	4.3	247.2	
ARM B	14.76	18.37	0.803		32.4	4.7	197.9	
ARM C	15.88	40.06	0.396		1.0	0.7	10.1	
ARM D	17.54	25.65	0.684		9.3	2.2	39.3	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
18.00-18.15								
ARM A	18.74	29.63	0.632		4.3	1.7	27.8	
ARM B	12.36	23.02	0.537		4.7	1.2	19.2	
ARM C	13.30	42.79	0.311		0.7	0.5	6.9	
ARM D	14.69	27.39	0.536		2.2	1.2	18.2	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.7	**
17.15	3.6	****
17.30	28.4	**********
17.45	47.3	**********
18.00	4.3	****
18.15	1.7	**

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.1	*
17.15	2.5	**
17.30	19.1	**********
17.45	32.4	**********
18.00	4.7	*****
18.15	1.2	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.6	*
17.30	0.9	*
17.45	1.0	*
18.00	0.7	*
18.15	0.5	

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.1	*
17.15	2.1	**
17.30	8.3	********
17.45	9.3	*********
18.00	2.2	**
18.15	1.2	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	2055.4	1370.3	1185.6	0.58	1185.7	0.58
B	1356.1	904.1	842.1	0.62	842.1	0.62
C	1459.0	972.6	61.0	0.04	61.0	0.04
D	1611.2	1074.1	336.2	0.21	336.2	0.21
ALL	6481.7	4321.1	2424.9	0.37	2425.0	0.37

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

[Printed at 09:28:20 on 05-23-2000]

APPENDIX L

Old Wokingham Road/B3430 Junction

ARCADY – Existing Situation

TRANSPORT RESEARCH LABORATORY

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CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

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Run with file:- "w:\Met Office\Bracknell\DESIGN\ANALYSIS\ARCADY\owrnmrexam.vai" at 12:27:43 on Tuesday, 23 May 20

ROUNDABOUT CAPACITY AND DELAY

RUN TITLE

Old Wokingham Road/B3430 Nine Mile Ride Jnt - Do Minimum - AM Peak

INPUT DATA

ARM A - Old Wokingham Road (North)
ARM B - B3430 Nine Mile Ride (East)
ARM C - Old Wokingham Road (South)
ARM D - B3430 Nine Mile Ride (West)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/
ARM A	3.50	7.00	10.00	26.00	36.00	21.0	0.648	27.118
ARM B	3.50	7.00	11.00	20.00	36.00	19.0	0.651	27.442
ARM C	4.50	6.00	3.00	26.00	36.00	16.0	0.654	27.173
ARM D	3.40	7.00	18.50	16.00	36.00	22.5	0.659	28.765

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 07.45 AND ENDS 09.15
LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	4.76	7.14	4.76
ARM B	15.00	45.00	75.00	9.63	14.44	9.63
ARM C	15.00	45.00	75.00	12.68	19.01	12.68
ARM D	15.00	45.00	75.00	10.15	15.22	10.15

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
07.45 - 09.15					
	ARM A	0.000	0.247	0.462	0.291
		0.0	94.0	176.0	111.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.348	0.000	0.171	0.481
		268.0	0.0	132.0	370.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.705	0.252	0.000	0.042
		715.0	256.0	0.0	43.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.411	0.554	0.034	0.000
		334.0	450.0	28.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME		DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
07.45-08.00									
	ARM A	4.76	21.22	0.224		0.0	0.3	4.2	
	ARM B	9.63	24.89	0.387		0.0	0.6	9.1	
	ARM C	12.68	21.07	0.601		0.0	1.5	21.0	
	ARM D	10.15	18.62	0.545		0.0	1.2	16.8	
08.00-08.15									
	ARM A	5.69	20.07	0.283		0.3	0.4	5.8	
	ARM B	11.49	24.39	0.471		0.6	0.9	12.9	
	ARM C	15.14	19.87	0.762		1.5	3.0	41.7	
	ARM D	12.12	16.64	0.728		1.2	2.6	35.1	
08.15-08.30									
	ARM A	6.96	18.97	0.367		0.4	0.6	8.4	
	ARM B	14.08	23.72	0.593		0.9	1.4	20.7	
	ARM C	18.54	18.24	1.016		3.0	19.0	187.1	
	ARM D	14.84	14.51	1.023		2.6	17.5	170.3	
08.30-08.45									
	ARM A	6.96	18.84	0.370		0.6	0.6	8.7	
	ARM B	14.08	23.71	0.594		1.4	1.4	21.7	
	ARM C	18.54	18.22	1.018		19.0	28.5	358.5	
	ARM D	14.84	14.23	1.043		17.5	29.7	356.5	
08.45-09.00									
	ARM A	5.69	19.10	0.298		0.6	0.4	6.5	
	ARM B	11.49	24.34	0.472		1.4	0.9	14.0	
	ARM C	15.14	19.84	0.763		28.5	3.5	132.4	
	ARM D	12.12	15.51	0.781		29.7	4.1	177.4	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
09.00-09.15								
ARM A	4.76	21.08	0.226		0.4	0.3	4.5	
ARM B	9.63	24.87	0.387		0.9	0.6	9.7	
ARM C	12.68	21.04	0.603		3.5	1.5	24.6	
ARM D	10.15	18.47	0.550		4.1	1.2	20.2	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.3	
08.15	0.4	
08.30	0.6	*
08.45	0.6	*
09.00	0.4	
09.15	0.3	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.6	*
08.15	0.9	*
08.30	1.4	*
08.45	1.4	*
09.00	0.9	*
09.15	0.6	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.5	*
08.15	3.0	***
08.30	19.0	******************
08.45	28.5	****************************
09.00	3.5	***
09.15	1.5	**

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.2	*
08.15	2.6	***
08.30	17.5	*****************
08.45	29.7	******************************
09.00	4.1	****
09.15	1.2	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
A	522.4	348.3	38.2	0.07	38.2	0.07
B	1055.8	703.9	88.1	0.08	88.1	0.08
C	1390.4	926.9	765.2	0.55	765.3	0.55
D	1113.4	742.3	776.4	0.70	776.4	0.70
ALL	4082.1	2721.4	1667.9	0.41	1668.0	0.41

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

{Printed at 15:38:18 on 05-23-2000}

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CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

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Run with file:- "w:\Met Office\Bracknell\DESIGN\ANALYSIS\ARCADY\owrnmrexpm.vai" at 08:17:22 on Thursday, 25 May 2

ROUNDABOUT CAPACITY AND DELAY
****

RUN TITLE
****
Old Wokingham Road/B3430 Nine Mile Ride Jnt - Do Minimum - PM Peak

INPUT DATA
****
ARM A - Old Wokingham Road (North)
ARM B - B3430 Nine Mile Ride (East)
ARM C - Old Wokingham Road (South)
ARM D - B3430 Nine Mile Ride (West)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/
ARM A	3.50	7.00	10.00	26.00	36.00	21.0	0.648	27.118
ARM B	3.50	7.00	11.00	20.00	36.00	19.0	0.651	27.442
ARM C	4.50	6.00	3.00	26.00	36.00	16.0	0.654	27.173
ARM D	3.40	7.00	18.50	16.00	36.00	22.5	0.659	28.765

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 16.45 AND ENDS 18.15
LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	12.75	19.13	12.75
ARM B	15.00	45.00	75.00	9.20	13.80	9.20
ARM C	15.00	45.00	75.00	4.49	6.73	4.49
ARM D	15.00	45.00	75.00	9.21	13.82	9.21

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15					
	ARM A	0.000	0.174	0.422	0.405
		0.0	177.0	430.0	413.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.234	0.000	0.068	0.698
		172.0	0.0	50.0	514.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.543	0.273	0.000	0.184
		195.0	98.0	0.0	66.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.229	0.699	0.072	0.000
		169.0	515.0	53.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
16.45-17.00								
ARM A	12.75	21.75	0.586		0.0	1.4	19.8	
ARM B	9.20	20.20	0.455		0.0	0.8	11.9	
ARM C	4.49	18.24	0.246		0.0	0.3	4.7	
ARM D	9.21	24.95	0.369		0.0	0.6	8.5	
17.00-17.15								
ARM A	15.22	20.68	0.736		1.4	2.7	37.2	
ARM B	10.99	18.79	0.585		0.8	1.4	19.8	
ARM C	5.36	16.49	0.325		0.3	0.5	7.0	
ARM D	11.00	24.20	0.455		0.6	0.8	12.1	
17.15-17.30								
ARM A	18.65	19.25	0.969		2.7	12.6	137.3	
ARM B	13.45	17.14	0.785		1.4	3.4	45.5	
ARM C	6.56	14.29	0.459		0.5	0.8	12.1	
ARM D	13.47	23.19	0.581		0.8	1.4	19.7	
17.30-17.45								
ARM A	18.65	19.23	0.970		12.6	16.2	218.9	
ARM B	13.45	16.91	0.796		3.4	3.7	53.6	
ARM C	6.56	14.11	0.465		0.8	0.9	12.8	
ARM D	13.47	23.16	0.582		1.4	1.4	20.6	
17.45-18.00								
ARM A	15.22	20.65	0.737		16.2	2.9	67.5	
ARM B	10.99	18.26	0.602		3.7	1.5	24.8	
ARM C	5.36	16.12	0.332		0.9	0.5	7.8	
ARM D	11.00	24.15	0.455		1.4	0.8	13.0	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
18.00-18.15								
ARM A	12.75	21.71	0.587		2.9	1.4	22.8	
ARM B	9.20	20.10	0.458		1.5	0.9	13.3	
ARM C	4.49	18.13	0.247		0.5	0.3	5.1	
ARM D	9.21	24.92	0.370		0.8	0.6	9.0	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.4	*
17.15	2.7	***
17.30	12.6	**********
17.45	16.2	**********
18.00	2.9	***
18.15	1.4	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.8	*
17.15	1.4	*
17.30	3.4	***
17.45	3.7	****
18.00	1.5	**
18.15	0.9	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.3	
17.15	0.5	
17.30	0.8	*
17.45	0.9	*
18.00	0.5	*
18.15	0.3	

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.6	*
17.15	0.8	*
17.30	1.4	*
17.45	1.4	*
18.00	0.8	*
18.15	0.6	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
A	1398.6	932.4	503.5	0.36	503.6	0.36
B	1009.2	672.8	169.0	0.17	169.0	0.17
C	492.3	328.2	49.4	0.10	49.4	0.10
D	1010.6	673.7	83.0	0.08	83.0	0.08
ALL	3910.7	2607.1	804.9	0.21	805.0	0.21

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

[Printed at 08:17:27 on 05-25-2000]

APPENDIX M

Old Wokingham Road/B3430 Junction

ARCADY – With Development

TRANSPORT RESEARCH LABORATORY

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CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

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ROUNDABOUT CAPACITY AND DELAY

RUN TITLE

Old Wokingham Road/B3430 Nine Mile Ride Jnt - With Development - AM Peak

INPUT DATA

ARM A - Old Wokingham Road (North)
ARM B - B3430 Nine Mile Ride (East)
ARM C - Old Wokingham Road (South)
ARM D - B3430 Nine Mile Ride (West)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/
ARM A	3.50	7.00	10.00	26.00	36.00	21.0	0.648	27.118
ARM B	3.50	7.00	11.00	20.00	36.00	19.0	0.651	27.442
ARM C	4.50	6.00	3.00	26.00	36.00	16.0	0.654	27.173
ARM D	3.40	7.00	18.50	16.00	36.00	22.5	0.659	28.765

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 07.45 AND ENDS 09.15
LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	5.21	7.82	5.21
ARM B	15.00	45.00	75.00	9.82	14.74	9.82
ARM C	15.00	45.00	75.00	12.77	19.16	12.77
ARM D	15.00	45.00	75.00	10.93	16.39	10.93

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
07.45 - 09.15					
	ARM A	0.000	0.312	0.422	0.266
		0.0	130.0	176.0	111.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.349	0.000	0.169	0.482
		274.0	0.0	133.0	379.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.703	0.255	0.000	0.042
		718.0	261.0	0.0	43.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.382	0.586	0.032	0.000
		334.0	512.0	28.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
07.45-08.00								
ARM A	5.21	20.68	0.252		0.0	0.3	4.9	
ARM B	9.82	24.89	0.395		0.0	0.6	9.4	
ARM C	12.77	20.95	0.610		0.0	1.5	21.7	
ARM D	10.93	18.51	0.590		0.0	1.4	19.9	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
08.00-08.15								
ARM A	6.22	19.45	0.320		0.3	0.5	6.9	
ARM B	11.73	24.39	0.481		0.6	0.9	13.4	
ARM C	15.25	19.72	0.773		1.5	3.2	44.0	
ARM D	13.05	16.51	0.790		1.4	3.5	46.5	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
08.15-08.30								
ARM A	7.62	18.57	0.411		0.5	0.7	10.1	
ARM B	14.37	23.74	0.605		0.9	1.5	21.7	
ARM C	18.68	18.06	1.034		3.2	22.0	210.6	
ARM D	15.98	14.46	1.105		3.5	31.0	273.3	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
08.30-08.45								
ARM A	7.62	18.50	0.412		0.7	0.7	10.4	
ARM B	14.37	23.73	0.605		1.5	1.5	22.7	
ARM C	18.68	18.04	1.036		22.0	34.9	429.5	
ARM D	15.98	14.20	1.125		31.0	58.4	671.1	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
08.45-09.00								
ARM A	6.22	18.30	0.340		0.7	0.5	8.0	
ARM B	11.73	24.34	0.482		1.5	0.9	14.5	
ARM C	15.25	19.69	0.775		34.9	3.8	183.9	
ARM D	13.05	15.12	0.863		58.4	31.2	671.6	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
09.00-09.15								
ARM A	5.21	19.81	0.263		0.5	0.4	5.5	
ARM B	9.82	24.83	0.396		0.9	0.7	10.1	
ARM C	12.77	20.91	0.611		3.8	1.6	25.7	
ARM D	10.93	18.34	0.596		31.2	1.5	87.9	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.3	
08.15	0.5	
08.30	0.7	*
08.45	0.7	*
09.00	0.5	*
09.15	0.4	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.6	*
08.15	0.9	*
08.30	1.5	**
08.45	1.5	**
09.00	0.9	*
09.15	0.7	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.5	**
08.15	3.2	***
08.30	22.0	**********
08.45	34.9	**********
09.00	3.8	****
09.15	1.6	**

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.4	*
08.15	3.5	***
08.30	31.0	**********
08.45	58.4	**********
09.00	31.2	**********
09.15	1.5	**

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
A	571.8	381.2	45.7	0.08	45.7	0.08
B	1077.8	718.5	92.0	0.09	92.0	0.09
C	1401.4	934.3	915.3	0.65	915.3	0.65
D	1198.4	799.0	1770.2	1.48	1770.2	1.48
ALL	4249.4	2832.9	2823.1	0.66	2823.3	0.66

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

[Printed at 15:42:42 on 05-23-2000]

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CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

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ROUNDABOUT CAPACITY AND DELAY

RUN TITLE

Old Wokingham Road/B3430 Nine Mile Ride Jnt - With Development - PM Peak

INPUT DATA

ARM A - Old Wokingham Road (North)
ARM B - B3430 Nine Mile Ride (East)
ARM C - Old Wokingham Road (South)
ARM D - B3430 Nine Mile Ride (West)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/
ARM A	3.50	7.00	10.00	26.00	36.00	21.0	0.648	27.118
ARM B	3.50	7.00	11.00	20.00	36.00	19.0	0.651	27.442
ARM C	4.50	6.00	3.00	26.00	36.00	16.0	0.654	27.173
ARM D	3.40	7.00	18.50	16.00	36.00	22.5	0.659	28.765

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 16.45 AND ENDS 18.15
LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	12.80	19.20	12.80
ARM B	15.00	45.00	75.00	10.07	15.11	10.07
ARM C	15.00	45.00	75.00	4.50	6.75	4.50
ARM D	15.00	45.00	75.00	9.29	13.93	9.29

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15	ARM A	0.000	0.177	0.420	0.403
		0.0	181.0	430.0	413.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.242	0.000	0.067	0.691
		195.0	0.0	54.0	557.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.542	0.275	0.000	0.183
		195.0	99.0	0.0	66.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.227	0.701	0.071	0.000
		169.0	521.0	53.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
16.45-17.00								
ARM A	12.80	21.69	0.590		0.0	1.4	20.1	
ARM B	10.07	20.21	0.499		0.0	1.0	14.1	
ARM C	4.50	17.71	0.254		0.0	0.3	4.9	
ARM D	9.29	24.76	0.375		0.0	0.6	8.7	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
17.00-17.15								
ARM A	15.28	20.62	0.741		1.4	2.7	38.1	
ARM B	12.03	18.79	0.640		1.0	1.7	24.7	
ARM C	5.37	15.85	0.339		0.3	0.5	7.4	
ARM D	11.09	23.97	0.463		0.6	0.9	12.5	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
17.15-17.30								
ARM A	18.72	19.17	0.977		2.7	13.6	145.0	
ARM B	14.73	17.17	0.858		1.7	5.2	66.1	
ARM C	6.58	13.57	0.485		0.5	0.9	13.3	
ARM D	13.58	22.92	0.593		0.9	1.4	20.6	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
17.30-17.45								
ARM A	18.72	19.14	0.978		13.6	17.9	238.3	
ARM B	14.73	16.94	0.870		5.2	5.9	84.8	
ARM C	6.58	13.35	0.493		0.9	1.0	14.2	
ARM D	13.58	22.88	0.594		1.4	1.4	21.6	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
17.45-18.00								
ARM A	15.28	20.58	0.743		17.9	3.0	74.3	
ARM B	12.03	18.21	0.661		5.9	2.0	33.8	
ARM C	5.37	15.38	0.349		1.0	0.5	8.4	
ARM D	11.09	23.90	0.464		1.4	0.9	13.5	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
18.00-18.15								
ARM A	12.80	21.65	0.591		3.0	1.5	23.2	
ARM B	10.07	20.10	0.501		2.0	1.0	15.9	
ARM C	4.50	17.58	0.256		0.5	0.3	5.3	
ARM D	9.29	24.72	0.376		0.9	0.6	9.3	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.4	*
17.15	2.7	***
17.30	13.6	**********
17.45	17.9	**********
18.00	3.0	***
18.15	1.5	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.0	*
17.15	1.7	**
17.30	5.2	*****
17.45	5.9	******
18.00	2.0	**
18.15	1.0	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.3	
17.15	0.5	*
17.30	0.9	*
17.45	1.0	*
18.00	0.5	*
18.15	0.3	

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.6	*
17.15	0.9	*
17.30	1.4	*
17.45	1.4	*
18.00	0.9	*
18.15	0.6	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1404.1	936.1	538.9	0.38	539.0	0.38
B	1105.2	736.8	239.4	0.22	239.4	0.22
C	493.6	329.1	53.6	0.11	53.6	0.11
D	1018.8	679.2	86.2	0.08	86.2	0.08
ALL	4021.8	2681.2	918.1	0.23	918.2	0.23

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

[Printed at 08:17:00 on 05-25-2000]

APPENDIX N

Site Access Junction With Development

ARCADY – 2003, 2018

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CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

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ROUNDABOUT CAPACITY AND DELAY
****

RUN TITLE
****
Site Access Junction - 2003 base - With Development - AM Peak

INPUT DATA
****
ARM A - Site Access
ARM B - Nine Mile Ride East
ARM C - Nine Mile Ride West

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/
ARM A	3.65	7.00	19.00	30.00	41.00	11.0	0.704	31.653
ARM B	3.00	7.00	23.00	30.00	41.00	17.0	0.676	29.855
ARM C	3.00	7.00	20.00	45.00	41.00	20.0	0.668	29.166

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 07.45 AND ENDS 09.15
LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	1.01	1.52	1.01
ARM B	15.00	45.00	75.00	15.13	22.69	15.13
ARM C	15.00	45.00	75.00	11.93	17.89	11.93

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) / (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
07.45 - 09.15	ARM A	0.000	0.790	0.210
		0.0	64.0	17.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.333	0.000	0.667
		403.0	0.0	807.0
		(0.0)	(0.0)	(0.0)
	ARM C	0.112	0.888	0.000
		107.0	847.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
07.45-08.00								
ARM A	1.01	24.24	0.042		0.0	0.0	0.6	
ARM B	15.13	29.71	0.509		0.0	1.0	14.9	
ARM C	11.93	25.82	0.462		0.0	0.9	12.4	
08.00-08.15								
ARM A	1.21	22.77	0.053		0.0	0.1	0.8	
ARM B	18.06	29.68	0.608		1.0	1.5	22.2	
ARM C	14.24	25.16	0.566		0.9	1.3	18.7	
08.15-08.30								
ARM A	1.48	20.80	0.071		0.1	0.1	1.1	
ARM B	22.12	29.65	0.746		1.5	2.8	40.1	
ARM C	17.44	24.26	0.719		1.3	2.5	34.8	
08.30-08.45								
ARM A	1.48	20.76	0.071		0.1	0.1	1.1	
ARM B	22.12	29.64	0.746		2.8	2.9	43.1	
ARM C	17.44	24.25	0.719		2.5	2.5	37.5	
08.45-09.00								
ARM A	1.21	22.70	0.053		0.1	0.1	0.9	
ARM B	18.06	29.68	0.608		2.9	1.6	24.6	
ARM C	14.24	25.13	0.567		2.5	1.3	20.7	
09.00-09.15								
ARM A	1.01	24.18	0.042		0.1	0.0	0.7	
ARM B	15.13	29.71	0.509		1.6	1.0	16.1	
ARM C	11.93	25.79	0.462		1.3	0.9	13.4	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.0
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.0

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.0	*
08.15	1.5	**
08.30	2.8	***
08.45	2.9	***
09.00	1.6	**
09.15	1.0	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.9	*
08.15	1.3	*
08.30	2.5	**
08.45	2.5	***
09.00	1.3	*
09.15	0.9	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	111.1	74.0	5.3	0.05	5.3	0.05
B	1659.2	1106.1	161.1	0.10	161.1	0.10
C	1308.1	872.1	137.4	0.11	137.5	0.11
ALL	3078.4	2052.2	303.8	0.10	303.8	0.10

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

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CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

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ROUNDABOUT CAPACITY AND DELAY

RUN TITLE

Site access Junction - 2003 base - With Development - PM Peak

INPUT DATA

ARM A - Site
ARM B - Nine Mile Ride East
ARM C - Nine Mile Ride West

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/
ARM A	3.65	7.00	19.00	30.00	41.00	11.0	0.704	31.653
ARM B	3.00	7.00	23.00	30.00	41.00	17.0	0.676	29.855
ARM C	3.00	7.00	20.00	45.00	41.00	20.0	0.668	29.166

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 16.45 AND ENDS 18.15
LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	4.53	6.79	4.53
ARM B	15.00	45.00	75.00	10.59	15.88	10.59
ARM C	15.00	45.00	75.00	11.52	17.29	11.52

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) / (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
16.45 - 18.15	ARM A	0.000	0.790	0.210
		0.0	286.0	76.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.051	0.000	0.949
		43.0	0.0	804.0
		(0.0)	(0.0)	(0.0)
	ARM C	0.013	0.987	0.000
		12.0	910.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME		DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
16.45-17.00									
	ARM A	4.53	23.68	0.191		0.0	0.2	3.5	
	ARM B	10.59	29.21	0.362		0.0	0.6	8.3	
	ARM C	11.52	28.81	0.400		0.0	0.7	9.7	
17.00-17.15									
	ARM A	5.40	22.10	0.244		0.2	0.3	4.8	
	ARM B	12.64	29.09	0.435		0.6	0.8	11.2	
	ARM C	13.76	28.74	0.479		0.7	0.9	13.4	
17.15-17.30									
	ARM A	6.62	19.97	0.331		0.3	0.5	7.2	
	ARM B	15.48	28.92	0.535		0.8	1.1	16.7	
	ARM C	16.85	28.64	0.588		0.9	1.4	20.5	
17.30-17.45									
	ARM A	6.62	19.94	0.332		0.5	0.5	7.4	
	ARM B	15.48	28.92	0.535		1.1	1.1	17.2	
	ARM C	16.85	28.64	0.588		1.4	1.4	21.3	
17.45-18.00									
	ARM A	5.40	22.07	0.245		0.5	0.3	5.0	
	ARM B	12.64	29.09	0.435		1.1	0.8	11.9	
	ARM C	13.76	28.74	0.479		1.4	0.9	14.3	
18.00-18.15									
	ARM A	4.53	23.63	0.191		0.3	0.2	3.6	
	ARM B	10.59	29.21	0.362		0.8	0.6	8.7	
	ARM C	11.52	28.81	0.400		0.9	0.7	10.3	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.2
17.15	0.3
17.30	0.5
17.45	0.5
18.00	0.3
18.15	0.2

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.6	*
17.15	0.8	*
17.30	1.1	*
17.45	1.1	*
18.00	0.8	*
18.15	0.6	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.7	*
17.15	0.9	*
17.30	1.4	*
17.45	1.4	*
18.00	0.9	*
18.15	0.7	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	496.4	330.9	31.4	0.06	31.4	0.06
B	1161.4	774.3	73.9	0.06	73.9	0.06
C	1264.3	842.8	89.3	0.07	89.3	0.07
ALL	2922.1	1948.0	194.7	0.07	194.7	0.07

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

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CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

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ROUNDABOUT CAPACITY AND DELAY
****

RUN TITLE
****
Site Access Junction - 2018 base - With Development - AM Peak

INPUT DATA
****
ARM A - Site Access
ARM B - Nine Mile Ride East
ARM C - Nine Mile Ride West

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/
ARM A	3.65	7.00	19.00	30.00	41.00	11.0	0.704	31.653
ARM B	3.00	7.00	23.00	30.00	41.00	17.0	0.676	29.855
ARM C	3.00	7.00	20.00	45.00	41.00	20.0	0.668	29.166

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 07.45 AND ENDS 09.15
LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	1.01	1.52	1.01
ARM B	15.00	45.00	75.00	17.19	25.78	17.19
ARM C	15.00	45.00	75.00	14.10	21.15	14.10

TIME	FROM/TO	ARM A	ARM B	ARM C
07.45 - 09.15				
	ARM A	0.000	0.790	0.210
		0.0	64.0	17.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.293	0.000	0.707
		403.0	0.0	972.0
		(0.0)	(0.0)	(0.0)
	ARM C	0.095	0.905	0.000
		107.0	1021.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
07.45-08.00								
ARM A	1.01	22.72	0.045		0.0	0.0	0.7	
ARM B	17.19	29.71	0.578		0.0	1.4	19.5	
ARM C	14.10	25.82	0.546		0.0	1.2	17.1	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
08.00-08.15								
ARM A	1.21	20.96	0.058		0.0	0.1	0.9	
ARM B	20.52	29.68	0.691		1.4	2.2	31.4	
ARM C	16.84	25.16	0.669		1.2	2.0	28.3	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
08.15-08.30								
ARM A	1.48	18.65	0.079		0.1	0.1	1.3	
ARM B	25.14	29.65	0.848		2.2	5.1	68.5	
ARM C	20.62	24.28	0.849		2.0	5.1	66.9	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
08.30-08.45								
ARM A	1.48	18.53	0.080		0.1	0.1	1.3	
ARM B	25.14	29.64	0.848		5.1	5.3	78.7	
ARM C	20.62	24.25	0.850		5.1	5.4	78.8	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
08.45-09.00								
ARM A	1.21	20.79	0.058		0.1	0.1	0.9	
ARM B	20.52	29.68	0.691		5.3	2.3	36.8	
ARM C	16.84	25.11	0.671		5.4	2.1	33.9	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
09.00-09.15								
ARM A	1.01	22.63	0.045		0.1	0.0	0.7	
ARM B	17.19	29.71	0.578		2.3	1.4	21.6	
ARM C	14.10	25.79	0.547		2.1	1.2	19.0	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.0	
08.15	0.1	
08.30	0.1	
08.45	0.1	
09.00	0.1	
09.15	0.0	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.4	*
08.15	2.2	**
08.30	5.1	*****
08.45	5.3	*****
09.00	2.3	**
09.15	1.4	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.2	*
08.15	2.0	**
08.30	5.1	*****
08.45	5.4	*****
09.00	2.1	**
09.15	1.2	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
A	111.1	74.0	5.8	0.05	5.8	0.05
B	1885.4	1256.9	256.5	0.14	256.5	0.14
C	1546.7	1031.2	243.9	0.16	243.9	0.16
ALL	3543.2	2362.1	506.2	0.14	506.3	0.14

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

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CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

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ROUNDABOUT CAPACITY AND DELAY

RUN TITLE

Site access Junction - 2018 base - With Development - PM Peak

INPUT DATA

ARM A - Site
ARM B - Nine Mile Ride East
ARM C - Nine Mile Ride West

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/
ARM A	3.65	7.00	19.00	30.00	41.00	11.0	0.704	31.653
ARM B	3.00	7.00	23.00	30.00	41.00	17.0	0.676	29.855
ARM C	3.00	7.00	20.00	45.00	41.00	20.0	0.668	29.166

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 16.45 AND ENDS 18.15
LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	4.53	6.79	4.53
ARM B	15.00	45.00	75.00	12.65	18.97	12.65
ARM C	15.00	45.00	75.00	13.86	20.79	13.86

TIME	FROM/TO	ARM A	ARM B	ARM C
16.45 - 18.15				
	ARM A	0.000	0.790	0.210
		0.0	286.0	76.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.042	0.000	0.958
		43.0	0.0	969.0
		(0.0)	(0.0)	(0.0)
	ARM C	0.011	0.989	0.000
		12.0	1097.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
16.45-17.00								
ARM A	4.53	22.04	0.205		0.0	0.3	3.8	
ARM B	12.65	29.22	0.433		0.0	0.8	11.1	
ARM C	13.86	28.81	0.481		0.0	0.9	13.4	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
17.00-17.15								
ARM A	5.40	20.15	0.268		0.3	0.4	5.4	
ARM B	15.11	29.09	0.519		0.8	1.1	15.7	
ARM C	16.55	28.74	0.576		0.9	1.3	19.5	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
17.15-17.30								
ARM A	6.62	17.58	0.376		0.4	0.6	8.7	
ARM B	18.50	28.92	0.640		1.1	1.7	25.2	
ARM C	20.27	28.64	0.708		1.3	2.4	33.6	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
17.30-17.45								
ARM A	6.62	17.54	0.377		0.6	0.6	9.0	
ARM B	18.50	28.92	0.640		1.7	1.8	26.3	
ARM C	20.27	28.64	0.708		2.4	2.4	35.7	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
17.45-18.00								
ARM A	5.40	20.08	0.269		0.6	0.4	5.7	
ARM B	15.11	29.09	0.519		1.8	1.1	16.9	
ARM C	16.55	28.74	0.576		2.4	1.4	21.4	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
18.00-18.15								
ARM A	4.53	21.98	0.206		0.4	0.3	4.0	
ARM B	12.65	29.21	0.433		1.1	0.8	11.8	
ARM C	13.86	28.81	0.481		1.4	0.9	14.4	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.3	
17.15	0.4	
17.30	0.6	*
17.45	0.6	*
18.00	0.4	
18.15	0.3	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.8	*
17.15	1.1	*
17.30	1.7	**
17.45	1.8	**
18.00	1.1	*
18.15	0.8	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.9	*
17.15	1.3	*
17.30	2.4	**
17.45	2.4	**
18.00	1.4	*
18.15	0.9	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	496.4	330.9	36.5	0.07	36.5	0.07
B	1387.7	925.1	106.9	0.08	106.9	0.08
C	1520.7	1013.8	138.0	0.09	138.0	0.09
ALL	3404.7	2269.8	281.4	0.08	281.4	0.08

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

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[Printed at 08:48:07 on 05-25-2000]

THE MET OFFICE, BEAUFORT PARK, BRACKNELL

PLANNING STATEMENT

June 2000

PROPOSED RELOCATION OF THE MET OFFICE TO BEAUFORT PARK

PLANNING STATEMENT

Prepared on behalf of
The Met Office by
The Barton Willmore Planning Partnership

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Ref: 9906/P3a/A5/WD/MR
Date: 16th June 2000

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1.0 Introduction

2.0 Background to the proposal

3.0 Brief description of the site and the proposal

4.0 The planning policy context

5.0 Summary of the planning issues

6.0 *Conclusions*

ANNEXES TO THE STATEMENT

1. Landscape Appraisal and Assessment including an Ecological Appraisal

2. Transport Report incorporating "Green Transport/Travel Plan"

1.0 INTRODUCTION

1.1 The Met. Office is a world leader in meteorology and climatology employing some 2,200 staff worldwide and is in the forefront of scientific and technological development. Its headquarters building at Bracknell was built in the early 1960's. It and is now increasingly outmoded as a building to serve The Met. Office's role as a world class weather and environmental service provider which is reliant on ever more sophisticated computer and telecommunications equipment.

1.2 The Met. Office is therefore consulting Bracknell Forest Borough Council regarding its proposed development under arrangements used by government departments under Department of the Environment Circular 18/84. The proposal is for the construction at Beaufort Park of a new purpose built headquarters building; student accommodation block; social facilities building and associated parking deck to provide accommodation for some 1,400 staff and specialist telecommunications and computer equipment. The existing college teaching facilities presently located at Shinfield Park near Reading would be incorporated within the new development.

1.3 This Statement provides the background to the proposed new headquarters building at Beaufort Park including the reasons for such a relocation. It explains the proposals and shows how they have been developed in the context of planning policies at national, regional and local level. This statement also includes an architectural design statement accompanying a set of drawings prepared by Barton Willmore Architecture, illustrating the proposed building, showing how it would sit on the site and its relationship to the remainder of the site. The illustrative drawings are intended to show how a building of this mass could be accommodated on site and includes an indicative elevation and section through the building. The drawing also indicate how a new vehicular access could be provided to the site from Nine Mile Ride.

1.4 Accompanying the Statement are the following related documents:

- a Landscape and Visual Appraisal, prepared by Barton Willmore Environmental, describing the assessment of the site and the visual effects of the new building in the surrounding area; together with an Ecological Appraisal;

- a Transport Report, prepared by WSP, setting out the transport proposals associated with the scheme, including the limitation of car parking provision; and a proposed Green Transport/Travel Plan;

2.0 BACKGROUND TO PROPOSALS

2.1 The Met Office is an Executive Agency of the Ministry of Defence and has operated as a Trading Fund since April 1996. As the UK's National Meteorological Service it operates at the forefront of scientific and technological development, and occupies a world leading position in meteorology and climatology with an expanding, and increasingly global, customer base. The Met Office employs 2,200 staff of which some 40% are spread around the world with approximately 1,400 staff at London Road, Bracknell, at Beaufort Park, Easthampstead and at Shinfield Park, Reading.

2.2 The Met Office presently occupy premises at London Road roundabout, Bracknell (1.8 hectares) which is their main headquarters building together with four adjacent leasehold buildings and two other buildings leased in the Bracknell area. In addition their site at Beaufort Park, Easthampstead, (23 hectares) provides a technical development and instrumentation division, whilst the site at Shinfield Park, Reading (17.6 hectares) is the present home of The Met Office College. Over recent years changes in The Met. Office's business requirements have been accommodated, in part, through the leasing and disposal of land and property, mainly in the Bracknell area. This has resulted in the workforce being spread across several sites making communication between staff more difficult.

2.3 The Met. Office's London Road premises have now been judged to be unfit for purpose, with continued occupation not sustainable in the medium or long term. The premises are outdated and unsuitable for the long term future of the organisation.

2.4 The existing London Road buildings are of an age (early 1960's) where problems are now caused by inefficient configuration, limited floor to ceiling heights, inflexible cellular and structural layout and multi-storey construction. Such factors individually and combined inhibit the flexibility of occupation as well as the capability of the buildings to accommodate both organisational and technological changes. In addition the age of the buildings brings consequent increasing maintenance liabilities. Further, the refurbishment of the London Road complex has been calculated to be only marginally less than the cost of a newly constructed bespoke building. Both a "do nothing" scenario and refurbishment of the London Road buildings have therefore been rejected.

2.5 The redevelopment of the existing London Road, Bracknell site has also been considered but is unlikely to achieve the requisite additional floorspace required for The Met. Office's future use given likely planning restrictions for the site. In addition the substantial costs of temporary off site accommodation during redevelopment are considered prohibitive. It is essential for The Met. Office that full operational capability is maintained through the transition period.

2.6 New accommodation is thus required to provide a modern efficient working environment fitting The Met. Office's standing as a world class weather and environmental service provider, to encourage modern good business practices including effectiveness and efficiency and be flexible to adapt to changing requirements. The advent of ever more sophisticated computer and telecommunications equipment in use by The Met. Office has further advanced the necessity of seeking new purpose built premises. The Met. Office needs to upgrade its specialist computer facilities in early 2003 and this is one of a number of reasons for requiring the new accommodation by the end of 2002.

2.7 The opportunity to relocate to Beaufort Park would enable staff to remain in the environs of Bracknell Town and would minimise any disruption in the journey to work distance. As considered in the Transport Assessment the majority of employees' homes are clustered in the Wokingham and Bracknell areas.

2.8 The Met Office is also consulting with Wokingham District Council under Circular 18/84 regarding the alternative of construction of a similar headquarters building with associated parking at Shinfield Park which is presently the home of The Met. Office Staff College. This would be as an alternative to Beaufort Park. Following the outcome of both consultations The Met. Office will consider their position with regard to relocation. At present a relocation away from the Reading-Bracknell area has not been considered in detail, nor have other non Met. Office owned sites in the locality been considered. A planning brief will be prepared in conjunction with Bracknell Forest Borough Council regarding the future use of the London Road, Bracknell site.

3.0 BRIEF DESCRIPTION OF THE SITE AND PROPOSALS

3.1 It is understood that Beaufort Park was formerly an army base in World War I and a Czech/Canadian army base during World War 2. As such it has always been Crown land. The Met. Office first established a presence at Beaufort Park in 1959 as a balloon station. A single storey workshop building was established to the north of the site in 1960 to provide for workshops, lecture rooms and store rooms. In 1968 some 30,000 sq. ft (2,788 sq. metres) of research buildings were the subject of consultation to provide for laboratories in association with practical testing on site. This was the nucleus of the present southern complex of predominantly single storey buildings to which new office and laboratory extensions were added in 1978. The site presently houses the technical development and instrument division of The Met. Office.

3.2 Beaufort Park which comprises an area of 23 hectares (56.8 acres) (see Drawing No. 9906/P2 : Site Location Plan) is a mainly open site of grassland and heathland, part woodland and "parkland" with the main complex of predominantly single storey research laboratory and workshop buildings with ancillary offices and parking located towards the south east of the site. The majority of the accommodation is housed in "temporary" buildings which are now more than 20 years old, although they have been recently refurbished. Much of the remainder of the site to the north is given over to meteorological testing and observations with a miscellany of associated buildings and equipment in the area of open grassland and heathland. The overall gross floor area of buildings on site is estimated at 3,413 sq. metres.

3.3 Beaufort Park lies approximately 3.8 kilometres south west of Bracknell town centre just outside of the urban area boundary of Easthampstead and the Great Hollands Estate. An irregular shaped site, it is bounded to the south by Nine Mile Ride and thence the Transport and Road Research Laboratory; to the north east by Easthampstead Park Cemetery and Crematorium to the east by Easthampstead Park; to the north by West Road on to which there is a secondary emergency vehicular access, and the Downshire Golf Course, and to the west by the Look Out and Forestry Commission land. Much of the site is surrounded by woodland vegetation with a mixture of conifer plantations and secondary woodland on former heathlands. Access to the site is from Nine Mile Ride (B3430) via South Road.

3.4 A more detailed consideration of the site is contained in the Landscape Appraisal.

Design Statement

3.5 As indicated on the illustrative drawings (SK001 and SK009) the proposed new complex comprises approx 36,733 sq. metres (395,400 sq.ft) of accommodation to the south east corner of the site, including a replacement building for the present student residential accommodation provided at Alexandra House, Shinfield Park, Reading of 2,266 sq. metres (24,400 sq.ft. approx). There are two further main areas of additional new build, the main building providing office and ancillary accommodation of 33,351 sq. metres (359,000 sq.ft) and social facilities building of 1,115 sq. metres (12,000 sq.ft). All other buildings and equipment presently on site would be demolished or removed to facilitate the new development.

3.6 The site is accessed from the south via a new roundabout on to Nine Mile Ride. Upon entering the site the entrance forecourt of the main building is immediately in view with its bus lay-by and drop off point. A link road to the west gives access to the social facilities building and residential building with the decked car park situated to the east of the main entrance area.

3.7 The entrance forecourt is semi enclosed by a stepped perimeter corner. A circular core tower marks each corner of the building aiding orientation, the largest marking the entrance forecourt with a quarter circle structurally glazed reception area.

3.8 The perimeter corners are created by four 3 storey 15m high (approx) pavilion buildings. Each pavilion contains a full height 12m wide internal street with a view at each end over a perimeter corner to the surrounding landscape. Individual "streets" have a translucent membrane roof over access galleries linked by bridges. Barrel vaulted office areas flank the internal street, each office area having a roof top plant area accessible by crane from the office ends to permit ease of plant replacement.

3.9 Each pavilion is linked on two corners by the core towers to create a central courtyard with a restaurant pod. Perimeter tensile membrane canopies, solar shading and a central feature canopy create a modern interpretation of the Oxbridge quadrangle.

3.10 The external office elevations are glazed between masonry piers. The piers are stepped at the top to receive the angled tubular steel roof supports. These stepped piers are most visible on the office ends where the feature roof trusses can also be seen. The internal street is expressed externally by structural glazing between the stepped piers of the offices. The core towers are clad in hi-tech cladding and are crowned by communication/feature masts.

3.11 The Operations Centre occupies the south west stepped perimeter corner and comprises a 3 storey secure isolated building, for uninterrupted continual operations, with an internal central dividing fire break and secure glazed link to the main building. The built form and aesthetic will act independently from the main built form visually expressing the contrasting "hi-tech" use.

3.12 The social facilities unit comprises a mainly double height single storey building accommodation social and sports facilities, a crèche and information centre. A separate car park for the social facilities building will be formed to allow separate and secure controllable parking.

3.13 The primary parking area comprises a decked car park enclosure of 750 parking spaces. The decked layout will utilise the natural landscaping of the existing site towards the eastern woodland area to reduce the overall height of the western elevation and its visual impact on the main building. Such a parking area would be accessed from a 6 metre width road running east of the headquarters building.

3.14 The car park design will provide a modern, secure, open parking environment with high levels of natural ventilation and daylight. Surrounding external landscaping will be enhanced to minimise overall visual impact on the eastern boundary of the site.

3.15 The new Alexandra House comprises a 2-storey building of student residential accommodation of a comparable height to the existing Alexandra House at Shinfield Park. The overall built form and position will enable the building to be successfully sited adjacent to the main building creating an enhanced overall setting with links to the main office accommodation and social facilities building.

3.16 The distribution of the buildings and the decked design of the car parking sits comfortably within the existing landscape maintaining the significant areas of trees and woodland. In addition, a substantial area of open heathland north-west of the main building would be maintained. The elevations of the main building, though using repetitive elements, are enlivened by the use of the curved office roofs and core towers, visible at the stepped perimeter corners, creating a lively roofscape.

4.0 PLANNING POLICY CONTEXT

4.1 The planning policies relevant to this planning application are set out in Government Planning Policy Guidance notes, in existing and emerging Regional Planning Guidance, in the approved Berkshire Structure Plan 1995, and in the emerging Bracknell Forest Borough Local Plan.

National Guidance

4.2 Planning Policy Guidance note (PPG) 1, February 1997, provides the general policy and principles for the operation of the Town and Country Planning system in England and Wales. Paragraph 1 emphasises the key role of planning in enabling the provision of investment and jobs in a way which is consistent with the principles of sustainable development. The system:

> **"needs to be positive in promoting competitiveness..."**

4.3 PPG4, November 1992, contains much of the later PPG1's guidance with regard to planning principles for investment and jobs but stresses (paragraph 13):

> **"The planning system should operate on the basis that applications for development should be allowed, having regard to the development plan and all material considerations, unless the proposed development would cause demonstrable harm to interests of acknowledged importance. Development control should not place unjustifiable obstacles in the way of development which is necessary to provide homes, investment and jobs ..."**

4.4 The general planning background to this application, therefore, is one where planning permission should be given unless there are good reasons why the development cannot be allowed.

Regional Guidance

4.5 Regional Planning Guidance for the South East in the form of RPG9 (March 1994), provides a framework for economic growth to maintain and develop the South East's

economic performance. RPG9 (para 3.2) requires the planning system to facilitate new developments for industry and commerce whilst meeting important principles related to sustainable development.

4.6 Revised draft regional planning guidance has recently been published for consultation. The implication for Berkshire and the Reading/Bracknell area is that further housing provision will be needed (a projected 3,440 additional dwellings per annum in Berkshire) above current Structure Plan provisions (see below).

Berkshire Structure Plan 1991-2006 BSP (see Appendix 1)

4.7 The Structure Plan was approved in November 1995 and stands as the most up-to-date part of the statutory Development Plan pending the adoption of the current draft Bracknell Forest Borough Local Plan. The Plan does not propose any major new employment allocations but gives flexibility for development beyond the then existing commitments (paragraph 8.15). This flexibility is delivered by the key employment policy BU1, which is essentially the starting point for determination of this planning application.

4.8 Policy BU1 is best addressed in three sections. First, it provides that in the case of proposals for business, industrial, distribution and storage development:

> **"permission will normally be granted where the proposal would:**
>
> .....
>
> **(iii) meet the needs of existing firms in Berkshire ..."**

The proposed development for The Met. Office, an established Berkshire firm, is therefore from the outset one of the types of development for which permission would normally be granted under the first part of the policy.

4.9 The second part of Policy BU1 then goes on to set provisos to the normal approach of granting planning permission for developments of this type. Permission would normally be given:

> **"provided that it does not give rise (either by itself or cumulatively with other such schemes) to:**

- **pressures for housing development additional to the provision in this Plan; or**

- ***transport problems, having regard to the capacity of the transport network, the rate at which the transport strategy is being implemented and accessibility by public transport".***

These two issues are explored in the next section of this Statement.

4.10 Finally, the Policy sets out two other factors to be taken into account in considering development proposals – the amount of suitable land and premises already available and the rate of completions and occupations over the Structure Plan period. Whilst both factors may have a bearing on proposals which are effectively "footloose" and therefore able to take advantage of other premises and sites, the proposed development by The Met Office is expressly an addition to their existing Beaufort Park operations, sought and promoted on the basis of meeting the organisation's overall needs whilst remaining in the Bracknell area and in order to maximise efficiency in its business operations. The interpretation of this part of the policy needs to be considered alongside the next policy, BU2.

4.11 The background to Policy BU2 is set out in paragraph 8.21 which explains the desire of the Local Planning Authority to achieve a **"broad-based local economy in which local firms have opportunities to grow and prosper..."**. The policy states that:

> **"Within the provisions of Policy BU1, favourable consideration will normally be given to proposals for:**
>
> **(i) existing businesses wishing to expand in situ;..."**

The Met. Office is already established at Beaufort Park and therefore the proposed relocation both assists in the continued well being of a local firm and specifically the expansion on a site it already occupies.

4.12 The site of Beaufort Park is identified in the Bracknell Forest Local Plan as within the countryside and outside of the built up area of Bracknell. As such Structure Plan Policy C1 *relating to rural development states:*

> **"The nature and scale of development in rural areas should seek to encourage and sustain balanced rural communities."**

"Development will normally be within rural settlements defined in local plans and be appropriate to the scale and character of a settlement."

4.13. Within such areas Policy C2 states:

"Development outside built-up areas and settlement *boundaries defined in local plans (and not within the* Metropolitan Green Belt - see Policy C4) will be strictly controlled, and permitted only :

(i) where it is required for agriculture or forestry; or

(ii) for the re-use, adaptation or redevelopment of existing buildings, particularly to assist the diversification of the rural economy and to maintain or enhance the rural environment; or

(iii) other development for which a rural location is essential;

provided it is both appropriate in scale, form, impact, character and siting to its location in the countryside and is acceptable in terms of other policies in the Structure Plan."

4.14 Policy C6 of the Structure Plan seeks to maintain the distinction between built up areas and the countryside by preventing the coalescence of individual settlements. Land between Bracknell and Crowthorne is generally identified in the Plan as such a countryside area between built up areas known as a "green wedge" or "gap" (paragraph 5.28). Policy C6 states:

"The setting and separate identity of settlements and communities will be conserved and protected. Development will not be permitted where it would threaten important open areas which are of special significance as "green wedges" or "gaps" because they provide physical or visual separation of settlements or communities which are close together. "Green wedges" and "gaps" will be identified in local plans where there is a risk of:

(i) coalescence, loss of community identity or increased *urbanised character;*

(ii) loss of access to open countryside or extensive open space with their associated environmental benefits."

4.15 There is thus a general policy presumption against development as proposed in such a location subject to a number of caveats. We discuss this issue further in Section 5.

Bracknell Forest Local Plan (BFLP) (see Appendix 2)

4.16 The Deposit Draft Local Plan was published in June 1996 with Proposed Changes in February 1997 and Further Proposed Changes in November 1997. The Inquiry into the Local Plan finished in October 1999. There is no previously adopted Local Plan which relates to the area of Beaufort Park.

4.17 The site is specifically designated on the Proposals Map as a part of "Land Outside defined settlements" (Policy EN8) and also identified as "Significant land between settlements" (Policy EN10). Policy EN8 states:

> **"OUTSIDE THE DEFINED SETTLEMENT BOUNDARIES, DEVELOPMENT WILL ONLY BE ACCEPTABLE WHERE IT WOULD NOT ADVERSELY AFFECT THE CHARACTER AND FUNCTION OF THE LAND, WOULD NOT BE DAMAGING TO LANDSCAPE QUALITY, OR, WHERE CONSPICUOUS FROM THE GREEN BELT, WOULD NOT INJURE THE VISUAL AMENITIES OF THE GREEN BELT.**
>
> **APPROPRIATE AND ACCEPTABLE DEVELOPMENT IN THE COUNTRYSIDE MAY INCLUDE:**
>
> **(i) DEVELOPMENT REQUIRED FOR AGRICULTURE AND FORESTRY;**
>
> **(ii) ESSENTIAL UTILITIES AND CEMETERIES WHICH CANNOT BE SITED WITHIN SETTLEMENT BOUNDARIES;**
>
> **(iii) MINOR EXTENSIONS TO, REPLACEMENT OF, OR SUBDIVISION OF, EXISTING BUILDINGS, SUBJECT TO CRITERIA DEFINED IN POLICIES EN17, EN18, EN24, GB2 AND H6 OF THIS LOCAL PLAN;**
>
> **(iv) THE RE-USE OF PERMANENT BUILDINGS WHICH ARE IN KEEPING WITH THEIR SURROUNDINGS, OR OF BUILDINGS OF SPECIAL ARCHITECTURAL OR HISTORIC INTEREST, FOR SUITABLE ALTERNATIVE USES (INCLUDING RESIDENTIAL INSTITUTIONS IN EXTENSIVE GROUNDS) SUBJECT TO CRITERIA DEFINED IN EN9, EN24, GB4, H11, AND E13; AND**

(v) **PROPOSALS WHICH ARE ACCEPTABLE IN TERMS OF OTHER POLICIES IN THIS PLAN FOR:**

(a) **RECREATION DEVELOPMENT APPROPRIATE IN THE COUNTRYSIDE;**

(b) **THE DISPOSAL, RECYCLING OR TREATMENT OF WASTE."**

4.18 The intentions of the policy are to protect the character of the countryside and maintain the destination between built up areas and the countryside by controlling the spread of inappropriate development outside of settlements. The policy comments that whilst the replacement of existing buildings may be appropriate and acceptable subject to other criteria, new business/office development would, (by its absence from the policy listing) be deemed inappropriate.

4.19 However paragraph 2.58 of the Local Plan in consideration of Policy EN8 comments:

> **"In exceptional circumstances, proposals not in accordance with this policy may be given favourable consideration if major benefits are provided by the development which could not be provided by other means. The Borough Council will have to be satisfied that the community, or other, benefits are sufficient to outweigh any disadvantages and the general presumption against development."**

4.20 The site is also subject to Policy ENV10 : Significant land between settlements which states:

> **"WITHIN THE DEFINED SIGNIFICANT LAND BETWEEN SETTLEMENTS, DEVELOPMENT WILL ONLY BE ACCEPTABLE WHERE IT WOULD NOT BE PREJUDICIAL TO MAINTAINING THE OPEN, RURAL, OR UNDEVELOPED CHARACTER OF THE DEFINED SIGNIFICANT LAND."**

4.21 The policy is intended to maintain the visual and physical separation of settlements by resisting development which would narrow or erode such a gap.

4.22 With regards to employment development generally Policy E1 directs employment opportunity to Bracknell Town Centre, especially with regard to retail and mixed use development; Policy E2 accepts that business development will generally be acceptable within defined employment areas, and Policy E3 encourages small scale development (up to 500 sq. metres) on new and existing employment sites within settlement boundaries. Outside of the urban areas development will generally be resisted.

4.23 Policy EN21 : Design Considerations in new development (amended Proposed Changes November 1997) sets a series of criteria for judging the acceptability of development. The Policy states:

> **"NEW DEVELOPMENT, WHICH ACCORDS WITH OTHER RELEVANT POLICIES OF THE PLAN, WILL NORMALLY BE PERMITTED PROVIDED THAT IT WOULD:**
>
> **(i) BE IN SYMPATHY WITH THE APPEARANCE AND CHARACTER OF THE LOCAL ENVIRONMENT AND APPROPRIATE IN SCALE, MASS, DESIGN, MATERIALS, LAYOUT AND SITING, BOTH IN ITSELF AND IN RELATION TO ADJOINING BUILDINGS, SPACES AND VIEWS;**
>
> **(ii) RETAIN BENEFICIAL LANDSCAPE, ECOLOGICAL OR ARCHAEOLOGICAL FEATURES AND, WHERE POSSIBLE, ENHANCE THESE FEATURES;**
>
> **(iii) ENSURE THAT THE DESIGN OF THE DEVELOPMENT PROMOTES, OR WHERE NECESSARY CREATES, LOCAL CHARACTER AND A SENSE OF LOCAL IDENTITY;**
>
> **(iv) PROVIDE ADEQUATE SPACE FOR PRIVATE USE AND VISUAL AMENITY WHERE APPROPRIATE;**
>
> **(v) PROVIDE APPROPRIATE LAYOUT AND DESIGN FEATURES TO IMPROVE PERSONAL AND GENERAL SECURITY, INCLUDING THE NATURAL SURVEILLANCE OF PUBLIC SPACES, INCLUDING FOOTPATHS, ROADS AND OPEN SPACE;**
>
> **(vi) AVOIDS THE LOSS OF IMPORTANT OPEN AREAS, GAPS IN FRONTAGES AND NATURAL OR BUILT FEATURES (SUCH AS TREES, HEDGES, WALLS, FENCES AND BANKS) WHICH IT IS DESIRABLE TO RETAIN;**

(vii) **DOES NOT ADVERSELY AFFECT THE AMENITY OF SURROUNDING PROPERTIES AND ADJOINING AREA;**

(viii) **IS NOT BE PREJUDICIAL TO THE PROPER FUTURE DEVELOPMENT OF A LARGER AREA IN A COMPREHENSIVE MANNER."**

4.24 Although intended primarily as a development control policy tool in relation to residential development policy EN21 highlights a number of themes which can give guidance as to the compatibility (in particular sub-sections (i) (ii) (vi) (vii) and (viii)) of the development with its surroundings.

5.0 PLANNING ISSUES

5.1 The following issues have arisen out of the policy considerations and are therefore addressed in this section of the Statement:

1. The proposed location of the development within the countryside in an area defined as significant land between settlements and whether this would cause demonstrable harm to interests of acknowledged importance (Policies C1 and C2 BSP and Policies EN8 and EN10 BFLP).

2. As a consequence of the location of the site, whether the proposed development is able to be integrated within the site and its surroundings (Policy RNV10 and EN21 BFLP).

3. Whether the proposed development might have any detrimental effect on the need for housing (Policy BU1, BSP).

4. What effect the proposed development will have on the transport network (Policy BU1, BSP) – dealt with in the Transport Report prepared by WSP.

Site's Location in the Countryside and in a Green Gap.

5.2 The Deposit Draft Bracknell Forest Local Plan identifies the Beaufort Park site as within the open countryside outside of built up areas and in a "green gap" which is identified as significant land between settlements. As such there is a general presumption against inappropriate development within such areas, reinforced by the necessity to keep visually open, rural and undeveloped such areas so as to prevent the coalescence of settlements.

5.3 The visual impact of the proposed development is assessed in detail in the Landscape and Visual Appraisal undertaken by Barton Willmore Environmental and is considered later in this Section. Whilst it is acknowledged that the proposed headquarters office building is not within a category of development normally deemed acceptable within the countryside and hence contrary to policy, Section 54A of the Town and Country Planning Act 1990 provides that where other material considerations apply a positive

decision may be taken with regard to the outcome of the proposals. Indeed paragraph 2.58 relating to Local Plan Policy EN8 acknowledges that where exceptional circumstances exist and major benefits arise favourable consideration may be given to the proposal.

5.4 It is considered that such exceptional circumstances exist to justify overriding such policy presumptions. Such circumstances are set out as follows:

(i) There is already an established presence of The Met. Office on site with buildings totalling some 3,413 sq. metres in floor area. As such the site may be regarded as "brownfield" and development would represent the expansion of the existing business "in situ" in accordance with Structure Plan Policy BU2.

(ii) The present disparate miscellany of buildings and equipment spread across the site would be removed and development concentrated within the southern area of the site on the edge of and partly within the coniferous plantation.

(iii) The development would permit the retention of The Met. Office at Bracknell and continue the historic link of the organisation to the town as a major employer and prestigious member of the Bracknell Business community. Indeed the continued and successful growth of Bracknell in the 1960's from one of the original "first generation" new towns must have owed much to the presence of The Met. Office and the varied employment opportunities offered. The town of Bracknell would continue to benefit in terms of its economic well being brought about by the retained presence of The Met. Office.

(iv) The development of the Beaufort Park site would mean that employees of The Met. Office could remain in the general Bracknell area and need not consider a possible move from their existing residences.

(v) As part of its proposals to relocate to Beaufort Park The Met. Office intend to establish a Green Transport Plan (GTP) for the site and consult with Bracknell Forest Borough Council on its contents and implementation. The plan which will co-ordinate all travel modes will be aimed at reducing the total number of car

trips to the site and increasing the accessibility of other transport modes such as public transport, walking and cycling.

(vi) Through the analysis of existing staff travel patterns and future surveys, The Met. Office will be able to give consideration to its overall policy on travel as part of the implementation of the GTP. A range of initiatives are available to meet an agreed strategy and are detailed in the Transport Assessment. For example the frequency of existing bus services which pass the site could be improved and an additional shuttle bus link between Wokingham, Beaufort Park and Bracknell, (from where the majority of employees homes are concentrated), could be introduced. The level and method of subsidy for such a service would need to be carefully considered in order to make a bus service more attractive than travel by car. Further opportunity could arise in association with existing development at Hewlett Packard of Pinewood and the Transport Research Laboratory to considerably improve such services.

(vii) The GTP could also provide the opportunity to increase travel to and from work by foot and cycle by enhancing mixed route linkages between the site and the western area of Bracknell. This would assist local residents as well as Met. Office employees.

(viii) Constraint would need to be exercised to restrict the number of car trips by limiting the number of parking spaces at Beaufort Park. In this respect The Met. Office fully support central and local government in reducing parking provision in favour of other non-car modes of transport.

(ix) Improved highway safety would also be achieved by the new roundabout to be provided from the B3430 Nine Mile Road and from minor improvements to the A3095 Crowthorne Road/Nine Mile Ride junction, with the speed restraint implicit in such new provision and also in separating business traffic from other users of South Road.

Integration of the Development Within the Site and its Surroundings

5.5 The new headquarters building will be generally located in an area presently occupied by the existing group of buildings. Additional buildings and parking provision would be accommodated in part of the conifer plantation which would need to be felled in part. Such felling would be only those plantation areas intended for new buildings and infrastructure which have been identified as of limited ecological value.

5.6 As considered in the Landscape and Visual Appraisal Report the site is well screened from the surrounding area and as a consequence visual impact is minimal. Sensitively developed the site would not impinge on the function of the "green gap" or the physical nature of the countryside and would take place within an existing landscape structure.

5.7 The existing woodland vegetation to the site perimeter effectively screens and limits the impact of any development by visually enclosing the site from the surrounding area. Development on site would therefore for the most part be screened by these broadleaved woodland areas and coniferous plantation, even allowing for the loss of part of the southern plantation.

5.8 Opportunity can be taken to evolve a landscape strategy for the site in association with its development, to enhance the natural features of the site which presently exist and provide an attractive overall setting for the development.

5.9 A detailed landscape strategy is considered in the Landscape and Visual Appraisal Report, but may be summarised as follows:

- The protection of as much of the existing planting as possible.
- The containment of the built development within a framework of existing and proposed planting.
- The retention and provision of landscape buffers between the proposed built development and adjoining land uses.

- The overall provision of a high quality landscape setting to the proposed development.

- New tree planting to in part offset the loss of the areas of existing broadleaved woodland and coniferous plantation, and additional planting within the existing woodland particularly to the north to complement the existing tree screen. Selective tree surgery would ensure the continued well being of the existing woodland.

- A Landscape Management Plan would be developed for the site in consultation with the Local Planning Authority so that an appropriate landscape management regime is secured.

5.10 An ecological appraisal of the site has identified areas of remnant heathland, acid grasslands and part of the broadleaved woodland which provide a mosaic of habitats which are of moderate county value. Such value is however limited in value by the over abundance of secondary woodland and closely mown grassland at the expense of more varied heathland. The coniferous woodlands are of limited ecological value.

5.11 There is opportunity to retain and manage the important ecological areas identified on site. It is anticipated that such development would avoid as far as possible the surviving heathland area and minimise land take on the acid grassland and open broadleaved woodland. Thus the buildings have as far as possible been confined to areas of existing development to species poor grassland and to dense conifer plantation. In this way development would provide for a major ecological enhancement of the site, in particular the opportunity for heathland restoration on site as described in the ecological appraisal.

5.12 With regard to hydrology the site is located downstream of the Special Protection Area catchment to the south and outside any Site of Special Scientific Interest catchments. The site lies on Bagshot Beds underlain by London Clay. As such any change in the use is likely to have minimal impact on the overall hydrology of the area. The site itself lies in the Emmbrook catchment to which surface water disposal is allowable subject to standard Environment Agency rules on rates of discharge and water quality.

5.13 Overall the location and design of the buildings have been carefully considered in the context of ensuring that the impact of the proposed development is minimised both in respect of compliance with countryside and gap policies but also in the context of Policy EN21 : Design Considerations, insofar as the latter is applicable to the proposed development.

5.14 Although intended only as a sketch proposal at this stage with detailed matters of design, materials and massing to be considered in future it is considered that the proposed development would be well integrated within the site and minimise any impact on the surrounding area.

Pressure for Additional Housing Development

5.15 Policy BU1 of the Structure Plan identifies that a "careful approach" is considered appropriate to new employment generating development within the plan period in the light of the level of existing commitments and Regional Guidance which seeks a reduction in rates of growth to allow infrastructure and services to catch up with recent rapid rates of growth. However, the plan does allow for some flexibility where new development would:

> **"not unduly add to transport problems or pressures for housing development."**

It is also clear from the plan that it is not the intention of Policy BU1 to damage the economy or force the relocation of local businesses outside of the county but to seek a better balance between new employment and the demand for new housing in the area.

5.16 The Regional Guidance upon which the policy of restraint in Berkshire was built is currently under review, with SERPLAN seeking to impose similar policies on the western sector of the region to discourage inessential development which is seen as fuelling unsustainable development pressures (Areas of Economic Pressure). However, this approach has been rejected by the Panel at the recent Examination In Public with the suggestion that problems relating to traffic congestion and labour shortages be tackled positively by,

> **"the improvement of local public transport, the elimination of congestion hot-spots and by new housebuilding (including the provision of affordable homes) within sustainable travelling distance. As a matter of general policy, neither congestion nor labour supply should be used as a reason for frustrating the proper elevation of the regional economy to world class."** (Report of the Panel into the draft Regional Planning Guidance for the South East, September 1999, paragraph 4.32).

5.17 The Public Consultation - Draft Regional Planning Guidance for the South East (March 2000) has endorsed the recommended approach of the Panel in replacing the Areas of Economic Pressure previously proposed and instead setting out a more positive approach to development in the Western Arc. It broadly proposes positive management to sustain the economic strengths of the area (Chapter 4 - Core Strategy for the Region).

5.18 Thus paragraph 4.22 states:

> **"Economic development strategies for this area should build on its economic strengths, particularly the high skill levels and knowledge base, to ensure that the economy continues to grow with the minimum additional pressure on limited labour or land resources. Development plans should support such strategies by ensuring that appropriate employment land is available for the businesses that need to be in the area, for example as a result of existing or emerging business clusters, as well as ensuring complementary housing and transport strategies. The positive tackling of "hotspots" or localised areas of problems, will be particularly important and further guidance is included in chapter 7."**

5.19 Policy RE8 dealing with the regional economy states, inter alia:

> **"In the Western Arc positive strategies should be developed for areas where congestion or labour or land shortages are constraining economic growth. "Hotspots" should be identified and specific policies developed to tackle local problems."**

With regard to such "hotspots" paragraphs 7.13 and 7.14 comment that development plans should include a range of policies to reduce or mitigate the effects of these pressures and that Local Authorities should work with partners to tackle congestion through local transport and housing strategies.

5.20 The proposed development at Beaufort Park is intended to represent a relocation from The Met. Office's existing London Road headquarters building some 4.25 kilometres to the north east. As such the development would provide for existing employees at Bracknell transferring to Beaufort Park. It is not anticipated that any new dwelling requirement will arise directly from the new offices at Beaufort Park. The question arises however of the future use of the London Road buildings.

5.21 With regard to the future of the London Road, Bracknell site this will be the subject of a planning brief to be prepared in conjunction with Bracknell Forest Borough Council. At this stage it is envisaged that a mixed use redevelopment could take place on the site including opportunities for new housing which may make a positive contribution to the balance between employment opportunities and housing provision. As such valuable Government objectives of maximising the re-use of previously developed land, and of achieving a mixed use development on this edge of town centre site can be achieved.

6.0 CONCLUSIONS

6.1 The Met. Office is an international organisation whose headquarters in the UK have been located at London Road in Bracknell since the early 1960's. The organisation has a well established presence in Bracknell and has contributed to the economy of the County for many years.

6.2 The organisation is presently based in a number of separate buildings within Bracknell Town Centre and at Shinfield Park and Beaufort Park. Refurbishment or redevelopment has been ruled out as an option and a decision has therefore been taken to concentrate operations at a single new relocated headquarters site.

6.3 The Met. Office is therefore consulting with Bracknell Forest Borough Council for a new headquarters and other associated buildings of 36,733 sq.m. floor area at Beaufort Park under Department of the Environment Circular 18/84. To assist the local planning authority to consider the quantum of such development on the site illustrative proposals and a design statement have been included in this Statement.

6.4 Policy considerations have identified four issues relating to the proposed relocation. Firstly, with regard to the sites location within the countryside and in an area defined as significant land between settlements, whilst it is acknowledged that there is a general policy presumption against such development, it is considered that there are exceptional circumstances which warrant overriding such presumptions. In this instance Beaufort Park is an established and previously developed site upon which the Met. Office wish to expand. The opportunity arises for the concentration of new buildings within a defined area rather than spread across the site as at present.

6.5 Importantly Beaufort Park allows the opportunity for the Met. Office to remain in the Bracknell area as a major local employer. Existing employees would have the opportunity to remain in the locality without the need to move. A travel plan will be prepared in association with Bracknell Forest Borough Council to address and improve the balance of car and non car travel to work patterns.

6.6 The second issue of the integration of the development within the site to meet gap policy and design criteria is addressed by reference to the landscape and visual assessment undertaken for the site. The site is well screened from the surrounding area such that the visual impact of the development is minimal. Sensitively handled such development could take place without compromising the general countryside location or the function of the gap. An ecological study has identified important areas worthy of retention and enhancement, and together with a landscape management plan would secure the long term beneficial future of the site.

6.7 The third issue of whether there will be any detrimental effect on the need for housing is addressed in relation to the proposal being a relocation of existing staff from central Bracknell headquarters. There will be no increase in the demand for additional houses as a result of this relocation.

6.8 The fourth issue relates to the effect (if any) that the proposed development would have on the transport network. Transport issues are dealt with in a separate report, which sets out the framework for a Green Transport/Travel Plan for the Beaufort Park site and which offers an opportunity to implement transport policies offering considerable benefits in assisting in the reduction in car use and improvements in public transport, pedestrian and cycle routes in the area. In addition a number of off-site highway improvements are intended to improve overall highway safety.

LIST OF APPENDICES

Appendix 1	-	Extracts from Berkshire Structure Plan 1991 - 2006
Appendix 2	-	Deposit Draft Bracknell Forest Local Plan 1996 and subsequent Proposed Changes.

LIST OF DRAWINGS

Drawing No. 9906/P2	-	Site Location Plan
Drawing No. SK001	-	Site/Building Footprint Layout
Drawing No. SK009	-	Typical Section and Elevation

BERKSHIRE STRUCTURE PLAN 1991-2006

Adopted by Berkshire County Council 4 November 1995

December 1995
Price: £15.00

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5 COUNTRYSIDE AND RURAL DEVELOPMENT

5.1 Much of Berkshire's attractiveness lies in the character and scale of its smaller towns and villages, and the countryside in which they are set. As part of the overall aims of this Plan, there is a need to adopt a sustainable approach in dealing with development affecting the countryside and the communities within it. In particular, there is a need to balance the protection of the countryside for its own sake with the need to accommodate changes necessary to ensure the health of rural communities.

RURAL DEVELOPMENT AND SERVICES

5.2 Despite an apparent air of relative prosperity, Berkshire's rural areas have not been immune from a number of pressures affecting the rural economy and society. As a result of these pressures, there is :

- a need to assist the rural economy, for example, through the diversification of farm businesses and the availability of reasonably priced premises suitable for small rural businesses;
- a need for more low cost residential accommodation for local needs - the majority of Berkshire's villages are attractive places to live but this has helped to raise the price of housing well above what many existing residents can afford, as well as fuelling pressures for land to be released for development; and
- a need to address the continuing decline of rural services brought about by factors such as increasing car ownership, the spread of large out-of-town retail stores, the general financial pressures on small businesses, and the changing social composition of rural settlements.

5.3 The County Council supports a vision of 'balanced rural communities', which are diverse both in terms of their social composition and the range of activities within them (villages which contain services and appropriate employment opportunities for local people, as well as housing). A mixture of people and activities can help support each other, and thereby help to maximise the 'quality of life' in rural areas. Access to local facilities can also make rural life more sustainable, by reducing the need to travel elsewhere.

Rural Development

Policy C1 **The nature and scale of development in rural areas should seek to encourage and sustain balanced rural communities. Development will normally be within rural settlements defined in local plans and be appropriate to the scale and character of a settlement.**

5.4 To help achieve this, other policies in this Plan :

(i) assist the maintenance of a range of employment opportunities in all parts of the County, including the rural areas (Policies BU1 and BU2);

(ii) help promote a supply of 'low-cost' housing for local needs in rural areas by :

- the provision (as elsewhere) of low-cost dwellings as part of new housing development (Policy H7);

- allowing some housing specifically to meet identified local needs, on sites where new dwellings would not normally be permitted (Policy H8); and

(iii) support public transport services in so far as resources allow, which can be justified by their level of use. In order to improve the overall effectiveness of public transport serving scattered communities, the County Council will encourage greater co-ordination of the services provided by the various operators and agencies (Policy T4).

Policy EN1 deals with the protection of the character and enhancement of the quality of the environment in villages and other rural settlements.

5.5 For the purposes of Policy C1, 'rural areas' may be defined as those places which lie beyond towns (and adjoining built-up areas) with populations of 10,000 or more. This definition accords with that used by the Rural Development Commission, and has been adopted for the Berkshire Rural Community Strategy (see paragraph 5.7 below). Using this approach the following settlements are considered to fall outside the remit of Policy C1:

Reading urban area (including Purley, Tilehurst, Calcot, Woodley and Earley)
Maidenhead
Bracknell
Newbury/Thatcham
Wokingham/Winnersh
Windsor/Eton
Sunningdale/Sunninghill/Ascot
Crowthorne
Sandhurst
Slough

5.6 Whilst the availability of local services such as schools, shops and health facilities is an important factor in helping to sustain balanced rural communities, land-use planning policies themselves can do little to ensure that services remain in villages.

5.7 However, the County Council has worked with the Community Council for Berkshire, the Rural Development Commission and other relevant organisations to prepare a Rural Community Strategy. This was published by the Community Council on behalf of the Berkshire Rural Strategy Steering Group in October 1994. The Strategy looks beyond land use planning and examines in a comprehensive manner both the issues affecting Berkshire's rural communities and recommendations as to how they may be addressed by a wide range of agencies.

LIMITING THE SPREAD OF DEVELOPMENT

Controlling Development in the Countryside

5.8 The protection of the countryside is a fundamental concern and it is necessary to limit development within it to that which is both appropriate (in type and form) and sensitive to its location.

Development Outside Built-Up Areas and Settlements

Policy C2 **Development outside built-up areas and settlement boundaries defined in local plans (and not within the Metropolitan Green Belt - see Policy C4) will be strictly controlled, and permitted only :**

(i) where it is required for agriculture or forestry; or

(ii) for the re-use, adaptation or redevelopment of existing buildings, particularly to assist the diversification of the rural economy and to maintain or enhance the rural environment; or

(iii) other development for which a rural location is essential;

provided it is both appropriate in scale, form, impact, character and siting to its location in the countryside and is acceptable in terms of other policies in the Structure Plan.

5.9 Building in the open countryside away from existing settlements or from areas allocated for development in local plans will be strictly controlled in line with advice in PPG7, 'The Countryside and the Rural Economy'. Even where development may be acceptable in principle in the countryside the acceptability of a particular proposal will depend on its suitability for the proposed site; on the impact of any related activity; and on the adequacy of any measures to integrate the proposal into the surroundings. More detailed criteria relating to the control of development in the countryside will be included in local plans. With regard to redevelopment, such criteria may for example require that proposals should have no greater impact (in terms of bulk of buildings or site coverage) than the existing development and should secure environmental improvements.

5.10 Proposals for essential utilities will be considered under sub-section (iii) of Policy C2. Essential utilities include development and facilities, where these cannot be sited within settlements, for transport and related services, including park and ride and motorway service areas; for the distribution of gas, oil and electricity; for sewage disposal; for water supply and flood alleviation; and for telecommunications.

5.11 Where necessary to meet provisions made in the Structure Plan, settlement boundaries may be defined in local plans to allow for appropriate forms of development on sites on the edge of built-up areas.

Bracknell Forest Borough	121,520 sq.m. plus 12.0 hectares
Newbury District	180,160 sq.m. plus 15.6 hectares
Reading Borough	237,730 sq.m. plus 6.6 hectares
Slough Borough	131,400 sq.m.
Royal Borough of Windsor & M'head	17,750 sq.m.
Wokingham District	237,570 sq.m.
Berkshire	**926,130 sq.m. plus 34.2 hectares**

In addition to the above commitments, there are a number of sites being proposed in draft local plans. Approximately 13,400 sq.m. of BIDS floorspace could be built on such sites identified at March 1994.

Further Business and Industrial Development

8.15 Although the County Council is not proposing any major new allocations for business, industrial, distribution and storage development it considers that some flexibility needs to be made for development beyond the existing provision. Policy BU1 therefore gives some scope for development additional to the provisions in paragraph 8.14 where it would not unduly add to transport problems or pressures for housing development. The flexibility afforded by Policy BU1, together with the substantial amount of floorspace already committed or currently vacant, will help the County to retain its prosperity and attractiveness for investment. It will also allow opportunities for businesses to expand, premises to be modernised or redeveloped and jobs lost in declining industries to be replaced. It will assist urban regeneration and the re-use of urban land in line with Government guidance[1] and will also allow more flexibility for the provision of local services and for helping the needs of the local labour force.

8.16 However, the County Council is concerned to ensure that a significant intensification of employment uses is avoided in many areas. Many of the existing industrial areas in Berkshire have experienced considerable change and redevelopment in recent years, often leading to additional floorspace and the replacement of traditional industrial and warehousing premises by more intensively occupied business premises. These trends have been encouraged by the flexibility offered by the 1987 Use Classes Order. The result has in many cases been a significant intensification of employment potential which has added to transport problems, additional labour supply demands and associated pressures for additional housing. It has also led to a reduction in the variety of premises available (see paragraph 8.21).

8.17 The redevelopment and intensification of large research and other institutional establishments in rural locations can also lead to significantly increased employment, drawing workers from a wider area, increasing traffic flows and the length of journeys to work, contrary to the objectives of sustainable development. The following policy therefore deals with redevelopment and changes of use as well as new sites.

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1 *Advice in Planning Policy Guidance Note (PPG4) 'Industrial and Commercial Development and Small Firms'*

Assessment of Proposals for Further Business, Industrial, Distribution and Storage Development

Policy BU1 In considering proposals for business, industrial, distribution and storage development other than that already committed, permission will normally be granted where the proposal would :

(i) aid urban regeneration;

(ii) contribute (when compared with existing or committed development) towards meeting the employment needs of the local population in the County, including the rural areas;

(iii) meet the needs of existing firms in Berkshire, including small businesses; or

(iv) meet the need for a particular type of business which would serve the local economy and which cannot be accommodated in existing or committed premises;

provided that it does not give rise (either by itself or cumulatively with other such schemes) to:

- pressures for housing development additional to the provision in this Plan; or

- transport problems, having regard to the capacity of the transport network, the rate at which the transport strategy is being implemented and accessibility by public transport;

Other factors to be taken into account in considering proposals will include:

- the amount of suitable land and premises already available, including development that is committed or agreed in principle and property that is being marketed at the time:

- the rate of completions and occupation of premises over the Structure Plan period, and changing densities of occupation.

8.18 Policy BU1 allows for local considerations to be taken into account. The County Council will be providing further guidance on the interpretation of Policy BU1 and will work with the local planning authorities to produce regular statements on the current state of the economy to assist with the implementation of the policy. The weight given to each criterion in the policy will depend upon local circumstances.

8.19 The use of the term 'urban regeneration' in the context of Policy BU1 does not imply the acceptance of wholesale redevelopment of BIDS uses in urban areas, as this could lead to the unacceptable intensification of activities and a loss of variety of types of premises and uses. Rather, it is the targeted redevelopment of existing underused, vacant and derelict land and premises where this is appropriate in accordance with other policies in this Plan. Urban regeneration also includes the redevelopment of older BIDS premises which due to age and specification may not be suitable for the modern needs of business and industry.

8.20 Particular attention will be given to proposals for major additional floorspace. The distinction between major and small scale developments may vary in different parts of the County, according to local circumstances and definitions adopted in local plans, but normally a major development will be one involving a net increase in floorspace of 500 sq.m. and over.

MAINTAINING A VARIETY OF PREMISES

8.21 The County Council is seeking a broad-based local economy in which local firms have opportunities to grow and prosper, and local people have access to a wide range of job opportunities. Although rentals may have fallen over the last few years, high rental and land values limit the supply of reasonably priced premises for small or recently established firms, and can lead to an over-emphasis on floorspace for office and business uses at the expense of industry, storage and distribution (a trend reinforced by changes in planning legislation).

8.22 Local planning policies can provide valuable assistance in controlling the scale and type of development and redevelopment. Measures that help achieve a variety of sizes and types of premises, a range of uses and the retention of areas for industrial and warehousing activities, as well as controls on the height, mass and density of development, are particularly welcomed.

8.23 While planning policies are only one of the factors that can influence the range of types and sizes of premises that are provided, encouragement can be given, where appropriate, to proposals which assist the maintenance of a balanced local economy and provide for the expansion of local firms.

Provision of a Variety of Premises

Policy BU2 **Within the provisions of Policy BU1, favourable consideration will normally be given to proposals for :**

(i) existing businesses wishing to expand in situ;

(ii) the provision of a range of small units;

(iii) the provision of industrial, distribution and storage units.

8.24 This policy seeks to guide any future employment development towards meeting the needs of existing local firms and providing a wide range of job opportunities, rather than an excessive provision of business (office) development. Small industrial starter or nursery units of less than 100 sq m each will be particularly encouraged. Where proposals involve the provision of smaller units the County Council will support measures by the local planning authorities to ensure that the units are not subsequently amalgamated without their prior agreement.

8.25 In the case of development and redevelopment within existing industrial areas an over-emphasis on the provision of office premises and a reduction in the variety of uses should be avoided. A range of types and sizes of premises should be provided wherever possible. Proposals involving development for business use can also contribute to achieving a variety of activities if their design enables a range of activities to be accommodated.

OTHER USES FOR BUSINESS AND INDUSTRIAL LAND AND PREMISES

8.26 In order to achieve other desirable planning objectives such as the provision of low-cost housing, or to seek sustainable locations for development, the County Council will, where appropriate, support the re-use or redevelopment of business, industrial, distribution or storage premises or sites to other uses such as housing (including the conversion of offices to flats), recreation, or social and community facilities. Proposals should meet the requirements of other policies and objectives in this Plan and in local plans.

8.27 Regard will also need to be paid to the concern to maintain a balanced local economy with a wide range of job opportunities and a variety of premises, including small units, although in some areas changes from BIDS to other uses may help to reduce the potential mismatch between jobs and local labour supply referred to in paragraph 8.10. The County Council will oppose development which adversely affects the availability of industrial and warehousing land and premises, and the locally available range of job opportunities. The Council will resist redevelopment to other uses of sites and premises which it considers to be of more benefit to the needs of the local economy where retained in BIDS uses.

Development Proposals Involving Other Uses for Business, Industrial, Distribution and Storage Land and Premises

Policy BU3 **Proposals for the redevelopment or change of use of business, industrial, distribution or storage premises, or sites proposed for such uses, to other uses will be encouraged in appropriate circumstances as defined in local plans, providing there is no unacceptable adverse impact on the availability of industrial and warehousing land and premises and on the locally available range of job opportunities. Permissions for business, industrial, distribution or storage uses will not be automatically renewed without a review of the continued justification for the development proposed, having regard to the considerations listed in Policy BU1, and other material considerations including the suitability of the site for alternative uses.**

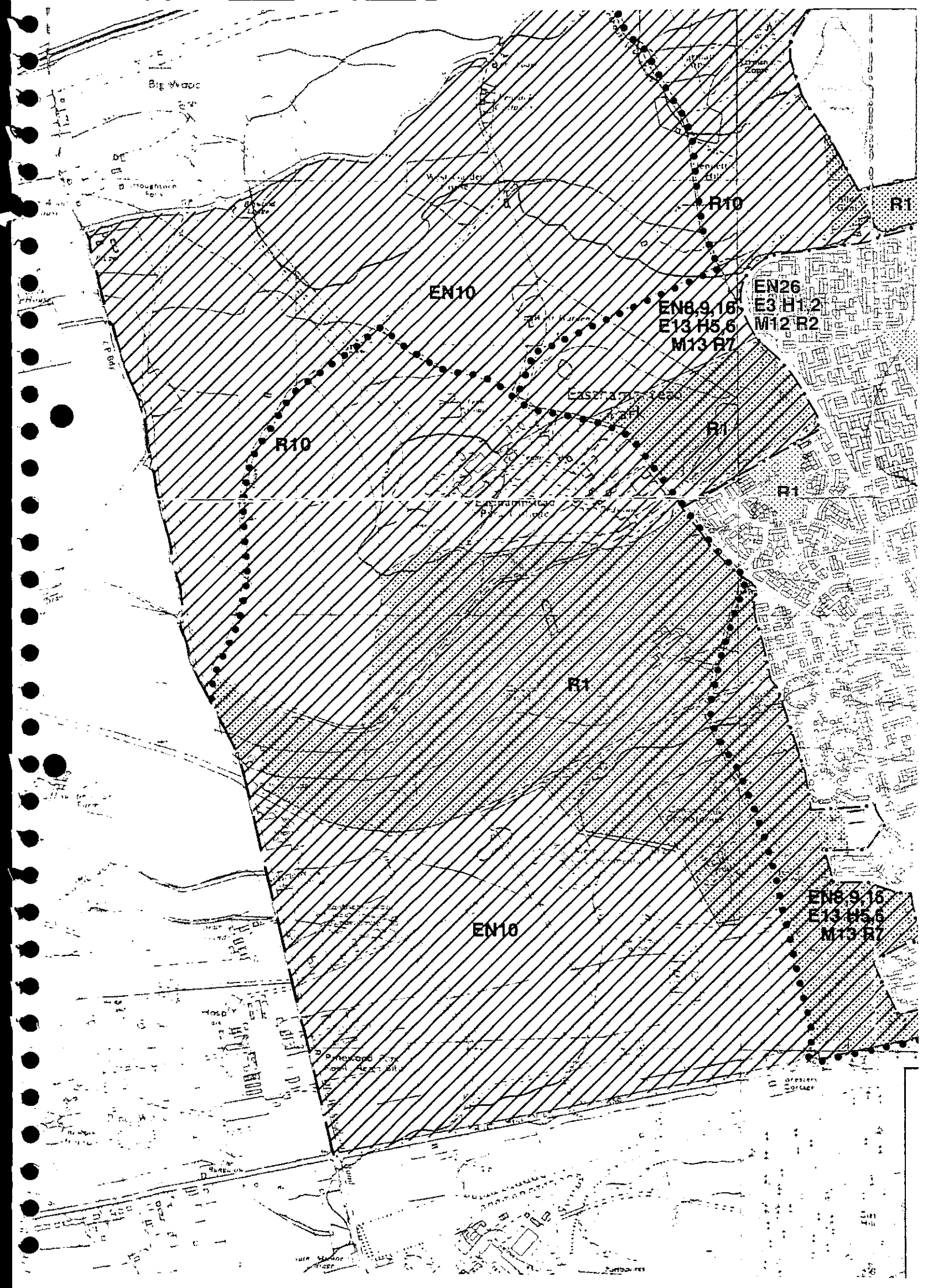
8.28 In all cases permitted in accordance with Policy BU3, the County Council will normally oppose any proposals to replace on other sites the resulting loss of floorspace and areas, unless they comply with the considerations listed in Policy BU1, in view of the substantial existing commitment to BIDS development and concerns about the potential imbalance between the anticipated increase in jobs and the labour supply available locally.

Bracknell Forest Borough Local Plan



Deposit Draft
June 1996

£20.00


R10
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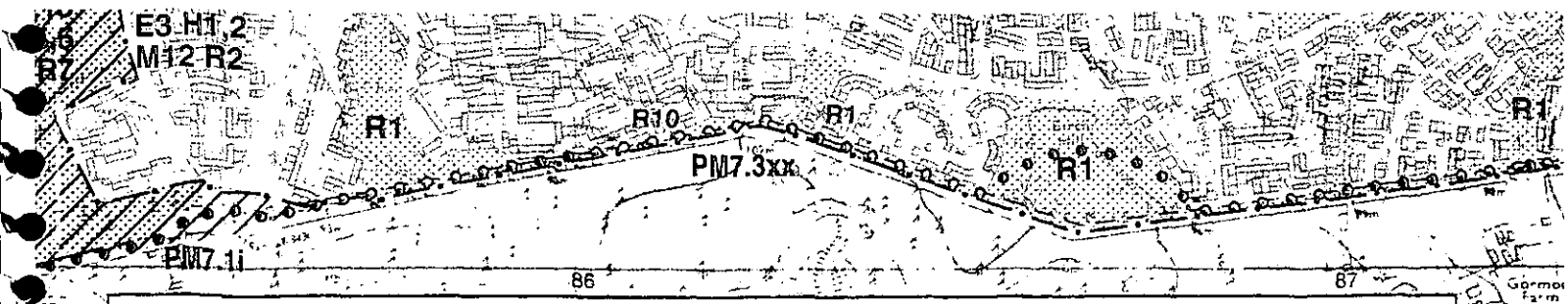


Policies

	Special Protection Area	EN3i
	Site of Special Scientific Interest	EN3iii
	Scheduled Ancient Monuments	EN6
	Land outside defined settlements	EN8,9 ,16 E13 H5, 6 M13 R7
	Significant land between settlements	EN10
	Area of Special Landscape Importance	EN11i
	Warfield Park Mobile Home Site	EN12
	River corridor	EN15
	Defined employment area	E2, 5
	Land within defined settlements	EN26 E3 (except areas covered by E1 & E2) H1, 2 M12 R2
	Green Belt	GB1, 2, 4
	Low density housing	H4
	Safeguarded road line	M2
	Open space of public value	R1
	Ramblers Route	R10
	Inset boundary	

Inset maps are bound into the document apart from Inset 1 which is overleaf.

Proposals -proposal numbers are shown in red

	Traffic management		Cycleway
	Junction works		Other works
	Highway works		Development proposal
	Footpath		Commitment
	Footpath/cycleway		

note : some proposals maybe represented by a number only eg along a length of road

BRACKNELL FOREST BOROUGH COUNCIL

Map 1 (Binfield) is overleaf
Maps 2 and 4 are on the other sheet

Scale 1:10 000

0 1km

N

POLICY EN7 Important archaeological remains

2.54 IMPORTANT ARCHAEOLOGICAL REMAINS WILL BE SAFEGUARDED, WHEREVER POSSIBLE, FROM DEVELOPMENT WHICH WOULD ADVERSELY AFFECT THEM. DEVELOPMENT PROPOSALS WILL BE ASSESSED HAVING REGARD TO THE NEED FOR THE PRESERVATION OF ARCHAEOLOGICAL REMAINS. WHERE APPROPRIATE, PROVISION FOR ARCHAEOLOGICAL ASSESSMENT AND EVALUATION PRIOR TO DETERMINATION OF PLANNING APPLICATIONS WILL BE EXPECTED.

2.55 The existence of archaeological remains which are already known to the Borough Council are indicated on Topic Maps 1 - 4. However, additional sites will continue to be identified as a result of new information and field work evaluation. The Borough Council will seek to ensure that adequate opportunity is given for the importance of the archaeological deposits to be assessed so that an informed judgement can be made on whether their value calls for preservation or further investigation. The Borough Council will seek to ensure the mitigation of the impact of development proposals upon such important archaeological remains. Planning permission in such cases will be conditional upon archaeological assessment and evaluation being carried out by an accredited archaeologist, prior to planning permission being granted. The full significance of many sites is often unknown and so it is important that proper investigations are undertaken early to establish their true value and to record or salvage artefacts and features which may be threatened by development.

POLICY EN8 Development on land outside settlements

2.56 OUTSIDE THE DEFINED SETTLEMENT BOUNDARIES, DEVELOPMENT WILL ONLY BE ACCEPTABLE WHERE IT WOULD NOT ADVERSELY AFFECT THE CHARACTER AND FUNCTION OF THE LAND OR WHERE IT WOULD NOT BE DAMAGING TO LANDSCAPE QUALITY.

APPROPRIATE AND ACCEPTABLE DEVELOPMENT IN THE COUNTRYSIDE MAY INCLUDE:

(i) DEVELOPMENT REQUIRED FOR AGRICULTURE AND FORESTRY;

(ii) ESSENTIAL UTILITIES AND CEMETERIES WHICH CANNOT BE SITED WITHIN SETTLEMENT BOUNDARIES;

(iii) MINOR EXTENSIONS TO, REPLACEMENT OF, OR SUBDIVISION OF, EXISTING BUILDINGS, SUBJECT TO CRITERIA DEFINED IN POLICIES EN17, EN18, EN20, GB1 AND H6 OF THIS LOCAL PLAN;

(iv) THE RE-USE OF PERMANENT BUILDINGS WHICH ARE IN KEEPING WITH THEIR SURROUNDINGS, OR OF BUILDINGS OF SPECIAL ARCHITECTURAL OR HISTORIC INTEREST, FOR SUITABLE ALTERNATIVE USES (INCLUDING RESIDENTIAL INSTITUTIONS IN EXTENSIVE GROUNDS) SUBJECT TO CRITERIA DEFINED IN EN9, GB4, H11, AND E13; AND

(v) PROPOSALS WHICH ARE ACCEPTABLE IN TERMS OF OTHER POLICIES IN THIS PLAN FOR:

(a) RECREATION DEVELOPMENT APPROPRIATE IN THE COUNTRYSIDE;

(b) THE DISPOSAL, RECYCLING OR TREATMENT OF WASTE.

2.57 The Borough Council is particularly concerned to maintain the distinction between built-up areas and the countryside by controlling the spread of inappropriate development outside settlements. Within the plan area, the settlement limits have been reviewed and redefined to provide strong and defensible boundaries.

2.58 In exceptional circumstances, proposals not in accordance with this policy may be given favourable consideration if major benefits are provided by the development which could not be provided by other means. The Borough Council will have to be satisfied that the community, or other, benefits are sufficient to outweigh any disadvantages and the general presumption against development.

POLICY EN9 Changes of use and adaptation of existing buildings outside settlements

2.59 OUTSIDE DEFINED SETTLEMENT BOUNDARIES AND OUTSIDE THE GREEN BELT, THE CHANGE OF USE AND ADAPTATION OF AN EXISTING BUILDING WILL ONLY BE ACCEPTABLE WHERE:

(I) THE BUILDING IS OF PERMANENT CONSTRUCTION AND ITS SCALE, DESIGN, BULK AND FORM ARE IN KEEPING WITH ITS SURROUNDINGS; AND

(II) THE PROPOSED CHANGE OF USE OR ADAPTATION WOULD NOT REQUIRE EXTENSIVE ALTERATION OR REBUILDING; AND

(III) THE PROPOSED CHANGE OF USE OR ADAPTATION WOULD NOT BE DETRIMENTAL TO THE CHARACTER OF THE BUILDING, ITS SURROUNDINGS AND LANDSCAPE SETTING; AND

(iv) THE PROPOSAL WOULD BE CONTAINED WITHIN THE EXISTING BUILDING; AND

(v) THE PROPOSED CHANGE OF USE WOULD NOT RESULT IN MORE THAN 500 SQUARE METRES OF BUSINESS, INDUSTRIAL, DISTRIBUTION OR STORAGE (USE CLASSES B1 TO B8) FLOORSPACE; AND

(vi) THE PROPOSAL WOULD NOT CAUSE SIGNIFICANT ENVIRONMENTAL, ROAD SAFETY OR TRAFFIC GENERATION, OR OTHER, PROBLEMS.

2.60 The Borough Council will examine applications for the change of use or re-use of existing buildings outside settlements with particular care. Such proposals should ensure that no extension will form part of the scheme. Associated car parking should be screened by existing buildings and landscaping and supplemented with appropriate landscaping and planting.

2.61 The Borough Council will pay special attention to design. The external appearance of the existing building should not be so altered by the insertion of additional openings, dormer windows or roof lights, the replacement of materials or the removal or insertion of other design features, that the result has little resemblance to the former building.

2.62 The Borough Council will strictly control any extension proposed in association with the re-use or change of use of an existing building. Only those very minor extensions required to provide essential incidental facilities will be permitted.

2.63 Buildings which have become so derelict that they could be brought back into a new use only by complete or substantial reconstruction do not fall within the scope of this policy. The Borough Council will pay particular attention to applications where it has reasonable cause to believe that an attempt has been made to abuse the system by constructing a new farm building (with the benefit of permitted development rights or otherwise) with the intention of early conversion to another use.

Changes to residential use

2.64 The creation of a new residential curtilage around a newly converted building can have a detrimental impact on the character of land outside settlements. The Borough Council will consider removing "permitted development" rights from new dwellings resulting from this policy where any further development would be likely to cause adverse impact on the open, rural and undeveloped character of the locality.

Changes to business, industrial, distribution and storage uses

2.65 In line with the Borough Council's careful approach to new employment-generating floorspace, the use of buildings for business, industrial, distribution or storage (BIDS) purposes will only be acceptable where it is small in scale. For the purpose of this policy, "small scale" will be defined as development involving a net increase in floor space of up to 500 sqm.

POLICY EN10 *Significant land between settlements*

2.66 WITHIN THE DEFINED SIGNIFICANT LAND BETWEEN SETTLEMENTS, DEVELOPMENT WILL ONLY BE ACCEPTABLE WHERE IT WOULD NOT BE PREJUDICIAL TO MAINTAINING THE OPEN, RURAL, OR UNDEVELOPED CHARACTER OF THE DEFINED SIGNIFICANT LAND.

2.67 Policy C6 of the BSP seeks to maintain the distinction between built up areas and the countryside by preventing the coalescence of individual settlements.

2.68 The defined areas of significant land between settlements have been identified as being particularly important in maintaining the visual and physical separation of settlements. These areas are subject to development pressures which threaten their open and undeveloped character, and if left unconstrained, could lead to a merging of settlements. Consequently, development which would narrow or erode the physical and visual gap between settlements will be resisted. This policy is intended to cover some categories of development defined in Paragraph 2.56 which may be acceptable in other areas outside settlements.

POLICY EN11 *Areas of Landscape Importance*

2.69 THE FOLLOWING AREAS WILL BE SAFEGUARDED FROM DEVELOPMENT WHICH WOULD ADVERSELY AFFECT THOSE FEATURES WHICH CONTRIBUTE TO THEIR SPECIAL CHARACTER AND FUNCTION:

(i) DEFINED AREAS OF SPECIAL LANDSCAPE IMPORTANCE:

(a) THE BLACKWATER VALLEY

(b) WINDSOR GREAT PARK

(ii) DEFINED AREAS OF LOCAL LANDSCAPE IMPORTANCE:

(a) CABBAGE HILL

(b) LAND SOUTH OF FOREST ROAD, WEST OF CHAVEY DOWN ROAD AND SOUTH WEST OF WARFIELD PARK.

2.70 Policy C8 of the BSP identifies areas of special landscape importance (ASLIs) that are considered strategically important. The boundaries of these areas are defined on the proposals map.

POLICY E1 Development in Bracknell Town Centre

3.23 WITHIN BRACKNELL TOWN CENTRE THE BOROUGH COUNCIL WILL PROMOTE DEVELOPMENT, REDEVELOPMENT AND ENHANCEMENT WHICH CONTRIBUTE TO ITS ENVIRONMENTAL QUALITY, VITALITY AND VIABILITY.

3.24 The Borough Council wishes to encourage proposals which strengthen the vitality and the viability of Bracknell Town Centre. Consideration will be given to potential sites that would improve the appearance, character and the function of Bracknell Town Centre. To this end the Borough Council will be preparing a town centre strategy in association with interested parties.

3.25 The Borough Council aims to ensure that future development is integrated into Bracknell Town Centre. Each proposal will need to be examined to ensure that it does not have a detrimental effect on other proposals.

3.26 The Borough Council will ensure that all new development does not generate overriding environmental, road safety, or traffic generation problems.

POLICY E2 Development in defined employment areas

3.27 WITHIN THE DEFINED EMPLOYMENT AREAS, BUSINESS, INDUSTRIAL, DISTRIBUTION AND STORAGE DEVELOPMENT WILL NORMALLY BE ACCEPTABLE EXCEPT WHERE THE PROPOSAL WOULD;

(i) RESULT IN THE CONSTRUCTION OF BUILDINGS WITH A GROSS FLOOR AREA EXCEEDING 60% OF THE SITE AREA; OR

(ii) CREATE OVERRIDING ENVIRONMENTAL, ROAD SAFETY, TRAFFIC GENERATION OR OTHER PROBLEMS.

3.28 The flexibility offered by the Use Classes Order has led to the redevelopment and change of use of several former industrial/ manufacturing premises to B1 office use. The Borough Council's view is that over a period of time, such development can result in a very significant increase in employment generating floor space, not in accordance with the BSP's generally careful approach to further BIDS development.

3.29 The increased use of underground car parking in such schemes and the lack of functional constraints on heights of buildings, has led to a considerable intensification of built development in these areas. This in turn will result in highway capacity problems and additional housing pressures which will also be contrary to strategic objectives. An

intensification of built development can also lead to physical problems of overbearing, bulky development and a lack of space between buildings.

3.30 The control set out in (i) above has been derived through a study of employment development in the Borough and will be applied to new development, redevelopment and extensions in conjunction with the Borough Council's vehicle parking standards. By limiting the level of development, the over intensification of development and the reduction of open space will be avoided, and the character of the employment area will be maintained.

3.31 Proper consideration will need to be given to road safety issues and traffic generation. Proposals must demonstrate that the impact of a scheme on the existing roads and issues such as potential congestion will be assessed. Other problems can arise from new development, for example adverse noise generation. Proposals will be considered in relation to the potential adverse impact on the amenities in the area.

3.32 Proposals for the change of use of buildings or land with an existing BIDS use must also satisfy the criteria set out in Policy E5.

POLICY E3 Employment development, within settlement boundaries, outside defined employment areas and Bracknell Town Centre

3.33 WITHIN SETTLEMENT BOUNDARIES, BUT OUTSIDE DEFINED EMPLOYMENT AREAS AND BRACKNELL TOWN CENTRE, BUSINESS, INDUSTRIAL, DISTRIBUTION AND STORAGE DEVELOPMENT WILL ONLY BE ACCEPTABLE WHERE THE PROPOSAL WOULD NOT:

(i) CREATE OVERRIDING ENVIRONMENTAL, ROAD SAFETY, TRAFFIC GENERATION OR OTHER PROBLEMS; AND

(ii) RESULT IN A NET INCREASE EXCEEDING 500 SQUARE METRES; AND

(iii) ADVERSELY AFFECT THE CHARACTER OF THE AREA.

3.34 The Borough Council will encourage small scale (ie not exceeding 500sqm) development on new and existing employment sites within settlement boundaries. Such development will only be acceptable where there are no overriding highway or environmental constraints and there is no detrimental effect upon the character of the area in which the proposal is situated. For example, a B2 use could cause noise pollution, fumes and vibration. A diversity of uses may be acceptable in appropriate locations, as long as they do not adversely affect the character of the surrounding land uses.

3.35 In line with the Borough Council's careful approach to new employment generating floorspace, any new development should not result in more than 500sqm. This limits major development to the defined employment areas and Bracknell Town Centre, whilst still allowing for small businesses outside of the defined employment areas.

3.36 Any employment development resulting in the loss of habitable accommodation, particularly small units above shops, or shopping floor space, will be critically assessed in relation to Policies H11, E7 and E9.

3.37 A high standard of landscaping will be expected in all development proposals (see Policies EN1 and EN2).

POLICY E4 Small businesses

3.38 PROPOSALS INVOLVING A VARIETY OF SIZES AND TYPES OF BUILDING FOR THE BENEFIT OF NEW BUSINESSES OR EXISTING SMALL BUSINESSES WISHING TO EXPAND, WILL BE ENCOURAGED IN APPROPRIATE LOCATIONS.

3.39 Small businesses provide a range of job opportunities and assist in the maintenance of a balanced local economy. There is often a shortage of suitable accommodation for new small businesses, existing businesses wishing to expand and businesses which are inappropriately located in residential areas. The Borough Council seeks to encourage development which meets the needs of these firms, within the overall careful approach in the BSP. Small units of less than 100sqm (including small industrial starter/nursery units), will be particularly encouraged. Proposals to amalgamate individual units will not normally be supported. Where appropriate, the Borough Council will seek to prevent this happening by attaching a condition to the planning permission.

3.40 On land outside settlements in the countryside, the proliferation of small individual units can have a detrimental effect upon the character of the area. Therefore, the Borough Council will consider the cumulative effect of several small units when assessing development proposals. The development will be assessed on whether the form, bulk and general design of the buildings are in keeping with their surroundings (see Policies EN8, EN11, EN24, EN26, EN28 and GB1).

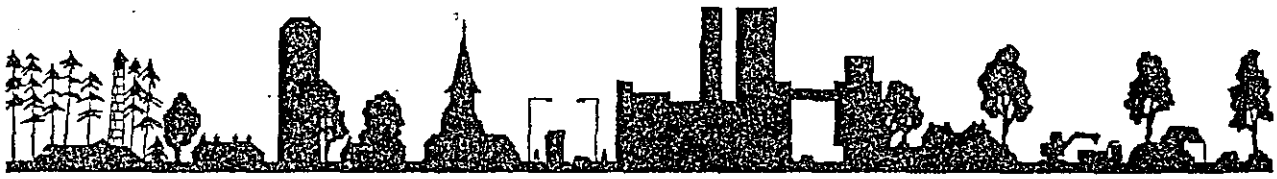
POLICY E5 Loss of business, industrial, distribution and storage land and premises

3.41 PROPOSALS FOR THE REDEVELOPMENT OR CHANGE OF USE OF BUSINESS PREMISES, INDUSTRIAL, DISTRIBUTION AND STORAGE (CLASS B1, B2 AND B8) PREMISES, OR SITES PROPOSED FOR SUCH USES, TO OTHER USES, WILL ONLY BE ACCEPTABLE WHERE:

(I) THERE IS NO LOSS OF EXISTING GENERAL INDUSTRIAL OR WAREHOUSING (CLASS B2 AND B8) LAND AND PREMISES OR SITES PROPOSED FOR SUCH USES; AND

(II) THE PROPOSAL IS NOT FOR RETAIL DEVELOPMENT; AND

Bracknell Forest Borough Local Plan



Further Proposed Changes November 1997

bracknell forest borough local plan

Proposed change 16

Policy EN8 Development on land outside settlements

Policy and paragraph 2.57 and new paragraphs 2.59-66

2.56 OUTSIDE THE DEFINED SETTLEMENT BOUNDARIES, DEVELOPMENT WILL ONLY BE ACCEPTABLE WHERE IT WOULD NOT ADVERSELY AFFECT THE CHARACTER AND FUNCTION OF THE LAND, ~~OR WHERE IT~~ WOULD NOT BE DAMAGING TO LANDSCAPE QUALITY, *OR, WHERE CONSPICUOUS FROM THE GREEN BELT, WOULD NOT INJURE THE VISUAL AMENITIES OF THE GREEN BELT.*

APPROPRIATE AND ACCEPTABLE DEVELOPMENT IN THE COUNTRYSIDE MAY INCLUDE:

(i) DEVELOPMENT REQUIRED FOR AGRICULTURE AND FORESTRY;

(ii) ESSENTIAL UTILITIES AND CEMETERIES WHICH CANNOT BE SIRED WITHIN SETTLEMENT BOUNDARIES;

(iii) MINOR EXTENSIONS TO, REPLACEMENT OF, OR SUBDIVISION OF, EXISTING BUILDINGS, SUBJECT TO CRITERIA DEFINED IN POLICIES EN17, EN18, *EN24*, GB1 AND H6 OF THIS LOCAL PLAN;

(iv) THE RE-USE OF PERMANENT BUILDINGS WHICH ARE IN KEEPING WITH THEIR SURROUNDINGS, OR OF BUILDINGS OF SPECIAL ARCHITECTURAL OR HISTORIC INTEREST, FOR SUITABLE ALTERNATIVE USES (INCLUDING RESIDENTIAL INSTITUTIONS IN EXTENSIVE GROUNDS) SUBJECT TO CRITERIA DEFINED IN EN9, *EN24*, GB4, H11, AND E13; AND

(v) PROPOSALS WHICH ARE ACCEPTABLE IN TERMS OF OTHER POLICIES IN THIS PLAN FOR:

(a) RECREATION DEVELOPMENT APPROPRIATE IN THE COUNTRYSIDE;

(b) THE DISPOSAL, RECYCLING OR TREATMENT OF WASTE.

2.57 The Borough Council *is committed to protecting the character of the countryside for the benefit of present and future generations. Of* particularly ~~concerned~~ *is the need* to maintain the distinction between built up areas and the countryside by controlling the spread of inappropriate development outside settlements. Within the plan area, the settlement limits have been reviewed and redefined to provide strong and defensible boundaries.

continued

Dwellings required in connection with agriculture and forestry

2.59 The erection of dwellings is inappropriate development on land outside settlements. Dwellings to accommodate farm or forestry workers will therefore only be permitted in exceptional circumstances. In the case of such proposals, the Borough Council will expect the applicant to show why permission should be granted by establishing that any stated intentions to engage in farming or forestry are (a) genuine, (b) reasonably likely to materialise, and (c) capable of being sustained for a reasonable period of time. The applicant will be expected to present evidence to enable the application of a functional test as described in Annex E of PPG7 to be carried out. The objective of this test will be to establish that it is essential for a farm or forestry worker to live at or near his or her place of work.

2.60 Evidence will also be required to enable a financial test to be carried out in order to demonstrate that the proposed dwelling is needed in connection with a business (including any significant change in the nature or scale of the business) that has been planned on a sound financial basis.

2.61 In accordance with PPG7 new agricultural or forestry dwellings will be scrutinised thoroughly with the aim of detecting attempts to abuse the concession that the planning system makes for such dwellings. The functional and financial tests will be strictly applied and in cases where there is uncertainty about the proposal, planning permission will not normally be granted.

2.62 In exceptional circumstances where a proposal lies on the margins of acceptability, temporary accommodation may be permitted for a trial period. This would normally be for three years to enable the applicant to show conclusively that an on site presence is justified in both functional and financial terms. Extensions to the trial period will not normally be granted in situations where the trial period has proved inconclusive.

2.63 Where accommodation is permitted for agricultural or forestry workers, the occupation of the accommodation by such workers will be restricted by planning conditions.

2.64 The Borough Council will restrict the size of the accommodation to the requirements of the enterprise rather than those of the owner or occupier. This will normally mean that the size of the accommodation will be restricted to that just sufficient to enable an "on site" presence to be maintained.

2.65 For the avoidance of doubt, the tests and criteria set out in the above paragraphs will be applied both to applications for temporary accommodation, such as caravans and mobile homes as well as to applications for permanent dwellings.

2.66 The keeping and breeding of horses for private, commercial or recreational use does not fall within the definition of "agriculture" as defined in the Town and Country Planning Act 1990. However, when considering planning applications for accommodation required in association with horse related activities, the Borough Council will assess the proposals on the same basis as proposals for agricultural and forestry dwellings. The tests and criteria in the above paragraphs will therefore be strictly applied to planning applications for dwellings required in association with horses. The protection of horses from theft or injury will not by itself be sufficient to justify residential accommodation on a site.

continued

Reasons for proposed change

1 To reflect the guidance issued in Planning Policy Guidance Note 2 (PPG2): "Green Belts", concerning the visual amenity of the Green Belt.

2 To reflect a drafting error which originally omitted any cross reference to Policy EN24.

3 To respond to an objection by MAFF (B/0396/10820/O) concerning the need for the policy to address agricultural workers' dwellings in the countryside.

4 To incorporate the recommendations of the environmental appraisal of the Local Plan.

Proposed change 38

Policy E2 Development in defined employment areas
New paragraph 3.28, changes to previous paragraphs 3.28, 3.30, 3.31 and 3.33

3.28 Development for business, industrial, distribution and storage uses will generally be acceptable within the defined employment areas provided there is no detrimental impact on the character of the locality in which the proposal is situated and there are no overriding highway, road safety or environmental considerations, including traffic generation, car parking, access and servicing.

~~3.28~~ 3.29 The flexibility offered by the Use Classes Order has led to the redevelopment and change of use of several former industrial/ manufacturing premises to B1 office use. The Borough Council's view is that ~~over a period of time,~~ *without adequate size control* such development ~~can~~ *could* result in a very significant increase in employment generating floor space, not in accordance with the BSP's generally careful approach to further BIDS development.

~~3.30~~ 3.31 *The control set out in (i) above has been derived through a study of employment* development in the Borough and will be applied to new development, redevelopment and extensions in conjunction with the Borough Council's vehicle parking standards. By limiting the level of development, the over intensification of development and the reduction of open space will be avoided, and the character of the employment area will be maintained. ***It is expected that most proposals for BIDS development will have a plot ratio of less than 60% but the policy will be applied flexibly so that a higher plot ratio may be justified in exceptional cases. Proposals which include "Green Commuter Plans" (considered under Policy M11) would qualify as an exceptional circumstance.***

~~3.32~~ 3.33 Proposals for the change of use of buildings or land with an existing BIDS use must also satisfy the criteria set out in ~~Policy E5~~ ***BU1 and BU3 of the Berkshire Structure Plan 1991-2006.***

Reasons for proposed change

1 To provide extra emphasis that BIDS development will generally be acceptable in the defined employment areas.

2 To add further clarity to this paragraph, to prevent undue restrictiveness.

3 To respond to objections by AMP Asset Management (E/0737/12035/O); British Telecommunications PLC (E/1112/12369/O); CIN Properties (E/1058/13644/O); David Smith Holdings Ltd. (E/1079/12212/O); Scottish Amicable Investment Managers Ltd. (E/1202/12693/O); Thames Valley Chamber of Commerce and Industry (E/0398/10873/O).

4 Cross-referencing to Policy E5 negated (as E5 is amended) and substituted with a reference to relevant Structure Plan policies.

Further proposed change 29A Incorporating proposed change 29

(merging of Policies EN21 and EN22)

Policy EN21 Design considerations in new development
Policy EN22 Character and content of new development

Policy EN21 Design considerations in new development

2.107 NEW DEVELOPMENT, WHICH ACCORDS WITH OTHER RELEVANT POLICIES OF THE PLAN, WILL NORMALLY BE PERMITTED PROVIDED THAT IT WOULD:

(i) BE IN SYMPATHY WITH THE APPEARANCE AND CHARACTER OF THE LOCAL ENVIRONMENT AND APPROPRIATE IN SCALE, MASS, DESIGN, MATERIALS, LAYOUT AND SITING, BOTH IN ITSELF AND IN RELATION TO ADJOINING BUILDINGS, SPACES AND VIEWS;

(ii) RETAIN BENEFICIAL LANDSCAPE, ECOLOGICAL OR ARCHAEOLOGICAL FEATURES AND, WHERE POSSIBLE, ENHANCE THESE FEATURES;

(iii) ENSURE THAT THE DESIGN OF THE DEVELOPMENT PROMOTES, OR WHERE NECESSARY CREATES, LOCAL CHARACTER AND A SENSE OF LOCAL IDENTITY;

(iv) PROVIDE ADEQUATE SPACE FOR PRIVATE USE AND VISUAL AMENITY, WHERE APPROPRIATE;

(v) PROVIDE APPROPRIATE LAYOUT AND DESIGN FEATURES TO IMPROVE PERSONAL AND GENERAL SECURITY, INCLUDING THE NATURAL SURVEILLANCE OF PUBLIC SPACES, INCLUDING FOOTPATHS, ROADS AND OPEN SPACE;

(vi) AVOID[S] THE LOSS OF IMPORTANT OPEN AREAS, GAPS IN FRONTAGES AND NATURAL OR BUILT FEATURES (SUCH AS TREES, HEDGES, WALLS, FENCES AND BANKS) WHICH IT IS DESIRABLE TO RETAIN;

(vii) [DOES] NOT ADVERSELY AFFECT THE AMENITY OF SURROUNDING PROPERTIES AND ADJOINING AREA;

(viii) [IS] NOT BE PREJUDICIAL TO THE PROPER FUTURE DEVELOPMENT OF A LARGER AREA IN A COMPREHENSIVE MANNER.

2.108 ~~2.117~~ Whilst there will be a general presumption in favour of development in accordance with the BSP and *all relevant* policies ~~H1, R2 and SC3~~ of this local plan, not all individual proposals will be acceptable. It is neither practicable nor desirable to identify all sites within the plan area with the potential for development and this policy indicates the considerations that will be taken into account in deciding planning applications.

2.109 ~~2.118~~ Each of the criteria listed under this policy will need to be satisfied in order for a proposal to be acceptable. The applicant will be expected to address each issue in such a way as to enable the Borough Council to form a judgement as to acceptability. ***Even if all the above design criteria are addressed, a scheme may still not be acceptable where, for example, the cumulative impact of several development proposals would have an unacceptable effect upon the character of the locality.***

2.110 ~~2.108~~ Within the limitations of advice from the Department of the Environment regarding control over design matters, and discussion in recent years on improving the quality of the built environment ("Quality in Town and Country ~~Planning~~: A Discussion Document", Department of the Environment, July 1994), the Borough Council considers that some guidance is required to ensure that any development proposed in the Borough is designed in such a way as to have regard to the existing character of an area and harmonise with existing surroundings, particularly where the development abuts the countryside. Such areas are particularly vulnerable to insensitive development. The Borough Council will have regard to BSP Policy C5 which provides guidance for minimising the effect of such development particularly on the edges of settlements.

2.111 ~~2.109~~ Large uniform areas of housing are to be avoided by the provision of a variety of site layouts, densities and a sensitive use of open space and landscaping. Whilst a variety of house types and sizes is appropriate on larger developments, the grouping together of houses of similar design can create identifiable areas and a sense of place.

2.112 ~~2.110~~ The design of the development should also be looked at in context with that of the surrounding area to see whether any particular good practices, or design features can be interpreted in the new development. For example, *it may be appropriate to reflect* the use of vernacular architecture ~~may be appropriate~~ in the older parts of the Borough, such as Winkfield and Warfield and the former New Town and will contribute to the new development's "sense of place". The high standard and quality of existing open spaces and pedestrian routes should be reflected in new designs.

2.113 ~~2.122~~ All new building is likely to have some effect on the established character of an area. The Borough Council will assess the particular impact of each proposal against a character appraisal of the area. Particular regard will be paid to the established character of residential areas when considering proposals for infilling with new housing or building on rear garden land (backland development). The latter will only be acceptable if it meets all the criteria set out in the policy.

2.114 ~~2.123~~ The character of an area is normally determined by physical and visual factors such as:

(i) density of the existing development;

(ii) size of individual plots and properties;

(iii) established building lines;

(iv) patterns of development;

(v) established landscape features;

(vi) uses and types of materials.

2.115 ~~2.124~~ When considering individual planning applications, the Borough Council will also seek to balance the need to make effective use of developable land against the need to respect existing residential character and amenity. The Borough Council's standards referred to above will be applied with some flexibility in cases where existing character and amenities are an issue.

2.116 ~~2.120~~ Adverse effects on the amenity of surrounding properties and adjoining areas will often occur in the following situations:

(i) where new windows invade privacy;

(ii) where new driveways are constructed alongside rear garden boundaries;

(iii) where new walls, particularly involving extensions of two storey or higher, are located alongside rear garden boundaries.

2.117 ~~2.121~~ To assist in implementing the above policy, the Council will apply the approved standards regarding privacy and related issues which are set out in Appendix 9 of this plan.

2.118 ~~2.111~~ Where development is proposed ~~on large sites~~ and is likely to have a significant effect on the existing urban fabric, the Borough Council will encourage the preparation of an urban design appraisal.

2.119 ~~2.112~~ In a further step towards securing a high quality environment particularly in new development areas, Policy H10 seeks the preparation and approval of planning briefs for residential sites over 1 hectare, *or on smaller sites if the Borough Council considers that the site has significant urban design implications in the locality.* A similar approach may be appropriate for mixed or commercial developments.

2.120 ~~2.113~~ Encouragement will be given to maximising the re-use and redevelopment of derelict or under used land or buildings in built up areas. "Sustainable" development should be achieved through energy efficient design and layout, and the reuse of building materials wherever possible. *Designers should consider the potential opportunities for harnessing passive solar gain and making the best use of micro-climates. Other energy-saving measures such as water recycling, should be incorporated wherever practicable.* Where new materials are used, the Borough Council will particularly encourage those with the minimum impact on natural resources in terms of production, energy efficiency during use, and future disposal or reuse. *The Borough Council will encourage designs which can be adapted to different uses, thereby extending the lifetime of buildings provided such development would have no adverse impact on the character of the surrounding area.*

2.121 ~~2.119~~ Natural landscape features such as trees and hedgerows, as well as the topography of the area, contribute most to the quality of the local environment. However, man-made features such as buildings of character may also be important. Applicants must demonstrate that such features have been taken into account in formulating development proposals.

2.122 ~~2.114~~ Wherever possible existing wildlife habitats and natural features of the site should be incorporated into the design of the new development and protected during the development process. Development should also, where possible, minimise the amount of impermeable surface, avoid excessive run off and protect existing water courses.

2.123 ~~2.125~~ In certain cases, it may not be possible for all potentially developable land to be brought forward for development at one time. In such cases, the Borough Council will wish to be satisfied that proper provision is made to enable comprehensive development to take place in the future. However, the appropriateness of such comprehensive development will need to be assessed having regard to the other criteria; it will not normally be a determining factor in itself.

2.124 ~~2.126~~ An adverse impact on the character of an area can be created by the insensitive design of facilities such as access roads, footpaths and car parking areas. Whilst proper consideration will be given to the safety and convenience of all road users, care will be taken to ensure that these features do not dominate new development. Contributions will be sought in accordance with Policy SC1.

2.125 ~~2.127~~ In addition to proper provision for access and car parking, highway works in conjunction with small site schemes will be promoted. Contributions towards the provision of highway works wherever they are considered appropriate and related to the proposed development will be sought from applicants/developers through conditions on planning permissions or through the creation of a planning obligation under Section 106 of the Town and Country Planning Act 1990 (as amended).

Flats and open space

2.126 ~~2.128~~ The Borough Council will have regard to the amount and character of communal space provided in association with development involving flats. These areas should be designated as useable, accessible, attractive and private for residents as far as possible. The Borough Council will exclude from the calculations of useable open space, strips of marginal landscaping, areas which are steeply sloping, excessively shaded, wooded or overlooked and spaces set aside for laundry, dustbin storage and car parking.

Commercial development

2.127 ~~2.129~~ Small scale development on new and existing employment sites and within settlement boundaries will continue. Such proposals will normally be acceptable having regard to such considerations as traffic generation, car parking, access and servicing, the effect upon the amenities of adjoining land uses or residential properties, and the character of the area in which the proposal is situated. In appropriate cases, development proposals will be expected to provide a high standard of landscaping.

Settlements adjoining the Green Belt

2.128 ~~2.130~~ In accordance with PPG2, the visual amenities of the Green Belt should be protected, and the siting, materials and design of new development should not prejudice the purposes of including land in Green Belts. Special consideration will therefore be given to the design of all new development, particularly where it is conspicuous from ***and*** within the Green Belt.

Reason for proposed change

1 To improve clarity and avoid duplication.

2 To reflect the guidance contained in Draft Planning Policy Guidance Note 1: "General Policy and Principles".

Reasons for further proposed change

3 To correct the grammatical structure of the policy.

Further proposed change 37A Incorporating proposed change 37

Policy E1 Development in Bracknell Town Centre

Policy and paragraphs 3.24, 3.25

3.23 WITHIN BRACKNELL TOWN CENTRE ~~THE BOROUGH COUNCIL WILL PROMOTE~~ THE BOROUGH COUNCIL WILL PROMOTE MAJOR DEVELOPMENT, REDEVELOPMENT AND ENHANCEMENTS WHICH:

(a) [CONTRIBUTE] ADD TO, STRENGTHEN AND IMPROVE THE RETAIL AREA, ~~ITS~~ *TOWN CENTRE DIVERSITY,* ENVIRONMENTAL QUALITY, VITALITY AND VIABILITY, AND

(b) REJUVENATE AND REGENERATE OF THOSE PARTS OF THE TOWN CENTRE CHARACTERISED BY POOR TOWNSCAPE QUALITY.

[*WILL BE PROMOTED, PARTICULAR ENCOURAGEMENT WILL BE GIVEN TO:*]

SUCH DEVELOPMENT WILL ONLY BE ACCEPTABLE WHERE IT:

(i) HAS NO UNACCEPTABLE ADVERSE ENVIRONMENTAL, ROAD SAFETY, OR TRANSPORTATION CONSEQUENCES;

(ii) IMPROVES PUBLIC TRANSPORT SERVICES;

(iii) IS OF A DESIGN WHICH WOULD IMPROVE TOWNSCAPE QUALITY AND MAKE A POSITIVE CONTRIBUTION TO URBAN DISTINCTIVENESS;

(iv) INCLUDES A MIX OF USES, ESPECIALLY THOSE THAT WOULD ENHANCE THE EVENING ECONOMY;

(v) PROVIDES NEW RESIDENTIAL ACCOMMODATION;

(vi) PROVIDES FOR THE RETENTION OF EXISTING RESIDENTIAL AND OTHER KEY TOWN CENTRE USES;

(vii) RETAINS (AND ENHANCES THE SETTINGS OF) BUILDINGS OF SPECIAL ARCHITECTURAL OR HISTORIC IMPORTANCE.

Major redevelopment

3.24 ~~The Borough Council wishes to encourage proposals which strengthen the vitality and the viability of Bracknell Town Centre. Consideration will be given to potential sites that would improve the appearance, character and the function of Bracknell Town Centre.~~ [*Encouraging mixed-use development in Town Centres and the retention of key town centre uses, are important in promoting sustainable development. Key Town Centre uses that add variety and complement the primary retail and employment uses include; small businesses, residential, civic facilities, leisure, entertainment, library, markets, food & drink establishments and higher education. The Borough Council wishes to encourage proposals which strengthen the vitality, viability and the diversity of Bracknell Town Centre.* To this end the Borough Council will be developing a town centre strategy in association with interested parties.]

3.24 The Borough Council wishes to encourage proposals which extend the retail area and strengthen the diversity, the vitality and the viability of Bracknell Town Centre. In particular, the Borough Council will give consideration to the redevelopment of those existing Town Centre buildings which make a poor contribution to townscape quality, many of which were built between 1955 - 1975. Encouragement will also be given to proposals for other potential sites that would improve the appearance, character and the function of Bracknell Town Centre. For the avoidance of doubt, the terms "major development" and "redevelopment" apply to all proposals comprising 500sqm or more gross floor area.

Mixed use development and key town centre uses

3.25 The encouragement of mixed use development in Bracknell Town Centre, and the retention (and expansion) of key town centre uses, are considered to be important in securing sustainable development. Key Town Centre uses that add variety and complement the primary retail and employment uses include: small businesses, residential accommodation, health facilities, cultural, leisure, entertainment and civic uses, the library, markets, food & drink establishments, visitor accommodation and education facilities.

Integrated development

[3.25] 3.26 The Borough Council aims to ensure that future development is integrated into Bracknell Town Centre. Each proposal will need to be examined to ensure that it ~~does not have a detrimental effect on other proposals.~~ *is complementary and compatible with sustaining and enhancing the Town Centre.*

Impact of the development

[3.26 The Borough Council will ensure that all new development does not generate overriding environmental, road safety or traffic generation problems.]

3.27 The Borough Council will carefully assess the environmental, road safety, and traffic generation consequences of all new development in the Town Centre. Although the Town Centre is well served by public transport, major developments have a significant impact on the environment and on the amount of traffic on the highway network and therefore, must be accompanied by traffic management and public transport improvements. Proposals for major development will be unacceptable where they would result in significantly adverse environmental or road safety impacts or where there would be an adverse effect on transportation. The Borough Council will have regard to the Town and Country Planning (Assessment of Environmental Effects) Regulations 1988 in determining the need for environmental impact assessment.

Listed buildings:

3.28 Existing buildings of special architectural or historic importance will be retained. Proposals for any form of development which would affect the setting of a listed building will be expected to enhance that setting.

Reasons for proposed change

1 To further strengthen the town centre at the top of the retail hierarchy in line with the thrust of PPG6 (Revised): "Town Centres and Retail Developments"; and to encourage greater diversity in town centres, especially mixed-use developments, to incorporate the recommendations of the environmental appraisal of the Local Plan and PPG6.

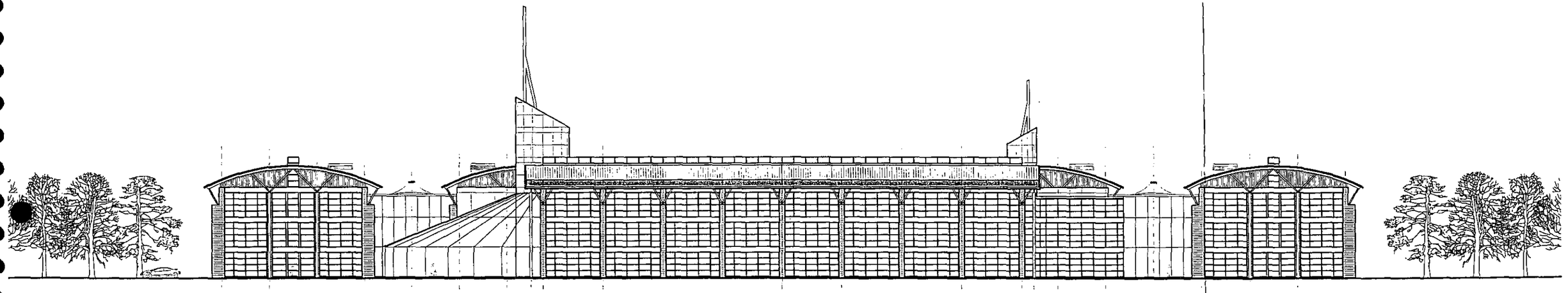
2 To make explicit the types of activity which would be apporopriate uses with which to increase vitality and viability of the town centre, in line with PPG6, para 2.18.

3 To respond to Allied London's objection (E/1089/12235/O) that any new town centre development shall complement that which is existing, in order to sustain and enhance the town centre.

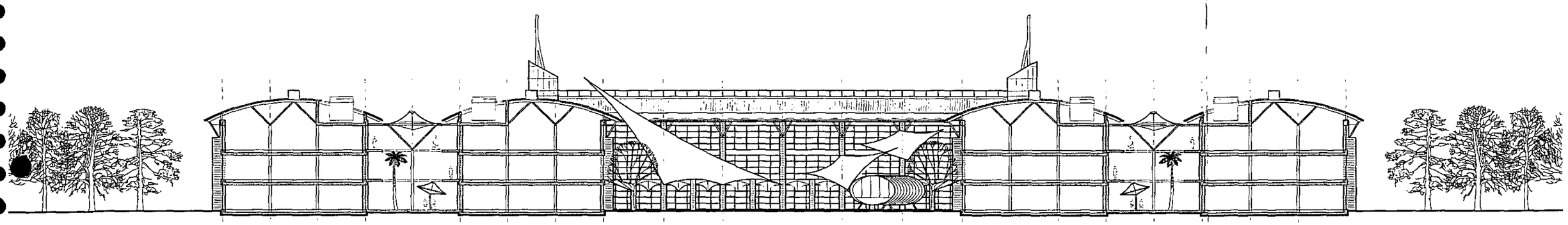
Reason for further proposed change

4 To clarify the types of appropriate land use in Bracknell town centre and to set out the necessary development control criteria to be used in considering planning applications.

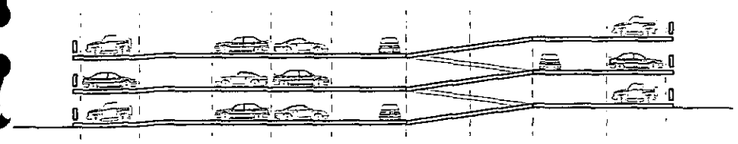
Revision Date By



TYPICAL ELEVATION MAIN BUILDING (EAST)



TYPICAL SECTION MAIN BUILDING (WEST–EAST)



TYPICAL SECTION CARPARK (WEST–EAST)

Project
Met. Office relocation
Beaufort Park, Bracknell

Drawing Title
Typical Section & Elevation
Option B1

Date	Scale	Drawn by
26.05.00	1:250 (A1) 1:500 (A3)	NPB
Project No	Drawing No.	Revision
9906	SK009	-

Barton Willmore
Architecture

Architects Master Planners Town Planners
Environmental Consultants Project Services

The Barton Willmore Partnership Reading Limited
Beansheaf Farmhouse, Bourne Close,
Calcot, Reading, RG31 7BW.
Tel: 0118 943 0000 Fax: 0118 943 0001

WORK SHEET FOR : Angela Odell

Application Number : CON/2000/1844

Applicant : The Met.Office C/O Barton Willmore Planning.

Location : Met Office Experimental Site, Easthampstead Park, , Wokingham.

Proposal : Consultation from Bracknell Forest B C on C18/84 for proposed erection of HQ building, student accommodation and social facilities building for the Meterological office (total floorspace approx 73,465 sq m) with associated decked car parking and vehicular access onto Nine Mile Ride.

Site Notice Displayed ? : YES ☐ NO ☐ DATE ☐

Date of Neighbour Notifications : .....

Date of Site Visit : .....

Date Registered : 30/06/2000

Earliest Date for Decision :

Latest Consultation Date/Site Notice Expiry Date :

This application will have expired on: 28/07/2000. You need to make a decision 1 day prior to this date for this application to count as determined in less than 8 weeks.

Consultation Responses :

Planning Issues :

Application Number: CON/2000/1844

Appraisal :

Recomendation : Approval: ☐ **Refusal:** ☐
(tick appropriate box)

Application Number CON/2000/1844
Conditions/Reasons for Refusal

No	Std Con	Std Reas	Non Std Conditions / Reasons for Refusal

RECORD OF SITE VISIT

SITE ADDRESS: Met Office Experimental Site Easthampstead Park Wokingham.

APPLICATION NUMBER: CON/2000/1844

OFFICER: Angela Odell

DATE OF SITE VISIT:.....

1 SITE/STATUTORY NOTICE DISPLAYED ?

2. DESCRIPTION OF SURROUNDINGS

3. DESCRIPTION OF SITE/BUILDING

4. RELATIONSHIP TO ADJOINING PROPERTIES

5. SITE CONSTRAINTS

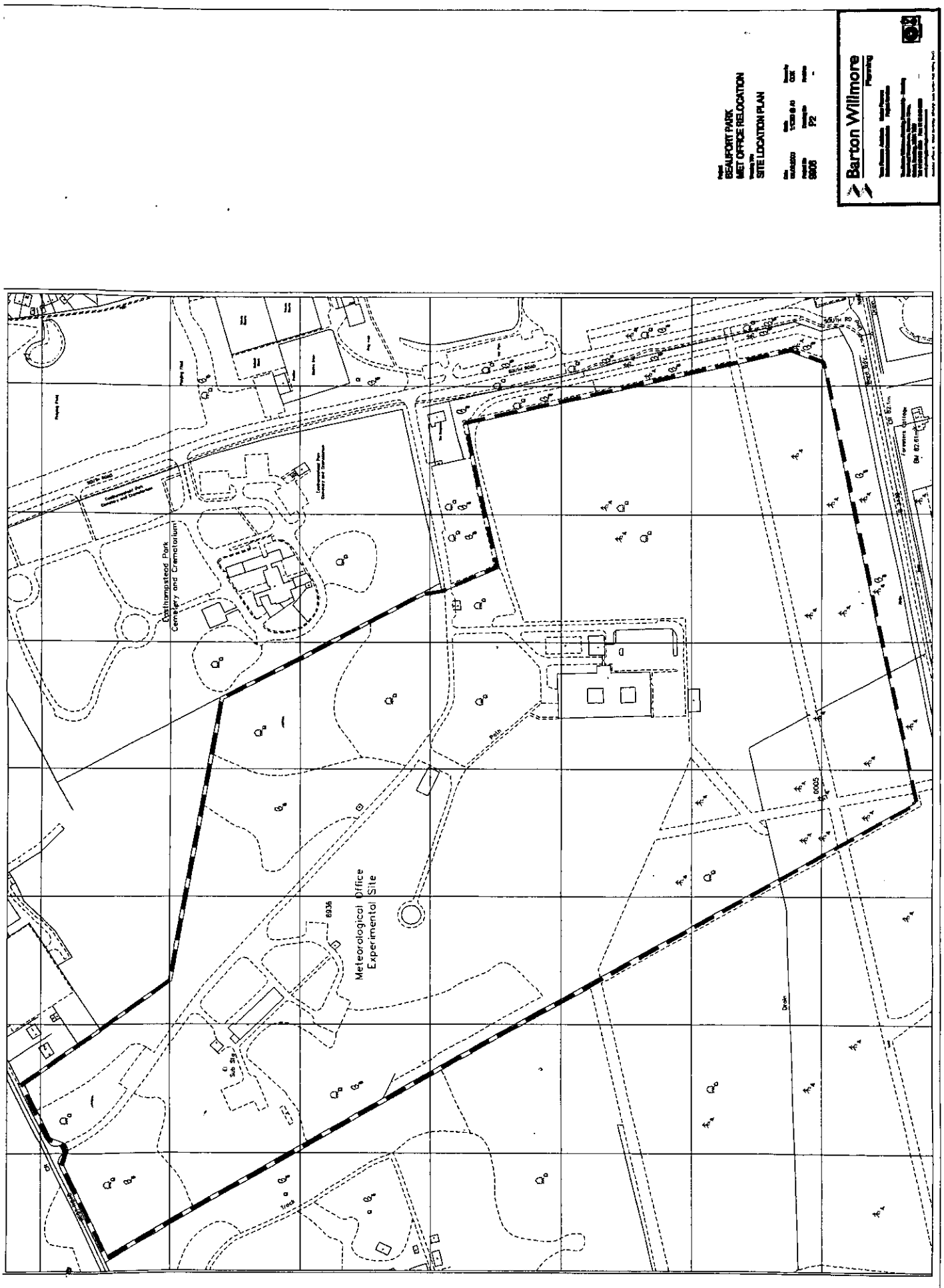
TREES

ACCESS/PARKING

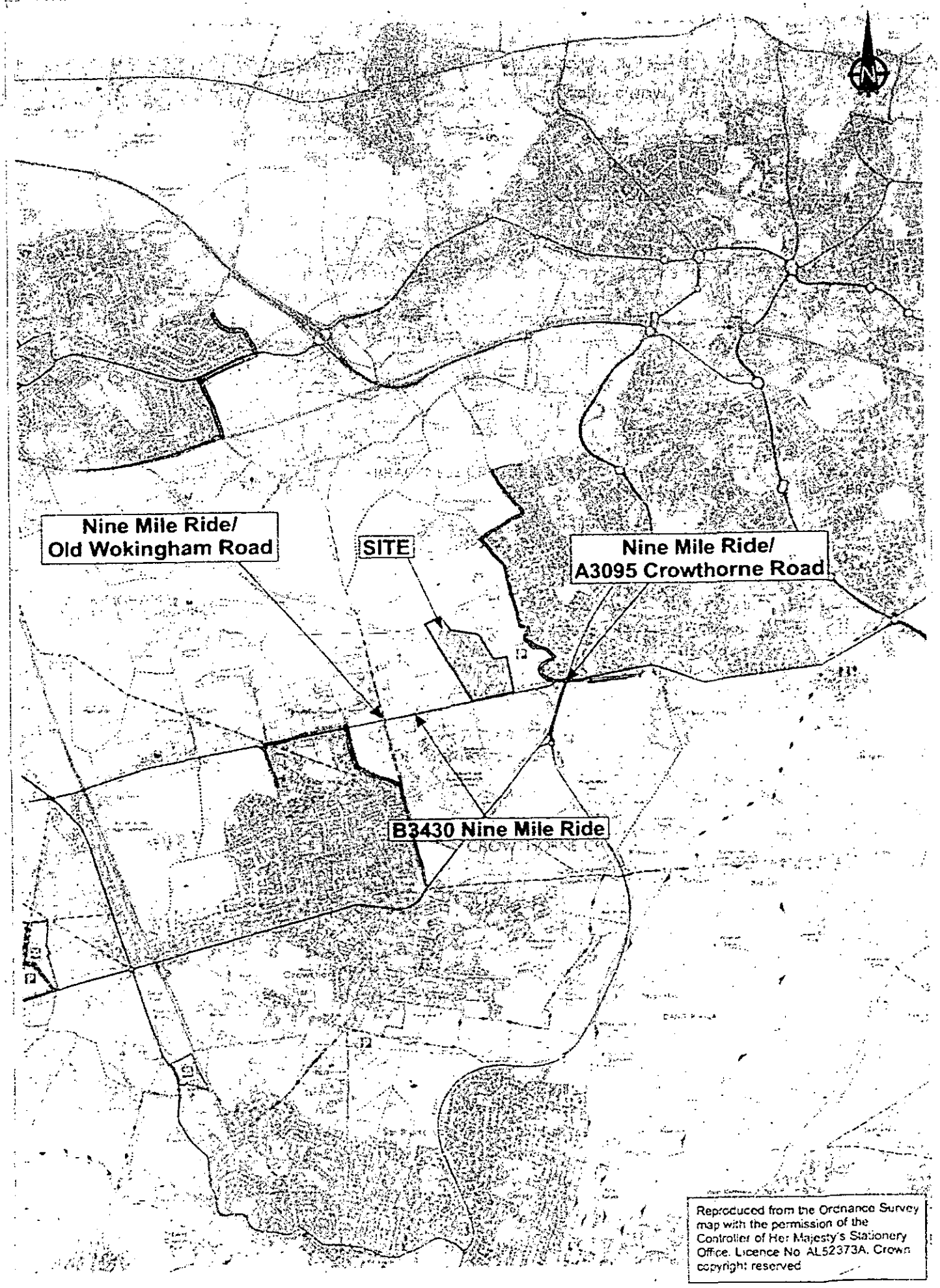
LEVELS

BOUNDARY TREATMENT

OTHERS



S.V. 4.7.00 Mainly single storey + some part 2 storey pre-fab type buildings. Screened from outside by ~~mainly~~ woodland (mainly conifers) also experimental equipment. Grass.



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WSP

The Met. Office - Beaufort Park
SITE LOCATION PLAN
1007



8001

BEAUFORT PARK
MET OFFICE RELOCATION

SITE LOCATION PLAN

9008 P2

Barton Willmore
Planning