



Report to the Secretary of State for Transport

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TRANSPORT AND WORKS ACT 1992
TOWN AND COUNTRY PLANNING ACT 1990

THE CAMBRIDGESHIRE GUIDED BUSWAY ORDER
AND
APPLICATION FOR DEEMED PLANNING PERMISSION

Inquiry opened: 28 September 2004

Ref: TWA/04/APP/02

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ABBREVIATIONS

AJC	Area Joint Committee
BAAplc	British Airports Authority
BAP	Biodiversity Action Plan
CCC	Cambridgeshire County Council
CCiC	Cambridge City Council
CGB	Cambridgeshire Guided Busway
CHUMMS	The Cambridge to Huntingdon Multi-Modal Study
CoCP	Code of Construction Practice
CPRA	Christ's Pieces Residents' Association
CPRE	Council for the Protection of Rural England
CUP	Cambridgeshire University Press
CWS	County Wildlife Site
CiWS	City Wildlife Site
DDA	Disability Discrimination Act, 1995
DEFRA	Department of the Environment, Food and Rural Affairs
DfT	Department for Transport
DMU	Diesel Multiple Unit
EA	Environment Agency
ECML	East Coast Main Line
EEDA	East of England Development Agency
EIA	Environmental Impact Assessment
EiP	Examination in Public
EN	English Nature
ES	Environmental Statement
EWR	East West Rail Link
EWRC	East West Rail Consortium

FDM	Fiscal Demand Management
GOMMMS	Guidance on the Methodology for Multi-Modal Studies
HDC	Huntingdonshire District Council
HIPC	Histon and Impington Parish Council
HMRI	Her Majesty's Railway Inspectorate
HSE	Health and Safety Executive
IDB	Internal Drainage Board
JPS	Joint Position Statement
LTP	Local Transport Plan
LRT	Light Rail Transport
MKSMMMS	Milton Keynes to South Midlands Multi-Modal Study
NAO	National Audit Office
NATA	New Approach to Appraisal
NCIT	The National Council on Inland Transport
NLL	North London Line
NR	Network Rail
ODPM	Office of the Deputy Prime Minister
PSV	Public Service Vehicle
PIM	Pre-Inquiry Meeting
PPG	Planning Policy Guidance Note
PRoW	Public Rights of Way
RAGBUS	Residents Against the Guided Bus
RFC	Ratio of Flow to Capacity
RFG	Rail Freight Group
RPG	Regional Planning Guidance

RSPB	Royal Society for the Protection of Birds
RSS	Regional Spatial Strategy
RTS	Rapid Transit System
SCDC	South Cambridgeshire District Council
SCLP	South Cambridgeshire Local Plan
SITC	St Ives Town Council, CPRE Cambridgeshire Branch, Railfuture, St Ives Town Centre Management Initiative, St Ives Civic Society and Hartford Conservation Group
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
SRA	Strategic Rail Authority
StL	Save the Lakes
TA	Transport Assessment
TRO	Traffic Regulation Order
TWA	Transport and Works Act 1992
WEBS	West Edinburgh Busway Scheme
WHO	World Health Organisation

CASE DETAILS

- This draft order would be made under Section 1 of the Transport and Works Act 1992, and is known as the Cambridgeshire Guided Busway Order.
- The application for deemed planning permission is made under Section 90 of the Town and Country Planning Act 1990.
- The applications for the Order and for deemed planning permission were made on the 19 February 2004.
- The Order if made and deemed planning permission if granted would authorise and enable Cambridgeshire County Council to construct and operate the proposed guided busway.

Summary of Recommendations: I recommend:

- **That the draft Order be made with modifications**
- **That deemed planning permission be granted subject to conditions**

1.PREAMBLE

- 1.1.I have been appointed pursuant to Section 11 of the Transport and Works Act 1992 to hold a public inquiry into the above draft Order and application, and to report to the Secretary of State for Transport.
- 1.2.The Cambridgeshire Guided Busway (CGB) scheme is intended to provide a high quality, bus based, public transport route, linking Cambridge City Centre with Huntingdon and other settlements to the north west, and with Trumpington and Addenbrooke's Hospital to the south. Along these corridors, specially adapted buses would run on concrete guideways for part of their route and along ordinary roads for the remainder. The draft Order concerns the proposed guideways and directly associated works, including two Park and Ride sites. For most of its length, the guideway would run along disused railway formations, between St Ives and the northern edge of Cambridge, and between Cambridge Railway Station and Trumpington.
- 1.3.The Inquiry ran for a total of 31 days. It was held first at Slepe Hall Hotel, St Ives, the sitting dates being 28-30 September and 1, 5-7 October, 2004. The Inquiry then moved to New Hall, Cambridge where it was held on 13-15, 19-21, and 26-29 October, 2, 4, 5, 16-19, 23-26, 30 November and 1, 2 December, 2004. I held a pre-Inquiry meeting on 19 July 2004 at Slepe Hall Hotel.
- 1.4.I made accompanied site visits along the length of the proposed route on 25, 26 and 27 January 2005. I also made numerous unaccompanied inspections

during the Inquiry and after its close. These included two visits to the Fen Drayton Lakes, one on a Sunday, and inspections of the 'non guideway' sections of the route, both the Huntingdon to St Ives stretch, and those sections within the built up area of Cambridge. I visited Cambridge's Drummer Street bus station on several occasions; these included a Saturday morning. I also viewed the Cambridge Railway Station area.

- 1.5. As part of my inspections, I travelled on a wide range of bus services within Cambridge, including those terminating at Park and Ride sites, and also on one of the services linking St Ives with Cambridge. In January and February 2005, I visited Leeds and Essen, Germany to see existing guided bus systems; both visits were unaccompanied.
- 1.6. The applicant is Cambridgeshire County Council (CCC). Cambridge City Council (CCiC) objected to the scheme. As it explained to the Inquiry, its initial concerns included likely journey times and a number of operational issues. CCiC also has a broader concern about the role of demand management for car use in the City an issue that is of relevance to the effective working of the CGB. By the close of the Inquiry, however, CCiC had significantly modified its position. While it felt unable to withdraw its objection, substantial agreement had been reached with CCC on a range of matters and these are reflected in the Joint Position Statement (CCiC/6).
- 1.7. The CGB would run through two other local authority areas, South Cambridgeshire District and Huntingdonshire District. The position of South Cambridgeshire District Council (SCDC) is set out in a letter dated 29 September 2004. While there remain some detailed areas of concern, SCDC supports the scheme (B121). For its part, Huntingdonshire District Council (HDC) has not objected to the scheme.
- 1.8. The scheme is supported by five bus/coach operators, and some 20 other organisations and individuals (B120).
- 1.9. A total of 2741 objections were lodged. These included late objections and duplicates. By the end of the Inquiry, 86 objections had been withdrawn. CCC has recognised Category 1 and Category 2 objectors. Category 1 includes statutory bodies and organisations and objections that relate to property and proposed direct acquisition of land as part of the draft TWA Order (B216). Many of these property objections were resolved during the course of the Inquiry. However, 54 remained unresolved at its close. About half of these relate to Trumpington Cutting. Category 2 objections were largely from individuals and are not property based.
- 1.10. The main grounds for objection relate to: the lack of justification for the CGB in transportation terms; the economics of the scheme; the preference for alternatives, particularly heavy rail; ecological impacts in both rural and urban areas: environmental effects upon specific areas, notably Histon and within Cambridge City Centre; safety; and property matters.
- 1.11. Some 70 objectors appeared at the Inquiry, either as representatives of groups or as individuals.

- 1.12. The application was accompanied by an Environmental Statement (ES)(A15-A19). Another key document is the Transport Assessment (TA)(B45).
- 1.13. CCC confirmed at the close of Inquiry that all the statutory formalities had been complied with.
- 1.14. This report contains a brief description of the area, a note of procedural and legal submissions, the gist of the cases presented and my conclusions and recommendations. Those conclusions are structured around the Statement of Matters about which the Secretary of State particularly wishes to be informed. Lists of Inquiry appearances, documents, plans and photographs are attached as Appendices.

2. DESCRIPTION OF THE SITE AND ITS SURROUNDINGS

- 2.1. From its western terminus at Hinchinbrooke Hospital, the CGB route would run eastwards, first connecting the historic towns of Huntingdon and St Ives; within this section it would follow existing roads, including the B1514 and the A1123. From the Hospital, itself located within a parkland setting, the proposed route passes over the East Coast Main Line (ECML). From the bridge over the railway line there is an access to Huntingdon Railway Station and its extensive car parks. A flyover, part of the route of the A14 (T) passes over both the ECML and the B1514 at this point.
- 2.2. Having crossed the ECML, the route would then enter Huntingdon, reaching its Bus Station and traversing its historic core. It would then follow the south eastern edge of Huntingdon before turning due east towards Houghton and then St Ives. Much of the intervening land is floodplain, associated with the River Great Ouse. North of the A1123 the land is in open agricultural use.
- 2.3. Within St Ives, the route would turn southwards towards the historic centre and the Bus Station. From the Bus Station, it would next cross the town's eastern bypass, the A1096 Harrison Way, and then follow the route of the former Cambridge to St Ives railway line.
- 2.4. For its first 250m or so (measured from Harrison Way) the former railway alignment is distinguished as a corridor of grassland interspersed with areas of scrub. Towards the east of this section the route becomes steeply embanked although there are two discontinuities in this embankment the result of former mineral workings. The alignment is then joined by a gated track that runs southwards from Meadow Lane and also serves an area of extractive industry. Meadow Lane would provide the access to one of two new Park and Ride sites serving the CGB. Currently, this is an area of rough grassland, a former infill site.
- 2.5. From this point, as far as Holywell Ferry Road, the former tracks have been replaced by tarmacked roadway. A viaduct, now partially derelict, carries this section across the River Great Ouse and the adjacent floodplain. To the east of Holywell Ferry Road and from there to the northern fringe of Cambridge, the railway ballast and one set of the former twin tracks remain as do the former

stations. Much of this trackbed section is now heavily overgrown.

- 2.6. In landscape terms, the stretch of the former line between St Ives and Swavesey crosses floodplain, dominated by a series of tree fringed lakes and wetlands which are the result of former extraction works. These lakes and their margins, and the adjacent River Great Ouse are designated as County Wildlife Sites (CWS). The largest of these is the Fen Drayton Gravel Pits CWS.
- 2.7. To the east of Swavesey, the landscape becomes more undulating and at Over the former railway line passes through a deep cutting also designated as a CWS. In the main, this land is characterised by large scale arable farmland punctuated by low, sparse hedgerows. To the north and south of the rail corridor there are several substantial villages. Swavesey and Longstanton, in particular, have a pronounced linear form, a result of former ribbon development. The proposed new settlement of Northstowe would occupy land to the north east of Longstanton. The second of the two Park and Ride sites would be located within presently farmed land at the western end of this area.
- 2.8. On Cambridge's northern fringe, the line passes along the southwestern edge of, and then through, the merged settlements of Histon and Impington. These are more heavily built up than the outer villages and they offer a significant amount of employment including a business park. The former station building with its platform canopy is a prominent feature. Histon and Impington are surrounded by Green Belt.
- 2.9. To the south of Histon and Impington, the route then passes beneath the A14(T). To the south of the former rail corridor there is modern residential development within the City of Cambridge boundary. To its north are Cambridge Regional College and Cambridge Science Park; both of these are in South Cambridgeshire District. To the east of Milton Road, the disused line joins the Cambridge to Kings Lynn Main Line at Chesterton Junction.
- 2.10. From this northern edge of Cambridge, the proposed CGB buses would take one of two routes, the Histon Road or Milton Road into the City Centre. These are single carriageway radial roads lined mainly by housing but with local shopping and other commercial uses. South of the River Cam the buses would enter the College area and a network of medieval streets. From Drummer Street Bus Station which adjoins Christ's Pieces, one of a number of 'greens' on the eastern side of the historic core, they would follow another radial route towards Cambridge Railway Station. This corridor, made up of St Andrew's Street, Regent Street, Hills Road and Station Road is lined by college as well as commercial and residential uses.
- 2.11. From the Railway Station, the CGB route would initially follow the main railway line, passing under the Hills Road bridge and running alongside the large commercial premises of Cambridge University Press (CUP). From here, the route would diverge from the main railway line to follow the line of the disused Cambridge to Bedford railway. To the south of CUP and the Long Road Bridge that crosses both lines in an east to west direction, the land opens up to form a green wedge of land that broadens out towards the open countryside to the south of Cambridge. The proposed CGB route takes the form of a broad track part of which is open to public use. The adjoining 'green' uses include

woodland, playing fields and allotments. Addenbrooke's Hospital dominates the view towards the east. Between the Long Road Bridge and Hauxton Road, the disused railway land is designated as a City Wildlife Site (CiWS).

- 2.12. To the east and south of Trumpington, the disused railway enters a heavily wooded cutting which becomes particularly deep between Hauxton Road and Shelford Road. The CGB route would pass under both roads and terminate at the Trumpington Park and Ride site. This is an extensively landscaped car park with a central bus station and large waiting room building.

3. PROCEDURAL MATTERS AND LEGAL SUBMISSIONS

- 3.1. **Scope of the Inquiry** A significant proportion of the objections touch on issues that go beyond the immediate scope of the draft Order. They concern, in particular, the on-road sections that the proposed buses would travel along in their unguided mode, within the City of Cambridge, within Huntingdon and St Ives and between these last two settlements. They are the subject of a number of proposed highway improvements and bus priority measures that are being pursued by the relevant local authorities through Traffic Regulation Orders (TROs) and other means. They are intended to benefit bus services generally within the corridor to be served by the CGB.
- 3.2. CCC helpfully uses the term 'the scheme' to encompass 'the project', which comprises the works covered by the draft Order (i.e. the guideways and the associated infrastructure) together with these additional bus priority and other measures. I shall use this terminology throughout this report.
- 3.3. While my recommendations address directly the project and not the other elements of the scheme, those other elements are of key relevance to the case for the CGB. In particular, the ease, or the difficulty, that the proposed buses would experience in passing through built up areas, or along the stretch of road between Huntingdon and St Ives, could be expected to have a significant bearing upon the effectiveness, the patronage and the financial viability, of the CGB as a transport system. Many of the objections touch on this very issue.
- 3.4. Therefore, in so far as the material is relevant to those matters, I have taken full account of the evidence presented regarding the on road sections. This is consistent with the Secretary of State's Statement of Matters, the first of which covers 'The aims and objectives of the proposed Cambridgeshire Guided Busway scheme as a whole' (my emphasis).
- 3.5. **'Future Proofing'** I shall deal with each of those Matters in my Conclusions. However, there is one additional question that assumed some prominence during the Inquiry, the so called 'future proofing' of the scheme were it to go ahead. A large number of the objectors feel strongly that the two disused railway routes should either have their railways restored or, failing that, these corridors should be protected until such time as the resources become available for a rail based solution to the Cambridge Sub-Region's (and wider) transport needs. For its part, CCC claims that there is

an overwhelming case, financial and otherwise, for the development of a guided busway system along these two routes.

- 3.6. The question that I posed to the Inquiry was, were the CGB to go ahead, to what extent would that system be adaptable to meet the needs of society in say 20 or 30 years time when living and working patterns, and conditions generally, might be very different? Over such a period, the economics of pursuing rail, for example, might have changed significantly; also, new viable transport technologies might emerge. Practically, could flexibility be built into the scheme so that the infrastructure could be converted to accommodate some form of light or heavy rail, or indeed other technology, at some stage in the future?
- 3.7. Regarding conversion to light rail, the West Edinburgh Busway Scheme (WEBS) suggests one possible way forward (6.24; 7.11; B180). In response to my question, CCC has looked at WEBS and, more generally, it has examined some of the main technical, operational and costings issues surrounding a potential, eventual conversion of a Cambridgeshire busway scheme to either light rail or heavy rail (B239; B239A). My conclusions take this discussion into account.
- 3.8. **Adequacy of the ES** A number of objectors, including Save the Lakes (StL), The St Ives Civic Society, the Wildlife Trust for Bedfordshire, Cambridgeshire, Northamptonshire and Peterborough (the Wildlife Trust), and Christ's Pieces Residents' Association (CPRA) made the case that the ES was inadequate. While the first three were primarily concerned about ecological impacts, the CPRA felt that inadequate attention had been given to the effect on the environment in Cambridge City Centre.
- 3.9. Following discussion at the Pre-Inquiry Meeting (PIM), I invited the applicants to enter into discussions with the objectors concerned to see whether any of these differences could be resolved. However, while various meetings took place, most of the objectors involved appear to have maintained their objections regarding the adequacy of the ES. In its statement dated 6 August 2004, StL expressed concern about the ES's lack of coverage on over-wintering birds and other aspects of the fauna and flora of the Fen Drayton Lakes complex. For its part, the Wildlife Trust felt that there were significant gaps in the ecological baseline. Also, several impacts had not been covered and the mitigation proposals were too sparse (letter dated 5 August 2004).
- 3.10. In a paper dated 6 August 2004, CCC referred to its discussions with the objectors but maintained that the ES was fully compliant with the relevant requirements. In response to the specific objections, CCC made a number of points. In respect of the on-road sections of the scheme, these fell outside the scope of the TWA Order. Nevertheless, the ES did contain an assessment of off-line impacts and significant effects and mitigation were identified. Regarding the Fen Drayton Lakes, the ES identified the likely main effects of the project. While StL and others might disagree with the judgements that had been made in the ES such disputes were matters to be addressed at the Inquiry.

- 3.11. CCC's paper also referred to a number of validity studies prepared since the submission of the ES. This work was done in close liaison with English Nature (EN) who had initially objected to the proposals. The studies, in respect of great crested newts, water voles and otters, bats, reptiles, birds and badgers were completed and submitted to EN and copies have since been produced for the Inquiry (B46-B50). In CCC's view, they confirm the findings of the ES and thus support its contention as to the adequacy of the ES. These new reports have been advertised in accordance with Rule 17(4) of the Transport and Works (Applications and Objections Procedure) Rules 2000.
- 3.12. In a letter dated 24 September 2004, EN withdrew its objection. It confirmed that the additional survey information and clarification of information originally submitted was adequate in order to assess the likely impact of the scheme on birds, great crested newts and various other protected species. Moreover, enough information had been provided on which to base an assessment of the effort required – in terms of mitigation and future management requirements – to offset those impacts.
- 3.13. In opening the Inquiry I ruled that on the basis of what I had read and heard so far, there were insufficient grounds for me to conclude that the ES was inadequate. I return to this question in my conclusions.
- 3.14. During the Inquiry, the Wildlife Trust sought to bring forward evidence regarding the background to EN's decision to withdraw its objection. I ruled that in the face of EN's unequivocal withdrawal letter this would not be an appropriate use of Inquiry time. I have no reason to doubt that EN's decision was a fully considered one which took into account all of the relevant information.

4. THE CASE FOR CAMBRIDGESHIRE COUNTY COUNCIL

The material points are:

The Project and the Scheme

- 4.1. The Cambridgeshire Guided Busway (CGB) would run from Huntingdon to Cambridge and from Cambridge to Trumpington. It would consist primarily of a guideway on which guided buses would run from St Ives to Cambridge's northern fringe and from Cambridge Railway Station to Trumpington with a link to Addenbrooke's Hospital. It would include new Park and Ride sites providing interchange facilities at St Ives and Longstanton. The guideway would utilise the disused railway formations of the St Ives to Cambridge and Cambridge to Bedford railways. Together, these guided elements and the works and operations associated with them (including the Park and Ride sites) constitute 'the project' and it is this to which the Order relates.
- 4.2. The draft Order seeks powers under the Transport and Works Act 1992 to:
- construct the guided busway and ancillary works;

- acquire land compulsorily;
 - secure deemed planning permission;
 - operate the guided busway; and
 - regulate and control its use.
- 4.3. On sections of the route where a guideway was not provided, vehicles would run on-street. To improve journey times and reliability, a series of highway improvements and bus priority measures would be provided. Collectively, the guideway and its ancillary works (including the Park and Rides) and these additional bus priority and other measures constitute 'the scheme'. While these on-street measures would benefit guided buses, they would not be for their exclusive use and would benefit all bus services in the corridor. They are being brought forward separately from the project and do not form part of the Order (B37, 1.4,1.5)).

Transport issues in the Cambridge Sub-Region

- 4.4. The Cambridge Sub-Region, defined as Cambridge and the inner ring of market towns surrounding it, including Huntingdon, St Ives and Ely, has been subject to sustained and significant growth over the last 50 years. This has stemmed from the emergence of a world-renowned research and education sector, coupled with high-technology and knowledge-based industries that are leaders in their field.
- 4.5. However, while this economic growth has brought jobs and prosperity to the area, it has been accompanied by increasing demands for movement. The available infrastructure, whether the narrow streets of Cambridge or trunk routes such as the A14, has struggled to cope with these demands. The A14 suffers from regular traffic congestion, particularly at peak times, inhibiting the operations of this economically important area. In tandem, there has been growing congestion on local roads which has affected bus services, as well as generating more pollution and affecting public safety.
- 4.6. Over the last five years, CCC and the District Councils have sought to define a new policy approach that can address these issues. The CGB is an important component of this. It makes use of two former railway lines including the line between St Ives and Cambridge which ceased to be used for scheduled passenger services in October 1970. Over a period of at least ten years, between 1987 and the late 1990s, CCC has considered a number of alternatives to improve public transport provision in this corridor, including heavy rail, light rail and guided bus, but none of these has come to fruition (CCC/GPH/2, 3.2-3.7, 7.2-7.15).
- 4.7. **CHUMMS** However, that changed with the publication of the Cambridge to Huntingdon Multi-Modal Study (CHUMMS), part of a new approach to transport planning introduced by the Government in 1998. This was undertaken in accordance with the Guidance on the Methodology for Multi-Modal Studies (GOMMMS), a structured approach to the preparation of detailed transport proposals.

- 4.8. The CHUMMS study was carried out over the period 1999 to 2001. This multi-faceted study entailed initially a detailed consultation exercise alongside data collection and the assessment of previous studies. It highlighted a range of problems affecting the A14 corridor, including traffic congestion, issues arising from junctions and access points, safety matters and environmental concerns. These problems would worsen, through increases in population and car ownership, and as more people tried to commute into Cambridge or undertake longer distance trips.
- 4.9. A contributing factor was found to be the multiple functions that the A14 serves. Thus, it is a national as well as international route connecting the East Coast ports to the M1/M6 motorways. It is also a regional route serving the regional centre of Cambridge. It contributes to the local economy being the only high-quality route for local traffic between Huntingdon, St Ives, Cambridge and other settlements within the corridor. Also it connects to the northern fringe of Cambridge, and to such centres as the Science Park which is of national and international importance. Overall between 40 and 50% of traffic movements on the A14, and 70% of HGV movements, involve through traffic (CCC/GPH/2, 4.59-4.73).
- 4.10. A wide range of transport concepts with the potential to solve these problems were then examined. The public transport options focused on the use of the disused St Ives to Cambridge railway line. Options based on bus priority measures on the A14 or the on-line widening of the road to provide dedicated road space for bus lanes were initially examined. However, bus priority was ruled out on capacity grounds while the second option was deemed impractical because of design and safety issues concerning junctions.
- 4.11. Following the transport concepts stage, four alternative transport strategies were derived. Of these, Strategies 1 and 2 included a guided bus system while 3 and 4 covered various rail alternatives (B248). All but Strategy 1 also involved improvements to the A14 and all included demand management. Following an extensive consultation exercise, detailed changes were made to the four strategies, and two further strategies were added, largely based on the routing of the A14.
- 4.12. A detailed technical appraisal of the strategies was then carried out accompanied by an assessment of how each strategy met regional and local objectives. The strategy appraisal was based upon inputs from an extensive transport modelling exercise.
- 4.13. Strategy 2 incorporating guided bus was shown to be the most effective option as it would bring greater patronage to public transport as a whole than light or heavy rail and at a lower overall cost. It would also provide direct connections between the communities in the corridor and enable penetration of city and town centres in a way that heavy rail could not and light rail could only do at great expense (CCC/GPH/2, 4.74-4.106).
- 4.14. CHUMM's final recommendations, depicted on the Preferred Plan, were threefold. First, that the disused St Ives line should be developed as a guided busway, including extensions to Trumpington and Addenbrooke's

Hospital. Secondly, that the A14 should be widened to dual 3 lane carriageway throughout. Thirdly, that the strategy of demand management in Cambridge should continue with further, more rigorous measures being implemented in the future (A39).

- 4.15. The CHUMMS study was being undertaken at a time when the Structure Plan strategy was still being developed. However, the modelling for CHUMMS was based on assumptions that were consistent with the emerging development strategy (CCC/GPH/2, 13.8).
- 4.16. The CHUMMS recommendations were considered by CCC and by the District Councils, as well as by the East of England Local Government Conference and recommended for approval to the Government. They were formally accepted by the Secretary of State for Transport in December 2001. In his letter to the Conference, the Secretary of State invited CCC to come forward with a full appraisal of the early phases of the guided bus project were it to wish it to be considered for funding as a local transport project. That process included a consideration of alternatives and it led to the submission of a bid as part of the CCC's annual Local Transport Plan (LTP) submission. This was provisionally approved by the Government and £65 million funding was allocated (CCC/GPH/2, 4.107-4.118, 8.7).
- 4.17. Guided bus technology was chosen because of its flexibility, its ability to serve directly the towns and other built up areas at either end of the route while running on designated corridors between them. With its three attributes of high quality, reliability and frequency, the CGB would deliver attractive services, and provide a step change in public transport provision in the corridor and a real alternative for car drivers.
- 4.18. In accordance with national and regional policy, the scheme aims to integrate land use and transport priorities. Also, it is consistent with, and it seeks to implement, the CHUMMS findings. At local level and following the policies of the LTP, the CGB has the following broad objectives:
- to extend the choice of transport modes for all, in particular for private car drivers to encourage a shift to public transport;
 - to promote sustainable development by providing high quality public transport links;
 - to improve access to public transport in areas that currently have poor provision;
 - to improve the integration of the public transport network;
 - to promote social inclusion by improving access to employment, retail, community, leisure and educational facilities; and
 - to improve safety along the corridor by providing a high-quality public transport alternative to the private car (CCC/GPH/2, 3.24).

Policy background

- 4.19. **National policy and guidance** The guiding principle for planning policy and guidance is sustainability. This means sustainability in both development form and in transport provision. It entails, among other things: increasing the density of development to improve the viability of non-car modes of transport; relating new development and transport infrastructure more effectively; integrating transport systems to provide for seamless journeys; and reducing the need to travel rather than providing for travel.
- 4.20. The current position on national transport policy is set out in the Transport White Papers of 1998 and 2004, the Transport Act that followed the 1998 White Paper and the Ten Year Transport Plan. These documents set the current course of government policy and they created new instruments of policy such as Bus Quality Partnerships, Multi-Modal Studies and Local Transport Plans (CCC/GPH/2, 4.2-4.16).
- 4.21. The 2004 White Paper states that improved bus services must be at the heart of LTPs. They will be the key to reducing congestion and pollution. Radical improvements in bus services are needed in some urban areas and these should be coupled with measures to reduce congestion, such as congestion charging. Buses should be seen as an alternative to rail services in some areas (CCC/GPH/2, 4.25).
- 4.22. National planning policy is set out primarily in the series of Planning Policy Guidance Notes (PPGs) and the statutory processes of the Town and Country Planning Act 1990 and the Planning and Compensation Act 2004. PPG13 *Transport* states that the aim for public transport should be to establish a high-quality, safe, secure and reliable network of routes with good interchanges, matching the pattern of travel demand in order to maximise usage. Working in partnership with public transport providers, local planning authorities should use their planning and transport powers to improve public transport (CCC/GPH/2, 4.26-4.38).
- 4.23. Two other Government policy initiatives are of relevance to the Cambridge Sub-Region. First, the Communities Plan *Sustainable communities: Building for the Future* has established the corridor between London, Stansted and Cambridge as one of four national growth areas where there is to be a high level of development to meet the needs of the growing economy (A42).
- 4.24. Secondly, the Government's White Paper on the future of air transport earmarks Stansted airport for possible major expansion through the addition of a second runway. As yet there is no commitment to this option; the matter will be one of the issues to be addressed at the public examination into draft RSS14 which is scheduled for September 2005. In the meantime, BAA plc is preparing a planning application that would permit usage of the existing runway to be increased from the present ceiling of 25 million passengers per annum (mppa) to 35mppa (B86).
- 4.25. Other relevant national planning guidance includes PPG9 *Nature Conservation*, PPG15 *Planning and the Historic Environment*, PPG24 *Planning and Noise* and PPG25 *Planning and Flood Risk* (CCC/GPH/2, 4.47-4.55).

- 4.26. **Regional policy** Regional planning guidance for the East Anglia region for the period 1995-2016 is set down in RPG6. Guidance for the period to 2021 is being developed through the emerging RPG14, to become RSS14. The former establishes a sequence whereby additional major development should occur across the Cambridge Sub-Region. It also identifies the need for a new settlement close to Cambridge and proposes that a full regional transport strategy should be produced for the region (C11).
- 4.27. A first working draft of such a strategy was produced in 2003 and has been 'banked' with the Government Regional Office, together with a draft of RPG14. Suitably modified to take into account the Government's Sustainable Communities Plan, among other things, the RSS as it is to become, is to be subjected to Examination in Public (EiP) in the summer of 2005. The draft addresses strategic public transport services and identifies the guided busway as a committed scheme (CCC/GPH/2, 5.4-5.18; C11; C12).
- 4.28. **The development plan** There is a clear relationship between the guided busway proposals and the development plan. The recently adopted Cambridgeshire and Peterborough Structure Plan (2003) differs from its predecessors in being locationally specific. The intention is to speed the processes in bringing land forward. The Structure Plan is also clearer about the transport infrastructure required to support that development.
- 4.29. Chapter 9 addresses policy for the Cambridge Sub-Region. Taking forward the underlying sustainable development theme, the strategy seeks to: provide for the accommodation of continued expansion; provide for most new homes, employment and related facilities to be within or as an extension to Cambridge, in a new settlement at Oakington/Longstanton (Northstowe) and in market towns; provide an increased proportion of affordable homes; protect the character and setting of Cambridge; support the expansion of high-technology industries; and ensure the provision of infrastructure to support new development.
- 4.30. As well as identifying the site for a new settlement, and specifying its size (6 - 10,000 homes), the Plan identifies the need for 8900 additional dwellings within built-up areas of Cambridge City and South Cambridgeshire, and a further 8000 dwellings on the edge of Cambridge, subject to the review of the Green Belt boundary. It sets out the broad locations of these growth areas. Policies P9/6 and P9/7 deal with the need to promote appropriate employment and particularly the role of clusters. This responds to Cambridge's role as a world leader in certain educational and technological fields.
- 4.31. Policy P9/3 is concerned with the proposed new settlement, the development of which is to commence in 2006. This is to be a small town closely linked to Cambridge, with a high-quality public transport link to Cambridge as well as to St Ives and Huntingdon. As Policy P8/10 makes clear, that link is to be a 'rapid transit system to serve key centres in the Cambridge Sub-Region, initially between Cambridge and Huntingdon utilising the former St Ives railway line and between Trumpington and Cambridge City Centre'. It is also stated in paragraph 8.42 that the system

is to be integrated with road-running sections along radial routes to the City Centre and between Huntingdon and St Ives.

- 4.32. The strategy was tested at the Examination in Public (EiP) held in 2002. One issue was the mode of transport that should be used in the rapid transit system. On this, the Panel concluded that 'nothing that we heard at the EiP persuaded us that the choice of the guided bus system along the former railway line was wrong and we can see no value in revisiting the decision at this advanced stage' (CCC/GPH/2, 6.5-6.33; A38; B84, 6.77).
- 4.33. In respect of Local Plans, both Cambridge City Council and Huntingdonshire District Council adopted their plans some years ago (and these are currently being reviewed). A first deposit draft of the replacement Cambridge Local Plan was published in June 2003. Policy 7/7 states that development will not be permitted where it would inhibit the expansion of high-quality public transport; this includes land around existing or potential public transport nodes, such as Chesterton Sidings, and along the former rail routes to Bedford and St Ives. Those routes are identified on the Proposals Map (A47). The re-deposit draft was published in 2004. This contains several references to the proposed 'Cambridgeshire Guided Bus' and the assumption is made that the scheme will be approved in its present form (CCiC/5).
- 4.34. Regarding Huntingdonshire, its Local Plan was adopted in 1995. Policy T21 indicates that the Council will support proposals which maintain or improve the present level of public transport services (CCC/GPH/2, 6.37-6.56, 6.68-6.74; A47; A53).
- 4.35. The South Cambridgeshire District Local Plan sets out clearly the need to link high-quality transport provision with new development proposals. Policy TP3 supports the creation of a Rapid Transit System (RTS) that would follow the route of the disused St Ives railway line. This is seen as a critical element in planning for sustainable future growth in the Cambridge Sub-Region. Section 106 powers are to be used to ensure that developers who would benefit from the provision of the RTS make appropriate financial contributions towards its costs (CCC/GPH/2, 6.57-6.67; A49).
- 4.36. **Cambridgeshire Local Transport Plan 2004 to 2011** The LTP is the mechanism whereby the funding bid for the CGB was made to Government. Three versions were produced over the course of the project the latest being a revised Annex E bid document based upon discussions with the DfT and incorporating additional tests required by them. This was submitted in October 2003.
- 4.37. The LTP's vision is for a transport system that, among other things: provides a springboard for the continuing prosperity of Cambridgeshire; recognises and meets the social needs of its residents and visitors; provides a choice of options that link seamlessly from one form to another; and encourages a healthier and more sustainable Cambridgeshire.
- 4.38. To enable delivery of these, the LTP contains a strategy hierarchy. This identifies broad aims, establishes appropriate tools, sets objectives, identifies individual strategy areas, and then prepares detailed strategies.

Each of the objectives is associated with headline and secondary targets to measure the extent to which they are being achieved. The role of the St Ives to Cambridge rail line for reuse as an RTS is detailed in Chapter 7 (CCC/GPH/2, 6.75-6.95; A25; A31; A35).

Route details, design and construction

- 4.39. The northern guideway section of the CGB would commence at the proposed Park and Ride site at St Ives, continuing along the disused railway corridor to the northern fringe of Cambridge, to serve the Regional College and Cambridge Science Park. The guided buses would then join Milton Road at a new junction continuing on-street through Cambridge city centre. A second leg of the guideway would serve the Arbury Park development, the route then following the Cambridge Road/Histon Road on-street to the City Centre.
- 4.40. After passing through the City Centre, the buses would join the southern section of guideway to the south of Cambridge Railway Station. Following the route of the old Cambridge to Bedford line, that section would initially run parallel to the main Cambridge to London railway. It would then branch off to terminate at the existing Trumpington Park and Ride site. There would also be a link to Addenbrooke's Hospital which would pass over the main line on a newly constructed bridge.
- 4.41. The guided sections would consist of twin guideways for the whole of the northern section, providing a dedicated, segregated route in each direction. The majority of the southern section would also have two guideways. However, within Trumpington Cutting, the guideway would be single track; this would operate in both directions and be signal controlled.
- 4.42. Each guideway would be 2.6 m wide with a 180 mm kerb, separated by a central reserve typically 800 mm wide. The guideway running surfaces would be 700 mm wide with infiltration ditches between them to manage surface water drainage. The buses using them would be fitted with small, horizontally mounted wheels attached to the bus steering mechanism.
- 4.43. A maintenance track running alongside the guideways would provide access for maintenance and emergency vehicles. On the northern section this would be some 4 m wide and have a dual role as a bridleway. To the south, it would be some 3 m wide and be designated as a cycleway.
- 4.44. There would be ten guideway stops each designed to provide a consistent image. With the exception of the Nature Reserve request stop at Hollywell Ferry Road, they would offer level boarding and alighting for all, shelter and secure cycle facilities, real-time information, off-board ticketing, a high standard of lighting, CCTV and footpath connections to nearby communities.
- 4.45. The Nature Reserve request stop would have reduced facilities in recognition of the environmental sensitivity of the location. Those facilities would include a platform for level boarding and a ramped access.
- 4.46. Highway junctions would be traffic signal controlled with the exception of

the junction with Hollywell Ferry Road. The guided buses would have priority to minimise journey times.

- 4.47. The St Ives Park and Ride site would have 500 spaces, extendable to 1000 spaces. A 350 space facility would be provided at Longstanton; this would be extendable to 700 spaces. There would be a maintenance depot and control centre at the St Ives site to manage the system. At Histon, there would be a short stay, 40 space car park close to the guideway stop, and at Swavesey there would be a 'Kiss and Ride' site for the dropping off of passengers.
- 4.48. The northern section of the guideway would accommodate double-decker buses, the southern section being restricted to single deckers because of bridge clearances. The buses would travel at a maximum of 100 km/h over the majority of the route. Lower speeds would apply at entry/exit points to the guideway (40km/h), and at signalised junctions and along the Arbury Park section (48 km/h). Her Majesty's Railway Inspectorate (HMRI) have no objection in principle to the proposed maximum permissible speed to be adopted (CCC/SHD/5, 3.68-3.71).

Construction and its impacts

- 4.49. Construction would last two years. Demolition of large structures would be limited to the existing Windmill Bridge, Over and the station building at Histon, while partial demolition (and reconstruction) of the River Great Ouse viaduct would also be required. Stabilisation works would be needed at the embankment south of that viaduct and at Over and Trumpington Cuttings. New construction would include the replacement Windmill Bridge, Hills Road Underpass and Addenbrooke's Link Bridge.
- 4.50. Highway works would be required on the A1096 Harrison Way in St Ives, and at the guideway junctions with Milton Road and Cambridge Road. There would need to be some amendments to railway infrastructure between Cambridge Station and Hills Road, where the guideway would pass the Cambridge Signal Box.
- 4.51. In respect of junctions with the public highway, all works would require a detailed method of working to be approved by CCC. Access routes for construction traffic would be clearly signed. They would be chosen to avoid residential areas and the interface with pedestrians wherever possible. Detailed traffic management measures would be drawn up for each junction, taking into account the safety of all users, including pedestrians, cyclists and equestrians and construction staff (CCC/SHD/5, s.4).
- 4.52. Advance warning signs would be needed at the new junction on the A1096. Also, particular attention would be needed at junctions where there are adjacent private accesses, for example that at Station Road, Swavesey. All access needs would have to be taken account of.
- 4.53. The junction between the guideway and Kings Hedges Lane south of the Cambridge Regional College is complicated by the existing traffic signal controlled junction. The traffic management measures to be adopted would

have to take this into account as well as the need for safe and dedicated routes for the students.

- 4.54. Where public footpaths and bridleways cross the guideway, details of the crossings have been agreed with CCC's Rights of Way officers. Temporary diversions of public and private rights of way would be considered where appropriate. The Order caters for temporary closure of public rights of way where no alternative route is available, in order to construct the works (CCC/SHD/5, 7.29-7.70).
- 4.55. **Site compounds** would be located every 6 to 8 km with local compounds at areas of significant activity such as new bridge sites. That would ensure the most efficient working. On the northern section, there would be major compounds at the two Park and Ride sites, one off the Longstanton Road opposite the BT mast compound and compounds on either side of the River Great Ouse Viaduct.
- 4.56. On the southern section, there would be two main site compounds. One would be to the south of the Long Road embankment and near Clay Farm. That would be to the west of the alignment. The other would be to the east of the alignment on land currently in agricultural use. There would also be a temporary construction site to the south of Hills Road. Together with the disused sidings area to the north of the bridge, that would be used for the construction of the Hills Road underpass. Finally, there would be compounds on either side of the main railway line for the construction of the Addenbrooke's link bridge (CCC/SHD/5, 4.91-4.97).
- 4.57. The impact on **access to property during construction** has been limited to a minimum. The proposals here cover access to a range of businesses, to Cambridge Railway Station and Cambridge Regional College and to properties that would be affected by the construction of the two Park and Ride sites. They also provide for diversionary routes to private tracks where existing routes would be severed. These would be provided in advance of the loss of those routes.
- 4.58. The proposals also cover the surface car park at Unex House, Hills Road which would be reduced in size during the construction works, and the need to amend the service road at the Trumpington Park and Ride site to cater for the construction of the new guideway junction (CCC/SHD/5, 7.71-7.87).
- 4.59. A **Code of Construction Practice** (CoCP) would be developed in consultation with the relevant authorities and included in the construction contract. A draft of this document was submitted with the TWA draft Order application. The final CoCP would cover environmental and safety issues such as: construction traffic routes, pedestrian or traffic diversions and the protection of street furniture and trees; noise and hours of working; measures to prevent dust and air pollution; the protection of surface and groundwater resources; the handling and disposal of waste and contaminated materials; and the protection of trees and vegetation directly affected by the works (CCC/SHD/5, 4.102).

Statutory Undertakers

- 4.60. There has been liaison with all the statutory undertakers to determine the location of existing plant. Some diversions and protective measures would be required throughout the whole route although this would be most evident in the urban areas. All works would require prior approval of the relevant utility.
- 4.61. In selecting diversion routes the aim would be to minimise impact on services and future disruption arising from on-going maintenance. Where possible, the diversion of major services would be avoided. For example, agreement has been reached with Transco and the HSE to leave the high pressure main through Trumpington Cutting in place. Rather than divert it, which would be disruptive to local residents, suitable protective measures would be put in place. The works would use methods limiting vibration and any impact on the gas main.
- 4.62. There have been detailed discussions with Network Rail concerning works in and around the Cambridge Railway Station forecourt and regarding the railway crossing needed for the Addenbrooke's Hospital link. A detailed possession plan has been agreed.
- 4.63. The new Hills Road underpass would affect a number of services. Final diversion requirements would be agreed between the contractor and the statutory undertaker affected.
- 4.64. Services running parallel to the guideway would be relocated beneath the maintenance track to minimise disruption to bus services and to allow access for maintenance vehicles. (CCC/SHD/5, 4.14-4.16, 7.91-7.98; CCC/SHD/6).

Traffic Regulation Orders

- 4.65. Traffic Regulation Orders (TROs) are only proposed as part of the TWA where there is a proven need. Were it to be found that further TROs were needed, they could be introduced relatively quickly using CCC's highway powers.
- 4.66. A number of TROs are associated with the bus link across the A1096 Harrison Way between Station Road, St Ives and the bus interchange at the Park and Ride site. They have been included to control use of the bus gate and bus only road, to control parking in Station Road to ensure clear access to that bus gate, and to prohibit certain turning movements other than by buses.
- 4.67. Within Cambridge, there is a need for bus priority measures on the Milton Road to counter delays at the evening peak. Thus, the draft Order includes a TRO in connection with a bus and cycle lane to allow buses unimpeded access to the guideway.
- 4.68. TROs are needed at the Swavesey 'Kiss and Ride' site. They would limit waiting to 30 minutes and prohibit waiting and unloading on the access route.

- 4.69. Also, off-street parking places orders are required to control the use of the Park and Ride sites to ensure that vehicles park correctly and that the sites are not abused. Also bus lanes are proposed on the access road to Longstanton Park and Ride, and TROs would be necessary to control their use.
- 4.70. A range of measures is needed at Histon. First, there is a need to discourage commuters from using the proposed car park. It is proposed to limit parking to four hours which would effectively restrict use of the car park to those making shopping and leisure trips on the CGB. Another TRO would prohibit waiting and loading on the access road.
- 4.71. Secondly, TROs are needed for those parts of Cambridge Road, Station Road and New Road in the vicinity of the guideway junction. Existing TROs control parking. There is a need, in addition, to ensure that visibility of the proposed traffic signals is not obstructed and that parked vehicles do not obstruct the movement of vehicles across the guideway. TROs are therefore proposed to prohibit waiting and loading on the above three roads.
- 4.72. There have been objections from shopkeepers on Cambridge Road to the proposed waiting and loading restrictions. Following discussions with them it is proposed to widen the carriageway and narrow the footway in the vicinity of No.1 Cambridge Road. This would allow parking to take place without obstructing traffic flow; this would entail a reduction in length for the proposed prohibition of waiting and loading on the east side of Cambridge Road (CCC/RDM/8, ss. 5,6; CCC/RDM/9, Fig.2.3).

Safety

- 4.73. HMRI would be responsible for certifying the safety of the system and authorising its use. It would be expected to be presented with a safety procedures case and operating regime. Speed limits would be set for different locations (see also para. 5.32). The Eastern Traffic Commissioner would have responsibility for the safe operation of all on-road bus services. He is the registrar for all bus service and licence applications for this area and would continue to exercise those functions over bus operators and their services running on the guideway.
- 4.74. In terms of operational safety and management of emergencies there would be close liaison with the fire and rescue, ambulance and police services. Clear guidelines and rules would be established to ensure urgent and targeted responses to emergencies. For example, in the event of a bus breakdown resulting in a stationary vehicle, the following buses would be diverted onto the public highway and services would divert to a pre-arranged route. Special procedures would be developed to recover such vehicles. Fire and rescue vehicles would gain access to incidents from the maintenance track.
- 4.75. All bus drivers would be full PSV licence holders and therefore trained both to anticipate incidents and also in the use of the braking system of the bus to stop efficiently. Forward visibility along the guideway would meet the desirable minimum stopping distances. Regarding night time driving or

driving in fog, drivers of all buses must proceed at a speed that is appropriate to the conditions.

- 4.76. The fencing off of the maintenance track from the operating guideway would not be favoured. The position would be similar to that of rural roads which often have footpaths or cycleways running alongside them. Fences would prevent people or animals that had strayed onto the guideway from stepping clear and they would impede egress should evacuation be required.
- 4.77. The guided bus technology is not untried. There have been many millions of miles of safe operation in Adelaide, Essen, Leeds and Bradford. Accident rates have been very low; there has been only one recorded injury accident and two non-injury accidents in 18 years of operation by the Adelaide guided bus (B112). It is believed that the introduction of the CGB would result in the prevention of 80 personal injury accidents over a 30 year period, equivalent to a saving of £2.25m.
- 4.78. There have been very few recorded incidents of guide wheels being broken off during guideway operation. There is a greater likelihood of damage during on-street operation. Indeed, the wheels are designed to snap off if a kerb is hit too sharply.
- 4.79. The busway junctions would operate as conventional traffic signalled junctions. HMRI regards the guideway as a highway and thus no barriers are required. In any case buses have very much shorter stopping distances than do trains. The junctions have been subject to Stage 1 Safety Audits. These would be reviewed under a Stage 2 Safety Audit during the detailed design of the project.
- 4.80. The provision of a continuous maintenance track alongside the guided busway would be a major improvement on the access applying alongside virtually all railways operating in the UK. Detailed consultation with the emergency services would establish emergency operational procedures along the guideway, including those sections which would be at a lower level. Those procedures would anticipate any temporary limitations on access caused by flooding.
- 4.81. Users of CGB services would benefit from a number of measures designed to enhance personal security by reducing stress and promoting safety. These include the provision of CCTV, passenger information and good lighting at stops, and two way communications between the bus driver and the control centre (CCC/SA/REB1; CCC/RDM/11; CCC/SHD/5; CCC/ACB/14; B45, s.6).

Benefits

- 4.82. In summary, the main benefits of the CGB are that it would:
- provide a step change in the quality and quantity of public transport, creating enhanced travel choice and offering a real alternative to the car;
 - attract over 20,000 trips per day onto guided bus services by 2016, bringing about modal shift away from the A14 in a corridor where the car currently

dominates;

- provide congestion relief on the road network in the corridor with a forecast reduction in traffic demand of up to 8% in the 2016 AM peak hour;
- support sustainable new development, including that at Northstowe, in the Northern Fringe, the City Centre, the Railway Station area, and to the south of the City at Clay Farm and Addenbrooke's Hospital;
- provide a new public transport service in the Huntingdon to Cambridge corridor, introducing a five-minute frequency service along the guided sections of the route east of Longstanton during the peak period by 2016;
- provide new opportunities for interchange between guided bus services, the existing public transport network and, through the introduction of new Park and Ride/Kiss and Ride facilities, the private car;
- maximise flexibility and thus exploit the full opportunities in the Sub-Region by enhancing access to employment, retail, leisure and education opportunities;
- provide a vital part of the Sub-Regional transport infrastructure which is essential to ensure that other elements of the Cambridgeshire LTP can be delivered, e.g. the proposed new railway station at Chesterton Sidings;
- reduce accidents in the corridor by encouraging a shift away from the private car; and
- promote social inclusion by improving accessibility.

4.83. Combined, these points form the central part of the case for delivery of the CGB. It was on the basis of this case that funding approval was agreed in December 2003 (CCC/GPH/2, 3.28, 3.29; A43).

4.84. The CGB would provide an integrated transport system and a real alternative to using the private car for journeys within the Huntingdon to Cambridge corridor. It would be a transport system with a dedicated route, bringing with it quality of ride and facilities, frequency, speed and reliability. In those terms, the system would be akin to the existing ones in Essen and Adelaide. It is those cities that provide the operational model for the CGB rather than Leeds where the guided bus system is a speed constrained urban one and designed as such.

4.85. For many, the CGB would offer a directness of route from origin to destination that would be of as much weight as factors of reliability and speed. For example, it would offer a direct connection between St Ives and the northern fringe of Cambridge with its major employment provision. In place of the present one hour trip, a journey from Swavesey to the Science Park would be reduced to a little over 13 minutes, truly a step change (B179). The CGB would connect directly Huntingdon and St Ives and the settlements along the route to Cambridge's northern fringe, City Centre and southern edge.

- 4.86. The two major developments on Cambridge's northern fringe that the CGB would serve are Cambridge Science Park and the Cambridge Regional College. The former is one of the largest single employment sites in the county. There are an estimated 6,000 employees and further developments will add an additional 1,000 jobs. The adjoining Regional College site has some 18,000 students plus 600 staff. Almost all of this large area would be within 800m walking distance of a CGB stop (B191).
- 4.87. The CGB would directly serve major areas of committed development, including the new settlement of Northstowe, and development at Arbury Park, and Chesterton to the north of Cambridge, as well as Clay Farm and Addenbrooke's Hospital to the south.
- 4.88. The CGB would connect all the main centres along its route using one service. Compared to existing bus services it would secure significant time savings for the vast majority of journeys (B179). Also, for those locations along the guideway, there would be a significant increase in service frequencies. While service patterns would be determined by the operators on a commercial basis in response to demand, a 'most likely' operating scenario has been identified. Under this scenario, a proportion of existing services would divert to the guideway, while some would continue to follow their present route.
- 4.89. The comprehensive modelling and validation carried out by Atkins remains unchallenged; indeed it has been expressly accepted by the DfT and CCiC. (B275; CCC/ACB/14, s.7, Tables 7.1-7.4; CCC/ACB/15, fig.8.1).

Effects upon highway capacity and traffic flow

- 4.90. The operational impacts of the CGB project where the guideway intersects with existing highways and rights of way are detailed in the Transport Assessment (TA). Assessments of the impacts on the existing road network were made using industry standard software tools such as LINSIG, ARCADY and PICADY. These establish ratio of flow to capacity (RFC). An RFC value of below 85% means that the junction operates satisfactorily. Above 85% it is approaching capacity and beyond 100% it is over capacity and queues and delays may result.
- 4.91. These models were supplemented by PARAMICS at three specific junctions (see below); this was intended to support and confirm the earlier results. Further validation was done using video surveys. These supported the findings of the models.
- 4.92. The LINSIG results for the junction with the A1096 Station Road, St Ives show that in 2016 at the AM peak, two of its arms would operate beyond the RFC threshold. Therefore, with the signals there would be additional vehicle delay and queuing. Already, however, traffic moves slowly in the AM peak period which is caused primarily by the roundabouts at either end of this road. In that context, the introduction of the guideway junction would cause no significant amount of additional delay or queuing on the network. These results are confirmed by the PARAMICS model.

- 4.93. Using ARCADY it has been found that three arms of the A1096 Meadow Lane Roundabout would operate over the RFC threshold by 2016, even without the addition of CGB services. With the CGB there would be a slight increase in vehicles using the junction because it would provide the access to the St Ives Park and Ride site. The RFC would be likely to rise by up to 2%, with average queues lengthening by no more than 2 vehicles in the peak hour and an increase in delay of four seconds. Thus the impact would be minimal.
- 4.94. In the LINSIG assessment for the Milton Road junction, the RFC values did not go beyond the threshold. As was confirmed using PARAMICS, the introduction of the CGB would cause no significant additional delay or queuing during the peak hour (B45, 6.70-6.88).
- 4.95. At all other road crossing points, the impact in terms of delays and queue lengths would be slight (A15, s.16). The Longstanton Park and Ride site would be served off a new roundabout. There would be some queuing and delay in 2016 (AM peak) but this would be minor (B45, 6.85-6.87).

Rights of Way

- 4.96. There would be no permanent closure of any public rights of way (PRoW). Indeed access for pedestrians, cyclists and equestrians would improve through the provision of new linear routes along the maintenance track. These would be in the form of a designated bridleway on the stretch between St Ives and Milton Road in Cambridge, and a cycle track on the southern sections out to Addenbrooke's Hospital and Trumpington Park and Ride site. The section of the maintenance track through Arbury Park would be designated as a cycle track.
- 4.97. This would extend the PRoW network and create opportunities for new circular walks and rides. It would provide a lawful and safe bridleway access from St Ives to the Fen Drayton Lakes. It would promote an alternative means of access to the car and, overall, there would be substantial health and economic benefits for the community.
- 4.98. The public right of way Byway 7 Longstanton/Byway 4 Rampton would be closed to vehicles on either side of the guideway crossing and that crossing would effectively be downgraded to bridleway status. No objections or comments have been received over this issue.
- 4.99. The British Horse Society and the Ramblers Association have considered the relationship of the CGB with PRoW. They have expressed themselves satisfied and withdrawn their objections.
- 4.100. PRoW that would be affected by construction would be temporarily stopped up or diverted. The periods of closure or diversion would be kept to a minimum. Before construction commenced, the Ouse Valley Way and the footpath link across to Addenbrooke's would be temporarily diverted (Footpaths FP13 Fenstanton and FP46/47 Cambridge). Suitable alternatives would be offered where possible for other paths.

- 4.101. **Crossing points** There would be no breaks in the guideway at footpath and bridleway crossings. For each of the running tracks, users would encounter a step down and then a step up of some 180mm, the height of the guideway upstands. It is accepted that those with impaired mobility might have difficulty with steps of this size; this is an issue that would be examined further at the detailed design stage.
- 4.102. Cyclists would need to dismount at guideway crossings. Regarding equestrians, the British Horse Society considers that any reasonably competent rider would have little problem negotiating a crossing. Bridleway approaches would also have chicanes and holding areas to ensure that users stop before crossing while the central reservation would be widened too.
- 4.103. There would be warning notices on the approaches to these crossings to alert bus drivers and rights of way users. There would be a toucan crossing on the A1096 as part of the scheme (CCC/CMD/17, s.5; CCC/CMD/18; CCC/SHD/5, 3.108 – 3.112; CCC/SHD/6, Fig.2.18).
- 4.104. A number of private crossings would be closed or diverted. They include two that have been the subject of objections, those at Histon and Mow Fen Drove and Middle Fen Drove (CCC/RDC/29, Table 4.1).

Park and Ride

- 4.105. Cambridge's Park and Ride scheme has been a major success. The numbers using the facility since its introduction in 2001 have grown to 1.4 million in 2003, an annual growth of 15%. It is now planned to extend the programme to cover the market towns close to Cambridge. The St Ives and Longstanton sites form part of that programme which seeks to integrate cycling and private car use with public transport. Moreover, the existing Trumpington Park and Ride is now proposed to be expanded by 50%. The provision of direct access to Addenbrooke's Hospital, the City Centre and the Railway Station would enhance the attraction of that facility as a transport choice as an alternative to using the car (B275).
- 4.106. The two proposed Park and Ride sites meet several criteria. Thus they are easily accessible to the road network; well related to areas from which demand would be secured and they have sufficient space to accommodate demand. They were also chosen following experience at Cambridge of how such sites best operate (B246).

Interchange

- 4.107. Beyond these three Park and Ride sites, there would be other opportunities for interchange. At Huntingdon, the CGB buses would be able directly to serve the Railway Station. However, particular attention should be drawn to the opportunities at Cambridge Railway Station and the proposed station at Chesterton. While Drummer Street would be retained as the central bus station, Cambridge Railway Station is proposed as an additional major transport interchange. The development brief provides for a minimum of 10 bus stands as well as two dedicated stops for the CGB (B75). The CGB would underpin both that proposal and the proposal for a one-way traffic

system for Drummer Street and St Andrew's Street (CCC/RDM/8, 5.39-5.49); CCC/RDM/9, Fig.2.2).

- 4.108. The Railway Station interchange would be complemented by the committed proposal for a new interchange at Chesterton. This would secure important improvements to the railway network by enabling trains to terminate at Chesterton rather than Cambridge, thereby relieving platform capacity at the latter. It would provide a key interchange with the CGB and be an integral part of the quality public transport proposed for Cambridge and the surrounding area. Also, it would be located close to the Cowley Road Park and Ride. The CGB would link the employment centres in the Northern Fringe to this interchange.
- 4.109. At Northstowe the new development would be directly served by a conventional running segregated bus loop through the settlement while retaining the guided busway for more distant services, including those from the two Park and Rides and St Ives/Huntingdon without involving any delay or diversion through Northstowe itself. In this way it would combine the advantages of speed and directness with the most convenient provision to the new settlement.
- 4.110. There is a similar opportunity at the Science Park where services could divert to serve particular points of demand, leaving other services to continue along the guideway to the south. There would be no need for a detour of all services as is proposed by *CamToo*. Such flexibility would enable the CGB to serve further developments in the area, including east Cambridge and north-west Cambridge. This would be at least challenging, if not impossible, to secure with rail guided public transport provision (B275).

Accessibility

- 4.111. The CGB would be able to accommodate feeder bus services from more distant areas beyond the guideway, for example from the rural settlements north and south of the guided busway. This would be a major benefit.
- 4.112. In terms of social inclusion, the CGB would result in more direct, faster and more frequent public transport services than those presently available. There would be improved accessibility, especially for users without an available car (B275).

Frequency and reliability

- 4.113. Based on the modelling carried out, CCC was able to commit itself to a minimum service provision along the route of the CGB. This would amount to a turn up and go service, with a minimum of a 10 minute frequency during the peak hour period. The actual numbers of buses along the central section of the route are predicted to be significantly higher (up to 24 services an hour in each direction).
- 4.114. A frequent and reliable service of that kind would provide confidence for travelling members of the public that there would be a service within

minutes and that it would be reliable in quality of provision and operation. That confidence would derive not only from the number of services but also from the knowledge that this would be a controlled and segregated system, from the provision of real-time information and from the use of inter-ticketing arrangements (CCC/ACB/14, Table 1.1; B275).

Cyclists

- 4.115. The CGB would provide significant benefits for cycling. There would be secure cycle parking provision at both the Park and Rides and at the proposed stops. It is not intended that the CGB buses would carry bicycles (other than folding bicycles). However this would not be a significant deterrent to the use of the CGB. First, the system would provide a direct access to the principal destinations of choice, in particular the City Centre, thus avoiding the need to use a bicycle at the other end. Secondly, in practice, only 2% of rail passengers at Cambridge Railway Station took bicycles with them; one-third of these were folding bicycles.
- 4.116. There would be no severance or removal of any existing cycleway. On the contrary, the maintenance track would be available to be used as a cycleway and this prospect is widely welcomed by cyclist interests. Its provision would not fall within the scope of Section 1 of the TWA. However, it would be a facility for which CCC would be responsible as part of its general highway powers and as part of its LTP commitment for the enhancement of cycle provision. Under the LTP, some £2.6 million is committed up to 2008 to 'improved pedestrian cycle access to rapid transit cycle schemes'. In practice this would only be likely to arise in connection with the CGB (A31; B275).

Perception

- 4.117. The notion that the guided bus would represent a second best solution for Cambridgeshire is firmly rejected. Instead it would perform better than any of the identified alternatives. While this would be dependent upon actual performance and actual delivery, the support and commitment of the bus operators and other stakeholders is both encouraging and highly material. It would be as much in the operators' interests as CCC's to ensure that the CGB were seen to operate as a premier service. The guided bus systems in Essen and Adelaide are indicative of the superior quality that would be provided here (B258; B112; B262).
- 4.118. Some objectors have referred to the existing Stagecoach CITI6 service from Oakington via Girton (which avoids the Milton and Histon interchange congestion) and claim that the CGB would simply be duplicating that provision. However CITI6 runs into Cambridge every 20 minutes in the peak hour and it is therefore not turn up and go. It travels along rural lanes mostly subject to a 30 or 40 mph speed limit and without any bus priority; inevitably it is subject to day-to-day irregularities caused by congestion and other factors.
- 4.119. The CGB would suffer from none of those disadvantages. Instead, it would

offer a segregated, fast and reliable turn up and go service with a guarantee of service quality. Moreover, Oakington would enjoy, in addition to three conventional buses in the peak, eight CGB express services direct into the northern fringe (CCC/ACB/14, Table 7.4; B275).

Potential attractiveness - the output from modelling

- 4.120. The results from the modelling by Atkins serve to reinforce the above conclusions about the inherent attractiveness of the CGB. That modelling follows a conventional four stage approach, the end result being a forecast of CGB patronage. It also provides the necessary outputs for an economic assessment and an operations model to help predict the likely frequency and number of buses to be operated on the system (CCC/ACB/14, s.6).
- 4.121. While the outputs of the model are merely tools to be used in forming an overall judgement, that modelling has been extensively scrutinised by other parties and in each case accepted by them, including by DfT and by CCiC. Also, CAST.IRON has concluded that the model patronage results for the CGB are appropriate to use for the assessment of heavy rail, subject to the exclusion of certain patronage elements which would not be available for heavy rail. Thus weight should be placed upon the Atkins model results. These indicate a demand for the CGB in 2016 amounting to a total of 3385 trips in the peak hour and a daily trip rate of 20,310 (CCC/ACB/14, Table 6.2).
- 4.122. The expansion factor of 6.0 is based on locally observed transport patterns and account has also been taken of the monitoring studies for the Manchester Metrolink and the South Yorkshire (Sheffield) Supertram (CCC/ACB/14, s.6).
- 4.123. The majority of the demand would be for travel to and from Cambridge, with the City Centre being the largest single destination attracting around 40% of users. However there would be high levels of demand for other locations. The forecasts indicate that by 2016, Longstanton (Northstowe) would contribute 22% of the overall demand while demand from the northern fringe stops would grow from 20% percent in 2006 to 28% in 2016 (CCC/ACB/14, Tables 6.3, 6.4).
- 4.124. The TA has significantly underestimated the Park and Ride element having regard to parking restraint in the City Centre, capacity at other Park and Ride sites and observed usage of those sites in 2004. The effect of that would be to increase the number of peak hour trips from some 3,385 to some 3,828 nearly 30% of which would be attracted from the car (B45, 6.24, 6.25; B138).
- 4.125. However, for a number of reasons, even that figure is probably conservative. No account has been taken of a variety of factors which are likely to increase the attraction of public transport as against the car. These include: car parking restraint, the use of which is likely to increase in the future; bus priority measures; contributions provided by feeder services; and the introduction of new Park and Ride sites, for example that proposed

in Godmanchester. Moreover, it is the policy of both CCC and CCiC to encourage existing and new employers to establish Green Travel Plans (B150).

- 4.126. It has also been assumed that any service between the north and south of Cambridge would involve a change at Cambridge bus station and an interchange penalty, whereas in fact there would be significant through services. Another assumption has been that with the A14 improvements in place there would be no congestion delays along that corridor; this is probably an optimistic assumption. As another indication of its robustness, the model has not taken into account the proposed bus priority measures both within Cambridge and between Huntingdon and St Ives. Within these built up areas, the assumed timings for the CGB are based on present service timetables.
- 4.127. Moreover, the model has been subjected to a number of sensitivity tests which have, in turn, confirmed the robustness of the results. These include a 25% fare increase, and a five-year delay in the completion of Northstowe. (B138). Moreover, while the scheme has evolved and to some extent changed over the years, it continues to show a strongly positive benefit cost ratio of 2.26 (CCC/ACB/14, s.10; B275).

Public commitment

- 4.128. The CHUMMS proposals have been consistently endorsed as part of national, regional, strategic and local policy for this area. The proposed improvements to the A14 now form part of the Government's approved road programme. Both the A14 plans and the guided bus proposals were scrutinised at the EiP for the Cambridgeshire and Peterborough Structure Plan in 2003. They have been confirmed as part of its policies as has a policy in respect of the new settlement of Northstowe. (B84; A38).
- 4.129. Support for the guided busway is also to be found in the adopted SCLP, while its inclusion in the 2004 LTP has the support of all the relevant local authorities. There is also support or a lack of objection from the authorities for the present proposals. Thus, SCDC has raised some detailed matters of concern but has not pursued them at the Inquiry (B121). HDC resolved not to object. In the case of CCiC, there has been no formal withdrawal of their objection but following discussions and negotiations, there is nothing of substance left by way of objection or reservation (B275).

Funding and timing

- 4.130. In its letter dated 19 December 2003, the DfT committed itself to funding the proposals to the extent of some £65 million on the then estimated capital cost of £73.8 million (A43). Since that time, the scheme has been extended to include the Arbury Park link and a connection to Addenbrooke's Hospital. Together with some other necessary works the total cost has been adjusted to £86.4 million (CCC/SHD/5, 5.21). While there is a reasonable expectation of an increase in the offer of central funding, Section 106 and other contributions from development interests could reasonably be expected to meet part of the gap in funding (CCC/GPH/2, 8.11-8.18). Any

shortfall could be met through other sources. Given the commitment to the scheme and its robustness in terms of its benefit cost ratio there is a reasonable prospect of the scheme being funded and, importantly, its early delivery.

- 4.131. The CGB could be delivered so as to contribute at an early date to transport choice in the A14 corridor. By contrast, no viable alternative has been put forward. The absence of any effective business plans, as well as demonstrated funding, is a telling indicator of the reality and practical merits of the alternatives put forward (B275).

The A14

- 4.132. There is a pressing need for the CGB or an equivalent public transport link to be in place without delay. Moreover, the proposed improvements along the A14 assume the prior implementation of the CGB. The problems of the A14 speak for themselves; the road is notorious for accidents and blockage. They lead in turn to pressure on local roads through rat running and consequent congestion and queuing. Such pressure can to some measure be relieved through the introduction of a suitable new transportation facility such as the CGB. In accordance with the CHUMMS recommendations, it is a public imperative that such provision is in place before completion of the A14 proposals (A39, B275).

The City of Cambridge and on-street running

- 4.133. Provision for on-street running is firmly outside of the Order, save so far as it is immediately required for its functioning. There can be no precondition on the approval of the Order that bus priority or other forms of demand management should actually be in place. The three conditions put forward by CCiC on Day 30 of the Inquiry suggest that there should be such a link. However, they are inappropriate in policy terms, they are not justified in terms of the evidence and they are of doubtful legality.
- 4.134. In reality, appropriate on-street measures are either in place or are being progressed to ensure that the best balance of bus priority, traffic management and other provision is secured. The local authorities have demonstrated their commitment to secure that result through the relevant Area Joint Committees (AJCs) and otherwise.
- 4.135. There was additional work and discussion between CCC and CCiC during the Inquiry adjournment. This led to the Joint Position Statement (JPS). CCiC now accepts the validation of the modelling within the City including a sensitivity test applying a 6.8% increase in traffic. It also accepts the reliability of the journey times assumed for Milton and Histon Roads. While some variability is present in the Hills Road corridor, the proposed management and priority measures would address this. Those measures would include bus priority along Station Road coupled with the removal of parking.
- 4.136. Both Councils are committed to the consideration of appropriate demand

management measures and participation in a study into fiscal demand management. That commitment is reflected in the measures coming forward through the AJC in connection with the bus station and the core traffic scheme (B126, B133). While the study that led to that scheme envisaged a 40% increase in buses within the City Centre, the CGB would contribute only a small part of that. That study also demonstrates how the capacity of the existing Drummer Street bus station could be expanded to provide for the predicted increase in bus numbers (B73(1); CCC/RDM/8, 5.39-5.50).

- 4.137. Through the work of its officers and its consultants, CCiC provided the Inquiry with an independent endorsement of the proposals in the City Centre and along Milton, Histon and Hills Roads. There is nothing that can justify deferment of the CGB pending implementation of those proposals; in any case, they are programmed to be in place by 2007. If anything, the CGB has acted as a catalyst in securing the implementation of a range of improvements that would be required in any event.

St Ives/Huntingdon

- 4.138. The procedures for bus priority measures between Huntingdon and St Ives are in place and progressing. While their precise form remains to be determined in the light of consultation, bus priority along Houghton Road is required in any event; there would be a potential four-minute saving on that road alone. On the approach to St Ives, a belt of vegetation including some trees would be removed, although the mature poplars behind that belt would remain. Within Huntingdon the scheme would provide for convenient access to the railway station (B242, B242A; CCC/SITC/REB2,3.91).
- 4.139. The effect on St Ives market is a non-issue as far as the Order is concerned; the route through Crown Hill and Market Hill could only operate with the agreement of the market traders and HDC (CCC/SITC/REB1, App.1).
- 4.140. As with the on-road sections in Cambridge there is no justification for postponement of the CGB until such measures are actually in place. By contrast, there is an urgent need for public transport improvements and that is best secured through approval of the present guided bus proposal.

Alternatives

- 4.141. The alternatives comprise heavy rail, light rail transport (LRT) or a bus only road. The essential question is whether there is an objection to approval of the present draft Order on the grounds of prejudice or detriment to any better alternative that might be adopted in the future. In addressing that question, CCC's decision to proceed with the current proposal has been taken following an appraisal of the alternatives.

LRT

- 4.142. LRT would be significantly more costly than the CGB, and it would deliver fewer benefits in public transport terms. Patronage for light or heavy rail would also be lower than for the CGB. A major dilemma for LRT provision is

that, if it were to provide accessibility to the City Centre, this would inevitably involve major disruption within the historic core and conflicts which, in the past, have led to its rejection.

- 4.143. The alternative would be to provide no direct service to the City Centre but that would severely reduce patronage. On either option, considerable cost would be involved and the system would almost certainly not be viable (CCC/ACB/14, 3.25-3.29). That would accord with experience elsewhere and with the finding of the National Audit Office (NAO) that there is a problem of overoptimistic forecasting with LRT systems (B109).
- 4.144. In this case, no actual proposal to implement an LRT scheme has been put before the Inquiry. By contrast, the CGB is deliverable now and would provide a comprehensive transportation proposal well-suited to address the needs of the area.
- 4.145. On the flexibility question, while there is unlikely to be any case in the future for conversion, approval of this Order would not in itself obstruct or prejudice the introduction of LRT should that be found to be appropriate in future (B239 and B239A). However, its dependence upon fixed tracks makes LRT fundamentally inflexible and limits its potential patronage.
- 4.146. While the National Council on Inland Transport (NCIT) has advocated an LRT solution for Cambridge, that would depend upon an unrealistic passenger flow of 4,000 per hour (NCIT/4). Also, the NCIT option would involve joint running with Network Rail on the Cambridge mainline. This would have significant operational implications and it is by no means certain that shared running would be acceptable.

New technology

- 4.147. Bladerunner, a road/rail vehicle and the Parry People Mover, a lightweight tram, both represent pioneering and innovative technologies. However, neither has been demonstrated to be deliverable. They offer no assurance as a transportation solution to meet the policy and other imperatives of this area.

Bus only road

- 4.148. There is no case for the bus only road alternative. First, it would be likely overall to be more expensive, given the wider carriageway (with implications for embankment construction) and the necessary drainage works. Moreover there would almost certainly be objection from the EA. Secondly, given the wider metalled surface it would be likely to have a greater impact in sensitive areas such as Over Cutting and through the Lakes. Thirdly, while there would be no need for a maintenance track on operational grounds, without it, the benefits in terms of having a bridleway and cycleway would be lost. Fourthly, and above all, it would not provide the quality of ride or image or the reliability that the CGB would secure (CCC/ACB/14, 3.7-3.15).

Heavy Rail

- 4.149. Essentially, those supporting heavy rail see two main advantages over the CGB. First, it is said to offer the potential to connect with the wider national railway network. Secondly, there is the alleged perception of a quality difference in mode of transport between rail and bus.
- 4.150. **Cambridge Line Connection** There is no case for London trains on the electrified mainline continuing through to St Ives. That is not part of the CAST.IRON argument. At best there could theoretically be an extension to the Science Park for connecting services onto the Cambridge line with electrification provided by Network Rail. However NR have no plans for such a link. It is not feasible to provide a direct connection by rail to Stansted, for example. That would require an interchange, either at the new Chesterton stop on the mainline (and in relation to which St Ives line trains could not directly connect) or, as most recently proposed by CAST.IRON, at Cambridge Station to which some trains would now continue.
- 4.151. CAST.IRON's most recent proposals incorporate a southern extension. That would entail trains running on the mainline over the capacity restricted link through Cambridge Station. The practicalities of that project have not been demonstrated in respect of available train paths or otherwise. Thus, there is no reality in the claim for a direct connection onto the main rail network at Cambridge, a proposal which lacks any support from official railway interests.
- 4.152. **Huntingdon connection** What then about connections westwards from St Ives? To connect to the main rail network, an entirely new railway line would have to be constructed across the floodplain between St Ives and Huntingdon. CAST.IRON conceded at the Inquiry that there had been no proper examination of that proposal. That line would then need to be connected to the ECML involving grade separated junctions across those tracks and, were the line to connect to the north, the need for the new railway somehow to go over or under the A14 itself (CI/8). CCC's estimate of the cost of rebuilding the complete line from Cambridge to Huntingdon, with a connection to the ECML (and allowing for freight trains) is £354.5m (B83).
- 4.153. Such massive infrastructure investment could only be supported on the basis of a business plan or cost benefit analysis that demonstrated clear and substantial public benefit. In terms of possible passenger services from Cambridge to Peterborough via a reopened railway, the journey time would be very similar to that of the current service via Ely; therefore there would be no strategic justification for funding such a link on those grounds. This is not a heritage railway such as in Wensleydale or North Norfolk. One such justification might have been the East West Rail Link (EWR), the principle of which is supported by CCC and other local authorities and organisations (CCC/CI/REB1).
- 4.154. **EWR** However, the alternatives for the "missing link" for the EWR have been the subject of a careful and comprehensive review. This has led to the adoption by the East West Rail Consortium (EWRC) of the Sandy to Bedford link connecting to the Royston line to Cambridge as the preferred option (B145; B237). The St Ives line was not even considered as one of the

possible options because it would have involved longer distances and greatly increased expense without commensurate benefit.

4.155. The Secretary of State considered the review conclusions when he made his decision on the Milton Keynes to South Midlands Multi-Modal Study (MKSMMMS) in July 2003. In respect of EWR, he stated that no further steps should be taken for the time being in relation to the section between Bedford and Cambridge (B110, B111).

4.156. Thus, the link remains a long-term aspiration that may, in due course, attract funding. However, that would not be in the immediate future and, in any event, there is no ground for expecting that it would involve the use of the St Ives line. The objective of securing EWR could be better achieved along the preferred line. The CGB project would not prejudice that proposal.

4.157. **Freight** Freight routing has been the subject of strategic consideration which has led to gauge enhancements to the North London Line (NLL) and the selection of a second freight route through Ipswich and Peterborough that would provide additional capacity post-2016. In response to an objection from the Rail Freight Group (RFG), there is no significant case to use the Cambridge to St Ives line for freight, either to serve businesses along that line or for it to act as a diversionary route for the Ely to Peterborough line during maintenance work or in the event of a blockage. Setting aside the physical and operational constraints, a third diversionary route would have only an extremely limited utility (RFG/1-RFG/3; CCC/RFG/REB1).

4.158. There is nothing in the representations of the RFG or the evidence of CAST.IRON that would support the principle of using the St Ives to Cambridge line for freight purposes. In any event, the EWR, if completed, could itself be used as a diversionary route.

4.159. It has been suggested that there would be benefit in a connection to the ECML, both as a proposal in its own right, and as a means of serving the proposed freight facility at Alconbury. Under the terms of its approval, that facility would be connected to the mainline. However no sensible explanation has been provided as to why that should justify connection through to St Ives and Huntingdon. There is no identified requirement for a further connection to St Ives as part of that proposal (B186).

4.160. **Perception and patronage of a rail service** CAST.IRON has made an assessment of the likely attractiveness of a heavy rail system. This makes use of the overall modelling approach adopted by Atkins. The number of peak hour trips in 2016 was initially forecast to be 1,466; this was for the northern section of the line (DK/2A, 6.1). However, that calculation includes Huntingdon trips (350 trips) which do not form part of the Phase 1 proposal to St Ives. Taking this into account, deducting CAST.IRON's allowance for the carriage of bicycles (which is based on a misunderstanding by CAST.IRON of the model), but adding an appropriate allowance for patronage on the southern section (156 trips) CCC calculates heavy rail patronage to be 1,272.

- 4.161. This figure is almost exactly the same as the CCC forecast done for the Inquiry (B164, p.2). It demonstrates that for a heavy rail scheme, the public patronage and utility would be likely to be less than half that of the CGB. That conclusion is based on the assessment given in evidence by CAST.IRON of its own scheme. It argues strongly against denying the potential benefits of the CGB in favour of an alternative scheme that, even if it could be delivered, would provide an inferior service with a smaller patronage.
- 4.162. This conclusion is unsurprising because it accords with the conclusions reached in CHUMMS and through the Steer Davies Gleave appraisal (A39; A63). It was also the conclusion of the private sector consortium in promoting the earlier Supercam scheme (A67). It reflects the absence of any support or credible business case for the CAST.IRON proposal.
- 4.163. **Business case for heavy rail** CCC's business case analysis shows a continuing and very considerable deficit on operating costs against revenue (B164). Even if, against every expectation, capital funding could be secured, the prospect would be of a system requiring continuing public subsidy for what would be, on the face of CAST.IRON'S own appraisal, reduced public benefit.
- 4.164. Little weight should be attached to the business case that was submitted during the closing days of the Inquiry (CI/19). In it, CAST.IRON has sought to go back on evidence previously given as to patronage on the southern section of the route. Also, unjustified inflation factors for cyclist patronage and for trips from the northern fringe and northern villages to Cambridge railway station were inserted, and three stops were now proposed for Northstowe, even though no adjustment was made for the implications of this.
- 4.165. Much reduced operating costs are then put forward without any supporting evidence. Essential items such as infrastructure maintenance are omitted. In any event, even on CAST.IRON's own approach, the proposal for heavy rail is shown not to be viable. The only sound assessment of financial viability remains that in B164 which was the subject of evidence and cross-examination. CI/19 is rebutted in CCC/CI/REB3.
- 4.166. Finally, in closing, CAST.IRON produced further evidence without any explanation as to why it had not been produced earlier. It has been impossible to test the assertions as to costs in CI/23. CCC's position as set out in B83 and CCC/CI/REB2 remains unaltered by this late submission. CI/24 continues to ignore land required for mitigation and does not add to the information already before the Inquiry.
- 4.167. CI/25, however, provides new survey information which confirms that the delays modelled to arise in Milton Road with heavy rail (B176) would indeed be likely to arise, once it were appreciated that there would be interference with other junctions on Milton Road, including the Science Park entrance. This would be a further major disbenefit of the heavy rail proposal (CCC/CI/REB4).

- 4.168. **Inflexibility** The reduced patronage of heavy rail is in part due to its inability directly to serve areas of principal demand. This would include areas of development such as at Northstowe, Arbury Park, Addenbrooke's Hospital and Clay Farm. However it applies with particular force to Cambridge City Centre. Here, in particular, interchange to another mode of transport would be necessary. There would be a strong incentive to resort to the car with all the disbenefit that would involve.
- 4.169. **Environmental intrusion** Locally, heavy rail would be environmentally intrusive. In the case of Histon and Impington, for example, the criticisms levelled at the CGB in respect of noise and vibration impacts would apply with greater force with heavy rail. Such impacts would be exacerbated were the route to carry freight. The ecological objections would continue to apply.
- 4.170. **Conclusion** The heavy rail proposal has no support from the rail industry and no support in development plan policy (notwithstanding that current policies all promote strategies that are inclusive of rail as part of overall transportation provision). There is no demonstrable case in its favour in terms of any potential for strategic connection to the wider rail network that is practicable or deliverable, at least without interchange (something that would be secured through the CGB in any event). It would be less attractive in terms of potential patronage but would involve potential environmental disbenefit. It would incur significantly increased capital cost, would lack flexibility and has not been shown to be viable, deliverable or fundable.
- 4.171. Were a different view to be taken in years to come, there is nothing in the CGB project that would physically prevent its eventual replacement by heavy rail. It is accepted, however, that the extensive requirements for heavy rail, whether for passenger or freight, would greatly exceed those for CGB and would effectively require complete reconstruction.
- 4.172. Rejection of the CGB would most likely result in continuing sterilisation of the transportation corridor without any alternative coming forward to address the urgent transportation needs of the area. The case for the heavy rail alternative has not been made out and would not justify rejection of the present proposal.

Sustainability

- 4.173. The proposal is demonstrably sustainable in accordance with draft PPS1 and other guidance. It uses an existing transportation corridor and underpins major employment and residential proposals within the growth area. It promotes other forms of sustainable movements including cycling, walking and riding. It would use Euro IV compliant vehicles and would be compatible with other forms of locomotion such as electricity should they be available in the future. There would be an overall increase in terms of habitat provision.

The maintenance track

4.174. Without the maintenance track the quality and reliability of the service would be impaired. Maintenance access would have to be carried out from the busway itself and access in an emergency would be more limited. On occasions the maintenance track would not be usable because of flooding, although the guideway could continue to operate. However maintenance could be planned accordingly. This would be a preferable situation to one where there were no maintenance track at all. The supplementary function of the track as a bridleway and cycleway is a major benefit.

Northstowe

4.175. The need for some form of dedicated transport link to serve the new settlement of Northstowe is unchallenged. Also, it has been generally accepted that the CGB offers the flexibility to be able to pass directly through the new settlement, albeit on an unguided but dedicated busway. The remaining issue before this Inquiry is the degree of the severance that would be caused should the option be chosen to go north rather than west to accommodate up to 10,000 dwellings in accordance with the Structure Plan (B134). Would the northern option be prejudiced and, if so, would this be to an unacceptable extent?

4.176. As far as vehicles are concerned, they would be able to connect at the proposed junction to be formed to access the Park and Ride facility and the spur to Northstowe (B196). Pedestrian and cycle movements would not need to be grade separated but they could be at grade having regard to the limited level of movements along this section of the guided busway. Grade separation or other specific provision might be justified in respect of disabled mobility where that could not be accommodated at the proposed unguided vehicular junction. However, that would be a matter for detailed planning.

4.177. There would be no prejudice to the choice between the two options. There is no case for abandoning the western part of the CGB which has been promoted as an entire scheme. That section would account for some 24% of the patronage of the CGB.

Existing services

4.178. CCC's conclusions regarding likely service levels have been sent to the bus operators in this area (CCC/AB/14, s.7). The Inquiry has their letters of support (B120) and there has been no cogent evidence to suggest that those conclusions are unrealistic or that they do not provide a reasonable basis for considering the likely implications for existing services.

4.179. There would be some reduction in the level of service that Fenstanton currently enjoys. However, with the CGB in place there would be likely to be a continuing service of some three buses per hour in the peak hour which would adequately serve the settlement. The service at Bar Hill should remain at a good level. There is no other settlement where the level of existing services would be likely to be materially reduced (CCC/AB/14, 7.28-7.35).

Ecology and the Environmental Statement

- 4.180. With its 24 km length of guideway the CGB is a significant infrastructure project and its ecological impacts must be carefully assessed. However, in assessing those impacts, it should be noted that the scheme does not pass through or affect any nationally or internationally designated sites. Also, its potential to significantly affect protected species is limited and restricted to the possible relocation of a low number (if any) of great crested newts, the closure of disused subsidiary and outlier badger setts and possible disturbance to badgers. It is interesting to reflect that the areas of ecological interest to this Inquiry themselves stem from the original construction of the railway or gravel extraction works.
- 4.181. The CGB mitigation scheme would result in a net gain in terms of habitat areas of 17.2 has (CCC/ADB/20, Table 3.2). The guideway corridor, including the strips of land between the guideways and the central reserve would be 'greened' and allowed to colonise naturally. Together with new planting, this would promote the ecological interest of the CGB and replace and enhance its capacity to act as a wildlife corridor.
- 4.182. The mitigation scheme would be implemented through an ecological management plan and supported by a Code of Construction Practice (CoCP), both to be secured by way of planning conditions. An ecology working group comprising stakeholders has been set up to inform decisions about ecological management. A qualified ecologist would be present on-site during construction works.
- 4.183. A comprehensive ES has been produced and further reports provided. English Nature (EN), the Environment Agency and the Royal Society for the Protection of Birds (RSPB) have expressed themselves satisfied. The ES includes an invertebrates survey conducted by Dr Kirby a universally acknowledged expert in the field. That survey has necessarily been carried out only in places where there is thought likely to be significant invertebrate interest that has not been previously recorded and in areas that are most likely to be affected. The approach accords with the requirements for EIA. Dr Kirby has been commissioned to identify priorities for further research work and he has done so.
- 4.184. The absence of objections from the statutory bodies, together with the RSPB, is important because each has given detailed consideration to the ecological impacts of the scheme before expressing their final view to the Inquiry. English Nature initially objected to the scheme. Its comments were entirely consistent with its statutory role which extends beyond consideration of SSSIs and protected species to all aspects of ecology.
- 4.185. Further discussions with EN and the production of further ecological reports on behalf of CCC satisfied its concerns and led to the withdrawal letter of 24 September 2004. That letter was detailed and considered, addressing amongst other things great crested newts, the breeding and wintering of birds and the habitat of the grizzled skipper at Over Cutting (B155). EN's views must be given weight as was accepted by StL in cross examination. The RSPB has similarly withdrawn its objections (B144).

4.186. Land take would be minimised. In the case of the Fen Drayton Lakes, only 1% would be used by the CGB including that required for mitigation. Land would be lost from some County Wildlife Sites (CWS) but replacement land would be provided and in the medium to long-term (long term being 10-15 years) there would be a net habitat gain. In the long-term, hedgerow habitat would nearly double. There is no evidence that there would be any capacity problems arising from birds competing for sites around the Lakes area.

Fen Drayton Lakes

4.187. At the instigation of CCC the Lakes were restored as a nature reserve. They are also a CWS. Ongoing contributions from the minerals operators have secured the continuing maintenance and development of the nature reserve. It is common ground between StL and CCC that the CGB would enable improved maintenance and management of the Lakes.

4.188. Moreover, the CGB would provide a sustainable means of access to the Lakes by means of the bus stop requested by the RSPB. The maintenance track would improve accessibility for walkers, horse riders and cyclists, particularly from St Ives from which there is currently no lawful access other than by car. No public rights of way would be closed in this area as a result of the CGB; rather, the maintenance track would provide opportunities for linkage with existing footpath routes. Accessibility for disabled persons would be improved.

4.189. StL has suggested that the Fen Drayton Lakes are a potential SSSI. However, should the Lakes have the potential to be so designated, this would not be prejudiced by the CGB. EN has withdrawn its objection in full knowledge of the StL representation for SSSI status. There would be no prejudice either to a possible future Special Protection Area (SPA) designation. But there is no requirement for the area to become an SPA, notwithstanding its importance for bittern and smew (CCC/ADB/20, 4.8-4.10).

Birds

4.190. CCC has produced a further Bird Report to supplement the material in the ES. Both EN and the RSPB have indicated their satisfaction with the assessment made of breeding and wintering birds and with the scheme of mitigation. The report provides detailed information of surveys and observations made over a period of years, taking into account the extensive work of the Cambridge Bird Club.

4.191. Account has been taken of the effects of the project upon birds, in terms of noise, air quality and visual impact. The buses themselves are unlikely to cause birds very much disturbance. However there is potential for disturbance from people and their pets and this has to be managed. This will be a question of the appropriate routing of paths and of suitable screening following the practices already in place at the Lakes. Indeed, appropriate management has proved very successful in respect of increasing the number of bittern. Willow walls could provide an immediate screen

(CCC/ADB/20, 4.6-4.7; B46).

Great crested newts

- 4.192. Great crested newts have been found to be present in a total of nine waterbodies within 500m of the limits of deviation of the proposed works. The population sizes range from very low to medium. Only one of these ponds would be directly affected by the works (Pond 34a). No adult newts of this species were found there but larvae were found during one visit that have been tentatively identified as those of great crested newts (B48). While this ephemeral pond would be lost as a result of the works, it would be replaced by at least 12 that would be capable of supporting this species.
- 4.193. Mitigation would involve the temporary exclusion of the newts from working areas where needed, a watching brief within those terrestrial areas where the species might be present, and the relocation of any individuals that were encountered to suitable nearby habitats. More generally, landscape and habitat creation steps would be taken to promote the occurrence of great crested newts. Following construction, a programme of monitoring would be carried out to assess the effectiveness of the measures. This would inform management action, for example in connection with the new ponds to ensure that these remained suitable for use by this species (CCC/ADB/20, 3.120-3.133; B48).
- 4.194. The mitigation proposed far exceeds the minimum required by EN's published guidance (CaD/3). While it has been argued that a subsequent study has undermined the status of that guidance (StL/16), there is nothing in its recommendations that conflicts with what is being proposed.
- 4.195. A licence application has been made to DEFRA. EN has pronounced itself satisfied with the assessment of the licence requirements (B269; B155). The question of 'alternatives' has been considered in the application; in so far as the licence is concerned, it is not a matter for the Inquiry. The Inspector need only be satisfied that there is a reasonable prospect that the licence would be granted. (B275, pp.67,68).

Other protected species

- 4.196. The separate report on great crested newts is accompanied by four other reports covering badgers, bats, reptiles and water voles together with otters. With respect to **badgers**, 15 setts occur along the route or in its immediate vicinity. Ten would require closure, six of which are disused. The four remaining setts are at least partially used but they are not main setts. There is widespread evidence of general badger activity along the route and the works would have a temporary adverse effect on this.
- 4.197. Sett exclusion and closure would be carried out as advance works, in accordance with methods agreed with EN and for which licences would be obtained. Mitigation would aim at protecting remaining setts or badgers present in the wider countryside from disturbance or damage, and providing new habitats of value to badgers.

- 4.198. There would be no adverse effects on **bat** roosting. There would be temporary adverse effects upon foraging bats (B47). Mitigation would include addressing the minor loss of potential bat roosting habitat and the provision of new planting. There would be no need for any works to be undertaken under licence (B47). The only **reptiles** present are common lizards and grass snakes; in both cases they are in low numbers. Mitigation would be confined to the removal of individuals to safe locations and various habitat measures. No licence would be required (B49).
- 4.199. **Water voles** have been found at three watercourses that would be crossed by the CGB. Mitigation would be required during construction as well as before and after it. It should seek to protect existing habitat wherever possible and include the provision of culverts incorporating ledges in order to maintain movement along watercourses. Licence procedures do not apply (B50). Evidence of **otters** has been found at two watercourses. Mitigation would be similar to that for water voles. While licence procedures apply to otters, they would not be required for the works proposed here (B50).

Trumpington Cutting

- 4.200. Trumpington Environmental Action Group (TEAG) has a particular concern about slope instability within Trumpington Cutting. The risk of subsidence is a current fear of residents. The planned works would secure the stability of those slopes. Thus there would be a real benefit from the CGB in that there would be: an engineering solution to the current level of subsidence; security for the future stability of the slopes; and an easing of the fears of local residents (both real and imagined).
- 4.201. The Cutting has not been managed. It is fairly dark and the lack of light inhibits the growth of vegetation. With the CGB there would be proactive management. Any vegetation lost would be replaced with planting designed to re-establish the existing character and enhance ecological interest. The intention is to retain as much as possible of the slope and almost all the mature trees whose health would be improved by the planned coppicing. This would address the instability problem which is in part caused by the weight of the mature trees. The root growth that coppicing would encourage would also add to slope stability. While, in the short term, the level of screening provided to local residents would be reduced, longer term the measures would create a healthier, albeit less solid, screening of the Cutting.
- 4.202. While the Cutting provides a habitat for birds there are no rare species. The management proposed by CCC would include the planting of bushes and shrubs which would provide new habitat and thereby support birds and other fauna.
- 4.203. The use of the existing Cutting would not cause air pollution problems. Moreover the use of the guideway would be restricted to vehicles complying with Euro IV standards. There would be no noise disturbance and, given the levels, there would be no disturbance from bus lighting.

- 4.204. While local residents are concerned about the possibility of increased crime, the proposals would make the area more secure. They would bring natural light into the Cutting, reducing opportunities for graffitists and the ability of criminals to remain unobserved or undisturbed. Residential boundaries would be protected by appropriate planting and close boarded fencing could be provided if necessary (CCC/TEAG/REB1; CCC/TWDA/26, 6.19; B213).
- 4.205. **Alternative routes** It is common ground between TEAG and CCC that any transport provision in this area, including CGB, must integrate with the proposed Clay Farm development and the Addenbrooke's 2020 vision.
- 4.206. The TEAG proposal to use the access road to the proposed development as an alternative route for the CGB is not an option. It would be unlikely to offer as attractive a route to the Park and Ride site as through the Trumpington Cutting. Instead, it is likely that journey times would be increased. Moreover, unless fully segregated, it would not provide the same levels of reliability.
- 4.207. Also, there are no worked out proposals for the southern link road and development flexibility would be prejudiced by a route having to be fixed so as to accommodate the CGB (CCC/TEAG1/REB1, 3.13-3.17; B255). There is no support for the assertion that the proposed link road would necessarily be able to accommodate a bus priority lane as an alternative.
- 4.208. **The bridge to the Addenbrooke's Hospital site** TEAG has also highlighted the visual impact of the bridge crossing the main railway line. The landscape between Long Road and Shelford Road is flat and open and the bridge would have a permanent impact on the current landscape setting. However, views from the built-up area are middle distance ones and impact is reduced by distance. The successful integration of the bridge in this open location would be a matter of detailed design and landscaping. It also has to be seen in the context of the envisaged scale of development at Addenbrooke's under the 2020 vision (CCC/TEAG/REB.1, 3.11, 3.12; B193).

Over Cutting

- 4.209. Over Railway Cutting has been designated as a CWS because it supports at least 21 species of butterfly, including a population of the grizzled skipper. It is also a nature reserve managed by the Wildlife Trust. The grizzled skipper population is one of the five largest in Cambridgeshire and Peterborough. Although not a statutorily protected species, it is the subject of a provisional Biodiversity Action Plan (BAP).
- 4.210. The Cutting slopes are structurally unsound and their stabilisation is required to enable the operation of the guideway and the maintenance track. That would necessarily involve the removal of ballast and soil from the base of the Cutting. The ES considered a worst-case scenario which would have involved vegetation clearance from the entire designated area. However, recent engineering studies have shown that the clearance necessary could be much less and that much of the northern slope could be

retained. In addition, adjacent land was to be acquired and this would be prepared and managed for the benefit of the grizzled skipper and other species (CCC/ADB/20, 3.61-3.67).

- 4.211. In its oral evidence, the Wildlife Trust sought to suggest that this land would not be suitable because it would be at a lower temperature. But evidence from CCC's ecologist witness of having seen grizzled skipper on land adjacent to but outside the Cutting suggests that the species may be able to cope with more exposed sites.

Other sites and species

- 4.212. Other CWSs have been addressed in some detail in the ES and elsewhere in the evidence. There has been no serious challenge at the Inquiry. Evidence was raised about the possible presence at Trumpington of a wild licquorice plant. This could be considered for possible translocation (CCC/ADB/20).

Flooding

- 4.213. The northern section of the route crosses a number of main rivers, watercourses and local drains, including the River Great Ouse, Moore Brook, Church End Drain, Swavesey Drain, Beck Brook and Reynolds Drain. It is recognised that the guideway would pass through a drainage sensitive area which has a long history of flooding. The essential issues for the Inquiry are (i) the impact of the scheme upon flooding, and (ii) the impact of flooding upon the scheme.
- 4.214. Throughout, the project team has consulted and worked with the relevant bodies – the EA, the Swavesey Internal Drainage Board and the Old West Internal Drainage Board (the IDBs) to ensure that that the proposals would not adversely impact on the current flooding regime. The three bodies have withdrawn their initial objections.
- 4.215. A Flood Risk Assessment has been undertaken by Arup in accordance with PPG25. At this preliminary stage of the design, this has been done in a qualitative manner. The key issues have been identified and measures proposed to avoid or mitigate against potential impacts. These are summarised in paragraph 4.4 of Dr Lancaster's proof (CCC/JWL/32). The Assessment concludes that, subject to the mitigation it proposes, the project would not have any adverse effects on the existing flooding regime of the area (B97).
- 4.216. An assessment carried out by Atkins on behalf of the EA confirms that the conceptual design for the CGB project shows a neutral impact on the peak 100 year water levels at key settlements within the study reach. It goes on to make recommendations about the future work that should be done as part of the detailed design process (B234). A figure provided for the Inquiry by Atkins shows the complexity of the flooding mechanisms in the area between the River Great Ouse and Swavesey (B252, App.A).
- 4.217. **Detailed impacts and design measures** The CGB proposals would include the reinstatement of the railway embankment between the proposed

St Ives Park and Ride car park and the River Great Ouse viaduct; this was removed during the course of past gravel extraction works. The EA has agreed to this in principle as it is replacing what used to be there in 1991.

- 4.218. The railway embankment just to the south of the viaduct currently forms a barrier that hinders the flow of floodwaters across the flood plain. In times of high flow, the water builds up behind that embankment and threatens the populations of Fen Drayton and Fenstanton. To help alleviate the flow restriction that this causes and the loss of floodplain volume that would result from the reinstatement of the northern embankment, a line of flood culverts would be provided beneath the existing southern embankment.
- 4.219. Many existing culverts and bridge crossings pass beneath the railway alignment. These would need to be extended where the works would pass over them and measures taken in their detailed design to ensure that the works would not have an adverse impact on current flow conditions. More generally, the need and type of erosion control, to minimise vulnerability to scour, would be determined at the detailed design stage when a better understanding of flow conditions would be available through hydraulic modelling.
- 4.220. For the majority of the alignment, the guideway would not impinge on the capacity of the fluvial floodplain, due to its location on the top of an existing railway formation. The maintenance track would follow the busway along the toe of the embankment at existing ground level; it would not therefore encroach on the capacity of the floodplain. An exception would be where it were required to rise up over culverts and road crossings where the required ramp would impinge slightly on the floodplain. However the amount of floodplain storage lost would be minimal and any capacity lost would be mitigated against by the provision of additional flood culverts to provide compensation storage.
- 4.221. **Sustainable drainage systems** The guided busway could create additional surface water run-off that could exacerbate current flooding issues in the area. For that reason a sustainable drainage system would be provided based upon the principles of a dual infiltration trench that would also provide attenuation and storage.
- 4.222. Within the Park and Ride sites, surface water run-off would be restricted to the equivalent greenfield run-off from the site. All surface water run-off would be attenuated and controlled at discharge. The St Ives Park and Ride site lies within the predicted one in 100-year fluvial floodplain and is therefore at risk of flooding. A comprehensive site management procedure would be developed to ensure that the car park were made safe when under risk of flooding. This would include a warning system for users (CCC/JWL/32/33).
- 4.223. **Foresight Report and Climate Change** The Foresight Report on future flood risks seeks to provide a long-term vision for the future of flood and coastal defence in the UK. It looks ahead to the 2080s by which time climatic changes to precipitation could increase the risk of flooding by two to four times, although specific locations could experience changes well outside

this range (INQ.OBJ7).

- 4.224. The potential for climate change to cause an increase in flood frequency is acknowledged. Future increases in winter rainfall amounts could lead to an increase in flood flows, and therefore flood levels. DEFRA has suggested that an allowance of 20% increase in flows for climate change would be an appropriate precautionary response to the range of uncertainty of future climate change impacts. Further detailed consideration of the potential impact of climate change on flood frequency would continue during the detailed design of the scheme.
- 4.225. **The 1947 Flood Event** is used as the basis for preliminary design and assessment as this is the greatest recorded flood event and one more severe than a 1 in 100 year flood event. It led to flooding in St Ives, and in several villages and it affected the road network. Contrary to the statement in the proof of evidence it is accepted that train services were in fact suspended following the erosion of ballast from beneath the sleepers (B214, B218, StL/23).
- 4.226. **Closure of the guideways and maintenance track** Using the available data and the EA model of the area, it is estimated that the guideway would have been flooded on just two occasions over the last seven years. While the duration of the first event (Easter 1998) is unknown owing to equipment failure, in the more recent event, over 2002/2003, it is estimated that it would have been flooded for 3.5 days (B214, Table 1).
- 4.227. The majority of the maintenance track would not be at risk of significant flooding. However, for the sections that would be most at risk, i.e. between the River Great Ouse and Swavesey, it is estimated that the longest period of closure in any one of the last seven years would have been 66 days (B214, Table 2).
- 4.228. During the preliminary design and assessment stage for the CGB, consultants for the EA were undertaking a comprehensive hydrological and hydraulic flood modelling study of the River Great Ouse around St Ives. These newly produced data suggest that the section of guideway between the River Great Ouse and Swavesey would flood with return periods in excess of one in ten years. Based on the 2003 flood event (estimated flood return period of 75 years) the guideway might be flooded for a period of around four days during a significant flood event. Such events would entail closure of the busway between St Ives and Longstanton.
- 4.229. By the 2080s, and allowing for climate change, that would mean that the guideway would flood during flood events with return periods in excess of one in five years.
- 4.230. The possible scope for raising certain sections of the embankment in order to reduce flood risk to the guideway would be investigated during detailed design. For example, if minimum guideway levels were raised by 0.3 m, the frequency of flooding would be reduced to a return period in excess of one in 25 years. However, regard would have to be had to the potential impact of such works on flood risk elsewhere.

- 4.231. Using the same EA data, it is estimated that the St Ives Park and Ride site would begin to flood during flood events with a return period of approximately one in 25 years. With climate change, by the 2080s, that might increase to between one in ten and one in 25 years. The site might be flooded for a period of two days during a significant flood event.
- 4.232. Regarding flood risk east of Swavesey, any disruption due to flooding would be likely to be infrequent. The section of the CGB between Longstanton and Cambridge would be expected to continue to operate during flood events with return period close to one in 100 years.
- 4.233. The guideway would be designed to withstand the effects of floods with a minimum return period of one in 100 years (including an allowance for climate change). This would be secured through a combination of robust construction and flood proofing measures.
- 4.234. **The effect upon operations** During large flood events, the operation of the CGB would be disrupted in the short term. Diversions would be put in place and emergency timetables operated. St Ives Park and Ride would be closed. During very large flood events, it might not be possible to maintain a bus service to all locations as the existing local road network would also be flooded.
- 4.235. **Mitigation** A flood warning system and flood response plan are proposed; this would include the St Ives Park and Ride site. During flood events leading to closure of part of the guideway, buses would be diverted onto surrounding roads wherever possible. In most events, operation of the CGB would be able to continue with access from the Longstanton Park and Ride when there were flooding of any part of the CGB to the west of that point (B124).
- 4.236. **Ground Contamination** The baseline assessment for the ES did not identify any significant ground contamination issues. However, it is felt that potential impacts might arise in connection with: the St Ives Park and Ride site, ballast and track material, an area of hydrocarbon impacted soil at Swavesey, and an area of high groundwater vulnerability at the Addenbrooke's crossing.
- 4.237. It is concluded, however, that any adverse effects upon human health during construction and operation arising from localised areas of contamination could be fully mitigated. Also, while the scheme could potentially impact upon soil and groundwater resources, those effects could, again, be fully mitigated (A15, s.12).
- 4.238. **Air quality** The ES concludes that, overall, the scheme would have a negligible impact in terms of air quality. Ground level NO₂ and PM₁₀ concentrations are not predicted to be significantly affected by the scheme.
- 4.239. There would be benefits to Cambridge City Centre arising from the fact that only buses meeting the Euro IV emission standard would qualify to run on the CGB system. Nitrogen dioxide concentrations in parts of the City Centre are currently high and CCiC is currently developing an Air Quality

Management Plan aimed at meeting the national objective for this pollutant (A15, s.8; B243).

Histon and Impington

- 4.240. The cases put by Residents Against the Guided Bus (RAGBUS) and the Histon and Impington Parish Council (HIPC) conflict in one respect. Whereas the RAGBUS objection is specifically concerned with protecting the amenities of a particular housing area, HIPC feels that the balance of public advantage lies in supporting the use of the existing railway formation for transportation purposes (albeit for heavy rail rather than the CGB) as opposed to preserving it as an amenity for local residents. That conclusion is in line with the policy background which, from 1993, has envisaged the use of the formation for transportation purposes (A48; A62; A50; A38; A45; A32).
- 4.241. While RAGBUS supports the A14 improvements, there is absolute opposition to any transportation development along the safeguarded transportation corridor to the south of the homes in Pease Way, Melvin Way and St Audrey's Close. Its objection centres upon interference with the amenity of homes beside the route. The principal concerns are in respect of noise, visual intrusion and overlooking and loss of outlook.
- 4.242. Points were also raised in relation to unfairness or an estoppel on the basis of the grant of planning permission in the 1980s and 1990s. However, that is not a proper ground for objection, having regard to the continuing publicity given to the emerging proposals through development plan consultation and otherwise. There is nothing in law or on the facts that would amount to unfairness or give rise to a legitimate expectation in this case that could affect the decision.
- 4.243. Regarding dust, it is wholly unlikely that there would be additional dust emissions arising from operations. In any event there would be a significant landscaping and physical barrier between the busway and the dwellings and their gardens. Measures would be included in the Code of Construction Practice (CoCP) that would abate any dust risings that might occur during the short period of construction.
- 4.244. **Noise and disturbance** The scheme has been subject to a noise and vibration assessment as part of the ES . In terms of the construction phase there is the potential for some short-term noise and vibration impacts. These would be mitigated through the application of the CoCP. Operationally, in terms of noise, there are two distinct elements. There are the guideway sections which would pass through rural areas and on the edge of residential areas, and street running sections where additional buses would mix with existing traffic noise.
- 4.245. Where the buses would be a new noise source (on the guided section) the assessment has regard to the ambient noise levels measured at representative locations. This takes account of a baseline noise survey. Predictions of operational noise are based on noise measurements made on the Leeds guided bus system. The highest predicted noise levels are up to

59 dBL_{Aeq} by day and 56 dBL_{Aeq} between 23:00 and midnight at residential properties within ten metres of the guideway. In some cases those predicted levels would be below existing ambient noise levels. At some locations in Histon, however, they would represent a significant increase in noise levels.

- 4.246. **Operational noise impacts at Histon** On the approach to Histon, the CGB would run to the rear of properties in Pease Way, Melvin Way, and St Audrey's Close and it is there, and at Villa Road and Villa Place to the south, that the largest predicted increases in noise would occur. There would be around 10 dwellings where an increase in noise level of more than ten dB is predicted, and a further 35 where more than 3dB is predicted. Noise barriers are therefore proposed to protect the worst affected properties such that, with the barrier in place, no dwelling would be subject to an increase of more than 3 dB (CCC/CJM/23, ss.4-6).
- 4.247. There has been an unfortunate difference of view as to the technical assessment from the three witnesses who gave evidence to the Inquiry. CCC's witness is an independent noise consultant with many years experience of transportation and other development proposals. He has rightly assessed the proposals against appropriate advice and policy and by adopting established methods of assessment according to relevant policy guidance including PPG24 (C68).
- 4.248. By contrast, the objectors' witnesses are an 'environmental health practitioner' whose approach has been largely to provide a critique of the ES, on the basis that a range of additional measures should have been applied, and a theoretical acoustician with no practical experience of noise emissions from buses or other transport modes. Neither considers the effects of an alternative transportation mode, in particular heavy rail, although it is acknowledged that a train would produce significantly higher maximum noise levels.
- 4.249. On noise standards, neither witness significantly challenged the approach to the assessment of the day-time period identified in PPG24 and the World Health Organisation (WHO) guidance as 0700 to 2300 hours. The increase in the community noise environment for that period would be negligible, being limited to a 3dB increase. By looking specifically at the shorter 16 hour period, CCC applies a more stringent test than is required for the 18 hour day-time period used for the calculation of road traffic and railway noise. It is generally accepted that Leq is the best measure for this purpose; this is certainly supported by PPG24.
- 4.250. The use of Leq is also consistent with the WHO guidelines, with BS7445:1/2003 and with the SCLP which advises that the method for the measurement of railway noise should be the Leq. Thus, there is overwhelming support for the use of Leq as the primary measure of community noise disturbance in the present case.
- 4.251. There is no dispute that, assuming an appropriate design, the WHO Leq target levels for day-time and indeed night-time respectively of 50/55 dBA Leq and 45 dBA Leq would be met with the proposed barrier in place (C52).

- 4.252. Essentially, therefore, the objection focused upon the 'shoulder' night-time periods i.e. the times between 23:00 and midnight and 0600-0700hrs in the morning. It is contended that it is not only Leq which should be considered but also that sleep disturbance should be protected by a limitation on the Lmax. Here, though, a distinction should be made between the targets in the WHO advice and policy on acceptability for planning purposes in PPG24. The PPG had the earlier WHO advice in mind but it does not expressly include the Lmax levels from the WHO guidelines. It does, however, include the very much higher Lmax limit of 82 dBA (slow weighting) as a test for Noise Exposure Category C if that is regularly exceeded during the night-time period.
- 4.253. Applying the WHO guidelines, however, the advice for bedrooms is that when the background noise is low, noise exceeding 45 dB Lmax should be limited, if possible. For that objective, Table 1 identifies a noise level guideline of 60 dBA Lmax (fast) outside bedrooms with the window open (allowing attenuation of 15 dBA). The maximum noise levels recorded in Leeds vary but they are up to 73 dBA at 9 m (the distance to the closest dwelling here). Allowing for the 10dBA attenuation provided by the barrier, that would give a figure of 63 dBA at the dwelling façade. That in itself could readily be reduced to 45 dBA inside the dwelling by partially closing the window.
- 4.254. But, just because it is a target, the WHO guideline should not be taken as a requirement for acceptability. It should be borne in mind that the WHO day-time and night-time Leq levels are exceeded in most of the sample dwellings. Also none of the dwellings surveyed meet the WHO maximum night-time noise target of 60 dBAm_{ax} (B226). It should also be noted that the two hours addressed are at the boundaries between night-time and day-time; they would not apply to the central six hours of night-time that would be wholly unaffected. The view of two witnesses that this area is 'very, very quiet' is disputed. Lmax levels of over 60dB were recorded within the 'shoulder hours' at both the Manor Park and the Villa Place recording locations (CCC/CJM/24,App.2).
- 4.255. While considerable emphasis is placed by the objectors on the issue of 'rating level' or tonality, this is of limited relevance to the WHO guidance or otherwise. For the purposes of PPG24, it relates only to industrial noise. The WHO night-time guidelines make no reference to more stringent targets for sensitive persons, let alone tonality or rating levels (C52, 4.3.1).
- 4.256. Regarding the criticism on the use of the Leeds figures, these are based on 12 readings where there is an uphill gradient and surfaces that would tend to increase noise emissions. The CGB vehicles would travel faster than the Leeds buses; however, higher frequency tyre noise is not a dominant factor for heavy vehicles and thus noise does not tend to increase with higher speed. While Mr Stigwood for HIPC has obtained a marginally higher Lmax reading it is within 3dBA of the CCC figures. CCC's base level form a robust basis for assessment.
- 4.257. Further criticism is levelled at the likely effect of the barrier. However, the assessment of its effect has followed well-established advice on both road

and rail noise; this allows for diffraction as well as attenuation (B18, Chart 9; B205). The essential question is whether, and to what extent, the noise levels likely to be emitted would be capable of attenuation by a barrier in an acceptable manner. The detailed design of the barrier, including the question of whether it should incorporate absorptive material is a matter for subsequent consideration and approval. It is not accepted that a higher barrier or absorptive surface is required but if justified it is a matter that could be considered at the detailed design stage.

- 4.258. The point raised about possible wind effects and Aeolian tones was of no material relevance. The CGB would not create any new surface or structure that would create those additional tones and the phenomenon has not been noted as part of the existing noise climate.
- 4.259. Finally, on the question of frequency, the dominant noise generating source would be no different from the engine of an ordinary bus. It would be no different from any other bus as an element in general traffic noise. Also, the perception of noise by the human ear has been extensively studied and it has become accepted that this is best represented by A-weighting (B222). As reflected in this weighting, the ear will attach more significance to higher frequency noise levels than to low-frequency ones in terms of their impact.
- 4.260. On the evidence produced there is nothing to indicate that the relationship of the frequency spectra for the bus is unusual for traffic noise. Indeed, the absence of the dominance of higher frequency tyre noise would be beneficial in terms of the subjective effect on the human ear. There is nothing to support the suggestion that the assessment of barrier noise attenuation for traffic noise is not appropriate to bus noise having regard to the interrelationship of the frequency spectra or otherwise.
- 4.261. **Conclusion on noise** It is accepted that there would be a change in the noise environment and that buses would be heard when they passed these properties. That has to be seen, however, in the context of a transportation corridor reserved for that purpose in a succession of development plans. The local community does not oppose the use of that corridor for transportation purposes, albeit for heavy rail rather than guided bus, and notwithstanding any additional noise intrusion that would result with rail use. Finally, CCC rejects the suggestion that the assessment of noise impacts in the ES is inadequate.
- 4.262. In terms of **vibration**, it is considered that no adverse effects would arise from operational vibration (CCC/CJM/23).
- 4.263. **Loss of outlook** Those living in the adjoining properties would face a change in their view, and for those who appreciate openness of view some loss of outlook. The removal of lineside vegetation would create direct visual exposure to the busway but the degree of impact upon residents would depend upon existing garden boundaries and the character of existing garden vegetation. The proposed noise barriers would provide some immediate visual screening and the intention would be to soften the appearance of those barriers through appropriate planting.

- 4.264. In the case of the properties to the south of Pease Way, Melvin Way, St Audrey's Close and Manor Park, this planting would be within the strip of land immediately behind the property boundaries. The general approach would be for under-storey planting interspersed with fastigate trees that would provide filtered rather than complete screening. This would retain a degree of openness to the south without creating any overbearing or overshadowing effect (CCC/TWDA/26, 6.13, 6.14).
- 4.265. With the noise barriers in place, headlights would not shine directly into the adjoining properties. Any light from passing double-decker buses would be seen through the filter of the trees in winter. Regarding any potential overlooking from the upper deck of such buses, the vehicles would be moving at some speed and any such views would be transient and at an angle. Such impacts would be further lessened by the proposed tree planting. There is no justification for restricting the service to single deck buses operation, bearing in mind the effect operationally. There would be unlikely to be any benefit in applying a speed limit.
- 4.266. **Alternative route** RAGBUS has suggested realigning the CGB to take it further from the affected houses. However such a route would impinge upon the Green Belt, the purpose of which is to preserve the unique character of Cambridge. It would create a new and linear structure in a part of the Green Belt that is very open at this point and it could create pressure for further development. The alternative suggested by RAGBUS should not be accepted.
- 4.267. **Public rights of way** No PRow would be permanently closed. They would be temporarily closed during construction but this would be for the minimum time possible. As far as the Histon area is concerned, pedestrian access to the community woodland would be maintained via the permissive path and FP4. The CGB crossing would not be dangerous for pedestrians; there would be ample opportunity to cross safely (CCC/HIPC/REB1).

Histon Station and platforms

- 4.268. The former Histon Station House would be the only building that would be wholly demolished. Demolition is required partly for the guideway works themselves and wholly to provide the necessary land for the proposed car park (CCC/RDC/29, 2.20). The layout for the crossing area, including the location of the bus stops, and the provision of and location of a car park reflects the public consultation done in 2003 and the support from the local authority for some local parking.
- 4.269. In answer to the Inspector's questions, it is not realistically possible to retain the existing platform and canopy to serve the guided buses. That would entail moving the project's alignment to the south which would impact adversely upon adjacent property interests and the adjacent area of woodland. Also, such realignment would impact on the guideway junction with Station Road; a straight passage is needed across that junction. Moreover, the existing station platform, at one metre in height, is significantly higher than the guided bus stops at 300mm, while the existing canopy overhangs the platform edge. Neither would be compatible with the

present proposals (B209).

- 4.270. From the public consultation, there is strong support for the provision of some car parking. Given the absence of more acceptable alternatives, the replacement of the remaining part of the station building by a car park strikes a proportionate balance between the competing interests. There has been little focussed objection in respect of either the use of the platform or the station building. Neither is listed or within a conservation area.

Land and Property Requirements

- 4.271. Three distinct categories of land are covered by the Draft Order (A2). These are: land to be acquired or used; land to be used temporarily; and additional land to be acquired or used. Collectively, these categories are known as the land within the Limits of Deviation. They are shown on the Works and Land Plans, while the owners and occupiers of land and property within the Limits of Deviation are identified within the Book of Reference (A13, A11). Since the draft Order was originally framed there have been some modifications in respect of land and property requirements. These are shown in the Modifications to Order Documentation (B270).
- 4.272. The basic principle underlying the planning of the project has been to reduce, as far as is possible, its impact on private property. Indeed, for a project of this scale and nature, the number of structures and properties to be demolished is low. The only property that is to be wholly demolished is the former Histon Station House.
- 4.273. The use of two disused railway corridors has minimised both severance and blight impacts. However, parts of this former railway land have been sold off, most notably in the St Ives and Trumpington areas. Therefore severance effects are potentially greater in those areas; in negotiations, CCC have sought to minimise those impacts. Other severance effects would result from the need to minimise the number of breaks in the guideway and therefore the number of vehicle crossing points. A number of third party private crossings would be either permanently affected or diverted (CCC/RDC/29, Table 4.1).
- 4.274. CCC received some 131 property related objections. Contact has been made with these objectors and, in many instances, meetings held to ascertain whether there would be a basis to overcome their concerns. This has been achieved by either explaining the detail of the project or working to minimise the effect of the project on land and property, through giving undertakings or entering into agreements (CCC/RDC/29).
- 4.275. Prior to the start of the Inquiry and as the Inquiry progressed, a number of these objections were withdrawn (B219; 219a-c). The position at the close of the Inquiry is set out in a schedule attached as Annex 1. This indicates that, at that time, there were a total of 54 outstanding objections, of which 26 relate to land at Trumpington Cutting. The cases for those objectors are set out in Section 6 and CCC's response is Section 7.

Statement of matters

- 4.276. The matters raised by the Secretary of State have been dealt with comprehensively in the evidence. The **aims and objectives** of the scheme have been clearly set out. They are consistent with national, regional and local policy (CCC/GPH/2, 3.28).
- 4.277. Similarly, the **justification for the particular proposals** has been fully covered (CCC/GPH/2, 13.3-13.9). The project would be wholly consistent with and supportive of adopted and emerging development plan policy. There would be widespread and significant transportation and socio-economic benefit. There are compelling advantages in the use of the existing railway formation for the proposed transportation use in accordance with the established policies.
- 4.278. There is no realistic prospect of its use by LRT or heavy rail in the foreseeable future but, in any event, any such use would not in itself be prejudiced through its use pursuant to the powers sought for the CGB. Those alternative transport modes have been fully considered and alternative scheme options have been assessed in determining how the scheme's objectives would be best achieved and in selecting the preferred transport mode (A15, s.5).
- 4.279. The alternative alignment suggested at Histon is not justified, either by the degree of detriment that would be caused to homes in the village or having regard to the damage that would be caused to the Green Belt and otherwise by the proposed alternative.
- 4.280. It has been demonstrated that there is a **compelling case in the public interest** for the acquisition and use of land required for the CGB. CCC's approach in limiting the land to be acquired to the minimum is reflected in the small number of landowner objections that have been sustained at the Inquiry. Of these, Mrs Jocelyn's objection has been founded more on an overall objection to the proposal than property detriment (CCC/RDC/29).
- 4.281. On **traffic impact**, it has been shown that there is no proper ground of objection. The City of Cambridge is satisfied. The TA has demonstrated both the absence of technical highway objection and the benefits, potentially in terms of modal attraction and enhancement of the use of public transport in preference to the private car. The means for ensuring bus priority and other appropriate measures within the City and for Huntingdon and St Ives are in place and capable of ensuring appropriate provision in time for the opening of the CGB.
- 4.282. Other public rights would be preserved so far as appropriate and there is the particular benefit in the provision of the proposed bridleway and cycle track along the maintenance track. There would be only limited closing, diverting or downgrading of paths and no recorded paths would be permanently closed (CCC/CMD/17, 8.9-8.11).
- 4.283. The impacts on traffic during the construction phase have been dealt with in the evidence (CCC/SHD/5, 7.29-7.70). The various highway crossings have been assessed and any impact demonstrated to be slight (CCC/ACB/14; B45, 6.70-6.88). The effect of the TROs has been shown to be satisfactory

(CCC/RDM/8, s.6).

- 4.284. On the **likely impact on local residents, businesses and the environment** there would be a limited impact in the area of Histon and Impington represented by RAGBUS. Any other objections should be seen in the light of HIPC supporting the use of the transport corridor for heavy rail. Other objections are limited in respect of environmental impacts. The evidence has addressed the effect on access to property during construction and the safety implications of constructing the maintenance track at a different level to the guideway (CCC/SHD/5, 7.71-7.90).
- 4.285. The ecological impacts of the development would be limited and satisfactory mitigation would be provided. No designated international or national sites are affected by the scheme. English Nature, the RSPB and the EA are satisfied with the proposals. Overall, those proposals are inherently sustainable.
- 4.286. **Mitigation** has been integral to the proposals from the outset. As developed during the preparation for and as part of the Inquiry, the proposed mitigation is entirely appropriate. Appropriate **conditions** have been put forward. The **ES** is entirely adequate for its purpose and comprehensive in scope. There are no grounds for requiring additional environmental information for that purpose. All the **statutory undertakers** are content with the proposals and the protective provisions that have been put in place.
- 4.287. The project has at least a reasonable prospect of the required **funding** being secured, particularly having regard to the commitment of the Secretary of State in his determination in December 2003 to provide substantial funding for the project as proposed. There is no indication of any funding for any of the suggested alternatives.

Conclusion

- 4.288. As a matter of urgency in the public interest the Order proposals should be approved and deemed permission granted, to enable this scheme to proceed without further delay so as to address the transportation problems in the A14 corridor and the City of Cambridge on a sustainable and an environmentally sensitive basis.

5.THE CASE FOR THE SUPPORTERS

The material points are:

- 5.1. **Stagecoach** is the major bus operator in the Cambridge area, running 119 vehicles and carrying 36,000 passengers a day. If this area is to meet the social and economic challenges it faces, it is vital that the proposed guided busway becomes a reality. The creation of a new town at Northstowe and the ever increasing traffic congestion on the A14 corridor make the early delivery of the project critical to the area's future prosperity and quality of

life. Given the use of suitable high-quality vehicles, the project is a key part of a strategy that would attract people out of their cars and help cut congestion on our roads.

- 5.2. **Burton's Coaches Ltd** also supports CCC's initiative. The company is actively expanding and in its five-year plan has already taken into account the need for vehicles suitable for use on the guided busway. It currently operates the shuttle service between Addenbrooke's and Trumpington Park and Ride. This is proving a popular service and one that would immediately gain from use of the busway.
- 5.3. **Huntingdon and District** are the major operator of bus services from Huntingdon and St Ives to Cambridge. The company would be likely to operate services along the busway notwithstanding the substantial investment in the form of new buses that would be required. This initiative would appear to give public transport a massive boost in Cambridgeshire. **Go Whippet** and **Norfolk Green** also support the CGB.
- 5.4. The **Strategic Rail Authority** (SRA) has decided to support the guided busway scheme following its consideration of the CHUMMS report. In reaching its decision, it considered all the options proposed, including heavy rail. It has concluded that, compared with the guided busway, heavy rail would not only be more expensive but also it would deliver fewer benefits. There are serious concerns too about the affordability and deliverability of the heavy rail option.
- 5.5. Regarding the carriage of freight, gauge enhancement between Felixstowe and Nuneaton, coupled with the renovation of Ipswich Tunnel to cater for larger maritime containers, would be more beneficial than restoring the rail link between Cambridge and Huntingdon. That option would require the construction of a new railway alignment between St Ives and Huntingdon and the provision of expensive links to the congested ECML.
- 5.6. The CGB would provide the best public transport solution for the corridor. There would also be benefits to the railways through the provision of better links from the St Ives corridor and South Cambridge to the railway stations in Cambridge and Huntingdon.
- 5.7. Were the CGB not to go ahead, that would not mean that the heavy rail option would proceed in its stead. Available funds need to be prioritised towards projects demonstrating a sound transport case for investment. A heavy rail line from Cambridge to St Ives does not.
- 5.8. **Sustrans** supports the guided bus project. Moreover, with its associated maintenance track it offers great potential benefits for cyclists and walkers. The route is expected to form part of the National Cycle Network and this is welcomed.
- 5.9. The maintenance track surface should be tarmac or equivalent throughout. There is a danger that were the surface to deteriorate, people would be tempted to walk or even cycle on the guideway. Access to the stops should focus on the public walking and cycling there. This necessitates a network

of high-quality feeder paths to be constructed at the same time as the busway. More thought needs to be given to crossing details for cyclists, walkers and horse riders.

- 5.10. It would be desirable for the buses to employ hybrid drives to allow electric operation within the City area. Also, the buses should have the capability to carry cycles.
- 5.11. **Addenbrooke's NHS Trust** views the CGB, which would link both Addenbrooke's and Hinchingsbrooke hospitals, as an important part of its transport strategy for both staff and patients.
- 5.12. The Addenbrooke's Hospital site provides a District General Hospital service and some specialist regional and national medical services. It is also a teaching hospital and a major centre for clinical research. The Medical Research Council's world renowned Laboratory of Molecular Biology is also based at the site. Currently the Trust employs around 6000 staff, out of a total of some 9000 employed on the site. Some 10,000 patients and visitors also access the site daily. Under a successful Travel Plan the proportion of staff driving to work in the last ten years has fallen from 74% percent to 42%.
- 5.13. The Addenbrooke's site is being developed significantly over the next ten to 15 years. Under the Trust's 2020 vision, there would be additional clinical facilities and the establishment of a bio-medical Research Park. This would mean doubling the size of the existing site. The CGB would serve both this and the planned housing development in the south of the City. It would be a valuable alternative to conventional buses which currently suffer delays on the road network (B193).
- 5.14. The Trust particularly welcomes the proposed service hours which would ensure that staff working early and late shifts at the hospital would be able to take advantage of the CGB. However, it regrets that it would not be possible to extend a double-decker CGB service to the south of the City. The height restriction provided by the Hills Road Bridge would mean that passengers travelling from the northern sections would need to change vehicles during their journey. The alternative might be for passengers from the north to catch single-deck buses from the origin of their journey. But this would reduce the level of service available to those passengers.
- 5.15. The **East of England Development Agency (EEDA)** regards the provision of sustainable forms of public transport to accommodate future development and population growth as crucial to the sustainable development of the sub-region. This is an essential part of the Regional Economic Strategy and it is a necessary step if the Cambridge Sub-Region is to retain its role as one of the leading high-technology clusters in the world. In that context, the CGB would represent a critical addition to the public transport infrastructure in the A14 corridor.
- 5.16. **JJ Gallagher Limited** strongly supports the principle of the CGB as well as the TWA application to facilitate its early implementation. It is working up proposals for the development of the Northstowe new settlement. In

developing those proposals Gallagher has long recognised the potential benefits of a high-quality public transport system utilising the disused Cambridge to St Ives railway line. Together with a number of partners (as part of the superCAM consortium) it previously invested considerable sums in developing such a proposal (A67). It now continues to support CCC in its promotion of the present scheme.

- 5.17. The CGB would be highly accessible and attractive to Northstowe residents. It would maximise patronage levels on the corridor underpinning the business case. The route would facilitate easy access to all key destinations within the Sub-Region and help to reinforce the role of Northstowe as a sustainable market town supporting the growth of the sub-regional economy. Compared to other modes the CGB would offer convenience, frequency, flexibility and quality. The rejection of heavy rail and other alternatives is entirely correct.
- 5.18. In terms of timing and coordination, the aim is to complete the first Northstowe dwellings in 2007. While there is no Structure Plan requirement to secure the implementation of any rapid transport system before the commencement of development, Gallagher welcomes the progress being made by CCC and its intention to implement the CGB as quickly as possible. It also supports the aspiration for a high frequency service between the new town and Cambridge and the potential for 'up to 24 vehicles per hour' once the system were fully operational.
- 5.19. While the Park and Ride proposals at Longstanton are not opposed, it is questioned whether all the land indicated within the limits of deviation is required for that proposal. Does so much of this land need to be devoted to landscaping?
- 5.20. **The Defence Estates** own significant tracts of land in the Cambridge area. Oakington Barracks has long been seen as a major brownfield development opportunity and its allocation in the Structure Plan for the proposed new town is welcomed. The former Cambridge to St Ives railway line runs alongside this land and the CGB would be well-placed to serve the new town.
- 5.21. Similarly on property matters, **Trinity College** fully supports the scheme.
- 5.22. **Prof.Dipl.-Ing Hans Ahlbrecht** has provided a statement of support for the CGB based on 24 years of operation with guided buses in Essen, Germany.
- 5.23. A disused railway alignment should, in principle, be suitable for a bus guideway. The Essen system makes use of former tram reservations along public streets. Applied to Cambridgeshire, the system would provide a very high flexibility in operation on both guided and unguided sections and without losses in travel time.
- 5.24. The mechanical guidance system is extremely simple in design and installation. It is easy to operate and maintain. It is 'low tech' and intrinsically reliable and durable. The system's maintenance costs are low.

As the financing of new light rail systems becomes more difficult, the implementation of more guided bus projects seems to be both realistic and probable.

- 5.25. The Cambridgeshire project appears to be really favourable in its application, and it is thoroughly prepared.
- 5.26. **John S Walker** of Walker Strickland Ltd (Consulting Transportation Planners and Engineers) led the development of the case for the Adelaide guided busway and was subsequently the resident project manager. Since January 2002 he has acted as a call-on specialist adviser to the CGB project team.
- 5.27. Kerb guided busways involve simple technology which has proved to be safe and reliable in service since the early 1980s. The system provides for self enforcing bus priority, safe high-speed running, reliably consistent journey times and smooth ride quality. The Adelaide and Leeds guided bus systems have been successful in achieving, against the tide of decline, growth in bus service patronage. They have also encouraged switching from private to public transport.
- 5.28. Because the buses can also run on ordinary roads, guided busway systems minimise the need for passengers to change mode. Experience from Adelaide suggests that the provision of park and ride facilities, also planned for the CGB, greatly enhances the attraction of the system.
- 5.29. The proposed busway is appropriate to its proposed application. The concept incorporates the best practice learned from Adelaide and Leeds; the continuous segregated guideway approach of Adelaide and the highly effective bus priority techniques for city centre operation as used in Leeds.
- 5.30. In a similar vein, **Dr RGP Tebb**, who was involved in developing two initial guided bus corridors for Leeds, also supports the project. The proposals should result in an efficient and attractive guided busway system that would attract significant numbers of users.
- 5.31. **St Mary's School**, Bateman Street, Cambridge, supports the CGB. It should reduce reliance on car use and thus greatly benefit both pupils and their parents. The **City of Cambridge Conservative Association** considers that the CGB would provide an extended Park and Ride scheme by means of which commuters to Cambridge could avoid the grossly overloaded A14. The **East Anglian Ambulance NHS Trust** makes a similar point. **Cllr Chris Howell** feels that the CGB would help rectify a deficit in public transport and greatly benefit the local economy. Expressions of support have also been given by **Liisa Ylioja**, **Mr C Moller**, **Ms S Karim**, **Mr J Rees**, **Mr AH Shepherd** and **Mr R Boorman**.
- 5.32. The **Health and Safety Executive** (HSE) supports the proposed maintenance track. There is concern about the potential for trespass, and the provision of a parallel access track should reduce this by providing a more attractive route. It would also reinforce the comparison with a normal highway by replicating a footpath arrangement with which the public are

familiar. The HMRI division has indicated that there is no objection to the concept of the CGB. It confirms that the design of junctions with the highway, and such matters as sighting distances and visibility splays should be in accordance with highway engineering practices rather than standards required for the design of railways.

- 5.33. **Cambridgeshire Local Access Forum** supports the proposal to establish a permanent public right of way to Fen Drayton nature reserve.

6.THE CASE FOR THE OBJECTORS

The material points are:

Cambridge City Council

- 6.1. The City Council's concerns at the beginning of the TWA process fell broadly into five categories: anticipated journey times and the reliability of CGB; demand management; future planning and development; operational issues; and the built environment.
- 6.2. While many issues have been addressed, and the Joint Position Statement (JPS) sets out what has been agreed with CCC (CCiC/6), CCiC has not been fully satisfied in respect of all its concerns such that it can withdraw its position as an objector. Much would be determined by the way in which the two authorities worked together in the future were the TWA Order to be approved.
- 6.3. **Journey times and reliability** CCiC's initial concerns regarding journey times were in connection with: the lack of current data; the adequacy of traffic modelling; and the potential impact of future growth in travel demand on bus journey times and bus journey reliability.
- 6.4. During the early part of the Inquiry, however, CCC prepared further traffic information, including: new journey time information; an estimate of the potential growth in travel demand arising from planned land use developments within the City (6.8% between 2002 and 2012); a revised analysis of current journey time reliability; and outputs from a traffic model sensitivity test incorporating the projected growth in travel demand.
- 6.5. Through this additional work, CCC has demonstrated that on Histon Road and Milton Road, the journey time forecasts for the CGB are credible and that the Traffic Commissioner standards for reliability can be met over these studied sections. This applies both to the year of opening and in 2012, assuming the planned bus priority measures are implemented.
- 6.6. There is greater variability on the Hills Road section of the route, but measures are being introduced or are planned (such as the Local Authority Parking Enforcement and the Core Traffic Scheme Stage 4) that would help to address these points. Both Councils consider that measures and processes can be devised that would improve reliability to an acceptable

standard (CCiC/6, 2.3, 2.4, App.1).

- 6.7. Additional work remains to be carried out over the City Centre sections where there are pinch points, especially Bridge Street, the Drummer Street interchange and the Catholic Church junction. It would be important to demonstrate that a redesigned Drummer Street interchange would allow CGB services to reach the Traffic Commissioner standards.
- 6.8. **Demand management** Both Councils recognise that management of the demand for car use is an essential tool to the effective functioning of the City and agree that as the City and Sub-Region continue to grow, increasingly firm demand management measures will be required. They agree that effective demand management would be necessary to the proper working of the CGB, in particular in helping to deliver consistent and short journey times in the City. They are committed to the introduction of appropriate measures to achieve this.
- 6.9. They differ on the question of fiscal demand management (FDM). CCiC's position is that FDM will be required, particularly given the proposed levels of development in the Sub-Region. An appropriate condition ought to be attached to the TWA Order if it is approved, requiring such a study.
- 6.10. **Future planning and development** The overall level and location of development for the future growth of the Sub-Region is set out in the Structure Plan. CCiC is concerned that the transport planning elements of this have not proceeded as quickly as they should have and that this might delay the implementation of development. If this is not tackled effectively, the consequence might be increased congestion with possible adverse impacts on the reliability of the CGB.
- 6.11. Both Councils agree that these transport planning elements should proceed as quickly as possible (CCiC/6, 4.3). Both Councils agree that guided bus technology has a part to play in the medium-term and that it is likely to be important in the longer term. They are satisfied that processes can be put in place to address the issues of future growth and to allow the CGB to continue to operate effectively.
- 6.12. **Other matters** CCiC accepts that its representations on operational issues, concerning an open system, impact on pedestrians and cyclists, severance impact, and disabled access, have been satisfactorily addressed by CCC (CCiC/6, s.5). Regarding the effect upon the City's buildings in terms of vibration, CCiC now accepts that the CGB would have the same characteristics as buses currently operating in the City Centre, that no additional adverse impact is anticipated and that no further information is required (CCiC/6, s.6).
- 6.13. **Conclusion** CCiC does not make a case that the CGB ought to be refused now. Rather it believes that it should be fully engaged as a partner in helping to plan the CGB, and in terms of its implementation and effective integration with the future transport planning of the Cambridge Sub-Region.

6.14. Given the particular challenges posed by the growth of the Sub-Region and the impact on the historic City, the Inspector is asked, if he is minded to support the TWA application, to include, exceptionally, the following general conditions providing for:

- a. the immediate commencement of additional work on the on-street sections;
- b. the immediate commencement of a Fiscal Demand Management study led by CCC;
- c. the setting up of robust partnership arrangements between all of the relevant local authorities.

St Ives Town Council, CPRE Cambridgeshire Branch, Railfuture, St Ives Town Centre Management Initiative, St Ives Civic Society and Hartford Conservation Group (SITC)

6.15. All six organisations support the principle of high-quality public transport in the Cambridge-Huntingdon corridor but they remain fundamentally opposed to the CGB (including the on-road sections). The main reasons for objection are as follows:

- the scheme would not provide high-quality public transport; most quality improvements could be met in other ways than through guided bus;
- it would close down any future option to restore a railway to the corridor; that would be the key to a genuinely high-quality public transport system;
- it would threaten the quality of other bus services in the corridor;
- it would have an unacceptable impact on the townscape of the centre of St Ives, and it would be incompatible with its large and thriving markets;
- there would be an adverse environmental impact on certain on-road sections; and
- there would be serious ecological impacts and impacts on rural tranquillity.

6.16. CCC has failed to identify an alternative strategy to the CGB that would bring together: quality improvements for on-road bus routes; quality improvements to services, vehicles and information systems, as with CGB; retention of the track bed of the former railway to retain the option of restoring rail services; and rail development integrated with local bus services (SITC/2).

6.17. CCC has failed to evaluate properly **the integrated bus/rail option**. Its position in rebuttal that this is not a realistic option because of increased cost and reduced patronage has not therefore been substantiated. It has also maintained that whereas options including rail would necessarily involve continuing subsidy, the CGB would not (CCC/SITC/REB7, 3.5).

6.18. However, the position on access charges to the busway is as yet unresolved,

and there is no guarantee either that they would be levied or levied to an extent that would meet all busway operating costs. Also, a significant volume of CGB passengers would come from existing bus services which would be likely either to deteriorate in quality or require subsidy to maintain levels of service. Therefore it is just as possible that there would be 'ongoing subsidy' for the CGB.

- 6.19. In the event of the CGB being approved, conditions should be inserted requiring access charges to be set before construction starts, and integration between CGB and other bus services (SITC/12, p.1).
- 6.20. **Retaining the option of future rail use** It would be relatively straightforward to restore the St Ives to Cambridge section of the former railway line to rail use. Even were restoration to be currently unviable, it would arguably be a very unwise decision to close down the option of future restoration. At a time when passenger rail use is rising, there is a shortage of track capacity and a need to hold any potential for capacity increase in reserve rather than reallocate it for other purposes. Also, this line would link directly into the national rail network offering a variety of new or improved journey opportunities.
- 6.21. Moreover, the rail option provides an opportunity to move freight off the roads; that would accord with national transport and environmental policy. Specifically, it might be possible to use the restored line for the transport of construction materials to the planned development at Northstowe (SITC/2, 3.4).
- 6.22. CCC's rebuttal of this part of the SITC case is largely confined to the support for the CGB by several rail organisations. However, the railway industry has a poor record for making strategic decisions about its assets, as exemplified by the attempt to close the Settle to Carlisle railway (SITC/2, 3.5). The loss of potential capacity on the rail network over the last 40 years was misguided, and the network now has serious capacity problems. That view is supported by representations from the Rail Freight Group (RFG1-RFG3).
- 6.23. The principal patronage of the CGB would be between Longstanton/Northstowe and the northern edge of Cambridge with forecasts of usage on the busway west of Longstanton considerably lower. Under the integrated rail/bus option, the benefits of the guideway between St Ives and Longstanton could be met in other ways. Thus, Longstanton could be linked to Cambridge by means of a guided busway or other rapid transit system built into the infrastructure of the new settlement rather than it using the rail line (SITC/4, 6.3).
- 6.24. The Edinburgh guided busway project (WEBS) involves a 3 km section of guideway designed expressly for future conversion to light rail. Thus, the guided busway is an interim stage in the development of a light rail scheme rather than a long-term solution in its own right, and it provides little support for the CGB (SITC/7, s.2).
- 6.25. **Modal shift** The CGB would offer very little traffic reduction compared with the do-minimum scenario, and nothing said in rebuttal has challenged

that premise. It would fail in one of its key objectives, to provide significant congestion relief. CCC asserts that direct comparisons cannot be made between the do-minimum and do-something tables in Appendix C of the TA. However, do-minimum is supposed to be a realistic and credible representation of the situation without the CGB. Either it is a realistic and credible scenario, in which case the comparison is valid, or it is not, in which case it would contravene the relevant guidance (CCC/SITC/REB7, 3.1-3.2; SITC/4, s.2).

- 6.26. CCC argues that **the A14 upgrade** would not significantly improve the journey time of on-road bus services between Huntingdon/St Ives and Cambridge because they would operate along the parallel local roads, with their frequent at-grade junctions, rather than on the fast through road and they would still be subject to congestion on the edge of Cambridge. Therefore the CGB has a decisive advantage in journey time and reliability.
- 6.27. However, this misses the main point of the SITC case that the journey time improvement from St Ives to the centre of Cambridge via the CGB is, in any case, negligible compared with existing services. Even minor improvements to local traffic conditions along the A14 would benefit journey times and reliability for on-road bus services. Targeted improvements at key points would add more benefits. CCC has not refuted that case (SITC/4, 4.1-4.3).
- 6.28. Secondly, the removal of congestion would remove one of the stimuli for car users to change behaviour. CCC has presented a rather unconvincing argument that the CGB would 'lock in' changed travel behaviour before the A14 upgrade occurs. There is no evidence for that assertion which flies in the face of all that is known about travel behaviour (SITC/2, 5.13).
- 6.29. **Flexible bus routes** CCC argues in rebuttal that the CGB has an advantage over rail in that buses can enter and leave the guideway very flexibly, thereby offering potential benefits to places away from the main route (CCC/SITC/REB2, 3.59). However this would be up to the bus operators and there is no evidence that such services would be provided. Instead, there is a danger that commercial services would concentrate on the trunk route to the detriment of services to the more distant villages. CCC could only claim potential rather than actual benefits (SITC/12, p.3).
- 6.30. There would be a particular problem for the CGB in serving people without access to a car. In general, the route would run some distance from the settlements. For elderly people, it might be of little value having a high-quality public transport corridor a mile or more from their home, while anyone without the use of a car would require a good and preferably short pedestrian route to the nearest CGB stop. In reality, would CGB operators run feeder services linking these villages to the guideway (SITC/4, 8.5)?
- 6.31. Moreover, flexibility for rural bus services increasingly involves a range of bus types and sizes tailored to small-scale local needs. The CGB would run contrary to that approach by having to use relatively large vehicles; narrower buses could not use the guideways. While CCC asserts that smaller buses are not appropriate in the Cambridge context and usually not DDA compliant (fully accessible to people with disabilities), almost the entire

community transport network in Britain operates with vehicles which have to have fewer than 16 seats and be fully accessible (SITC/REB7, 3.8; SITC/4, 8.4; SITC/9, s.3).

- 6.32. **Flaws and contradictions** Most of the quality benefits of the CGB could be provided within quality partnerships with on-road bus services and would not require a guided busway. In particular, joint ticketing arrangements would be possible without the CGB and evidence has been provided to show that this can and does take place (SITC/7, s.3).
- 6.33. CCC causes confusion by claiming that direct journeys between the northern and the southern sections of the guideway would be possible, then modelling service patterns and economic performance on the basis of double-decker buses that would be unable to use the southern section. While the modelling assumes interchange in the city centre, the benefit of through journeys is claimed in relation to social inclusion and improved accessibility to Addenbrooke's Hospital and employment areas on the south side of Cambridge.
- 6.34. However, such a benefit could not be claimed unless its consequences are properly evaluated. CCC argues that by not modelling through journeys their assessment is conservative in that through journeys would promote more patronage. To be set against that, more single-deckers on the northern section would cost more than the modelled scheme, which has a higher capacity, therefore fewer buses, to meet forecast demand. Given that through services would carry the time penalty of negotiating the city centre, they could not be regarded as a 'given' and they might or might not happen, depending mainly on bus operator assessments (SITC/12, pp. 4/5).
- 6.35. No mention has been found in the scheme documentation of the possibility of **induced traffic effects** arising from the claimed modal shift of car trips from the A14 to the CGB. If the A14 were as congested as the documentation suggests, it is highly likely that there would be induced traffic effects if any of that congestion were relieved. The switch of traffic from rat-running routes back to the A14 is one example but it is not explained why induced traffic effects would stop there (SITC/2, 5.12).
- 6.36. CCC's main defence on induced traffic assessment appears to be that the modelling methodology has been agreed with the DfT. Nevertheless, the CGB appears to fit the criteria for requiring an induced traffic assessment. Moreover, the rebuttal does not answer the central conundrum of how a scheme could produce so much non-user benefit whilst having so little effect on congestion in a congested network that the possibility of induced traffic could be regarded as 'not material'. Those two statements are incompatible. Also the existence of other LTP policies supporting an overall strategy of traffic reduction around Cambridge does not eliminate induced traffic as an issue and does not obviate the need for the assessment. (SITC/7, 4.10-4.16; CCC/SITC/REB6, 3.13-3.16).
- 6.37. In respect of the **EIA**, the main area of concern is the non-compliance of the scheme appraisal with NATA and GOMMMS, especially in relation to biodiversity (SITC/2, s.6). CCC's rebuttals are unconvincing; the line being

taken does not comply with the guidance. The assertion that it would not be normal practice to use GOMMMS other than for highway schemes is challenged. It is not supported by the guidance (CCC/SITC/REB2, 3.79; CCC/SITC/REB6, 3.8; SITC/7, 4.6).

- 6.38. It is incorrect to claim that a rail based scheme would have the same impact on biodiversity as the guided busway. There would be a higher level of land take, mainly due to the maintenance track, and this would be more disruptive to the margins of the former rail line which are important habitat areas (SITC/2, 6.14).
- 6.39. **On-road issues** The detailed plans for the on-road sections between Huntingdon and St Ives confirm SITC's fears about the extent of loss of mature trees and hedgerows and increased urbanisation along the route, including in Hartford and along the Houghton Road in St Ives. That road forms a very attractive gateway to St Ives and the proposals should be reassessed (SITC/3; SITC/6).
- 6.40. The proposal to use Old Houghton Road as a busway in one direction has been shown to confer little benefit in terms of the journey time saving, and the alternative of widening the existing road up to the roundabout has not been properly evaluated. The proposal should be dropped (SITC/12, p.6; HCG/1-3).
- 6.41. The St Ives 'town centre' route would have a major effect on the market area and on the narrow approach road from the west (i.e. Crown Street). The Inquiry established that dropping that route would have a limited impact on the quality of the bus route between St Ives and Huntingdon. Moreover, CCC has given a written assurance that the route would not proceed without the agreement of St Ives Town Council. Therefore, the town centre route should be formally deleted. Otherwise, there remains a question mark over whether the present assurance would be honoured in the future (SITC/1; SITC/6, 3; CCC/SITC1/REB1, App.1).
- 6.42. SITC remains opposed to the proposal not to run CGB eastbound buses into the bus station at St Ives. While the proposed bus stop would be only a short distance away on Station Road, its siting there would create confusion and difficulty for those changing buses (SITC/6, 4).
- 6.43. While there have been assurances that the modelling of traffic flows on Harrison Way do incorporate pedestrian phases on the traffic lights, concerns remain. First, there is the prospect of the CGB car park being used as a town centre car park, leading to pedestrian flows across the lights being heavier than anticipated. Secondly, the creation of traffic free phases at the roundabout a short distance along Harrison Way would encourage town centre rat-running and this problem has not been resolved (SITC/6, 5; SITC/8).

CAST.IRON

- 6.44. CAST.IRON has a range of objections to the proposed CGB. Fundamentally it would not achieve the transport, social or economic benefits claimed by

CCC. It would attract far fewer than the claimed 20,000 passengers per day. As most of its passengers would be users of the present conventional bus services, those services would suffer, thereby worsening public transport provision for a number of communities. Also there would be a minimal shift away from private car usage.

- 6.45. All of the benefits of the scheme over the 'do-minimum' case would derive from the Park and Ride sites and the new on-road priorities. There would be no additional benefits from the busway. There is a case to be made for the on-road improvements and the Park and Ride facilities. But it would be better to do nothing, rather than proceed with the busway. Instead, CCC should abandon the CGB and properly evaluate the rail alternatives (CI/5).
- 6.46. **Flawed modelling** CCC has presented only partial results from its modelling in order to prevent independent analysis of its conclusions. The comparative mode share data presented in the TA have been so arranged that the catchment area for guideway services is wider than the catchment area for the 'do-minimum' situation against which they are compared. This overstates the comparative attractiveness of the guideway. CAST.IRON's own comparison shows that only 1800 more passengers per day would use public transport if the CGB plus two new Park and Ride sites were built (PK/2A).
- 6.47. Very few of the input assumptions for the modelling have been published. As a generality, changes to such assumptions can be used to alter the outputs from any modelling exercise. The changes made by CCC have been enormous. Its predictions for the reduction in A14 traffic have changed considerably. Most recently, CCC has altered its modelling approach by adding new constraints to the model that lead to much higher predicted use of the new Park and Ride sites. This leads to a greater predicted A14 traffic reduction as well as improved mode shift projections (A28, p.42; A35, p.51; B138; B45, 6.24).
- 6.48. However, any modelling exercise should not defy common sense. CCC has not applied that test. Even on their admission, reductions in A14 journey times resulting from the guideway would be small and imperceptible to motorists. Yet it has been claimed that most of the journey time savings would arise because motorists would be attracted back to the A14 because it would be seen as preferable to rat-running through villages (A35, p.51). The whole CCC case is undermined by the common sense test - no A14 journey time improvement means no change in motorists' habits. In any case, rat running is more likely to be inhibited by the traffic calming measures now being installed in the villages along the A14 corridor.
- 6.49. Modelling is only useful if it realistically models actual conditions. This is illustrated by CCC's prediction of long and ever increasing queues throughout the peak period were the level crossing in Milton Road to be restored to railway use. However, that simplistic model ignores conditions on the ground. CAST.IRON's observations show that flow rates are limited by the nearby traffic lights, not by the crossing, and that the achievable flow rates across the crossing after the barriers were lifted would allow queues to dissipate, even at peak times (B171; CI/25).

- 6.50. On patronage predictions, these are based entirely on modelling at the AM peak hour and then using a simple multiplier of six to predict daily patronage. However, that multiplier is based on data from areas with much lower car ownership than rural South Cambridgeshire. In its rebuttal, CCC fails to address this particular objection. But it goes to the heart of the CGB case. The residents of Northstowe would use their second cars during off-peak times and CCC's transport case would be fatally wounded (AH/2A; CCC/AH2/REB1, 3.24).
- 6.51. The claimed Benefit to Cost ratio for the CGB has fallen over two years from 4.8 to 2.3 (A28, p.57; B45, App.F). The latter figure is still a substantial overestimate. It is undermined by a number of factors. First, 33% of the claimed benefits would derive from journey time savings for users. However, that is a flawed assumption that ignores the effects of peak hour congestion. On the basis of Service 99, CCC claims that a bus would run from the Science Park to the City Centre as quickly at 0830 hours as it would at 0630 hours. That is absurd, and other timetables published independently by the bus operators tell a different story for the same bus route (AH/2A; CD/2A; CCC/AH/REB2, 3.45; B169; CI/9).
- 6.52. Secondly, the predicted 20,000 passengers per day figure is dependent upon a six-fold increase to the modelled peak predictions. As indicated earlier this is an inappropriate assumption for rural South Cambridgeshire.
- 6.53. Thirdly, there is the effect on the economic case arising from the A14 upgrade and other planned road improvements. The Highways Agency has confirmed that the upgrade should commence in 2008/09 and that the accompanying local access road would improve flows on the trunk road without compromising local traffic movements. CHUMMS indicates that the upgrade would reduce 2016 peak hour journey times by 20% compared with 2000 levels. The benefits of the upgrade would be felt by local as well as long-distance traffic. Commuters would also benefit from the improvements at the A14/Milton Road interchange that would be implemented irrespective of the success of the CGB application (B167; A39, s.5; CI/22).
- 6.54. **The A14 and the planned upgrading** Current journey times on the A14 are substantially faster than have been claimed by CCC. CCC's measurements were taken at a particular speed camera located at one of the slowest points on the whole road section. This finding undermines the claimed benefits of the CGB. (MA/2; CI/9; B168).
- 6.55. In reality, all of the journey time savings on the A14 would come from the A14 upgrade and the guideway would make no measurable difference. Also improvements in A14 journey times after the upgrade would act to reverse the modal shift from private car to bus usage. Given that the guideway would be in place for only five years before the upgrade the benefits cited in its economic case would be valid for just five years.
- 6.56. After five years, the attractiveness of the guideway would also diminish for bus operators, as compared with routes using the A14. Faced with access charges on the guideway, operators could be expected to revert to the A14.

Taking all these factors into account, the guideway is unlikely to achieve a Benefits to Cost Ratio of 1, let alone 2.3. The short term traffic problems during the A14 upgrade call for a short-term solution such as temporary public transport lanes provided as part of the upgrade works.

- 6.57. **Benefits and costs** Journeys by the CGB would in most cases be slower or no faster than alternatives by existing bus services. The fares charged would be greater. The public perception of the CGB would be no better than that of existing bus services. While CCC claims that the CGB would provide associated journey time savings valued at £128 million discounted over 30 years, the actual value would be much less than this (AH/2A).
- 6.58. In terms of operating costs, those presented by CCC are significant underestimates. Based on the patronage levels and service frequencies projected by CCC, the CGB would require a significant cash subsidy in its first five years of operation. However, a usage forecast at around 29% of CCC predictions is more realistic. This would probably lead to a much less frequent service being operated but this would still require a cash subsidy. The CGB fails the test of financial viability as set out in ODPM Circular 02/2003 (IB/2).
- 6.59. Moreover, the full cost of construction is understated by CCC and has been partly diverted into other budgets. Those costs that are admitted have risen sharply since the time of the bid as greater detail was provided. That detail is still inadequate (PP/2A).
- 6.60. The business case for the CGB is weak. As CCC has identified, the differential between CGB and conventional bus fares is the greatest inhibitor to use of the CGB; higher fares would result in lower usage. Moreover, the CGB faces a funding gap and the level of Section 106 and other funding required could be expected to rise further. All CCC figures remain as estimates and there is no evidence that the quality standards recommended could be obtained within the estimated budget. The benefits of a CGB link to the Addenbrooke area could not be properly assessed without consideration of the new access road proposed for that area (JC/2).
- 6.61. Although most guideway users would simply transfer from existing bus services, a minority would make a mode shift from the private car. However, nearly all of the predicted mode shift would be due to the proposed new Park and Ride sites. The importance of these sites is borne out under the revised predictions provided by CCC whereby greater use of Park and Ride would double the number of cars removed from the A14 (A35, p.65; PK/2A).
- 6.62. Improved conventional bus routes would be just as suitable to serve the new Park and Ride sites as would the guideway. This combination should have been evaluated by CCC. It would produce nearly comparable benefits but hardly any of the costs. Turning to the tests in the Statement of Matters, there is no case in the public interest for the compulsory purchase of 109 hectares of land for the guideway.
- 6.63. **Quality enhancements** CCC has evaluated only poorly designed

conventional bus alternatives. This is another fundamental flaw in its economic case.

- 6.64. In reality, none of the proposed bus quality improvements require the construction of the guideway. It is already CCC policy to apply many of them to its conventional bus services. There is a programme in place to provide real time information, and low-floor buses have been deployed on a number of key bus services. These steps have led to improved patronage (B67; CI/21).
- 6.65. Joint ticketing could be applied to existing bus routes, for example by making the existing St Ives to Cambridge services a true turn up and go service. Also Quality Partnerships could be applied to conventional bus routes. CCTV and prepaid ticketing could be introduced at selected conventional bus stops as part of such partnerships (A15, p.53; SITC/7).
- 6.66. Given the success of these existing policies for improving patronage of conventional bus services, CCC should abandon the guideway proposals and instead set up a number of key routes under a Quality Partnership with local operators. Some possible route options have been put forward to the Inquiry that would attract just as much patronage as the guideway (PK/2A; CI/9). Careful design of new conventional bus routes providing reliable interchange and through ticketing would produce a bus system able to deliver the same benefits as the guideway, but without the costs or the compulsory land purchase.
- 6.67. There are concerns about the actual provision of services by bus operators. Currently the market is dominated by particular operators and there is no evidence to suggest that open access to the guideway would lead to competition. Also, CCC would not be able to make any guarantees about the provision of direct services and service frequency. Claims that the guideway would bring social inclusion benefits to more users, because buses could serve villages off the guideway, could not be guaranteed by CCC. An operator might decide to provide no such thing (TL/2A).
- 6.68. A large number of **safety** issues arise. The TWA process needs to be suspended until these are resolved and their full impacts assessed. Also, a full safety case should be required as a condition on any permission, on the same terms as required for a railway system (SA/2A).
- 6.69. The safety concerns include the inability of bus drivers to steer out of trouble on the guideways, the safety of junctions and the need for barriers at crossings, difficulties surrounding night operations or operations during fog, the risks of buses being blown over, the propensity for the guide wheels to be snapped off and, in terms of emergency access, the acceptability of the maintenance track being at a different level from the guideways (SA/2A).
- 6.70. **Other matters** The CGB would require an unnecessarily high land take, significantly greater than would be needed for alternative transport options. Much of the track bed and associated drainage would have to be rebuilt. There would be a major impact on the wider landscape. Construction would

- cause significant disruption and nuisance (RT/2; CI/14, 26-30).
- 6.71. There is concern about the provisions of the draft Order. In particular, it affords too much flexibility (TP/2).
- 6.72. The CGB would have an adverse impact upon residents living close to Histon Station. For the residents of Villa Place, for example, this would be in terms of noise nuisance and visual intrusion. At peak times there would be increased difficulties for pedestrians in crossing the road at the railway level crossing (EM/2).
- 6.73. CCC has failed to consult the public adequately about the CGB and alternative options. It has significantly misrepresented the case for the CGB and the level of support for it, as well as the case for alternatives. This is a matter for significant public concern.
- 6.74. CAST.IRON has raised a petition calling for the restoration of regular, timetabled rail services on the line from Cambridge to St Ives and beyond. This attracted over 3800 signatures (SB/2; CI/27).
- 6.75. **The rail alternative** CCC focuses much attention on the railway alternative. In particular it has produced a consultant study which systematically exaggerates the costs of building and operating a rail system (B83).
- 6.76. For example, it is claimed that the permanent way costs for a predominantly single line route from the Regional College to Swavesey would be £10.3 million plus additional costs of £4.4 million for site establishment. By contrast, CAST.IRON has produced budgetary costings from contractors putting the total figure at £4.2 million. Those contractors have advised that little formation renewal would be required. But even allowing for completely new ballast and substructure, the cost would only increase to £5 million, one third of the CCC figure (B83, 7.3; CCC/CI/REB2, s.4; CI/4; CI/23).
- 6.77. CAST.IRON's budgetary costings equate to roughly £350,000 per track km against the CCC claim of around £1.2 million per km. However, CCC's costings for the southern section of the route, involving completely new track, price the work at £600,000 per km. This shows alarming inconsistency (B83; CI/23, 2.20; B170; CI/3).
- 6.78. Unlike the CGB proposal, the technicalities of reinstating a railway are well understood. The costs obtained by CAST.IRON are robust in that they come from contractors with experience of comparable works on UK railways, and from railway companies currently operating in the UK. A comparison should be made with the recent Translink guided bus TWA Order application (Luton to Dunstable). In that case, Laing Rail have found that a rail system would be less expensive to construct than a guided busway system (DK/2A; CI/15).
- 6.79. CCC also exaggerates the predicted rail journey times. A very poor design has been assumed leading to an unnecessarily poor system performance. CAST.IRON has suggested that low-speed sprung points should be used;

however, these would be close to stations so as to minimise running time penalties. Under CCC's interpretation those points would be remote from stations necessitating additional acceleration and braking. While CCC asserts that the position of the points is immaterial, the time penalties involved are highly material. This example exposes the inadequacies of simplistic simulations (CI/4, s.4; CCC/CI/REB2, 4.40).

- 6.80. CCC raises a range of detailed concerns, adding up to a systematic attempt to portray the railway option as much less attractive than it actually is. It has concentrated upon obviously sub-optimal versions of the rail alternative. However a high-quality railway system would be a better option than the guideway.
- 6.81. **Patronage and costings** CAST.IRON has demonstrated that its proposed system could be operated profitably. Its calculations take into account only the revenues attracted by the system and operating costs. They exclude the transport and social benefits of the system, such as the congestion benefits, journey time savings, social inclusion, and the promotion of healthy travel modes.
- 6.82. Its patronage numbers are based on the modelling set out in the Transport Assessment (TA). For passengers travelling on the section from St Ives to the Science Park, a rail service interval of 15 minutes is proposed against the 10 minutes assumed for the CGB. These are regarded as equivalent in quality standard terms. For the sections of the line between the Science Park and Cambridge Railway station, and then Trumpington, a rail service interval of 30 minutes is proposed. However the short journey time would more than compensate for the lower service frequency.
- 6.83. From this analysis, 1343 of the 3384 AM peak hour passengers predicted by B45, Table C39 to use the CGB would also use CAST.IRON rail for identical journeys between the same stops, accessed by the same means in each case. Those journeys would secure a revenue of £3.43 million in 2016.
- 6.84. In addition, the system would attract passengers that are not included in the Table C39 modelling. As indicated in CI/3, it is proposed that there should be three stations at Northstowe as against the two guideway stops proposed for the CGB.
- 6.85. Secondly, there would be the potential to increase bicycle use within the corridor. This would be in line with DfT initiatives to promote combined cycling and rail schemes. The proposed system would involve commuters cycling from an adjacent village to the nearest railway station, taking the bicycle on the train, and then cycling from the destination railway station to the workplace. This would 'extend the reach' of a commuter transport system in a way not possible with the CGB (DK/2A, s.7; CI/10).
- 6.86. Thirdly, journeys across the City Centre would be substantially quicker by rail than by the CGB. Also passengers wishing to make an onward rail journey would much more readily make a journey that involves changing trains than they would make a journey involving a mode shift from bus to train. These factors would increase the anticipated revenue at 2016 to £3.82

million.

- 6.87. Detailed consideration has been given to the costs of operating a rail system. Individual cost elements have been provided by various rail service operators and other relevant industry suppliers. Full account is taken of leasing and maintenance costs for the rolling stock. It is assumed that five locomotive hauled sets are operated on the system. Track access charges are included in the operating costs as are the costs of using the services of a Train Operating Company to crew the CAST.IRON trains. The total cost of the operation at 2016 is calculated to be £2,873,000. Overall, the system would show a profit by 2009 (CI/19; DK/2A).
- 6.88. The **strategic transport needs** of the region would be poorly served by the CGB. Those needs require alternative rail based transport options. Such options need to be re-examined and the TWA process suspended until this has been carried out. CCC has said that LTP funding would not be available for a rail system. However, a recent change of policy by the DfT means that this is no longer the case (RH/2; CI/7).
- 6.89. On those wider questions, CCC claims that the complete cost of a railway from Cambridge onto the East Coast Main Line would be £354 million. In response to the question of why this is so much more expensive than the £109 million quoted by CHUMMS in 2001, it is claimed that CHUMMS was merely a desktop study whereas the detailed costs of a real rail system have now been produced. But CCC has included a sum of £24 million to install a set of ladder points on the ECML, at the exact location where there is already a set of such points. CCC has itself done no more than a desktop study (B83).
- 6.90. Regarding the EWR, CCC has discounted the recommendations of other multi-modal studies that a rail link into Cambridge should be constructed close to the A428 (B95). Such a route would be prevented by the proposed guideway. Instead, CCC points to the SRA's recommendation that this section of the rail link should be a bus service. (5.6).
- 6.91. CCC refers repeatedly to the alternative, much less direct rail routes recommended by the East West Rail Consortium (EWRC) of which it is a prominent member. The Consortium has decided not even to study routes running close to the A428. Thus, its proposals would lead to long rail journey times providing an unattractive alternative to the private car, and its conclusions are unsound (B145; B184).
- 6.92. **Other matters** At the time when CCC applied for Government funding for the guideway, it was still maintaining that a guideway could be constructed alongside the railway line from Chesterton to the Cambridge Railway Station. However, at the time of the funding application it was already known that this was not the case. This has left the rail option as the only realistic means to transport passengers across the City Centre without forcing them along the congested road network (A28, fig.3; A35, fig.3).
- 6.93. From 1993 to 1997, CCC promoted the reinstatement of the St Ives railway. During that period it asserted that the rail system could be run without

subsidy and with a running time of 22 minutes between St Ives and Cambridge. However, its present stance is that rail could not operate without subsidy, despite the increased population along the route, and that the same type of train would take 31 minutes for that journey. The two additional stops depicted in CI/3 do not account for the nine minute discrepancy between CCC's two estimates of running time (CI/19; A62; B162).

- 6.94. It would be appropriate to consider a range of alternative rail options as part of a full assessment of transport alternatives to the CGB. These might include continuous dual running from Swavesey to Histon. Also, services might be run using cascaded DMUs. Eventually, patronage of the line might justify electrification (CI/19, s.5).

Longstanton Parish Council

- 6.95. This is not the best use of the corridor left by the old Cambridge to St Ives railway line. It would be better to use a single carriageway road along which unmodified buses could run at comparable speeds. The CGB would not necessarily offer a better ride quality and breakdowns would present problems. Also, there is no guarantee that the bus operators would be prepared to invest in the system.
- 6.96. The guideway would act as an unnatural barrier to Northstowe. The site for the new settlement appears too small for the proposed population and the most obvious direction in which to expand would be northwards. However the CGB would impede this expansion, whereas an ordinary road would not. Moreover, the CGB would not carry a sufficient proportion of Northstowe generated passenger traffic and it would take very little traffic off the A14.
- 6.97. Three lanes would be required, allowing for the maintenance track, involving a total width of 11 m. This would take up the entire width of the disused railway, entailing the destruction of all the trees and vegetation along the edge of the old track and the loss of a valuable wildlife corridor.
- 6.98. The claimed average speeds of the CGB are disputed because of the need for the buses to reduce speed at every intersection with a road. The bus fleet would cost more because at the need for modifications (LPC/1).

Fenstanton Parish Council

- 6.99. The Parish Council's case takes into account a survey of those using the current bus services. On some issues, the Parish Council also represents the views of Hemingford Grey Parish Council. Where this is the case, this is indicated below.
- 6.100. The CGB would seriously threaten many positive aspects of village life in Fenstanton and put the employment of some parishioners at risk. There is a genuine fear that the present excellent bus service would be curtailed or lost almost completely. The present services provide the essential accessibility for people working in Bar Hill, Cambridge, Huntingdon, St Ives and neighbouring areas. They also provide access for young mothers, the

elderly and non-drivers to medical services, bulk shopping, the library and recreational activities. Teenagers use the services both during the day and the evening for further education and for social purposes.

- 6.101. For the people of both Parishes, the introduction of the CGB would lead to an inferior service. As far as Hemingford Grey is concerned, and in response to CCC's rebuttal, it is not the Whippet 5 service that is referred to but the frequent Huntingdon and District, and Whippet services from St Ives to Cambridge via Fenstanton and return. Within that Parish, there are some 200 homes within ten minutes walking distance of the bus stops on London Road. A further 200 homes along the London Road fall within Fenstanton Parish.
- 6.102. Both Parish Councils are very concerned regarding the impact of the CGB on the flow of traffic using the St Ives bypass. Traffic lights positioned on the bypass would lead to unacceptable congestion, particularly at peak periods, and would also provide a disincentive to residents to access the guideway from the St Ives terminus.
- 6.103. The proposed upgrading of the A14 and the guided busway should be examined concurrently with the aim of seeking a truly cost-effective solution to public, freight and private transport issues within this corridor. One question is whether it would be cost-effective to extend the guided busway beyond Northstowe when the proposed local service road might provide a better transport solution. Hemingford Grey Parish Council would like to see some consideration of the potential use of the existing A14 road and any new service road for bus services once the new A14 is constructed.
- 6.104. Other concerns include the risk of increased flooding, the restricted access to the Lakes area around Fen Drayton, the effect upon wildlife and the lack of provision for the carriage of cycles on the guided bus. There is also the worry that the CGB scheme would require CCC to contribute a large proportion of the cost and that this would mean higher Council tax payments (FPC/SEG/1-4).

The *camToo* project

- 6.105. The *camToo* project is an innovative, integrated multi-modal transport project for the north of Cambridge. It would deviate from the CGB route to the east of the A14 underpass. It would then run on existing roads between the Regional College and the A14, it would continue through the Science Park and it would cross Milton Road via the existing Science Park access. Buses would then travel along an extended Cowley Road to reach the main Cambridge to Ely Railway Line. Once there, they would turn southwards, following a guideway section alongside the railway line, before rejoining the road system at Newmarket Road. They would then follow this dual carriageway route, terminating at the Grafton Centre.
- 6.106. Allied projects would comprise a flood relief channel that would reduce the incidence of flooding in central Cambridge and Chesterton, the closure of the Fen Road level crossing, and the extension of Cowley Road across the main railway line to serve Chesterton Fen (CTP/4).

- 6.107. The system would offer a superior route to that of the CGB while retaining all its essential features. It would provide a priority route for the guided bus all the way to the Grafton Centre in both directions, it would offer a faster route than Milton Road and it would take the guided bus closer to sources of patronage, including sources not connected by the proposed CGB route.
- 6.108. There would be additional benefits, including the opening up of possibilities for expansion of the guided bus system and the development of a true road/rail interchange station on Chesterton Sidings (CTP/1).
- 6.109. The CGB fails to offer the maximum 'planning gain' and value for money. Also, insufficient time has been spent 'future proofing' the design. It emerged during the Inquiry that a major flaw of the CGB is its inability to travel direct to Cambridge Railway Station. With that in mind, *camToo* has put forward the suggestion of using the Parry People Mover, a lightweight tram that can operate both on conventional rail and on relatively inexpensive trackway that can be laid within the top 6 inches of a road surface (CTP/7).
- 6.110. It is proposed that the project be implemented in two phases. The first of these is directly relevant to the current TWA application. This is the alternative route between the A14 and Milton Road. It would add at most a couple of minutes to the CGB timings. However, its route would avoid the potential accident risk at the railway/Cambridge Regional College crossing and it would line the guided bus up for the logical extension into Chesterton Sidings and beyond (i.e. Phase 2).
- 6.111. Drawings produced by Atkins (B194) demonstrate the constraints in accommodating a two lane guided busway, plus an emergency access road, between Chesterton and the Railway station. These are agreed but there are also some omissions. In response, *camToo* has identified ways of addressing/overcoming the constraints south of Chesterton. The Parry People Mover might have a role here. Before any recommendations are made to the Minister, a comparison should be made of these two ways of bridging the final gap, the section between the Railway Station and a point some 325m south of Coldham's Lane bridge, i.e. through the use of guided buses or the Parry People Mover (CTP/10).
- 6.112. CCC's view on the safety of the railway/Regional College crossing is disputed given the very large number of visitors daily. As far as the Science Park is concerned, more people would use the buses if they were to go through the area, rather than alongside it, as with the CGB. It is not accepted that the Parry People Mover would be unable to satisfy the transport aims of the Sub-Region (CCC/*camToo*/REB1; CTP/8).
- 6.113. The Inspector should recommend refusal of the applications as proposed because the CGB does not provide the expected infrastructure for Northstowe, and insufficient consideration has been given to the contribution it could make to the medium-term future of public transport in and around Cambridge. He should also recommend that responsibility for providing the Sub-Region's transport infrastructure be transferred to Cambridgeshire Horizons (the successor to the Infrastructure Partnership)

and that future applications for the development of that infrastructure should identify how they fit into a coherent approach over at least a 25-year timescale (CTP/10).

The National Council on Inland Transport (NCIT)

- 6.114. The concept of the CGB is too narrow. It misses the opportunity to enhance both local and long-distance travel. It would exacerbate traffic congestion and pollution in Cambridge City Centre. It would cause local disruption, with two bridges requiring costly reconstruction. Safety and reliability are essential; but there is little experience from elsewhere to go on.
- 6.115. Instead, NCIT recommends a modern, environmentally friendly, and efficient transport mode involving: use of existing infrastructure; reserved track in new development areas; light rail in the City; quiet, fast, high-capacity low-floor rail vehicles, suitable for running on light and heavy rail where appropriate.
- 6.116. Light rail routes could penetrate the City Centre via Newmarket Road, Jesus Lane, St Andrew's Street, Regent Street and Station Road (NCIT/1-6).

Transport 2000 (Cambs and West Suffolk)

- 6.117. There is some common ground between T2000 and CCC. Both believe in the need for high-quality public transport within the A14 corridor, including a priority route for buses between Northstowe and Cambridge City Centre and employment areas. While Transport 2000 would like to see the St Ives Line reopened for rail, its objection does not depend on proposals such as those put forward by CAST.IRON. However the proposals for the EWR are inadequate and the CGB should be revised so as to avoid impinging on route options which would be more effective.
- 6.118. Such a rail link should fulfil four functions. First, it should provide a reasonably direct link between Cambridge and Bedford. Secondly, it should provide for an effective interchange with the ECML. Thirdly, it should serve population centres west of Cambridge, including new developments such as Northstowe and Camborne. Fourthly, it should provide a satisfactory route for freight.
- 6.119. A number of specific recommendations are made. These relate, among other things, to: the need to safeguard options for the EWR; the need for an independent evaluation of the relative costs and benefits of reopening the railway as far as St Ives, as compared with the CGB; the replacement of the southern section of the CGB by a limited use road link; an investigation of alternative routes for the northern section; and, linking any approval of the scheme to the application of workplace parking tax proposals (T2000/1-4).

The Rail Freight Group (RFG) (written representation)

- 6.120. The RFG is the representative body for the rail freight industry. Its objective is to grow the volumes of freight carried by rail. Already there has been a 50% growth since privatisation. The performance of new markets such as

rail freight from deep sea shipping has been very encouraging. Some lines expect a tripling in the current number of containers moved in the next 15 to 20 years.

- 6.121. The ports of Felixstowe and Harwich are likely to experience this level of growth and shippers and port operators would like to see as much of this as possible carried by rail freight to avoid severe congestion on the A13 and A14 roads. Much rail freight from Felixstowe is currently routed via London and gauge enhancements to carry 9'6" containers are to be completed by the end of 2005.
- 6.122. Unfortunately, the London route is becoming more and more congested with passenger and other freight trains. The medium-term intention will be to route an increasing number of these trains via Ely and Peterborough. This route can be gauge enhanced at a reasonable cost.
- 6.123. The Cambridge to St Ives line could play a useful role in the carriage of freight. There may be potential for rail connections from business premises along the route. More importantly, though, and with a suitable connection to Huntingdon, this could become a useful diversionary route for the Ely to Peterborough line during maintenance work or blockages on that line, or to cater for excess demand.
- 6.124. The 'Statement of Common Ground on the Topic of Rail Transport' in connection with the public inquiries for Bathside Bay, Harwich and Languard Point, Felixstowe is of relevance to this Inquiry. This indicates that when fully operational the two ports would generate 30 freight trains per day in each direction between Ipswich and Peterborough via Ely. Such traffic levels would need capacity enhancement, some of which might be funded as part of a Section 106 agreement. However there might be occasions where demand would exceed even the enhanced capacity.
- 6.125. Given the pressures to use that route for passenger services, it is unlikely that any spare capacity would be available on the North London Line. The alternative put to the CGB inquiry by CCC is that additional capacity could best be provided by using the route via Royston and a north-facing Hitchin curve. However, the problem would be primarily on the ECML between Hitchin and Peterborough. That line already faces the need to accommodate freight trains to and from Alconbury terminal and there would also be trains heading north from Thames Gateway. In summary, this route is not a sensible option because it would add significant demand to an already crowded line over a much longer distance than between Huntingdon and Peterborough.
- 6.126. Given the likely long-term demands for freight on this corridor, it would be very unwise to convert the Cambridge to St Ives line into a guided busway, since that would preclude any use of it for rail in the future. In the meantime, consideration should be given to reopening this line for rail passenger traffic. The Inquiry should reject the application on the basis that this railway line might be needed in the long-term as a strategic freight route between the Haven Ports and the Midlands and North (RFG/1-3).

Christ's Pieces Residents' Association (CPRA)

- 6.127. Given the impact on the City Centre, the Inquiry cannot be limited to the guideway proposals alone.
- 6.128. The environmental impact upon the City has not been properly assessed. Thanks to various traffic measures, the centre of Cambridge accepts a variety of traffic which is almost entirely restricted to buses, taxis and delivery vehicles at limited hours. That traffic has to negotiate a City Centre that is characterised by narrow streets and, in places, one-way working. Already, bus traffic must be close to capacity.
- 6.129. The ES makes limited reference only to the City Centre. In terms of air pollution, levels are rising and it is likely that they will reach unacceptable levels in some areas, representing a serious threat to health. Already many people are affected. In particular, the sheer congestion on roads such as Drummer Street, Emmanuel Street and St Andrew's Street makes these places unpleasant for both pedestrians and cyclists. There is concern also about the effects of vibration from heavy traffic, in particular in Emmanuel Road where some of the City's more handsome private houses are located.
- 6.130. For all sorts of reasons, people must come to the centre of Cambridge if it is to thrive. But we should avoid bringing into the centre those whose destination is elsewhere. The CGB is an inflexible system which would overload central streets. Instead, consideration should be given to interchange points at which people bound for the City Centre could switch to shuttle buses.
- 6.131. The CGB scheme differs significantly from the CHUMMS proposals which envisaged the use of the existing main railway line corridor as a link between the St Ives to Cambridge and the south Cambridge to Trumpington sections of guideway. Initially, the guided bus would access Cambridge by existing roads but that is a poor and temporary second best. Whatever runs along the old St Ives line – whether trains or buses – it is important that the system makes full use of the main line corridor. If there is to be a sensible integration of public transport in Cambridge, this matter must be resolved first.
- 6.132. The CGB would fail to meet the objectives of the LTP. In particular, it would fail to make traffic safer; the envisaged reduction in car journeys would have no perceptible impact on travel conditions. Rather than helping to develop integrated transport, the CGB would create a new stand-alone public transport element. It would cover only a limited area while creating additional congestion which would impair punctuality and reliability. It would do little to foster sustainable forms of transport. The increase in supply would be unlikely to affect usage levels; also cycling and pedestrian movement would be adversely affected. There would be no benefit to the local economy.
- 6.133. As it stands, the CGB would be a piecemeal and inadequate development. Given its experimental nature, it would represent a very high risk in terms of value for money and cost benefit. Alternative schemes and solutions

must therefore be re-evaluated in the light of the existing and future traffic situation in Cambridge City Centre (CPRA/1; CPRA/2).

Cambridge Cycling Campaign

- 6.134. Cambridge Cycling Campaign is a voluntary organisation with over 700 members. It seeks to work closely with local government and others to improve conditions for cyclists in Cambridge and the surrounding area. The principle of improved public transport is supported and the Campaign does not object to the principle of guided buses on the Huntingdon to Cambridge to Trumpington corridor.
- 6.135. More than 25% of local people cycle to work, by far the highest figure for the UK. Thus, the proposal to provide a maintenance track/cycleway along the guided bus route is applauded. This should open up new opportunities for cyclists. However, in some respects, the scheme does not take sufficient account of cyclists' needs, and therefore an objection is made. As a general point, the scheme should be designed for the needs of commuter as well as leisure cyclists.
- 6.136. By the time the proposed expansion around Cambridge is complete, the Councils should be aiming for over one million trips by bike each year (1000 in and 1000 out for both northern and southern sections, five days per week, 50 weeks per year). With routes that are properly surfaced and lit, this should be easily achievable. The proposed maintenance track provides an opportunity that must not be squandered.
- 6.137. In response to the Council's rebuttal document (CCC/CCyC1/REB1), there has been a failure to appreciate the nature and the volumes of cycle traffic. The routes in the urban fringe would be used primarily by commuters, students and shoppers (utility trips). While the proposed surface would be initially hard and smooth, experience shows that this treatment becomes eroded, and covered in debris. It has increased rolling resistance and in wet weather smart work clothes can become soiled through mud splashes. The requirements of cyclists are being seriously compromised. While it has been suggested that a different surface might be introduced at a later date, this could conflict with the EA's requirements for sustainable drainage.
- 6.138. Regarding lighting, there are three principal problems. First, there is a danger that on an unlit track, cyclists would be dazzled by the headlights of buses using the guideways. Secondly, there would be no law requiring cyclists, pedestrians or horse riders to use lights on this route. While responsible cyclists would use lights, those that are required for road use are not designed for good illumination. Thirdly, much of the route within the urban fringe is adjacent to well lit areas such as adjacent roads, premises with security lighting, and even floodlit playing areas. This can produce areas of high contrast that makes seeing even more difficult for cyclists. Given the level of existing light pollution, it is unreasonable to penalise the safety and convenience of cyclists by refusing to consider any form of lighting.
- 6.139. There is an indisputable case for a high-quality route for cyclists both within

the urban fringe, and as far as the new settlement. Such a route requires a smooth tarmac type surface, and some form of lighting.

- 6.140. Speaking in a personal capacity, Dr J Woodburn cited a number of concerns about the proposed guided bus. He feels that the guideway system is inflexible and would prefer to see a roadway provided for both buses and cyclists (C Cycle/1-5; JCW/1).

Huntingdon and Godmanchester Civic Society

- 6.141. While the scheme is intended to link Huntingdon with Cambridge, Huntingdon is effectively being excluded; the attention to detail in the town is negligible. The CGB scheme fails to take into account its effect on Huntingdon's suburbs and town centre and neither would it interact with local services. It would offer no improved service; indeed, the likelihood is that bus provision in the Huntingdon area would worsen. Bus services should be more direct with fewer stops, multi-operator ticketing and higher levels of comfort. While at present there is a thrice-hourly service to Cambridge, would the CGB be in addition to, or substitution for, that service?
- 6.142. The system is untried and expensive and takes no account of the planned expansion of Huntingdon. Most of those living in this major development would be car owners/users and likely to drive to Cambridge because the town has no park and ride facility for direct access to Cambridge. Huntingdon residents would be unlikely to use the proposed Park and Ride sites. An RTS was originally promised and the CGB would fail to deliver this.

Histon and Impington Parish Councils/RAGBUS

- 6.143. Histon and Impington are considered as one settlement for planning purposes. Together with local residents, the Parish Councils have been actively involved in land use and transport planning within this area. Council members participated in the public inquiries into development plan matters and have followed closely the debate on the various guided bus proposals. They organised two well attended public meetings in Histon and exhibitions/displays at local events. From the feedback, it is clear that the overwhelming majority of Cambridgeshire residents oppose the application. The CGB would provide little benefit at very great cost to the taxpayer.
- 6.144. CHUMMS failed to examine properly the alternative rail based strategies. It failed to recognise the strategic importance of seamless connections to the national rail network on which passenger journeys are still increasing year-on-year. Moreover, the CHUMMS recommendations were distorted by the proposed link between the development of Northstowe and that of the CGB. The Councils support the reintroduction of rail services. The line might be reopened for freight in the first instance and it might also carry much of the building materials needed for the construction of the new settlement.
- 6.145. CCC has failed to address the difficulties or prove the viability of the bus system when operating in the unguided mode on road. This application is for a hybrid mode of transport and the legal procedures must therefore be

regarded as interdependent. Unless all the on-street measures are in place to ensure a high-quality reliable performance at the outset, the scheme would not work effectively and revenue income would suffer.

- 6.146. There is an acute lack of information in terms of technical specifications, details of bus operations, diagrams of service patterns etc. Many detailed matters remain unanswered. The letters of support from bus operators amount just to support in principle; they should not be given great weight.
- 6.147. CCC has failed to answer questions about delays at crossings and specifically about the future functioning of the junction of Kings Hedges Road with Cambridge Road. The operation of this complex junction is a key factor in the B1049 route strategy for buses entering and leaving the proposed guideway. In the absence of proper modelling, this layout is inadequate and it would result in unacceptable congestion, including delays to the Citi7 service.
- 6.148. Insufficient regard has been paid to the question of safety. In particular, double-decker buses operating at speeds of up to 55 miles an hour in high crosswinds are likely to become unstable. There have been no proving trials at operational speeds.
- 6.149. There has been a lack of thoroughness in the preparation of this application. The ES is inadequate. There are weaknesses throughout, for example, in respect of rights of way, and these must indicate the vulnerability of the whole scheme to failure. Will this 'novelty' guided busway be a minor/major part of the answer to Cambridgeshire's transport problems or is it a costly experiment that would become a white elephant (HIPC/1-HIPC/15)?
- 6.150. **Noise** The two experts who appeared on behalf of HIPC and RAGBUS have shown that the noise impact assessment is both inadequate and flawed and that the bus route would seriously degrade the living environment for those whose dwellings back onto the guideway.
- 6.151. The assessment is poor because it is based upon measurements of a guided bus in town at much lower speeds than the CGB would travel at. The comparison is also inappropriate because the ambient environment here is made up of totally differing sounds and the proposed buses would be a new sound.
- 6.152. No account is taken of the frequency characteristics of the source, tonal components, etc. In particular, there has been no adjustment to account for the impact of significant low-frequency noise or atmospheric conditions, especially wind. There are doubts about some of the data. In particular, there are differences between the noise measurements for the Leeds guided bus system made by CCC and by Mr Stigwood for HIPC.
- 6.153. The measure used (LAeq) is flawed because the noise would be non-continuous. There would be high peaks of noise as the buses went past and there would be large differences between the averaged noise and the noise actually observed. But even based on LAeq, the noise increase would still be significant and well above the target minimum of 3dB for it to be un-

detectable.

- 6.154. The mitigation assessment is flawed because it assumes ray theory which is only valid at high frequencies. The noise that would result would have far more low-frequency content; this is more annoying and it penetrates dwellings more readily. The assessment also ignores the amplification of the source by the barrier and it includes no absorption. The barrier could only 'reduce' the noise by 15 dB at best. This would be wholly inadequate. High peaks of intrusive noise, sometimes occurring every 90 seconds to two minutes, would still be experienced. The crucial factor of sleep disturbance has been ignored.
- 6.155. The proposed guideway would be too close to existing properties. This section should be moved away from these homes (RAGBUS 1-18; HIPC 7; 11-15; HIPC/MAS/2).
- 6.156. Additional evidence was presented by **Mrs E Lynn** of 16 Melvin Way and **Mr L Perera** of 19 Pease Way. Both are opposed to the principle of the CGB for reasons similar to those made by other objectors. So far as impacts upon Histon are concerned, they are concerned about delays to traffic at the two proposed crossing points and related safety issues. Regarding safety, Mr Perera feels that traffic lights would be insufficient; all road junctions should take the form of barrier operated level crossings.
- 6.157. Mrs Lynn is concerned about increased traffic as vehicles travel to the parking facilities or drop off points such as the Swavesey Kiss and Ride site. At Histon, there would be just 40 short-stay spaces and there would be overflow parking on the street, thus increasing traffic disruption. The current traffic congestion on Park Lane and Station Road would worsen. She foresees long queues at the Park Lane junction.
- 6.158. Regarding the impacts on their own property, concerns are raised about noise intrusion (covered above), loss of view and of privacy and air pollution. Mrs Lynn also raises some additional points concerning likely joy riding and the impact of a bus becoming de-railed. Mr Perera states that his family moved to the area in August 2001. Neither a local authority search nor advice from his conveyancing solicitor unearthed any information about the re-opening of the disused railway line.
- 6.159. Both objectors point to allergies and other health problems in their families. The CGB would exacerbate these (EL/1; LP/1-3).

Trumpington Environmental Action Group (TEAG)

- 6.160. Since its formation in 1986 as a non-party residents' group, Trumpington Environmental Action Group (TEAG) has been continuously active in representing local views on planning and environmental matters. At this Inquiry it represents 44 local residents in Trumpington, many of whom have gardens extending down into the disused railway cutting.
- 6.161. TEAG and the residents it represents remain concerned about the impact of the scheme upon local residents: in particular its effects on flora and fauna

including disturbance to habitats in the Trumpington Cutting; its visual impact on the local landscape; the inadequacy of the proposed mitigation measures; and the fact that the proposed works would require land take from established back gardens.

- 6.162. Although TEAG has been assured that effective measures would be taken to stabilise the Cutting slopes, serious concerns remain. Those slopes have a history of subsidence, and residents are worried about potential damage to homes and gardens arising from vibration caused during construction and through the running of buses. There is also concern about the risks associated with the existing high-pressure gas main beneath the proposed trackway.
- 6.163. The confirmation that all vegetation growth would be cut right back initially, followed by coppicing and planting to a maximum level of only 2 m causes great concern. This would have a disastrous impact both in the short and long-term, with the pleasant green character of the area in and around the Cutting becoming a drab, open urban streetscape with no screening between the houses and none of the existing special woodland feel to the gardens. Property values would drop and people's lives would be blighted. Views from nearby roads would be affected by the loss of so many large trees.
- 6.164. This drastic treatment of the Cutting would greatly reduced its value as an important wildlife corridor and jeopardise its status as a CiWS. Disturbance and loss of habitats would certainly cause drastic reductions in the wildlife population, especially birds, many of which are woodland species attracted by the tall trees. TEAG is not convinced by CCC's assurances that subsequent planting would encourage recolonisation by birds.
- 6.165. There are also concerns about the effect of the clearance on the established flora and fauna along the stretch of Cutting leading eastwards from Shelford Road Bridge. Overall, there is there is a reluctance on the part of CCC to acknowledge the value of the Cutting in its present wild, undisturbed state as an important wildlife site and a green corridor.
- 6.166. There would also be implications for security. The busway with its cycle and pedestrian tracks, would be seen by intruders as providing easy access to the rear of properties which at present are protected by dense growth and, on one side, by an open ditch. Joyriders too would be attracted.
- 6.167. **Mitigation** The proposed land take and, in some cases, removal of sheds, greenhouses etc., would diminish the amenity value of the small gardens to an extent beyond full mitigation. Compensation measures relating to loss of property are unknown and therefore a source of deep concern.
- 6.168. CCC's rebuttal states that replacement planting would be designed to re-establish the existing character of the Cutting and enhance its ecological character (CCC/TEAG1/REB1). However, this is not possible, as TEAG demonstrated during the Inquiry. The drastically changed Cutting with its contained low growth would be in total contrast to the present wild

woodland that TEAG and local residents would wish to retain.

- 6.169. Contrary to the rebuttal, the proposed installation of a 2 m fence along the new boundary line of the gardens would not allay residents' fears over security. Also, CCC has acknowledged that effective measures to prevent illegal access onto the busway by motorcyclists and other joyriders would be difficult to enforce due to the open nature of much of the route.
- 6.170. **Operational disadvantages** Inevitably in a scheme of this magnitude there would be areas where localised loss and disadvantage could be justified by the overall benefit of the entire scheme. However, TEAG questions whether the Trumpington Cutting would form the best route for a scheme that it otherwise supports.
- 6.171. Because of the narrowness of the Cutting, only single way operation is planned for the 900 metres stretch from the Park and Ride site to the proposed village stop. This would result in inevitable delays. It would throw into question the claimed four minute transit time from the Trumpington terminus to Cambridge Railway Station.
- 6.172. **An alternative route?** Policies within the emerging Cambridge Local Plan seek to ensure that all developments within the urban extensions are served by a high-quality public transport service within a 400m walk. By routeing the guided bus along the proposed access road, rather than using the Cutting, this requirement would be more effectively met. In this way, it could serve not only the Clay Farm site but other proposed developments as well.
- 6.173. **Bridging the railway** To reduce both costs and environmental damage, CCC should decide now to merge the CGB route and that of the proposed road link to Addenbrooke's. This would enable the railway to be crossed using a single bridge, minimising the impact on the local landscape, while avoiding using the Cutting between Shelford Road and Hauxton Road.
- 6.174. **Summary** Residents of traffic congested Trumpington are very aware of the need for improvements in the local public transport infrastructure, especially in view of the proposed developments of over 3000 houses in the area. The CGB proposal for the south of the city is therefore welcomed.
- 6.175. However, TEAG and residents living next to the site are also very aware of the damage that the scheme would cause within the Trumpington Cutting. This aspect of the scheme is therefore opposed. A viable alternative route exists in the form of the new access road and this should be fully explored before unnecessarily destroying this highly valued part of the local environment (TEAG/1-TEAG/6).

Save the Lakes

- 6.176. The CGB scheme is contrary to national, regional and local policy for sustainable development, conservation and enhancement of biodiversity. Alternatives to the route have not been thoroughly evaluated, especially with respect to their environmental impact. The scope of the alternative

routes considered in the ES is extremely limited and most of those routes lie within the boundaries of the Fen Drayton Lakes themselves. On CCC's own analysis, a bus lane on the A14 would provide a viable alternative without many of the negative impacts of the present scheme.

- 6.177. Since the closure of the Cambridge to Huntingdon railway 30 years ago, the old railway route has become an important wildlife corridor and now runs through several important wildlife sites that have received designations as SSSIs and CWSs.
- 6.178. While CCC argue that the 'new habitat' to be created would conform to RPG 6 for East Anglia, this is questioned. The creation of new habitats by CCC would be a compensatory measure, whereas Policy 42, in particular, is not about compensation; rather, it is directed towards protecting and enhancing what already exists.
- 6.179. The Fen Drayton Lakes are a nationally important site for wild birds, especially overwintering waders, wildfowl and other species associated with wetlands. These include species protected under the EU Birds Directive and the Wildlife and Countryside Act (1981), and those listed as of red or amber status by the RSPB. Some of these species are particularly rare, including bittern and smew. The Lakes also contain other rare or protected species, including insects, reptiles, amphibians and bats.
- 6.180. **Adequacy of the ES** Under the TWA Procedure Rules, an ES should contain two main things. First, it should contain a description of those aspects of the environment likely to be significantly affected by the proposed project. Secondly, the likely significant effects on the environment should be described. Those carrying out the assessment are required to gain a full knowledge of such effects. This requires sufficient baseline data and that requires knowledge of the relevant policy framework, including Biodiversity Action Plans (BAPs), and the collection of necessary scientific data.
- 6.181. However, CCC has failed to complete invertebrate surveys regarded as essential by their own expert on invertebrates, Dr P. Kirby. The areas involved are those that would be destroyed or very seriously affected by the development and where a significant invertebrate interest seems likely. StL cannot see any justification for the failure to carry out this work. This is contrary to the relevant procedures.
- 6.182. Under Section 74 of the Countryside and Rights of Way Act 2000, the Secretary of State has a duty to have regard to the purpose of conserving biological diversity. That duty is applied, in part, through BAPs and it is submitted that the implementation of these is a specific legal duty to which the Secretary of State must have regard. From the ES, it is unclear what CWS and other important BAP habitat might be lost; the exact determination of the areas taken would depend on more detailed planning of the scheme.
- 6.183. It is clear that great crested newts would be affected. One pond in which this species is present would be destroyed at Meadow Lane Pits and another

is very close to the route. Great crested newts are a protected species under the EU Habitats Directive and other mechanisms. The Local Species Action Plan for Cambridgeshire provides that where sites are affected by developments there should be adequate mitigation and compensation measures such that there is a net gain in breeding/foraging habitat (StL15).

- 6.184. The ponds to be created within areas acquired for ecological measures would not necessarily be suitable for use by great crested newts as CCC has claimed. Newts are highly selective in terms of their habitat and will only occupy ponds with no fish. Research conducted nationally suggests that mitigation measures provided for great crested newts may not be effective in maintaining the conservation status of that species (StL16).
- 6.185. CCC would be required to obtain a licence for moving great crested newts. Given that the site is being destroyed they would have to argue that there is no satisfactory alternative to the translocation of newt populations. However such mitigation is unproven. Secondly, the Secretary of State would have to be satisfied that there were imperative reasons of overriding public interest. Could the case for the CGB be considered as overriding? In arriving at his recommendation it is imperative that the Inspector properly evaluates this matter at this stage. The precautionary principle has to be taken into account. Given the inadequacies of the proposed mitigation measures, the CGB scheme fails to ensure that the favourable conservation status of newt populations is maintained.
- 6.186. BAPs for other species, including bittern, and for habitats, especially for lakes and wetlands, have not been taken into account. The loss of hedgerows along the route through the Lakes area, likely to be a substantial one, would have a major impact on breeding birds, some of which are subject to BAPs. It would also expose birds and other wildlife to increased disturbance from walkers and other recreational users and the passage of the buses. Bittern might be particularly affected. The loss of hedgerows would impact upon nesting territories for birds and it is not known whether there would be sufficient unoccupied nesting habitats for displaced birds to move to.
- 6.187. The CGB would result in the loss of CWS land. During cross-examination of CCC's ecology witness, it has been accepted that it is not possible to spontaneously recreate habitats of the same value to make them CWS sites immediately. That might be achieved in the long-term, which means effectively 10 to 15 years, and that would depend upon good management.
- 6.188. **SSSI/SPA status** The Fen Drayton Lakes would justify SSSI status on the basis of the birds and invertebrates present at the site. They should also be designated as an SPA under the EU Birds Directive because of the presence of bittern and of smew. In a letter dated 14 September, EN confirms that consideration is being given to a possible SSSI designation. There would be separate consideration of whether the Lakes area meets the standard to enable EN to advise DEFRA that it should be designated as an SPA.
- 6.189. The UK Government has a particular duty to designate sites for the protection of smew because none have so far been designated. Given that

this site is one of the top four for smew in the UK, designation remains a possibility. It is submitted that, were planning permission to be granted, the Secretary of State would be in breach of the Birds Directive for allowing development to take place on the potential SPA, making his decision therefore open to challenge. In physical, ecological, terms, damage or disturbance to the Fen Drayton Lakes site would have a negative impact on wildlife and would jeopardise a future designation as SSSI or SPA (StL11; StL15).

- 6.190. **Other points** Many of the essential details about the CGB scheme are still unknown. Those details include the area of vegetation that would be removed, and the actual mitigation. As one example, a false impression has been given of the amount of grassland to be replaced. A large proportion of this would be between the guide wheels and would be subject to herbicide sprays.
- 6.191. There remains extensive disagreement between StL and CCC regarding issues of disturbance during both construction and operation. The proposed ecological forum would have no power to intervene; it would be only an advisory body. Overall, the route chosen for the CGB is possibly the worst compared to alternatives in terms of its environmental impacts.
- 6.192. The Lakes are regarded by CCC as an 'important recreational and leisure facility' in a county that 'has limited open countryside areas for informal recreational use'. With large scale development at Northstowe nearby, the Lakes would become an even more important open space in the future.
- 6.193. However, the scheme would be detrimental to that recreational use in a number of ways. First, every circular walk would be spoilt as they would be crossed twice by the guideway. In two places, existing linkages between paths would be broken, necessitating long diversions. This would be contrary to the Structure Plan and local rights of way policies.
- 6.194. Secondly, there are safety issues. With so many footpaths crossing the guideway, there would be a real danger to the public given that guided buses would not be able to swerve to avoid accidents. There is also concern about the lack of signal controls at the Hollywell Ferry Road junction. Thirdly, there would be an unacceptable denial of public access to the area during construction. This would greatly affect residents and visitors.
- 6.195. With the maintenance track and an access road running parallel to the guideways, there would be a severe loss of visual and general amenity. Any trees would spoil stunning open views.
- 6.196. Also, parts of the busway would be below the 1947 flood level. With climate change, the guideways would flood more frequently than in the past. The necessary raising of the guideways and the inclusion of more culverts to compensate would surely increase costs. The maintenance track would be flooded and out of action for a significant number of days per year and this would prejudice safety.
- 6.197. People with sight or mobility problems might be unable to cross the

guideway because of the many kerbs; this would be contrary to the Disability Discrimination Act, 1995.

- 6.198. The busway would form a trap for creatures such as hedgehogs, toads and small mammals with no escape for many miles. Fortunately, CCC is now considering measures to prevent this.
- 6.199. The CGB would be detrimental to local bus services. Fenstanton and Bar Hill would have a worse service. But other villages served by the CGB might actually be worse off as those most disadvantaged such as the elderly would not be able to walk to the busway from the far ends of these often very long settlements. The part of the route between Longstanton and St Ives would be perhaps the most expensive, both financially and environmentally and, generally, it would be the least beneficial part of the route (StL/1-StL/42).

The Friends of Over County Wildlife Site

- 6.200. Notwithstanding CCC's claim that ecology has been a central consideration in the planning of the CGB, the fact is that this scheme would be highly destructive of wildlife. In particular, it would result in the total destruction of Over CWS. This would be contrary to CCC's own objectives in terms of biodiversity.
- 6.201. Those planning the route have failed to enter into discussions with local experts including the Senior Conservation Officer of the Wildlife Trust and the two voluntary wardens for this CWS. Over the last 15 years those local experts have been instrumental in creating and maintaining this marvellous butterfly reserve. The flowery banks, as well as the track bed would otherwise have disappeared under deep scrub.
- 6.202. English Nature has ultimately withdrawn its objection. However, the officers involved had been opposed to the scheme. While an ecology forum has been set up it is unclear how this partnership between CCC and wildlife interests would work.
- 6.203. There has been inadequate recording of invertebrates on the site. The expert called in on behalf of CCC was able to do just one survey; he recommended that further surveys be conducted. That has not been done. Local experts have already provided evidence of the ecological richness of the site. It is, for example, rich in species of ants and hover fly and it is full of bees and wasps of all sorts. These invertebrates are supported by an abundance of plant species. The habitat also supports thrushes which feed extensively on the cutting bed because of the abundance of snails, there are long eared owls and turtle doves can be heard regularly along this section.
- 6.204. Before the conservation work at Over, just one solitary grizzled skipper had been seen. Now this area has the largest colony out of the eight that exist in Cambridgeshire. With its sunny but sheltered aspect and its abundant food plants this is a good habitat for the species. However, the proposed loss of the track bed could lead to the extinction of this butterfly at Over.
- 6.205. There are considerable doubts about the **mitigation** measures. The area

proposed would be inadequate in size and considerable excavation work would have to be done to replicate the sheltered habitat provided by the existing cutting. It would take a minimum of five years for the mitigation area to become suitable for the grizzled skipper and other species, and there would be no guarantee that this would happen. And where would these species live in the meantime? It is unlikely that the remnants of the cutting banks would provide sufficient holding grounds.

- 6.206. The voluntary wardens have suggested an alternative route for the guided bus. This detour would avoid the destruction at Over Cutting as well as the expense of having to rebuild the railway bridge.
- 6.207. While something has to be done about the A14, this 'solution' is not the right one. There has been far too much exaggeration of its benefits and far too little consideration of rational objections such as, in this case, the destruction of wildlife interests (JN/1-JN/6).

The Wildlife Trust for Bedfordshire, Cambridgeshire, Northamptonshire and Peterborough

- 6.208. While CCC claims that the potential impacts identified in the ES would be fully addressed in the detailed design and construction of the project, it has failed to adequately demonstrate how it would avoid some of the most severe ecological impacts.
- 6.209. There has been a lack of legally required detail. Not all surveys have been adequately undertaken or completed prior to preparation of the ES. For example, no breeding bird surveys have been undertaken. The invertebrate survey report recommends further targeted survey work to allow full assessment of the impacts of the proposed scheme. For other species groups, the assessment is inadequate or wrong (e.g. bittern, foraging bats and otters).
- 6.210. It is unacceptable to assume that **mitigation** is possible at the detail stage. Leaving the design of mitigation until after a proposal has been given permission removes all possibility of preventing it from proceeding should no acceptable form of mitigation be possible. That goes against the point of undertaking an EIA in the first place.
- 6.211. The route's function as a wildlife corridor would be severely damaged by the proposals. 20 km of mature grassland and scrub habitat would be removed over a period of 18 months. The ES routinely overestimates the capacity for new planting and habitat creation to replace the present mature habitats and makes no assessment of the capacity of the neighbouring landscape to accommodate displaced wildlife. It therefore underestimates the adverse impacts of the scheme and the residual impacts must be considered moderate to major adverse.
- 6.212. Several CWS and CiWS would be damaged. These represent the best semi-natural habitat at county level. However, there is a general lack of supporting information to satisfy the assertions in the ES that impacts would be adequately mitigated or compensated. In the case of Over Cutting, the

proposed mitigation would be completely inadequate. Overall, impacts are consistently downplayed, while the assessment of impacts post mitigation often assumes greater success than is reasonable. The scheme would have a significant adverse impact on the biodiversity of the county.

- 6.213. There would be an unacceptable level of damage to populations of several protected species and others noted in the Cambridgeshire BAP. The effects on several species have been underestimated or ignored due to incomplete data. Examples include the loss of bird breeding habitats, disruption to foraging routes for bats and the failure to recognise the potential impact on otters on the River Great Ouse near the proposed crossing.
- 6.214. The proposals would be contrary to legal requirements under UK and European legislation, as well as contrary to the aspirations of the local BAP. Should the scheme proceed there is a need for a monitoring programme, with mechanisms to ensure that any unforeseen failures in mitigation would be dealt with adequately. The mechanisms for ensuring that the proposed ecological management plan would be implemented over the long term are unclear. If implementation of the necessary ecological measures cannot be guaranteed then the scheme should not proceed.
- 6.215. CCC has claimed environmental benefits for the scheme. However, these are based solely around the perceived reductions in car traffic which are by no means certain or proven. The ES has ignored significant adverse ecological impacts. Sacrifice of the environment, in this case the local ecological resource, is not a sustainable solution to the transport problems of the Cambridge Sub-Region (WTBCNP/1 – WTBCNP/7).

Over Road Residents (written representation)

- 6.216. The proposed 'Kiss and Ride' site is to be preferred to a Park and Ride but this does not mean that residents support the Kiss and Ride over all other options. In terms of siting, the original location to the south of the station would be preferred on safety grounds. Siting it in the south eastern quadrant of the crossing would not conflict with archaeological interests because the scheduled area for Swavesey Priory lies to the west of the road. As far as can be seen there are no archaeologically significant features at either the now proposed nor the southern site.
- 6.217. Other concerns include the absence of barriers at the reconstructed crossing and the potential for flooding, given past flooding events.

Individual objectors

- 6.218. **Anne Campbell MP** told the Inquiry that while the guided bus system and the Government support for it is to be welcomed, a number of concerns need to be addressed before the proposal could proceed with confidence.
- 6.219. Cambridge residents live in an already congested city and the daily influx of workers is set to increase further. The transport needs of the future residents of Northstowe would add to an already overcrowded corridor. The CGB has the potential to provide an attractive alternative to the A14 and

would be beneficial for surrounding villages along this route.

- 6.220. However, insufficient attention has been paid to the effects of this transport scheme upon Cambridge itself, upon its buildings and infrastructure and on its pedestrians and cyclists. Also, it is doubtful whether the CGB would provide a sufficiently attractive alternative to the car. While it would contribute towards addressing Cambridge's transport needs, it would not be adequate by itself. Further studies are required to determine how it might be extended beyond this one corridor and be integrated with other public transport options, including cycling and walking.
- 6.221. CCC's studies demonstrate that the restoration of a rail link between Huntingdon and Cambridge would be neither viable, nor practical for addressing the particular problems of this transport corridor. While supporters of the rail option point to the potential to link with other mainline services, the analyses show that this is not as straightforward as has been portrayed. Were the CGB to be rejected, the Government funds available for this could not simply be transferred to a different scheme. Any new proposal would have to be fully appraised and even were it to be rapidly approved it would be unlikely to commence before 2009/2010. This would spell disaster for Cambridge in economic and traffic terms and it would add to the pressure on property prices.
- 6.222. For many people in Cambridge, the train is seen as a more attractive option than the bus. There is a need therefore to convince the public that the CGB represents a quicker, more convenient and relatively cheap option to get to work. While bold claims have been made about journey times and frequency of buses, the scheme's success would depend upon addressing those constraints that would otherwise entail a slow crawl into the City Centre. Further demand management would be needed, probably involving fiscal measures such as congestion charging.
- 6.223. **Jerry Alderson** presented a personal case to the Inquiry. However, he is also a member of CAST.IRON and supports that objection in its entirety.
- 6.224. CCC has justified the CGB on the basis of the CHUMMS proposals. That study does not look outside the Cambridge to Huntingdon corridor and its focus on 'most urgent problems' means that it looks for short-term solutions such as buses rather than a railway. It is severely flawed and has been overtaken by events.
- 6.225. CCC's public consultation has also been severely deficient. CCC has failed to explain the CGB properly to the public, it falsely promoted it as a prerequisite of the A14 works and it has misrepresented the CGB project and alternative schemes to the public and Council members. There is insufficient political support for it, and serious public opposition. However there is immense support for a railway.
- 6.226. The cost and benefits for the CGB are out of proportion. It has not been shown how it could be sustained operationally for the benefit of passengers, or economically for the benefit of Council tax payers. Its construction and operation would incur high environmental costs and all of its benefits could

be delivered using other solutions, at less environmental cost. The CGB is not essential to support Northstowe or other developments.

- 6.227. Insufficient technical detail has been provided; the CGB involves unproven technology, unlike heavy or light railway. The cycleway/bridleway offers little benefit and the operational risks have not been sufficiently evaluated.
- 6.228. Buses have a poor image; that of guided bus is no higher than conventional bus. Guided busways do not have a proven success record, while kerb-guided technology is frozen in time.
- 6.229. CCC has failed to look at alternative routes for the CGB or to assess alternative modes of transport either on the two disused railway lines, or on other routes. The rail option would provide superior connections – between Cambridge Science Park and Stansted Airport, for example.
- 6.230. The CGB does not address regional or national transport requirements for either passengers or freight. CCC wrongly claims that the railway could not be reopened; this has happened in numerous other locations. Wensleydale Railway, Britain's first true community railway, is a recent example. Moreover, the strategic need for the two disused railway lines to be retained for railway use in the future has been ignored.
- 6.231. The St Ives railway line should be upgraded/reinstated, taking into account the proposals of CAST.IRON and Railfuture. The line should be capable of accommodating both light and heavy rail services and the works should provide for eventual links to Huntingdon and the ECML.
- 6.232. The use of the BladeRunner passenger and freight road-rail vehicle (the subject of a presentation given to the Inquiry) is conditionally supported.
- 6.233. In the event of approval being given to the CGB, this should be conditional upon: the development of Chesterton interchange station; the areas for compulsory purchase being reduced; the reuse of present railway assets; the automatic return of the two railway routes to railway use when the land is no longer needed for the CGB; safety features to support public use of the maintenance track and level crossings; and, procedures to ensure safe operations (JA/1- JA/34; JA/G01-G10).
- 6.234. **Mr M Ranger** considers that the CHUMMS study is both flawed and outdated. It is dangerously biased against rail. Rail has not come forward as a solution, because no one has asked for it. The estimates obtained by CCC through Atkins are hugely inflated. A connection to ECML at Huntingdon would be complex but with the correct support it could be implemented. There is a need too for cross country freight links. The CGB is a local solution but the A14 is a nationally important road. This corridor needs something much more radical than the CGB (MarkR/1-2).
- 6.235. **Cllr Mark Rainer**, a councillor for Huntingdonshire, fears that any benefits of the CGB would stop once the bus reached Cambridge. Existing bus services would be adversely affected. The real need is for some sort of demand management in Cambridge City Centre.

- 6.236. The Government envisages a corridor of development between Stansted and Peterborough. But the CGB could not fulfil this. Were the first and last thirds of the route to be served by rail would it make sense to have these two sections linked by a route only usable by locally unique vehicles? (MR/1)
- 6.237. **Dr Peter Pope** advocates new thinking on transport to counter rising greenhouse gas emissions. This should embrace light rail and demand management.
- 6.238. The CGB is a peculiar hybrid, having no guideway where it is most needed, in the towns. Also, this is 40 year old technology which has been little used worldwide. Were Cambridge to adopt the CGB it would then compare badly with other cities such as Grenoble where there is an elegant tram system. Modern light rail has not been investigated in sufficient depth and this shortcoming should be made good before any final decision is made on the CGB.
- 6.239. CCC has based its costings for light rail on earlier, poorly managed projects. It has been insensitive to the technical innovations of recent years, notably, the ability of trams to share rail tracks with heavy trains, the development of quiet tramlines and new types of train protection and warning systems.
- 6.240. Any light rail system that could share track with existing rail services would have distinct benefits for Cambridge. It would enable an express cross town link between Chesterton and Addenbrooke's, it would be compatible with a high speed train service on the St Ives branch, there could be linkages into Cambridge City Centre (penetrating as far as the Four Lamps roundabout), and it would give a high-quality image, instantly connected with Cambridge (PHP/1-3).
- 6.241. **Malcolm Schofield** is similarly concerned about the appropriateness of guided bus. Its use would perpetuate old transport forms, whereas competing European cities have selected trains and trams, and combined them with new technology.
- 6.242. The CGB is the latest CCC transport initiative and in investment terms the most significant. But the A14 should be given priority whether or not alternative public transport facilities are provided. Very significantly, the CGB fails to reduce congestion on the A14.
- 6.243. While the CGB might provide additional public transport capacity for residents in the new housing developments, the essential need and preference for car ownership would be likely to prevail. Only faster, frequent and more reliable journey times to work would tempt residents to reduce car ownership (MS/1,2).
- 6.244. **Mr P Davies** expresses a preference for rail, and concerns about relying upon Cambridge's bus station as well as a number of health and safety issues. He has reservations about the number and safety of road crossings and about the adequacy of traffic light control. He has a specific concern about access to the guideway from Northstowe and about the visibility of buses that would be already on the guideway (PD/1).

- 6.245. **Arthur Henderson** has been described as the inventor of the guided bus. However, this system would be most inappropriate here. It would be damaging to the local environment and transport infrastructure of these medieval based towns and it would be a wasteful use of corridors that might better be used for rail.
- 6.246. The proposal stems from an out of date multi-modal study with very restricted and inadequate terms of reference. A comprehensive study for the region needs to include Stansted airport, business development within the M11 and A1 motorway corridors and the freight terminal at Alconbury. These land uses would generate substantial additional traffic movements and would benefit from main line rail links (AH/1-4).
- 6.247. **Mr B Heaven** also feels that the CGB would pre-empt the optimal use of a valuable strategic alignment. It has little support. The Inquiry should examine instead the strategic context and the case for incremental improvements to bus services until something worthy of this area becomes fundable; a 20-year view should be taken. The current 'official' EWR should be replaced by a more direct rail route; the best would involve the Chesterton to Histon alignment and it would be wrong to abandon this now.
- 6.248. The chances of the CGB operating effectively are low and people would use their cars instead. (BH/1).
- 6.249. **Mr Larmour** takes a similar view. The CGB would do little to solve Cambridge's transport problems. It offers insufficient capacity and there would be little relief for the A14. It would add to congestion within Cambridge and exacerbate conflict with cyclists. At the same time it is too expensive (JL/1-3).
- 6.250. **Ms M-L Holland** is similarly concerned about traffic congestion and about the impact of the CGB on the historic streets of Cambridge. Also, what effect might it have on parking provision on Histon Road and on conditions for pedestrians and cyclists (MLH/1-2)?
- 6.251. **Dr H Tribe** focuses in part on the aims and objectives of the guided bus as set out originally in CHUMMS. Its intention is to connect Huntingdon with Cambridge and Addenbrooke's and Trumpington to the south of Cambridge without any need for change. This is to persuade people out of their cars and reduce traffic on the A14. But the CGB would do little on that front. It would instead destroy the option for restoring the St Ives line.
- 6.252. Developed for rail instead of the CGB, that route would provide a direct link to Cambridge Railway Station, something that the CGB would be unable to do. There should also be a railway station serving Addenbrooke's Hospital. In parallel with the railway there is already an excellent bus service between Huntingdon and Cambridge. Northstowe would be adequately served by existing buses (HT/1-8).
- 6.253. **Mr M Thorne** believes that CCC has disseminated misleading information on the merits of the CGB, about the CAST.IRON proposals, and in respect of the comparison between the CGB and superCam – the public has been led

to believe that CGB would be a high-quality tram-like system. The CGB would provide insufficient incentive for people to switch from car to bus, but this could be achieved by other means. For example, consideration could have been given to hybrid systems where buses could share a rail corridor with trains or trams.

- 6.254. If the CGB is to be recommended for approval, there should be a requirement that as much as possible of the existing railway infrastructure be donated to heritage or private community railways. This should apply in particular to Histon Station (MT/3).
- 6.255. **Mr M Bernard** advocates the commissioning of an extensive independent survey which would seek to achieve a fair assessment of public opinion with regard to rail versus guided bus (MB/1-3). **Mr D Hofford** believes that the decision on the CGB should depend upon the will of local people expressed through a poll (DH/1-3).
- 6.256. **Mr D Shaw** refers to the encouragement being given by the Government to the development of community railways and, specifically, to the success of the Robin Hood line in Nottinghamshire; the St Ives line should be seen as a parallel. While rail re-opening schemes in England are currently at a standstill, the situation is different in Scotland and Wales. This suggests that the position in England may just be temporary (DJS/1-2).
- 6.257. **Mrs A Harknett** objects to the loss of the option to reopen the railway line. There has been a revival of railway use elsewhere and this could provide a model for the St Ives corridor (AH/1-4). **Ms C Zilahi** is of a similar view. She refers to the Wensleydale Railway, an initiative funded independently, without grants. The Mid-Norfolk Railway is another example of a re-opened line (CCZ/1-2R).
- 6.258. **Ms A Upton** raises, among other matters, the issue of mobility impaired passengers, including those dependent upon wheelchairs. While the CGB stops would provide for level boarding etc, those stops would not necessarily be in the right locations for this group of people (AMTU/1-2).
- 6.259. **Ms S Jourdain** (a member of Transport 2000 but speaking in a personal capacity) supports the northern section of the route but feels that the system is not the best solution to mobility in the south. That route should be left available to accommodate an east-west rail link in the future.
- 6.260. The guideway should be available off-peak for construction lorries serving Northstowe and for deliveries to St Ives and the northern villages. She is worried about the Regional College access and concerned that the junction assessments do not explicitly include turning movements for guided buses. She would like to see a guided bus stop at Shaftsbury Road, and at Northstowe a different location for the Park and Ride site and better access to the maintenance track (SJ/1- 4).
- 6.261. **Jane Wakefield** feels that the CGB is a narrow and shortsighted solution to the problems of the A14. Also, it fails to address wider and more long-term issues. It would fail to serve the needs of villages further away from the

railway line, and it would be environmentally damaging. Also, there is a major shortage of bus drivers in the Cambridge area.

- 6.262. **Mr J Lawton** considers that the CGB is deeply misguided. It would represent poor value for money and result in the loss of a valuable rail route. It is not the rapid transit scheme envisaged by CHUMMS. Experience from the guided busways in Leeds is not encouraging; in particular, they provide a poor ride quality (John L/1-4).
- 6.263. **Mr S Hannath** makes similar points to those set out above. The proposed buses would be slower and more expensive than today's buses which use the A14. The CGB would not provide the level of service that new towns deserve. While CCC has otherwise provided good facilities for cyclists, the CGB would not carry bicycles and would, instead, represent a significant danger to cyclists (SH/1).
- 6.264. **Mr P Rice** is also concerned about the inability of the CGB to carry bicycles. He is the director of a company at Cambridge Science Park and would welcome an integrated transport scheme that would serve that development; this system would attract good usage from employees. The businesses there also need good links to Cambridge Railway Station.
- 6.265. Given the strategic significance of this corridor, it should not be used for a local bus route. The route could have a role in connection with the freight warehouse development at Alconbury. Rail access to Alconbury would in practice be constrained by the lack of capacity on the ECML. This would lead to freight travelling by road rather than by rail. A short northern extension from the St Ives line to Alconbury would provide the only viable alternative route. To allow for this, the present alignment must be preserved (PR/1).
- 6.266. **Mr R Scully** lives at Alconbury and makes a similar point about rail access to the freight terminal. He regards the CGB generally as an ill conceived plan and is highly critical at the way that public consultation has been handled (RS/1-2).
- 6.267. **Dr I Magrath** raises a number of strategic issues. He stresses the value of having a rail network that can permit passenger and freight trains to be re-routed during periods of engineering works. However, he reluctantly accepts CCC's rebuttal evidence regarding the impracticability of a connection to the ECML and regarding journey times to Peterborough. Sadly, the government's recent transport review has reversed much of the optimism and vision of the ten-year plan. It has turned its back on light rail, it is to close down the SRA and it has failed to restore Rail Freight Facility Grants.
- 6.268. Regarding the technology, there are concerns about ride comfort and about the durability of guided wheels. Frequent fractures would not make for reliable timekeeping (IMM/1-2).
- 6.269. **Dr M Kemp** believes that the CGB would confer no benefit upon City residents. It would be accompanied by further bus priority measures, the

effect of which would be to cause increased delay to other traffic. Car journey times would be increased and the viability of local shopping areas would be damaged by additional parking restrictions (MK/1-2).

- 6.270. **S Wilkinson** is a former member (and chairman) of Histon Parish Council, and of the Railway Development Society. He is also a former director of Transport 2000. He objected to the original closure of the St Ives line and would like to see it re-instated. This could still be done and at a lower cost than the CGB. Histon has lost much of its industrial heritage and with the CGB a great deal more would be lost (SFW/1-2).
- 6.271. **Mr K Bradbury, Mrs E Cary, Mr O Dunn, Mr B Smith** make similar points to those already raised.
- 6.272. **Cllr A Reid** is a county councillor and transport spokesman for the Liberal Democrats as well as a member of the board of management of the Cambridge Preservation Society.
- 6.273. Rather than relieving the very heavy pressure on the roads of central Cambridge, the CGB would add extra buses to those roads, increasing congestion and pollution. Instead, a continuous off-road rapid transit link is needed all the way from St Ives, into Cambridge, to Cambridge Railway Station and on to the Trumpington Park and Ride site. Cambridge is a city of exceptional historic character which is being severely harmed by the levels of buses already experienced in its narrow streets.
- 6.274. One of two alternatives should be pursued. Either the guided busway should be built between Cambridge Science Park and Cambridge Railway Station, or rail should be used so that the transit link could run all the way to the Railway Station along existing tracks.
- 6.275. A grand plan is needed. However CCC sees the second part of the plans for Cambridge as too difficult - there is just a vague aspiration to complete them. There is a danger that if you do just A - the relieving of congestion on the A14 - you affect the cost of B involving completion of the rail connection. Were one to evaluate the total project that might make a rail based option more attractive than using buses (AR/1).
- 6.276. **Mrs E Kides** drew attention to the effect of the CGB upon the Longstanton area; this is in the context of the proposed Northstowe development. CGB and the Park and Ride site that would serve it would result in additional traffic. The project would give rise to increased noise and air pollution in the surrounding villages and it would fail to provide the necessary road and drainage infrastructure to support the existing and proposed new developments. Also, there are concerns about the location and impacts of construction routes (EK/1-6).
- 6.277. **Mr P Law** is concerned about the likely destruction of trees on the western edge of St Ives. Would the envisaged time saving for a trip to Cambridge adequately compensate? The CGB would put other bus services out of business. He fears that once the A14 has been widened, residents would use cars not buses (PL/1-3).

- 6.278. **Anne Ward** and **Frazer Dawkins** feel that the St Ives Park and Ride site would not be used. Motorists would drive to the sites on the outskirts of Cambridge instead. The St Ives site would have a unacceptable visual impact upon the cottages forming 'The Wilderness'. The site would also be subject to flash flooding and the run-off could damage the nearby properties. There would be pollution, noise and unsightly lights at night. If the CGB really has to be built, the Park and Ride site should be located elsewhere. A site to the east, along Meadow Lane is suggested.
- 6.279. The proposed busway crossing of Harrison Way is ill-conceived. It would be on a dangerous bend and there could be serious accidents (AW/1-2; FD/1).
- 6.280. **Dr T Carter** representing himself and **Ms T Tribe** objects to the loss of the railway asset, and about the likely on-street congestion. He feels that a modal shift towards public transport could be achieved in other ways, for example by subsidising fares. Also, the environmental surveys of the area have been inadequate (TC/1-3).
- 6.281. **Miss P Morris** raises a number of safety concerns affecting the Long Road area (PM/1-4).
- 6.282. **Ms F Oakman**, a Swavesey resident, objects to the significant loss of hedgerow and habitat for birds and other species. She is also concerned about construction impacts and flood risk. As a member of CAST.IRON she supports the rail alternative to the CGB (FJO/1).
- 6.283. **Ms C Downing's** principal objection is to the use of the disused railway corridor from St Ives to Longstanton. The claimed benefits for the CGB could be brought about through the use of existing roads or an improved local access road along the A14. In terms of greater social inclusion, this could be more effectively secured through the use of a frequent public shuttle service linking villages to a guided bus (or rail/tram) terminus at Longstanton.
- 6.284. CCC's position on the future bus service frequency for Fenstanton is untenable. With an off-peak frequency of just 1.5 buses an hour on average, it would fail to serve the community or promote social inclusion. It was accepted in cross-examination that this was 'an unfortunate side-effect of the system' and something that CCC would need to look at. The community and environmental cost of the CGB would be high. Those costs include the damage to areas important for wildlife.
- 6.285. CHUMMS has looked at the costs and benefits of alternatives to the proposed scheme in a broader sense. However, other alternatives have emerged during the course of the Inquiry, many of which have not been previously considered. Therefore, how can it be claimed that the current proposal is the best or even that there are no satisfactory alternatives to it?
- 6.286. This point is critical, because if it is not the case that there are no satisfactory alternatives, the scheme should fail when it reaches the point of applying to DEFRA for licences for work affecting European Protected Species.

6.287. In his written representations, **Mr A R Martin** draws attention to a range of flooding concerns (ARM/1-3). These were taken into account in the framing of my questions to CCC's witness on flooding and drainage matters. In her written representation, **Peggy Seamark** includes a series of photographs showing the local effects of flooding in 1998 and 2001 (PS/1).

Other written representations

6.288. The points made in the other written representations are summarised in Annex 2. The issues raised are largely the same as those already covered above.

Statutory Objectors

6.289. **Mrs J Jocelyn** operates stables on the south side of the former Cambridge to St Ives railway line and to the immediate south of Histon. Access to the stables is currently from St Audrey's Close via an informal railway crossing. Under the proposals, that vehicular access would be replaced by a link to Park Lane that would run parallel to the transport corridor on its south side.

6.290. She is concerned that those proposals would result in a loss of land (and viability) for her business, as well as causing noise and disturbance, and that her property would lose value. Noise would be reflected by the noise barrier towards her property. This would no longer be a quiet 'horse friendly' location. There would be a loss of mature trees along the new boundary with the busway.

6.291. The proposed new entrance onto New Road would be dangerous; it would be too close to the crossing. Also, the Girton footpath crossing would not be safe. The project would open up greater access to vandals and intruders and it would be difficult to prevent unauthorised access to her land.

6.292. During the construction phase she would lose clients who would not return until the works were complete. Also excessive noise and dust would affect the health and safety of the horses. She also raises a general objection to the CGB in principle (JJ/1-3).

6.293. **Mr and Mrs R Keyworth** operate a business on land adjoining the former station at Longstanton. Their case is that the loss of a strip of land adjacent to the disused line ((DP) 280) could inhibit the future use of the land. The site is already narrow and the proposals would impact upon the site's utility, value and potential out of all proportion to the area taken. Operational efficiency and their planning consent require that vehicles can turn on the site. For a full size articulated lorry, this is only just possible now and it would not be possible under the present proposals (RGK/1,2).

6.294. **Mrs R Lane** lives at 7 The Wilderness. The scheme would affect her living conditions. The construction works would cause considerable noise as well as air pollution, and run-off from the Park and Ride area could cause flooding. Her legal pedestrian access across the land ((DP)16) would be affected (Obj/81).

- 6.295. **Dodson Bros (Thatchers) Ltd** The proposals would discriminate against this firm by depriving it of access to its raw materials. This would deprive the countryside of a firm that practises bio-diversity and sustainability (MD/1-2).
- 6.296. **Mr N Tilbury's** objection does not specifically concern land at Fen Lane ((DP)69) in which he has an interest. His general objections, for example in respect of flooding and the effect upon existing bus services, are covered elsewhere (Obj/ 978).
- 6.297. **Mr B Hunt** is the warden at the Fen Drayton reserve and also holds a fishing lease at Ferry Lagoon. Both of his activities would be severely affected by the CGB. The peace and tranquillity of the reserve areas would be affected, making them less attractive to the public and thereby compromising his livelihood (Obj/50).
- 6.298. **Mr G Barker** farms land at Brownsfield Farm, Over. He does not object in principle to the proposed scheme but has a number of objections to the detailed proposals. First, he objects to the amount of land that has been identified within (DP)256 and (DP)258. He is a relatively small farmer and the loss of both plots would constitute over 5% of his entire holding. Since this land is only required for replacement habitat he would wish to see it distributed more evenly along the length of the scheme.
- 6.299. He objects to the exclusion of the existing area of scrubby woodland from the notice for (DP)258. That land is a haven for rabbits and he also objects to the acquisition of further land for tree planting unless it is properly fenced.
- 6.300. The acquisition of (DP)258 would leave him without access to the remainder of the field or, indeed, to his adjoining land. He therefore objects on those grounds too. Moreover, he currently has a right of way from his land north of the railway to the land on the south side over the level crossing shown on the plan for (DP)244. He objects to the closing of that level crossing unless CCC could provide him with an alternative access to his land on the south side of the railway (Obj/1310).
- 6.301. **Mr T E Johnston and Mrs F H Johnston** have a part freehold interest at Mow Fen Drove, Swavesey ((DP)146) and they have interests in terms of access in respect of (DP)148, (DP)149 and (DP)150. They own and occupy a field accessed only by Mow Fen Drove. They are concerned about whether there would be continuing vehicular access to it.
- 6.302. Mrs Johnston grazes a horse on this land. She is concerned that construction would impede or prevent access for an unknown period. This would be inconvenient, but she would also be affected financially as alternative premises would need to be sought. Also, if the land were to be left untended, it might be rendered less productive for the future.
- 6.303. They both object to the closure of public footpaths and bridleways between Swavesey and St Ives during the construction works. Local walkers, riders and cyclists would be denied access to the lakes and the river and this

would have a huge impact on the quality of life for many local residents. They also object in principle to the use of the old railway line for a guided busway (Obj/2281; Obj/1597).

- 6.304. **Mr L J Sanders and Mrs I M Sanders** are pensioners and both object to the compulsory purchase of a piece of their land for the guided bus. It would bring the bus route next to their house and that would add to pollution, noise and vibration (Obj/76).
- 6.305. **Edale Instruments (Cambridge) Ltd** operates from the old railway station that served Longstanton. The building also contains living accommodation. While the area of land to be compulsorily purchased would be relatively small, it would mean that buses joining the guideway from Station Road would pass within a few feet of an office window. This would mean noise, dust and a lack of privacy; this would be exacerbated by the probable loss of trees/shrubs.
- 6.306. The guideway buses would pass close to the windows of an electronics workshop. Again, this would mean noise, distraction and loss of privacy. Any barrier would block out light. The buildings suffer from subsidence and the scheme would be likely to increase those problems. The firm's access road would also be altered.
- 6.307. There is concern about the proximity of the Park and Ride site. This would be noisy and would attract illicit use in the evenings. Overall, the scheme would seriously devalue the property (Obj/293).
- 6.308. **Mr R J Ambrose** objects in detail to the proposed Longstanton stop and to the Park and Ride site; both would be close to his property, New Farm. There is no provision for screening, noise protection, the prevention of light pollution, and there is no buffer zone between the arable farm land and the station stops.
- 6.309. Traffic on the B1050 is heavy and slow moving during the morning and evening rush hours. The proposed junction with the CGB could worsen the situation and affect access to the farm (Obj/2553).
- 6.310. **Miss E M Randall, Mrs K Cornwell and Ms J Baiton** object on safety and other grounds to the use of an access track as a construction route for the CGB (Obj/2029; Obj/1902; Obj/888).
- 6.311. **Mr D Root** objects on several grounds, including: the inadequacy of CCC's debate and of its public consultation; the inappropriateness of the CGB as a transport solution; the cost of a scheme that would do little to resolve transport problems; and, the effect upon the Fen Drayton Lakes. The Inquiry must be followed by a Local Referendum.
- 6.312. The CGB would affect development opportunities on his land being the site of the former Level Crossing Keeper's Cottage, Park Lane, Histon, Cambridge. He has incurred considerable expenditure in planning to develop this site and he objects to its use unless a substantial offer is made for compensation or an offer is made to buy the entire plot (DWGR/1).

- 6.313. **Clark and Butcher Limited** has no objection in principle to the proposed guided busway. However, it objects to the details in so far as they affect the objector's land ((DP)386/387). First, the disruption arising from the works would be unreasonable and unacceptable. Secondly, the proposals should allow for better landscaping in order to create a buffer from the works.
- 6.314. There would be scope for a 'park and ride' type car park and a further stop in this vicinity; the proposed stop at Histon would be inadequate to cope with likely demand and it would be wrongly located to serve the western part of the settlement.
- 6.315. The above objections could not be dealt with by compensation; amended proposals are required. Any compensation would have to take into account not only the loss of the land but also the disruption to the existing business interests of C&B Ltd. Were the proposal to be reconfigured, in particular so that a park and ride could be provided, then C&B Ltd would be prepared to consider withdrawing its objection (Obj/1938).
- 6.316. **Mr K E Hart and Mrs E A Hart** are the owners of property at Histon Railway Station which they purchased in 1986. Four land parcels are involved, these comprising (DP)408 to (DP)411.
- 6.317. The Histon Railway station and its platform canopy is the only remaining structure of the Great Eastern Railway period. The objectors have maintained the buildings with the support of the Parish Council. The intention has been to refurbish the Station Offices, the canopy and the house to their original condition. This would be financed by the demolition of other buildings on the site that would ensure the security and stability of an original Victorian Railway Station. However, the proposals would result in the demolition of the station, until now a surviving part of the ever diminishing built heritage of the village.
- 6.318. Following discussions with CCC, other parts of the original objection have been withdrawn (Obj/1991).
- 6.319. Together with his partner, **Mr C Brown** is a tenant at Histon Station. Were this proposal to go ahead, they would suffer considerable hardship. He objects also to the principle of the CGB, making similar points to other objectors (Obj/1968).
- 6.320. **Bishops of Histon Limited** has concerns about several details of the CGB and until these are resolved they are maintained as objections.
- 6.321. First, it is feared that the introduction of a signal controlled junction would be accompanied by stack parking along Station Road and Cambridge Road, particularly at peak times. This would adversely affect existing businesses close to the crossing because of the greater difficulty for staff and customers in gaining access to those premises.
- 6.322. Secondly, the limited capacity of the proposed Histon Station car park might exacerbate problems with on-street parking in the area. SCDC's

representations on car parking (as reported in their Committee Report of 25 March 2004) are supported. Thirdly, all existing rights of way and access need to be retained. Fourthly, an overall transport plan is needed that takes into account all access needs and the needs of businesses along Station Road and Cambridge Road (Obj/2254).

- 6.323. **S and K Saini** are the tenants and occupiers of a convenience store at the junction of Cambridge Road/Station Road, Histon with the CGB. They are concerned that increased traffic congestion, coupled with the possible loss of three parking bays would result in a loss of income to their business. They are also concerned about pedestrian safety and about air and noise pollution generated by the buses (Obj/1876).
- 6.324. **Biochrom Ltd** occupies Unit 22 on Cambridge Science Park. The proposed siting of a bus stop and a walkway between Unit 22 and the neighbouring Unit 25 would give rise to parking on the roadway for the dropping off of passengers. This would be on a blind bend and opposite a busy junction. As well as creating a hazard, parked vehicles would impede traffic flows on this arterial road.
- 6.325. A possible alternative siting for the platforms and walkway (between Unit 22 and an electricity substation) is not favoured. This is on safety grounds.
- 6.326. In response to the CCC rebuttal, Biochrom Limited states that it continues to object to the proposed link between the two units. However, it also objects to the alternative proposal set out in Drawing No.CHSK225. This would increase the risk of 'fly parking' in the area (Obj/1976).
- 6.327. **Emma Waltham** lives at Seeley's Court, Milton Road, Cambridge. She objects to the loss of part of the parking forecourt of those dwellings. This would mean a loss of parking and it would bring the houses closer to the road. She also objects to the CGB in principle (Obj/2132).
- 6.328. **Turnstone Estates Ltd** is currently developing the former cattle market site at the junction of Hills Road and Cherry Hinton Road, Cambridge as a mixed use leisure led development, 'Cambridge Leisure'. While the CGB is welcomed, there is a concern that its implementation might prejudice pedestrian or cycle trips between the leisure scheme and Cambridge Railway Station, assuming that permission were ultimately forthcoming for a bridge link between the two (Obj/1808).
- 6.329. **Emmanuel College's** objection concerns the College's land holdings at Long Road, Cambridge. The notices served appear likely to prejudice (a) implementation of its planning permission for a playing field/sports pavilion development and (b) its ambitions to secure a housing allocation in the emerging Cambridge City Local Plan in which respect it lodged objections at the First Deposit stage (Obj/1674).
- 6.330. The objections of **Trumpington Allotment Society, Ms C Galloway, and Mr P A LeBoutiller** concern access to the Foster Road Allotment site. There is a concern that this might be impeded. Ms Galloway also objects to the principle of the CGB on a variety of grounds; these raise similar points

to those made by other objectors (Obj/1872; Obj/1357; Obj/2637).

- 6.331. **Trumpington Cutting objectors** The 26 individual objectors raise a range of concerns which are largely covered by the TEAG case (6.160-6.175).

7. REBUTTAL BY CAMBRIDGESHIRE COUNTY COUNCIL

The material points (in addition to those set out in Section 4) are:

- 7.1. **Joint ticketing** might be accepted on ordinary buses by way of quality partnerships. However, such arrangements would be exceptional and a special case would have to be demonstrated. SITC has neither addressed the need to demonstrate a special case nor has it provided evidence that would substantiate such an exception. By contrast, the CGB provides special circumstances (a single dedicated bus route without overtaking lanes) that makes CCC confident that its proposals for joint ticketing would be permitted (6.32; CCC/SITC/REB6).
- 7.2. On the question of **access charges** the economic assessment does not take these into account. How the operating costs for the CGB would be financed, what the level of charges might be and when they might be applied would be a matter to be resolved between CCC and the operators (6.18; CCC/SITC/REB2).
- 7.3. Given the expected levels of patronage for the CGB, normal sized buses would be used. On SITC's point about **flexibility**, feeder services would be able to provide links to outlying villages. In such cases, smaller buses could be used but they would still be able to use the guideway (6.31; CCC/SITC/REB4).
- 7.4. On **mode shares**, calculations undertaken for the Inquiry indicate that for the AM peak hour in 2016, the CGB would secure a 24% increase in public transport use in the corridor. Nearly 30% of its patronage would be attracted from former car users. This applies the more robust level of park and ride trips developed as an additional model in the TA (B45, s.6; B138).
- 7.5. **The A14 and congestion reduction** Applying the traffic modelling figures to the A14, for the section south of Bar Hill, would result in a 5.6% reduction in traffic. After traffic had re-routed from other roads to make use of the increased capacity, the net reduction in traffic on the A14 would be 2.3%. With the more robust level of park and ride trips, the former figure would rise to 11.1 percent (B138).
- 7.6. The CGB is the public transport element of the transport solution to the A14 and complementary to the road improvements. It is not intended to solve the congestion problems on the A14. The traffic relief as a result of transfer from car to guided bus would be distributed across the network. Such traffic would then re-route to take advantage of space made available on roads relieved directly by the project. Thus, whilst there would be some relief to

the A14, some of the capacity made available would be taken up by traffic re-routing to the A14 from other routes in the network (6.48; CCC/MA2/REB1).

- 7.7. The do-minimum case and the peak hour based modelling process were both agreed with the DfT and both lead to a conservative estimate of CGB benefits. It is incorrect to suggest that the CGB would deliver negligible congestion reduction. There would be travel time savings on the local road network within the corridor as a whole, including around the urban area of Cambridge. The CGB is part of a wider package of measures including restraint upon car use in Cambridge that would prevent any potential for induced traffic. (6.25-6.28, 6.35,6.36; CCC/SITC/REB2,4,6,7; B138; B45,s.6).
- 7.8. **Vehicle speeds** vary significantly on the A14 depending on the location of the timing points. Journey times lengthen on the section between Swavesey and Bar Hill with average vehicle speeds falling to around 20 mph. After the Bar Hill Junction, however, average speeds rise as a result of the capacity provided by the additional lane on this section. Statistics provided by the Highways Agency demonstrate that the average speed in the AM peak hour on this section is approximately 38 mph while that for the inter-peak period is 53 mph. Thus, the assertion that it is possible to drive along the A14 at the legal speed limit, and that journey time savings have been overestimated, is not accepted (6.54; CCC/MA2/REB1).
- 7.9. The proposed **rail and bus** solution would lead to increased costs and reduced patronage. It would fail to provide extra capacity in the City Centre (6.17; CCC/SITC/REB2).
- 7.10. With regard to **St Ives** the proposed routing of eastbound buses through Crown Street to Market Hill is intended to bring passengers as close as possible to the central shopping area of St Ives. This would take advantage of the rising bollards and associated TROs implemented in 2002. However that route would only be possible if a suitable rearrangement of the market could be made and that could only be achieved through negotiation. The alternative would be to use the present bus route through the town centre via North Road and East Street in both directions (6.41; CCC/SITC1/REB1).
- 7.11. The claim that the **West Edinburgh Busway Scheme** (WEBS) has been designed expressly for future conversion to tram is out-dated. Instead, the busway is being built to a standard design. Were it subsequently to be converted to a light rail system, this would be achieved by constructing the tramway on top of the guideway slab. Such flexibility could be applied to the CGB should this be considered to be appropriate in the future (6.24; B180; CCC/SITC/REB6).
- 7.12. **Patronage from the western part of the route** At 2016, some 20% of total CGB patronage would involve origins and destinations to the west of Swavesey. This would amount to 4038 trips per day and cannot be regarded as limited as StL suggest (6.199; CCC/StL/REB2).
- 7.13. **The Transport Model – assumptions** The 'do-minimum' case assumes

a 20 minute level of service directly between each stop. While this was agreed with the DfT as the reference case against which CGB economics would be tested, it is highly unlikely that such a service level could be provided on a commercial basis. It leads to a conservative assessment of the benefits of the CGB.

- 7.14. The low-cost alternatives are both bus priority measures relating to the A14. Thus the do-minimum case and the low-cost alternatives represent completely different situations. CAST.IRON has treated them as being versions of the same option and thus its analyses and conclusions here are not appropriate.
- 7.15. Regarding differences in car use and public transport use due to the CGB, it is not possible to achieve a precise comparison of trip locations within Cambridge due to the walk movements that take place. The definition of the corridor within Cambridge has been found to be narrower than the catchment area of CGB services with the result that the 'do-something' corridor for CGB services includes trips that were not in the 'do-minimum' corridor (6.47-6.50; CCC/PK2/REB1).
- 7.16. The **patronage forecasts** are based on the morning peak hour. The derivation of corresponding daily usage levels uses an expansion factor of 6.0 which is itself based on the CHUMMS assumptions. They are based on annualisation factors derived from survey work in Coventry and by London Transport. They are regarded as robust in this case (6.51; CCC/AH2/REB1).
- 7.17. CCC does not accept the claim by CAST.IRON that the proposed **journey time** comparison figures are flawed, nor that they have been misrepresented (6.51; CCC/AH2/REB1).
- 7.18. Regarding **safety** and the risk of double-decker buses being blown over by wind, such buses have a very low centre of gravity and would be no more likely to be blown over on a guideway than on a highway. There have been no records over the last five years in which a bus was blown over or blown sideways by wind (6.69; CCC/SA/REB1).
- 7.19. Regarding **land take**, the basic principle has been to reduce as far as possible the impact of the project on property outside of the disused railway corridors. The 108.5 hectares required for the CGB is based on the Limits of Deviation and land to be acquired or used for the project. The total land required for the core works would be significantly less than this. The CGB does not require significantly greater land take than alternative transport solutions. As with the CGB, any such alternative would require reconstruction of failed earthworks and replacement/removal of the track and ballast (6.70; CCC/RT2/REB1).
- 7.20. The CGB has Cabinet and Council support. The 2003 **public consultation** was intended to identify issues that the public might have about the CGB rather than to elicit the mode of transport preferred by the public; that decision was taken during the CHUMMS study and by CCC. The response

rate to the questionnaire was what would be expected for such an exercise. While the TWA application generated some 2700 objections, the bulk of these cover three main areas i.e. rail (52%), Save the Lakes (9%) and Fenstanton (9%) (6.73; CCC/CI/REB1).

- 7.21. The development of an **additional guided bus route** from Chesterton rail junction to the Cambridge railway station has long been an aspiration of the Council and continues to be so. However, given the expected difficulty in bringing such a route forward it does not form part of the current proposals. The lack of this route does not, however, detract from the validity of the current CGB proposals. The largest single destination for passengers on the system would be Cambridge City Centre and any link would need to serve the City Centre with the Railway Station as a secondary destination (6.92; CCC/CI/REB1).
- 7.22. **The rail alternative** B83 provides a full analysis of the CAST.IRON proposals as published in December 2003 and March 2004 on the CAST.IRON web site. CCC's review was carried out by experienced railway professionals and costings were produced by a leading commercial consultant working on railway projects. The estimates were based on an industry standard estimating package used throughout the UK, supplemented by information obtained from recent projects. The statement by CAST.IRON that the document is 'full of unsupportable and exaggerated cost estimates' is without basis.
- 7.23. The basis of CCC's assessment was the March 2004 information. Only total cost figures for each stage were suggested and there was no explanation of the basis of the cost estimates. CCC's estimates reflect its detailed understanding of the issues that would need to be addressed, particularly in engineering terms. They make allowances for these elements as well as potential scope changes which could be anticipated, and they include contingency and risk. In particular, the March 2004 information provides no indication of the need to substantially replace the trackside drainage, to address embankment failures in Over Cutting, and to reinstate the embankment towards St Ives.
- 7.24. The CAST.IRON proposals have since been developed and the scope of works has significantly changed (CI/3; CI/4). In particular, the amount of double track has increased, there are extra platforms, and passing loops coincide with stations. The changes respond in part to some of the points raised in the CCC.B83. However, significant concerns remain; in particular over the specifications and costings for the 7 level crossings and the proposed new station works.
- 7.25. In terms of track costs, the quotation from AWG Rail Services is a budget costing only that covers 7.5 miles instead of the 10.5 miles which is the actual track length. The specification is unclear and it is not known whether all necessary work would be covered. Taking all the required items into account, CCC's total estimated cost is significantly higher - £10.3 million in place of the total of just under £4 million quoted. In any case, AWG has

now withdrawn from the rail construction market and its costing is effectively obsolete.

- 7.26. CAST.IRON appears to lack understanding of the elements and pricing of railway construction works. Such works must make due allowance for the cost of design and for preliminaries. These are real costs that are generally dealt with as a percentage of the construction costs in estimating railway works (CCC/CI/REB2).
- 7.27. In terms of timings and operations, B83 predominantly relates to the ability of CAST.IRON's scheme to deliver a particular level of train service (a 15 minute frequency in the peak). The CCC analysis uses a well established software program 'Railsys' which is extensively used by UK and overseas rail systems for timetable modelling.
- 7.28. CCC's calculated running times are similar to those identified by CAST.IRON. (CI/4, 4.2). However, CAST.IRON takes particular issue with distances between stations, turnaround times and the locations of passing loops. CCC accepts that the mileages are slightly longer on two sections and that a top speed just touching 70 mph may be possible between Swavesey and St Ives. However, the increased distances make CAST IRON's proposed timetable even more difficult to achieve.
- 7.29. National agreements are in place providing for minimum turnaround times for trains at terminal stations. With locomotive operated trains, the type that CAST.IRON would propose to run, it is totally impractical to expect this operation to be carried out in under five minutes. This may be possible with more modern diesel or electric multiple units. The passing loops issue has now been addressed by the modified proposal forming part of CI/3.
- 7.30. The proposals put forward by CAST.IRON in March 2004 could not support a 15-minute peak frequency with the stated rolling stock of three train sets. CCC's initial assessment is that even with the revised proposals this would still not be possible. A 15-minute service using four sets of Class 150 DMUs might be possible if the turnover time at St Ives was less than five minutes. These conclusions have a significant impact on operational costs and operating viability since additional train sets would be needed and they are not included in the current CAST.IRON business plan.
- 7.31. The rolling stock that CAST. IRON proposes to use would not be suitable for the short distance traffic on a line from St Ives to Cambridge (CCC/CI/REB2). In respect of CAST.IRON's proposals to carry cycles, loading and unloading operations would increase dwell times at stations and result in longer journey times. Were railcars to be used as an alternative to locomotive hauled services, the carriage of cycles in any number would be even more impracticable (CCC/CI/REB3).
- 7.32. **The Rail Freight Group** RFG's proposal for a freight route via Cambridge and Huntingdon would face two fundamental constraints. First, it would require an additional east to west link (chord line) at Coldham Junction. The cost of that would have to be added to the cost of a connection to the ECML

at Huntingdon. Secondly, the Newmarket Tunnel is not wide enough to accommodate modern container traffic. Removing that constraint would be extremely costly. Network Rail has also said that there are no plans to reopen the Cambridge to Huntingdon corridor for freight traffic (CCC/RFG/REB1).

- 7.33. **The *camToo* proposals** The proposed *camToo* route would be disadvantageous in that it would involve unnecessary detours. The proposed CGB route to the south of the Regional College would not give rise to safety conflicts. Buses would not be travelling at speed because of the proximity of the stop and of the nearest road junctions. The Science Park stop would be within a maximum walking distance of 800 m to the whole of the Science Park.
- 7.34. While the routings of the two projects between the A14 and the Chesterton Sidings area differ slightly, the principle of running parallel to the rail line, should this be possible, does not differ. However, whilst CCC continues to support such a route, given the difficulties, this would be many years away, if at all.
- 7.35. While the objector has provided details of a potential alternative to the CGB, this does not meet the needs of the area, does not have the support of the rail industry, has not been costed, does not show its engineering feasibility and is not deliverable. Thus, it is without merit and should not be considered by the Inspector as a credible alternative scheme (6.105-6.113; CCC/CAMTOO/REB1).
- 7.36. Regarding the case made by **CPRA**, the ES covers both the guided and the unguided sections. In terms of air pollution, CCiC has decided to declare an Air Quality Management Area because target levels for 2005 are marginally exceeded. Without policies such as the Cambridge Core Scheme, pollution would be much worse. Also buses using the CGB would be required to meet Euro IV emission standards and under current proposals only those buses which meet those standards will be allowed into the City Centre. The impact of the CGB in terms of noise and vibration would be negligible.
- 7.37. Inner City traffic volumes with the addition of the CGB would be less than one-third of those prior to 1997 when the Core Scheme began and thus the area would not be made significantly more congested. There would be no worsening of conditions for cyclists and pedestrians. Indeed, under the latest proposals for Emmanuel Street there would be substantial improvements over the present arrangements. The number of personal injury accidents between buses and cyclists and buses and pedestrians is currently small and the increasing bus numbers would lead to no significant increase in the accident rate (6.129-6.132; CCC/CPRA/REB1).
- 7.38. **Cycling provision** It is proposed that the maintenance track be constructed of crushed stone compacted in layers with finer grade stone rolled into the surface to provide a hard smooth free-draining track. Following representations made on behalf of the Cambridge Cycling Campaign, however, some other options for the surfacing have been

explored. They include as one possible option the provision of a smooth bituminous wearing course across part of the width of the maintenance track. (CCycle/3/4; B253).

- 7.39. **Ecological issues** Although it is understood that StL has made representations to EN with a view to the consideration of the Fen Drayton Lakes as a possible future SPA, CCC's discussions with EN have confirmed that this site has not been indicated to Ministers for consideration as a possible SPA. There is therefore no requirement to consider it legally as if it were one. However, the CGB would not prejudice or otherwise influence the possible future designation of this area as a possible SPA (6.188, 6.189; CCC/StL/REB1).
- 7.40. While it is not accepted that this would be a significant effect, concern has been raised about the welfare of small animals, in particular hedgehogs and rodents, but also amphibians, that might enter the guideway. CCC would consider solutions to this concern in the detailed design of the guideway. Toads and other wildlife would be able to make use of the existing culverts and underpasses which would be designed so as not to impair use by wildlife (6.198; CCC/StL/REB4).
- 7.41. The Wildlife Trust agrees with the assessment of the impact of loss of habitats along the route but disagrees with the assessment of long-term residual impacts following successful implementation of mitigation. However, the significance criteria against which the scheme's likely effects are measured are defined in the ES based on generic definitions of levels of significance applying to all topics. Furthermore, English Nature has declared itself satisfied.
- 7.42. The Trust believes that the surrounding countryside adjacent to the disused railway does not have the carrying capacity to hold displaced wildlife. However, that view is an unduly pessimistic one. First, it assumes that alternative habitats in the wider vicinity of the proposals may be absent. However, a wide range of habitats able to support many species of wildlife are present in the vicinity of most of the length of the route, including woodland, wet land, hedges, water bodies and field margins. Secondly, it assumes that habitats in the wider vicinity of the proposals are fully exploited. However surveys undertaken for the CGB show that this is not the case.
- 7.43. CCC agrees with the Trust that translocation should not be undertaken as an alternative to in situ conservation and have attempted, where possible, to apply that principle. Translocation has only been identified as appropriate where ecological resources could not be retained in situ and no other choices are available (WTBCNP/2; CCC/WTBCNP/REB1).
- 7.44. The '**Kiss and Ride**' site at Swavesey is one of three original options that have been assessed as part of the ES, the others being a location to the south of the guideway (Option 2), and no Kiss and Ride. The present proposed site has been chosen as it would facilitate access to the Swavesey stop, because it would meet some of the concerns raised during the public consultation, and because it would have less environmental impact than

Option 2. Another factor is the location of Swavesey Priory and the archaeological importance of its immediate surroundings.

- 7.45. The junction resulting from the Kiss and Ride would be compliant with highway standards and would operate satisfactorily. Allowing for mitigation, where necessary, the CGB would not adversely affect the surrounding environment in relation to drainage and flooding issues (CCC/DZ1/REB1).

Property Objections

The material points are:

- 7.46. **Mrs J Jocelyn's** objection is based more on her preference for retaining the transportation corridor in disuse than on the actual impact on her equestrian business which would be very limited. There would continue to be access by horse through St Audrey's Close across the guided busway. The proposed new access would be preferable to the existing situation in that there would be a purpose-built access, with a proper turning provision at the stables.
- 7.47. It is not accepted that removal of a strip of the nearest paddock for the new access would render it unusable for grazing purposes. The use of that access would be occasional, simply serving the County Community Forest for maintenance purposes and the stable itself. There would be landscaping for the access and Footpath 4 would be retained and separated from the access to the stables. There would be no adverse noise impact upon the stables.
- 7.48. Moreover, there would be significant benefit for the stables which would be directly connected to a new bridleway running along the maintenance track. This would open up a wide range of opportunities for recreational riding. In any event, the objector would be entitled to compensation. There is nothing in this objection that would justify withholding approval for the proposed works (CCC/JJ1/REB1).
- 7.49. **Mr and Mrs R Keyworth** The objection has been withdrawn in respect of (DP)279. In respect of (DP)280, Mr Keyworth accepted in cross examination that the loss of the strip of land would not inhibit his current operations, and that his remaining objection relates only to compensation. Regarding any future activities on the land, and any planning requirement that there might be for vehicles to be able to turn around on the site, he did not produce any relevant planning permission (B275).
- 7.50. **Mrs R M Lane** The land involved is (DP)16. CCC has sought to align the project and undertake construction in a manner whereby impacts upon property are minimised. Mrs Lane has been offered an alternative right of way linking Harrison Way with The Wilderness but the offer has been declined (CCC/RML/REB1).
- 7.51. **Dodson Bros (Thatchers) Ltd** Mr Dodson owns an area of land to the north east of the River Great Ouse bridge crossing. For construction purposes, two land parcels are required, (DP)52 for temporary purposes and (DP)53 for permanent use. Access to Mr Dodson's land would be retained.

The objector's access to materials and jobs would not be significantly affected by the project (CCC/MD1/REB1).

- 7.52. **Mr N Tilbury** The land and property concern of this objector relates to Fen Lane track ((DP)64-69). It was originally identified as being additionally required for accommodation works. However, following discussion with landowners and occupiers, CCC will ask the Secretary of State in making the draft Order to delete the powers proposed over Mr Tilbury's property interest (CCC/NPT1/REB1); B270).
- 7.53. **Mr B Hunt** has an interest in Holywell Ferry Road in respect of access ((DP)109, (DP)111-115, (DP)116-123). Subject to traffic management restrictions, that access would be maintained during the construction phase of the project during which time the road would function as a construction access route. Those works would be carried out according to the CoCP.
- 7.54. While the junction with the guided busway route would not be signal controlled, its design would be to recognised highway standards. The junction layouts have been submitted to the local highway authority for an independent Stage 1 Safety Audit. These were completed to the satisfaction of the authority and they will be reviewed under a Stage 2 Safety Audit during the detailed design of the project.
- 7.55. Thus, access along Holywell Ferry Road would be maintained throughout construction and after completion. Mr Hunt's concerns regarding ecology are dealt with elsewhere in this report (CCC/BHU1/REB1).
- 7.56. **Mr G Barker** either owns the land or has a right of access in respect of six land parcels. CCC has reviewed and changed its proposals in the light of Mr Barker's concerns. He has been given a unilateral undertaking whereby the proposed ecological mitigation areas ((DP)256 and (DP)258) would be relocated to CCC land to the north of the guideway. Apart then from the balancing pond and context works (which would remain a permanent feature), the two parcels would not be permanently acquired but be subject to temporary possession under the Order for construction purposes.
- 7.57. The undertaking also states that the scrubby woodland to the north of (DP)258 would not be acquired, that both the new balancing pond and the new ecological area would be rabbit fenced, and that an alternative vehicular access would be provided to the land south of the disused corridor. A replacement landscape and ecological mitigation plan is attached to the Modifications to the Order as Drawing No. CHSK325 (CCC/GGB/REB1; B270).
- 7.58. **Mr T E Johnston and Mrs F H Johnston** Both Mow Fen Drove and Middle Fen Drove crossings form part of the Swavesey Byway network. Both would be closed to vehicles and a new access track would be built which would run along the northern side of the busway corridor (CCC/RDC/29, 4.10, 4.11; A14, drg Nos 006 and 007).
- 7.59. At Mow Fen Drove, the route of the existing footpath, FP6 Swavesey would be maintained with a footpath crossing provided over the guideway. At

Middle Fen Drove, the alignment of the bridleway BR5 Swavesey would be similarly maintained (CCC/SHD/5, 2.14, 7.59,7.60; A12, sheets 6,7).

- 7.60. CCC has sought to mitigate the effects of the CGB on Mr and Mrs Johnston's property. It has shown that access would be maintained throughout construction and after completion (CCC/TEJ/REB1; CCC/FHJ1/REB1).
- 7.61. **Mr L J Sanders and Mrs I M Sanders** The land involved is (DP)273 and is located on Station Road, Longstanton at the junction with the proposed guideway. It is needed as a visibility splay, and to provide safe access for buses to turn in and out of the guideway and to allow safe pedestrian movement around the junction.
- 7.62. The works would be carried out according to the CoCP. Among other things, this would control hours of working and dust and air pollution (CCC/LJS1/REB1).
- 7.63. **Edale Instruments (Cambridge) Ltd** Two parcels of land are involved, a triangular area at the junction with Station Road, (DP)281 and, temporarily, the mouth of a communal access to the south of the premises (DP)282.
- 7.64. Operational noise and vibration effects are assessed to be negligible. Any construction noise and vibration effects would be mitigated through the proposed CoCP. The increase in traffic on the B1050 as a result of the scheme would not be significant. Thus there would be a negligible impact in terms of air pollution.
- 7.65. When the guideway was operational there might be some loss of privacy in respect of the commercial workshop area. That could be overcome by fully frosting the windows. The effect on the property's access road would be temporary and continuity of access would be provided.
- 7.66. The Park and Ride site would be visible from the property. However, the proposed landscaping scheme would be of a sufficient scale and quality to effectively mitigate any adverse impact. Owners of property acquired under the Order could claim compensation through the Compensation Code (CCC/EI1/REB1).
- 7.67. **R J Ambrose** has a number of land interests affected by the scheme. His concerns are similar to those of Edale Instruments (Cambridge) Ltd and the same comments apply. The impacts of the proposed Park and Ride site would be mitigated by a comprehensive landscaping scheme. In terms of traffic impacts, there would be no significant impact in terms of queuing and delay (CCC/RJA/REB1).
- 7.68. **Miss E M Randall, Mrs K Cornwell and Ms J Baiton** All three of these objections relate to Construction Route 2. CCC has decided not to proceed with this particular construction route and the Secretary of State is asked to delete the powers proposed in the draft Order over all of this land (CCC/EMR/REB1; CCC/ KC1/REB1; CCC/JDB1/REB1; B270).

- 7.69. **Mr D Root** The land required, (DP)385 comprises some 7 sq.m from the site of the former Level Crossing Keeper's Cottage, Park Lane, Histon. It is needed for a visibility splay (CCC/DWGR/REB1).
- 7.70. **Clark and Butcher Ltd** The land affected is (DP)386, at the junction of the CGB with Park Lane, Histon, and (DP)387 which would be acquired to form a new private access running eastwards alongside the busway and its maintenance track.
- 7.71. The CCC scheme would involve replacement lineside vegetation, including planting on either side of the proposed access track. CCC cannot see that this would have an unacceptable impact on the agricultural holdings in the area. The works would be carried out according to the proposed CoCP.
- 7.72. The ES includes an assessment of the alternatives for parking provision in Histon. That shows that the impact of providing a stop in this location could not be justified in terms of any additional patronage (A15, 5.3.19, 5.3.20; CCC/C&B1/REB1).
- 7.73. **Mr K E Hart and Mrs E A Hart** Histon Station House is the only property that would be wholly demolished for the purposes of the project. Acquisition is required because the site is adjacent to the proposed Histon and Impington stop and it is the optimum location for the car park that would serve the two settlements.
- 7.74. Notwithstanding this, the CGB works would require the demolition of the platform and the Station canopy. As the platform forms the access to the main part of Histon Station House, its removal would affect the way the building could be used.
- 7.75. The ES regards the railway station building, though not listed, as of 'local importance'. Its loss would constitute a 'minor adverse impact'. Regarding railway heritage features generally, various measures are proposed which include the salvage and storage of items of heritage interest to the CGB or local museums. Alternatively they might be offered to local railway interest groups and railway enthusiasts (A15, 10.8.13, 10.9.3; CCC/KEH1/REB1).
- 7.76. **Mr C Brown's** property objection concerns his security of tenure at Histon Station House. His tenancy can be terminated by the landlord on two months notice with no compensation. If the Order is approved, CCC would liaise with Mr Brown and ensure that he has sufficient time to find alternative accommodation (CCC/CBR1/REB1).
- 7.77. **Bishops of Histon Limited** The land parcels involved are (DP)408 and (DP)409 (access rights) and (DP)417 (part freehold).
- 7.78. The signal controlled junction has been designed to minimise disruption to traffic on the busway and users of Station Road and Cambridge Road. There would be a negligible impact in terms of traffic queues (A15, Table 16.19). Access to the objector's premises would be available throughout the works and once the CGB were operational.

- 7.79. The car park is intentionally small as this busway stop would operate as an urban one. It would be subject to a TRO limiting length of stay (A2, Schedule 9). This would discourage commuter use from outside the two villages and encourage its use as a facility for local users unable to walk to the stop to make time limited journeys to Cambridge (CCC/BoH1/REB1).
- 7.80. **S and K Saini** The land parcel concerned is (DP)416. Traffic flows are addressed in rebuttal to the Bishops of Histon objection above. In terms of parking, CCC has offered an agreement, undertaking to provide two car parking bays to the front of the shop. This has not been accepted by Mr and Mrs Saini. Regarding deliveries, once the CGB were operational, these could continue as they do now. There would be some temporary disruption during the construction phase but the contractor would seek to work with local businesses to minimise this.
- 7.81. A new stop attracting passengers to it either by car or as pedestrians should not have a negative effect on trade for this type of general local grocery shop. The likely effect would be quite the opposite.
- 7.82. Safety issues would be taken fully into account in the design of all street works and they would be subject to a full safety audit (CCC/SKS1/REB1).
- 7.83. **Biochrom Ltd** occupies Unit 22 on Cambridge Science Park. It also has a lease of Unit 25. The land parcel concerned is (DP)470 which lies between the two buildings.
- 7.84. The Science Park stop has been chosen to allow adequate spacing between it and the Cambridge Regional College stop. It is not expected to be used by cars dropping off passengers. As highway authority, CCC is satisfied with the arrangements in safety terms.
- 7.85. CCC is also working with the land owners, Trinity College, and with Biochrom Limited to deliver an alternative pedestrian route that would avoid severance of a potential future development site. Were agreement not reached on this alternative, then CCC would seek to deliver the proposed route between Units 22 and 25 (CCC/BCL1/REB1, drg.CHSK225/02)).
- 7.86. **Emma Waltham** The land, (DP)487, is required to create a bus and cycle lane on the immediate approach to the guideway. This would enable northbound buses travelling to the guideway to avoid delays during the evening peak. The road widening proposed would not affect property access to Seeley's Court (CCC/EW1/REB1).
- 7.87. **Turnstone Estates Ltd** The pedestrian bridge link sought for Cambridge Leisure is an aspiration only; no planning permission exists. However, the planned route for the CGB through the Station forecourt area should not prejudice such a link which could be brought forward as part of the redevelopment of that area.
- 7.88. **Emmanuel College** The objections concern (DP)529 and (DP)531. CCC has developed plans to show how the site could accommodate both the College's playing field requirements and the requirements of the CGB. It

believes there is a satisfactory solution.

- 7.89. However, an allocation for residential development is thought to be very unlikely as the land is Green Belt and it has not been identified in the Revised Deposit Cambridge Local Plan for removal from the Green Belt. In the unlikely prospect that residential development were to go ahead, there could be a 'lift and 'shift' arrangement whereby the College could, at their own expense move the CGB balancing pond and combine it with their own pond as part of a residential planning permission (CCC/EMC1/REB1).
- 7.90. **Trumpington Allotments Society, C Galloway, Mr P A LeBoutiller** In respect of (DP)582 and the access that it provides to the Foster Road allotment site, CCC confirms that access would be maintained through the construction and operation of the project. Ms Galloway's general objections are addressed in other parts of the CCC case (CCC/TAS/REB1).
- 7.91. **Trumpington Cutting – individual objections** The cases for the 26 individual objectors were effectively covered by their representative organisation TEAG. The case made by CCC in Section 4 includes its response to the main arguments made, including property concerns (4.200-4.208).

8.CONCLUSIONS

Introduction

- 8..1 Having regard to the above, I reach the following conclusions. The numbers in square brackets relate to paragraphs earlier in my report.
- 8..2 The Statement of Matters dated 5 July 2004 sets out those matters about which the Secretary of State particularly wishes to be informed for the purposes of considering the draft TWA Order and the application for deemed planning permission. I set out my Conclusions regarding each of these Matters below, before addressing a number of additional considerations, and summarising my conclusions.

The Statement of Matters

1. The aims and objectives of the proposed Cambridgeshire Guided Busway scheme as a whole

- 8..3 The broad aims as well as six objectives for the CGB are set out under the Cambridgeshire County Council (CCC) case [4.18]. I address the extent to which they are met in my coverage of other Matters and return to this question in my Overall Conclusions [8.295-8.303].

2. The justification for the particular proposals in the draft TWA Order, including:

- **the extent to which they are consistent with national, regional and local planning and transport policies, including how the Cambridge to Huntingdon Multi-Modal Study ('CHUMMS') proposals accord with such policies**

- 8..4 I consider that the CGB proposals are consistent with policies applying at national, regional and local level. A Rapid Transit System (RTS) of the type proposed would accord with transport policy generally, planning policy guidance and the overarching concept of sustainability. In particular, it would be consistent with the principles of relating new development and transport infrastructure more effectively, integrating transport systems so as to provide for seamless journeys and providing car drivers with a genuine alternative mode of transport [4.19-4.38].
- 8..5 The proposals seek to implement such policy. They derive from the policy instruments set out in the Transport White Paper 1998 – i.e. the Local Transport Plan (LTP) and Multi-Modal Studies of which CHUMMS is one. The 2004 White Paper highlights the need for improved bus services to be at the heart of LTPs. Also, it sees buses as an alternative to rail services in some areas [4.20, 4.21].
- 8..6 At the regional level, planning guidance in the form of RPG6 establishes a sequence whereby additional major development should occur across the Cambridgeshire Sub-Region and identifies the need for a new settlement close to Cambridge [4.26]. Draft RPG14 (to become RSS14) supports the

enhancement of public transport services and identifies the guided busway as a committed scheme [4.27].

- 8..7 The RSS is to take into account the Sustainable Communities Plan under which there is to be additional growth in the London-Stansted-Cambridge growth area, and the possibility of major expansion at Stansted Airport [4.23, 4.24]. In my view, these two policy initiatives give added force to the need for major new public transport infrastructure such as the guided bus.
- 8..8 The present TWA proposals are consistent with the policies of the Cambridgeshire and Peterborough Structure Plan 2003. In particular, Policy P8/10 seeks the provision of an RTS in the Cambridge Sub-Region. Initially, this would link Cambridge and Huntingdon as well as Trumpington and Cambridge City Centre. While the Policy itself does not specify the type of system, the supporting text states that there is to be integration 'with road-running sections along radial routes to the city centre and between Huntingdon and St Ives'. Effectively this is a guided bus based proposal as is clear from the discussion that took place at the Examination in Public (EiP) [4.28-4.32].
- 8..9 Policy P9/3 of the Structure Plan identifies the site for a new settlement. This is to be built at Longstanton/Oakington and served by the RTS. Northstowe, as it has become known, is to be a town of 6,000 dwellings, with the capacity to grow to 10,000 dwellings [4.30].
- 8..10 The proposals are also in accordance with the policies of the South Cambridgeshire District Local Plan 2004. That Council supports the creation of an RTS that would follow the route of the disused St Ives railway line [4.35].
- 8..11 The Local Plans for both Cambridge City and Huntingdonshire District were adopted some time ago and they are of less direct relevance to the Order proposals. However, the First Deposit Draft of the replacement Cambridge Local Plan seeks to safeguard disused railway land for public transport use. The subsequent Redeposit Draft makes several references to the proposed 'Cambridgeshire Guided Bus' and the draft assumes that the scheme will be approved as proposed by CCC [4.33].
- 8..12 The Order proposals derive directly from the **CHUMMS** recommendations. The proposal there for a guided busway is one element of a threefold transport strategy for the Cambridge to Huntingdon corridor that would also embrace the re-routeing and widening of the A14 and the continuation of a strategy for demand management in Cambridge [4.14]. While the CHUMMS study pre-dated the Structure Plan, the modelling that underpins it was based upon the same assumptions that were being used in the then emerging development strategy. Thus CHUMMS is itself consistent with the Structure Plan [4.15].
- 8..13 The funding bid for the CGB was contained in the Cambridgeshire Local Transport Plan 2004 to 2011 [4.36-4.38].

8..14 I conclude that the proposals are consistent with national, regional and local planning and transport policies.

- **the anticipated transportation and socio-economic benefits of the scheme**

8..15 **Developments to be served** The proposal would return parts of two former railway routes to public transport use, albeit with a bus guideway system rather than with trains. Those stretches of guideway would be connected within Cambridge, and added to between St Ives and Huntingdon, by designated on-road sections. The result would be a strategic public transport route serving settlements within the A14 corridor and running through Cambridge from north to south.

8..16 The route would connect the towns of Huntingdon and St Ives, together with a number of other settlements, to Cambridge City with its concentrations of employment, shops, education and leisure facilities. It would also serve directly a number of specific developments, both existing and planned. Its 'reach' would be extended by the Park and Ride facilities proposed at St Ives and Longstanton and by the existing such site at Trumpington [4.85-4.87].

8..17 The planned developments that it would serve would include the new settlement of Northstowe with its major housing developments as well as employment and other uses, the housing at Arbury Park on the north western edge of Cambridge and the development at Clay Farm in the southern part of the City. The guided busway has been an integral part in the planning of all three of these developments. In the case of Northstowe, the new settlement would be served by a bus loop connected to the guideway making it highly accessible to residents [4.175-4.177; 5.16-5.18]. Such integrated planning should maximise use of the CGB by those living in these developments.

8..18 Turning to other specific developments, the Addenbrooke's Hospital site would be served by a spur off the southern section of guideway. Some 9000 people work on the site at the Hospital, and at other uses, notably the Laboratory of Medical Biology, and some 10,000 patients and visitors access the site daily. Moreover, under the 2020 Vision for Addenbrooke's there is to be a major expansion over the next 15 years. Taking into account the proposed biomedical research park, this would involve a doubling in size of the existing site.

8..19 While Addenbrooke's already has a bus station, it is clear to me that the complex would benefit enormously from being linked to the busway network with its promise of fast and frequent services. Under its Travel Plan, the Hospital has already secured impressive reductions in the proportion of staff who drive to work and the availability of CGB services would support this policy drive. The services would also be useful to shift workers [5.11-5.14].

8..20 Thus, the Addenbrooke's complex would be likely to be a major generator of CGB passengers. At the opposite end of the corridor, the route would

terminate at another hospital site, Hinchinbrooke Hospital [2.1]. This too would be likely to generate significant custom for the system.

- 8..21 Two other key developments are on the northern fringe of Cambridge, Cambridge Science Park and Cambridge Regional College. The Science Park is a world renowned centre for research. One of the largest single employment sites in the County, the many businesses employ a total of 6000 staff. There will eventually be a further 1000. The Regional College has some 18,000 students plus 600 staff many of whom could be expected to use the CGB. Almost all of this large area, the Science Park and the College, would be within 800m walking distance of a CGB stop [4.86].
- 8..22 **Integrated transport** This would be an integrated transport system that would provide for a range of connections with other modes of transport. In terms of integration with the **car**, the two proposed Park and Ride sites would represent an 'outer extension' to the five existing ones round the edge of Cambridge. There was general agreement at the Inquiry that these have been a considerable success. The new sites would initially provide a total of 850 spaces. In principle, I see no reason why they should not attract a significant amount of use to the system [4.105, 4.106].
- 8..23 Other passengers would be taken by car and 'dropped off' at a suitable stop. Only one dedicated facility is proposed for this, the 'Kiss and Ride' site at Swavesey [4.47]. As a generality, this could be an important source of patronage and, in principle, it should be encouraged where there would be no viable or realistic alternative means of getting to a CGB stop. It could, however, give rise to localised problems of congestion and other conflicts. Were this to happen, traffic regulation measures might need to be considered.
- 8..24 On **rail** integration, the route would serve the railway stations at both Cambridge and Huntingdon. In the latter case, facilities for buses are particularly poor, in my view. However, there are proposals for an improved bus interchange at Huntingdon Station. Once implemented, this should provide for a much greater role for buses, including CGB buses, as feeders to East Coast Main Line (ECML) train services [4.107].
- 8..25 However, there is particular scope for better integration at Cambridge Railway Station. This is being proposed as an additional transport interchange for Cambridge, complementary to the facilities at Drummer Street. In the context of a planned development for the Station area as a whole, which would itself generate a significant demand for public transport, it is planned that there would be at least ten bus stands with two being allocated for CGB buses [4.107].
- 8..26 Another, albeit more medium-term, proposal is the new station planned at Chesterton. Its provision would secure important network benefits by freeing up platform capacity at Cambridge Station. With the completion of the guideway link eastwards from the Milton Road junction, this would provide a third bus/rail interchange and further enhance the attraction of the CGB as a feeder service for national rail journeys. This would open up

possibilities for swifter connections to London, Stansted Airport and other destinations. Given the international importance of the businesses in the Cambridge Science Park, I believe that the Science Park would be a particular beneficiary of this [4.108].

- 8..27 There would also be numerous opportunities for interchange with **conventional bus services**. In addition to Drummer Street in Cambridge City Centre, and the facility planned at Cambridge Railway Station, there are also bus stations at Huntingdon and St Ives [2.2, 2.3]. It is possible too, indeed likely in my view, that there would be some guided bus services that would depart from the guideway to serve peripheral villages. However, while this would be highly desirable in many cases, no specific proposals were put to the Inquiry.
- 8..28 This is an area that should be emphasised in the discussions with operators were the CGB scheme to be approved. For vital social as well as economic reasons there is a continuing need to serve this area's dispersed villages. In individual cases the question would be what role, if any, should the CGB have? But that is not just an issue that concerns the 'remoter' villages, it also concerns those settlements that would have a CGB stop, i.e. Swavesey, Longstanton, Oakington and Histon/Impington [6.30, 6.199].
- 8..29 Many people living or working in those settlements would be within reasonable walking distance of a CGB stop. That distance would, of course vary; what would be reasonable, indeed enjoyable, to one person would be very different to the acceptable distance for another person having different personal circumstances. As a rule of thumb, however, I consider that a distance of some 800m (taking about ten minutes at normal walking speed) could be considered reasonable for a person of average fitness, given the intended quality and predictability of the CGB service.
- 8..30 Within concentrated urban areas, i.e. Cambridge City, St Ives and Huntingdon, many thousands of people live within that sort of radius. However, outside their historic cores, the village settlements between St Ives and Cambridge are not so densely developed. Also, several have an extended linear form that would effectively place many hundreds of people at a considerable distance from a stop. To take one such example, Swavesey is some 2km long from north to south. Developing the point made above, there would be a need to consider how CGB services could best be made accessible to those for whom walking would not be an option. Might this best be achieved by a CGB bus departing from the guideway or would some form of connecting shuttle or taxi service be a better option?
- 8..31 Given the distances, cycling to the nearest stop could potentially be an attractive option for significant numbers of people, particularly in the summer months; that would be in addition to those others who would use the maintenance track to cycle all the way to their destination. However, while the proposals provide for secure facilities to leave bicycles, getting to the stops would sometimes entail cycling along busy traffic routes and this can be unnerving for, and a deterrent to, less experienced cyclists.

- 8..32 In my view, were the proposals to gain the necessary approvals, more thought should be given to the provision and quality of pedestrian/cycle links between individual settlements and the CGB stops to make them attractive to as many people as possible, including children. I note that under the LTP funds have been set aside to improve cycle provision [4.116]. In some cases, traffic calming measures might have an allied role.
- 8..33 **Scale of transport benefits** One of the central predictions for the CGB is that it would attract over 20,000 trips per day by 2016 [4.121]. I have established above that the CGB would serve a range of important existing and proposed developments. They include such major sites as Addenbrooke's Hospital, Cambridge Regional College and the new settlement of Northstowe. I am quite sure that the various developments along the route would have the potential to generate a significant number of trips.
- 8..34 The 20,000 trip per day forecast is based on a modelling and validation approach that has been expressly accepted by the Department for Transport (DfT) and Cambridge City Council (CCiC) [4.89]. However, all forecasts of this type are dependent upon the assumptions that are made and there can be no absolute guarantee that they would necessarily be achieved.
- 8..35 In the circumstances, then, how reasonable or robust is the forecast? To what extent would the CGB actually be used? In particular, it has been argued by objectors that this is an area of high car (and second car) ownership and that most people thus have alternative ways of getting around [6.50].
- 8..36 The point has also been made by a range of objectors that buses are regarded as inherently less attractive than other mass transit systems. Linked to this issue of perception is the fact that the CGB service would rely upon existing streets and thereby be vulnerable to congestion and delay. Both these points are critical ones that would, in practice, determine the extent to which the proposed system would be used, and thereby its viability.
- 8..37 In addressing these issues I will look first at the guideway sections on their own (i.e. the CGB project), while recognising that it is the performance of the system as a whole (i.e. the CGB scheme) that would ultimately determine its success. From my experience of the systems in both Leeds and Essen, I have no doubt that the guideway sections would provide frequent speedy travel between St Ives and Cambridge Science Park in the north, and between Trumpington and Cambridge Railway Station in the south. In the main, the stops are widely spaced and the buses should be able to travel at or close to their permitted maximum speed of 100 km/h for much of their journey.
- 8..38 Over those guideway sections, certainly, the CGB would give extremely attractive journey times. For a journey between Swavesey and the Science Park, for example, a guided bus would take just 13 minutes

compared with one hour using existing services. On the southern section between Trumpington and Cambridge Railway Station, the time would be 4 minutes 10 seconds for CGB compared to 15 minutes using existing services. On CCC's predictions there would be faster times for most journeys. Also, most locations would enjoy a higher frequency of service [4.85-4.88].

- 8..39 From my experience in Leeds and Essen, I am satisfied that the busway sections would give passengers a smooth comfortable ride. That would be subject to the design and construction details. However, those are matters that are well understood and the designers would have plenty of opportunity to learn from the experience gained from the earlier schemes. While the CGB vehicles would be travelling faster than those in either Leeds or Essen, speeds would be comparable to those on the successful Adelaide system [5.27].
- 8..40 I turn now to the on-road sections. Here, significant bus priority measures are planned, embracing a combination of traffic light priority and special bus lanes, as well as revised circulatory systems as at Cambridge's Drummer Street and in Huntingdon. CCiC was initially concerned about the claimed time savings. During the course of the Inquiry, however, it was able to reach agreement with CCC that the estimates of savings are credible. They have been examined and validated by consultants working for CCiC and I have no reason to doubt that they are realistic. While there remains some doubt about the Hills Road section of the route, both Councils are confident that measures could be put in place there to achieve the required journey time reliability [4.133-4.137, 6.3-6.11].
- 8..41 Also, there has been no significant challenge to the claimed journey time savings between St Ives and Huntingdon [4.138]. This leads me to conclude that CCC's estimates of overall journey times – taking into account the on-road sections – are themselves realistic, provided that the planned measures, or measures having a similar effect, are implemented.
- 8..42 Also, according to the proposals, there would be a significant increase in service frequency for most locations. From St Ives to Cambridge, by 2016, the buses would run every ten minutes at peak times, while there would be 18 an hour from Northstowe. They are an important part of the proposal and I have no reason to believe that they would not be achievable. While the CGB services would replace some of the present conventional bus services, a proportion of the present bus services would remain, supplementing the CGB buses [4.88].
- 8..43 But what guarantee is there that the various proposals for on-street works not covered by the Order would, in fact, be implemented? As far as Cambridge City is concerned, the situation at the close of the Inquiry is as set out in the summary of CCiC's case. In essence, that case is that the Council strongly supports further bus priority measures in Cambridge and that in some respects, such as fiscal demand management, it would like to go further than CCC [6.8, 6.9].
- 8..44 Indeed, CCiC put forward some suggested conditions to help secure those

aspirations [6.14]. I do not think that they would be appropriate as conditions, in particular because they do not meet the essential tests [8.278]. But, in any case, the matters to which they refer have been largely agreed between the two authorities. The JPS is one expression of that. In particular, it has been agreed that both authorities will participate in a study into fiscal demand management. So both Councils are going in the same direction and I have no reason to believe that approval of the Order would not be accompanied by complementary bus priority measures within the City boundary.

- 8..45 Regarding the St Ives to Huntingdon section, the situation at the close of the Inquiry was that detailed proposals had been developed for the entire route between St Ives and Hinchinbrooke and they were about to go out to public consultation [4.138]. While St Ives Town Council opposes the routing of buses through the town's market area, there is a viable alternative which would be for the buses to continue to use the existing route via North Road and East Street in both directions [4.139, 6.41, 7.10]. From the evidence presented to the Inquiry it seems unlikely that this would make any significant difference in terms of timings. No evidence was put regarding any differences in terms of the likely patronage.
- 8..46 Those are my main concerns in relation to the Order proposals and I make no further comment regarding the respective merits of the two routes. As CCC has stated, the route through Crown Street and Market Hill could operate only with the agreement of HDC, together with that of the Town Council and the market traders [4.139].
- 8..47 Looking at the other proposed works within this section, there is every indication they would yield significant time savings. Importantly, in my view they would also help improve service reliability. Those gains would be worthwhile in that they would, doubtless, foster greater public transport use both between Huntingdon and St Ives, and on the CGB route as a whole. Given the likely patronage from the area to the west of the northern guideway, however, I do not see the planned measures as so critical to the viability of the CGB, that the scheme could not or should not proceed without them.
- 8..48 With the Cambridge City bus priority measures in place, at least, I believe that the CGB would be able to offer an attractive service in terms of frequency and reliability. Evidence presented to the Inquiry shows that for the majority of possible trips, including those stopping at, or passing through Cambridge City Centre, the CGB would offer faster journey times [4.88]. The main exception would be in connection with trips at off peak times that use the existing A14. However, even there, a trip along the CGB route would not be significantly slower. Also the CGB buses would be more likely to be able to maintain their schedules given the certainty of timing on the guideway sections and the priority that they would have over other traffic on the on-street sections.
- 8..49 The proposals embody one significant constraint. This concerns the availability of through running services between the northern and southern

sections of the route and it was raised, in particular, by the Addenbrooke's Hospital NHS Trust and SITC [5.14, 6.33]. Limited bridge clearances would mean that single deck buses only could use the southern section of the guideway (to the south of Cambridge Railway Station). By contrast, the northern section would be operated generally by higher capacity double decker buses. For passengers wishing to travelling north-south through Cambridge, or vice versa, this would mean either a change of buses in the City Centre or taking a through service on a single decker bus.

- 8..50 While CCC's calculations on journey time incorporate a five-minute time penalty [4.126] to allow for interchange between services, the situation would not be ideal. First, generally speaking, the need to change buses is a disincentive to use because it adds an extra layer of perceived uncertainty to any journey. Secondly, the proposed through services would be at a lower frequency than would the northern section services that would go no further than the City Centre. That would arise because within the northern section any single decker services would necessarily be interspersed amongst double decker ones. That lower frequency might prove a disincentive to use.
- 8..51 However, even with this disadvantage, I consider that the scheme as a whole would be viable. The CGB scheme would provide an attractive combination of speed, frequency and reliability. It would offer other things too, including level boarding, real time information, and off-board ticketing which would reduce the time spent at stops and the security of CCTV. With the exception of the request stop at Holywell Ferry Road, all the guideway stops would offer shelter and secure cycle facilities. The system as a whole would have a distinctive design [4.44].
- 8..52 Over most of its length, the CGB would operate as a tracked system and I believe that it would be seen as such by many rather than as 'just another bus'. With the whole package in place, I consider that it would come to be perceived as an attractive, distinctive transport system meeting people's needs for wide range of journeys.
- 8..53 CCC claims that the CGB would perform better than any of the identified alternatives. It also acknowledges that this would depend upon actual performance and actual delivery [4.117]. Clearly, that performance would need to be sustained over the long term, and high quality maintenance would have to be built in. As CCC points out it would be both in its interest and the interests of the operators that the CGB was seen to operate as a premier service [4.117]. I agree. Passengers who have access to a car would have a clear choice; they would be tempted to go back to using that car were the service to prove not good enough, or were its quality to slide over time.
- 8..54 **Robustness** I believe that the estimate of some 20,000 trips per day at 2016 is a realistic one. It is based on a predicted patronage in the peak hour of some 3,400 trips and then applying a multiplier of 6 to give the daily total. The peak hour figure derives from modelling that has been scrutinised and accepted by both DfT and by CCiC. The expansion factor, though challenged by CAST.IRON [6.50], is based on locally observed

- public transport patterns and account has also been taken of monitoring studies conducted into both the Manchester Metrolink and the South Yorkshire (Sheffield) Supertram. [4.122].
- 8..55 The modelling has been the subject of sensitivity tests which have confirmed the robustness of the results. Also while the scheme has been developed over the years, it continues to show a strong benefit cost ratio [4.127].
- 8..56 If anything, the 20,000 trip estimate may be a conservative one. The TA includes a further modelling exercise that focuses on Park and Ride trips. Based on observed usage of Park and Ride and the prediction of increased usage of the two sites within the project, a revised patronage forecast of over 3800 trips in the peak hour has been calculated [4.124].
- 8..57 There are other factors too which could increase the attraction of public transport as against the car. These include the effects of further car parking restraint and bus priority measures, neither of which has been taken into account in the predictions. The effects could be significant, particularly in Cambridge. Also, no account has been taken of the contribution that might be provided by feeder services and by the introduction of new Park and Ride sites, such as that proposed in Godmanchester. Moreover, good progress is being made in the development of green travel schemes in Cambridgeshire and this movement could be both encouraged by the CGB and a source of patronage for it [4.125].
- 8..58 **Socio-economic benefits** While this is an area of high car ownership, there are still many people who do not have access to a car. The CGB would potentially be very beneficial to those groups and individuals by opening up attractive new transport links offering, in many cases, journey times comparable to, or even better than obtainable in a car. In principle, the CGB would improve accessibility and thereby promote social inclusion; that is the fifth of CCC's objectives for the CGB. But as things stand it would only benefit those living in certain settlements, or certain parts of those settlements. The aim should be to broaden that accessibility through feeder services and other means, as has been discussed earlier [8.27-8.30].
- 8..59 A few settlements, in particular Fenstanton, would be adversely affected by the CGB. Currently, Fenstanton benefits from its location close to the A14 and a substantial number of buses stop there. With the CGB, fewer buses would use this route. There would be a halving of services to Cambridge in the peak hour (from 6 buses to 3), while off-peak there would be just 1.5 an hour (compared with 5) [4.179, 6.286]. While CCC argues that Fenstanton would still have a bus service equivalent to that of other nearby villages of similar size, in this case, the reduction in frequency would be contrary to CCC's aim in respect of social inclusivity.
- 8..60 There would be considerable economic benefits. The CGB would broaden the employment pool for business through enabling more people to access work. Moreover, depending on the mode share that the CGB achieved,

there would be some reduction in congestion on the A14, with consequent cost savings for firms. In particular, though, it would be the strategic public transport link for Northstowe which would be an important provider of housing, including affordable housing. The CGB would make it a highly accessible source of a home for those working on the Cambridge Science Park, for example.

- 8..61 **Effect upon the A14 and mode shares** The traffic model indicates that in 2016 there would be a 5.6% reduction in traffic on the section of the A14 to the south of Bar Hill. However, the net reduction, after rat-running and other traffic had re-routed from other roads, would be reduced to 2.3%. This figure has been highlighted by many objectors [6.25, 6.48, 6.242].
- 8..62 On those figures, there would, nevertheless be a worthwhile reduction in traffic, particularly in the context of the road network as a whole. The figure would be greater were the assumption about greater usage of Park and Ride to be applied. On that basis the overall reduction in traffic would become 11.1% compared to the 5.6% cited above [7.5]. I believe that this is a reasonable assumption, bearing in mind the undoubted success of the present Park and Ride sites on the edge of Cambridge. There are also the other factors outlined above, all of which could affect mode share [8.57].
- 8..63 In terms of the journeys within the CGB catchment area, with the more robust level of Park and Ride trips, the CGB would attract in 2016 almost 30% of its patronage from the car. Total public transport trips within the corridor would increase by 24% [7.4]. Given the likelihood of further demand reduction, within Cambridge City in particular, I see no reason, in principle, why these figures should not be achieved or even exceeded.
- 8..64 I **conclude** that the CGB would confer a wide range of benefits upon the Cambridge Sub-Region. This assumes that it is implemented as proposed as a premium quality RTS.

- **the impacts of disapplying the preserved status of the railway corridor**

- 8..65 The supporters of the heavy rail option have put forward two main arguments in its favour. One is that it would provide a superior service to the proposed guided bus system. I deal with this under 'Alternatives' below. The second concerns the potential benefits for the rail network; it regards the St Ives line in particular as part of a new connection serving region-wide, as well as national, aims. While the construction of the CGB would at least preserve what remains of both corridors for transport purposes, the likelihood is that any wholesale re-use for rail would be ruled out for many decades. One factor would be the sheer cost as heavy rail would require a complete reconstruction [4.152-4.153]. The position would be different for light rail [4.145]
- 8..66 **A link to the ECML** It is argued by objectors that were the CGB to proceed, a number of opportunities would be lost. First, there would be the loss of an opportunity to run connecting services to the main Cambridge to Ely line (addressed under 'Alternatives' below) and to the

ECML at Huntingdon.

- 8..67 Regarding a restored connection to Huntingdon, as proposed by CAST.IRON, that would involve, effectively, a new line going westwards from St Ives and crossing an extensive flood plain. There would then be the challenge of connecting the new link to the ECML. That would entail costly grade separated junctions across the tracks, while any plans for a connection going north would face the complications posed by the A14 flyover. While this might be technically feasible, the costs would undoubtedly be high. The total cost of completing the rail link from Cambridge through to the ECML was estimated by CCC at £354.8 million [4.152] although this and CCC's other estimates were strongly challenged by CAST.IRON [6.75-6.77].
- 8..68 As always, such estimates depend on the specification. In this case, that provided would bring the line up to a standard that would be suitable for all freight traffic. Clearly, it is a preliminary estimate but I have no reason to doubt that it gives a reasonable idea of the order of expenditure required for the whole route.
- 8..69 The question is, would the benefits be likely to justify costs of that order? Of those potential benefits, the proposal would provide a connection to Huntingdon Railway Station, but so would the CGB which would also serve the town centre area. Secondly, there would be a new link to the ECML, allowing through journeys from Cambridge to the North and the Midlands via Peterborough. But there is already a link to Peterborough via Ely and there would be no significant saving in terms of journey times [4.153].
- 8..70 A third potential benefit might be in connection with the aspiration for an East to West route (EWR), linking Cambridge with Oxford. The East-West Rail Consortium's (EWRC) position is that east of Bedford, this should be routed via the line to Royston and the ECML and then via a restored link between Sandy and Bedford [4.154]. This is by no means a direct route, but a link to Bedford via the St Ives line would be no shorter. Also, a far greater part of the 'official' route is existing operational railway. As a component of an EWR, the St Ives line offers no particular advantages.
- 8..71 The fourth potential use for the former St Ives line would be for the carriage of freight. While the route used to serve the businesses along it, no substantial argument has been made that, with a reinstated line, there would be any significant demand for direct freight connections. Some such opportunities might conceivably arise in the future, but it is unlikely that there would be many of them. While many new businesses have set up along the corridor, the main concentrations being at Cambridge Science Park, and at Vision Park, Histon, few of them would appear to deal in the sort of bulky goods for which carriage by rail is particularly suited.
- 8..72 The main argument is a strategic one, that a restored line linking to the ECML could act as a diversionary route when other routes were blocked or congested. In a nutshell, there is a strategic need for freight routes to connect with east coast ports such as Felixstowe. Those routes should be compatible with the scale of modern containers (W10 loading gauge).

Current need is being met through gauge enhancements to the North London Line. However, a second route has been selected which would pass through Ely and Peterborough. This would provide additional capacity post-2016 [4.157].

- 8..73 In its written representation to the Inquiry, the Rail Freight Group (RFG) draws attention to evidence produced recently for the Bathside Bay/Languard Bay public inquiries which suggests that further capacity still might be needed on occasions. In RFG's view, the St Ives Line could provide that capacity [6.120-6.126].
- 8..74 However, there is no apparent support for a new freight link via St Ives from either the Strategic Rail Authority (SRA) or Network Rail; indeed the latter has indicated that there is no prospect in the foreseeable future of the reopening and use of the Cambridge to Huntingdon corridor for rail freight. There are, furthermore, capacity constraints in the Cambridge Station area while the remainder of the route via Newmarket would pose fundamental constraints, the removal of which would be extremely costly [7.32]. Given all of the relevant factors I do not consider that the case for a diversionary freight route would justify the re-opening of the St Ives line.
- 8..75 It has been argued by other objectors that a restored St Ives line could itself serve the approved freight depot at the former Alconbury airfield [6.265, 6.266]. Under the terms of that approval, that development is to be connected to the ECML. However, no convincing evidence has been given as to why there should be an additional connection through to St Ives and Cambridge [4.159].
- 8..76 While I have based my comments primarily on the alignment proposed by CAST.IRON, I do not think that any of the three alternatives originally considered by CHUMMS would present any particular advantages in strategic terms. Moreover, there would have been no connection to St Ives and only one of the alternatives would have served Huntingdon [4.11].
- 8..77 My conclusion thus far is that there is no obvious vital role for the St Ives line (and any westward extension from it) that would of itself justify (a) safeguarding the present alignment in its entirety for some national rail related purpose and (b) refusing deemed planning permission for the present proposal. I examine below its possible heavy rail role in connection with Cambridge and its hinterland.
- 8..78 **Alternative rail projects** There is another question, though, and that is whether any part of the St Ives line, or what is left of the Bedford to Cambridge route, should be, in some way, protected for other possible transport projects. The London to South Midlands Multi-Modal Study (LSMMMS) recommended a different route to that supported by the EWRC for the Bedford to Cambridge part of the EWR. This would be routed via St Neots and then follow the A421/A428 corridor.
- 8..79 In his response to LSMMMS, the Secretary of State drew attention to the Government's funding constraints and in connection with the Bedford to

Cambridge proposal said that while it might 'merit further consideration in the longer term', the SRA was not being asked to carry out further work at this stage [4.155].

8..80 While such a route might have merit as a more direct and probably faster one than that supported by EWRC, because of its likely cost, the lack of official support and the considerable planning and technical uncertainties, it must be regarded as a distant possibility only. However, the situation could conceivably change in the longer term and, in so far as this were relevant to the proposed CGB route, a link to the Cambridge main line at Chesterton junction might be one option, possibly the main option.

8..81 Were this, at the moment distant, possibility to materialise, it would be likely to involve just the extreme eastern section of the St Ives line, on Cambridge's northern fringe. Were the CGB already in place, that limited section of the corridor would have to accommodate two transport systems, guided bus and train. Whether this would be done through the creation of some diversionary route for the buses, possibly on the lines of the route proposed for the *camToo* project [6.105], or through some form of shared use of the available track width, would be a technical matter to be solved, one not necessarily more difficult than would be encountered elsewhere along this possible rail route.

8..82 On this 'future proofing' point, I conclude that the existence of the CGB need not of itself prove an obstacle to the long-term accommodation of a rail connection at Chesterton Junction. So far as this Order is concerned, there is no justification for refusing to grant approval on the grounds of possible prejudice to a long-term possibility that may or may not materialise. Were it to materialise, it is my belief that it could be accommodated, subject to the necessary safeguarding of land.

- **the main alternatives considered by CCC for achieving the objectives of the scheme, and the reasons for selecting their preferred mode of transport**

8..83 There has been a lengthy process of discussion and debate about the problems of and the future solutions for the A14 corridor [4.6]. Over a period of at least ten years, CCC explored a number of alternative transport modes, including heavy rail, light rail and guided bus. However, nothing was resolved until the publication of CHUMMS in 2001. That came out firmly in favour of guided bus, part of an overall strategy that was endorsed by CCC, by the East of England Local Government Conference and then formally accepted by the Secretary of State. That led to an LTP submission that was provisionally approved by the Government and £65million funding was allocated. The appraisal carried out for that submission itself included an examination of alternatives [4.16].

8..84 There was a further examination of the alternatives at the Order Inquiry. In particular, considerable time was devoted to an examination of CAST.IRON's proposals for a re-opened St Ives line. The two main options that they put forward facilitated a close examination of the practicalities and the economics of resurrecting this railway. To that extent, at the very

least, this discussion was valuable to the Inquiry.

- 8..85 I turn now to the various alternatives, starting with heavy rail. In addressing that option I shall be looking primarily at the case for a local rail system; the case for strategic rail links has been examined above.
- 8..86 **Heavy Rail** There was little meeting of minds over the construction and operating costs of the CAST.IRON proposals and over the practicalities of running a rail service between Cambridge and St Ives, including, in their later option, a link to Trumpington. CAST.IRON maintains that the construction costs have been significantly exaggerated by CCC, while CCC contends that CAST.IRON's estimates fail to make due allowance for the cost of design and preliminaries. There are questions too as to specifications [6.75- 6.80, 7.22-7.26].
- 8..87 There is disagreement also regarding service frequencies. Under CAST.IRON's proposals dated August 2004, a 15-minute rail service interval is proposed for the section between St Ives and Cambridge Science Park. CCC maintains that because of turn round times this could not be achieved with the locomotive hauled rolling stock proposed, although it might be possible with modern diesel multiple units. However, additional train sets would still be needed to achieve the 15-minute frequency and that would entail extra costs [6.79-6.82, 7.27-7.30].
- 8..88 Having heard the evidence, I was left in some considerable doubt about the realism and viability of these proposals and about the ability of heavy rail in general to provide a truly effective service on this particular local route. Moreover, the forecasts of patronage produced for the Inquiry suggest that a heavy rail service would carry significantly fewer passengers than would the CGB, indeed less than half at the peak hour [4.160, 4.161]. This finding is in line with the earlier CHUMMS work [4.162] and I regard it as a robust conclusion as to the likely comparative performance of heavy rail. It has to do with the flexibility of guided bus compared with that of rail and with the more attractive frequencies that the CGB would be able to offer.
- 8..89 Fundamentally, the problem for heavy rail would be its inability to serve some key centres of patronage , either at all or as well as the CGB. Thus, in particular, heavy rail would fail to serve Addenbrooke's Hospital, and there would be no link either to the Arbury Park or Clay Farm developments. There would be no direct connection to Cambridge City Centre and St Ives, Huntingdon and Northstowe would be far less well served.
- 8..90 While SITC argues the case for the heavy rail/bus option [6.18], that would inevitably impose time penalties. The likely train frequency aside, this option would on the whole be less attractive for potential public transport passengers than would the CGB which would offer direct services to Cambridge City Centre, for example.
- 8..91 I do not consider that a heavy rail service would benefit cyclists to any significantly greater extent than would the CGB. The CGB stops provide

for cycle parking and, to that extent, foster cycling as a means of access to the system. There is, of course, no reason why a train service could not offer similar facilities.

- 8..92 CAST.IRON proposes that significant numbers of bicycles should be carried on the trains, to be used for onward travel at the destination stop; this would involve a wagon specially dedicated for that purpose [6.85]. However, I am doubtful about the practicability of loading/unloading such a vehicle at the various stations given the limited stopping time that a normal train schedule would allow. Also, from the evidence, a 15-minute frequency, peak time service would be more likely to be operated using diesel multiple units rather than by locomotive hauled trains [7.30]. The former would, at best, have very limited provision for the carriage of bicycles.
- 8..93 What though, about the ability of a heavy rail service to link with the main rail network at Cambridge? Under CAST.IRON's August 2004 proposals, this would involve an electrified spur from the main line extending to a station at the Science Park. That would be the point of transfer for journeys by diesel train to or from St Ives.
- 8..94 However, that spur forms no part of any Network Rail proposal. In any case there are well advanced plans for a new station at Chesterton Sidings. This would relieve platform congestion at Cambridge Railway Station. But it would also provide a new node for onward journeys to Stansted Airport and other destinations, and in connection with which the St Ives corridor would be an important feeder route [4.108].
- 8..95 Given its likely location straddling the main line, I consider that the new station would be better served by CGB than by heavy rail. In the former case, the buses could more directly serve the new platforms. Trains, though, would require a separate station and a less convenient interchange for passengers [4.150]. My conclusion here is that heavy rail would offer no obvious advantages over the CGB in providing a feeder service to a new Chesterton station.
- 8..96 At the Inquiry, CAST.IRON put forward the alternative option of direct running by diesel trains through Cambridge Railway station, connecting a restored Trumpington branch to the St Ives one. However, the link to Trumpington would operate only every 30 minutes [6.82]. In my view, that would be an unattractive frequency compared with that of the guided bus. Also, as stated earlier, it would fail to serve either Addenbrooke's Hospital or the Clay Farm development [8.89].
- 8..97 In my view, the detailed evidence to this Inquiry has served to reinforce the earlier findings, notably those of CHUMMS, that within this corridor the rail option would perform significantly less well than would the guided bus. Also, and with the exception of the RFG, there is a lack of support from the rail industry. For its part, the SRA supports the CGB which it sees as providing 'the best public transport solution for the corridor' [5.4-5.7]. While the Inquiry heard about other railway lines which have been successfully revived, including the Wensleydale Railway [6.230], my

conclusion is that rail would be an inferior option here.

- 8..98 Bringing the various heavy rail arguments together, I **conclude** that rail would be a less suitable option than would the CGB. In particular, in terms of the aims for public transport in the Cambridge Sub-Region, heavy rail would carry significantly fewer passengers than would the guided busway. Turning to the potential strategic/ network benefits, there is no significant case in my view for either pursuing heavy rail or safeguarding the routes (in an undeveloped form) for that purpose. Were the situation and the arguments to change in the long term, the corridor would at least have been preserved for transport purposes. In terms of the distant possibility of an EWR scheme involving access to the Cambridge to Ely main line at Chesterton Sidings, it is my view that this could be accommodated.
- 8..99 **Light Rail Transport (LRT)** In the case of light rail, the Inquiry was presented with no worked up scheme in any way comparable to that produced by CAST.IRON in connection with heavy rail. It was advocated principally by the National Council on Inland Transport (NCIT) and by Dr Peter Pope [6.114-6.116, 6.237-6.240]. However, there was no substantial challenge to CCC's conclusions over its costs, benefits and patronage. Those conclusions are that it would cost more than the CGB to deliver, that it would carry fewer passengers and that there would be fewer benefits in public transport terms [4.142-4.146].
- 8..100 LRT is widespread on the continent and recently it has been introduced into several British cities. Its ability to run on-street has proved to be an attractive characteristic, notwithstanding the considerable disruption often caused during the construction of tram routes. But it must be doubted whether, in its present form, a tram system could be successfully accommodated within the narrow streets of central Cambridge. Construction would be especially problematic. While there have been investigations of the scope for LRT in the past, it is unsurprising that no scheme has proceeded.
- 8..101 In my view, the route suggested by NCIT – a loop from the Cambridge to Ely main line penetrating the City Centre [6.114-6.116] – would not be without the above conflicts. Also, and as with Dr Pope's proposal, it would involve some joint running with Network Rail and there is no indication that this would be acceptable [4.146].
- 8..102 In terms of flexibility for the future, CCC's investigations have shown that it would be feasible to convert the CGB guideways to allow for the running of LRT [4.145]. However, for any such conversion to be justified, conditions, including the relative economics of the two systems, would have to be quite different from those that apply now.
- 8..103 I **conclude** that in the circumstances of the Cambridge to Huntingdon corridor, an LRT system would perform less well than the proposed guided bus system.
- 8..104 **Other bus solutions** The Inquiry also considered the option for a bus only road following the same route as that proposed for the CGB. Allowing

for the wider carriageway and the necessary drainage works, the cost would be likely to be slightly greater [4.148].

- 8..105 A bus only road would have some potential advantages. First, it would avoid the need for specially adapted buses with some cost saving. Secondly, an ordinary road would be without the constraint posed by the 1800mm raised guideways of the CGB. At right of way crossing points, these should present little problem for reasonably able bodied pedestrians, for cyclists and pedestrians [4.101]. For vehicle crossings, however, there has to be a break in the guideway; that entails buses having to slow down so that they can safely re-engage with the guideway on the far side of the break.
- 8..106 Understandably, therefore, the CGB proposals have sought to minimise the number of such crossings so as to limit delays to schedules on this otherwise high speed service. It has meant that diversions have had to be planned for a small number of existing private crossings [4.273]. This factor would act as a constraint in the design of Northstowe were it to be decided to extend the new settlement to the north of the St Ives line corridor. While I agree with CCC that the constraint might not be a significant one [4.176], the simple point is that a bus only road would not pose such a problem in the first place.
- 8..107 On the other hand, there are some compelling advantages for guided bus [4.148]. In particular, a 7.3 m bus only road would be wider than a twin track guideway. Applied to the CGB route, that might require the widening of embanked sections with implications for flood capacity where the track crosses the flood plain. Such a road would also present a continuous impervious surface over its entire width and drainage design could prove to be a particular problem on certain raised sections of the route. By contrast, the proposed guideways would have drainage strips between the running tracks [4.221].
- 8..108 Were there to be a parallel bridleway or cycleway track, the corridor needed for a bus only road would have to be wider than for the CGB and this would mean a greater loss of existing vegetation. This would have a particular impact within the Fen Drayton Lakes area and at Over Cutting. While there might be less need for a maintenance track than with the CGB (given the flexibility of a road to allow, for example, the closure of one lane and diversion to the other) the effect of excluding that track would be to lose the considerable recreational (and commuter cycle) benefits that it would otherwise confer.
- 8..109 Also, guideway systems have the potential to provide a significantly smoother ride – in terms of both lateral and vertical movement – than can be provided on a conventional road. This depends on the specification, and here I was particularly impressed by the ride quality of the Essen system. There is no reason, in principle, why a similar high quality could not be the norm for a Cambridgeshire system.
- 8..110 There would be other advantages too, for example the fact that a guided busway system with its specialised trackbed would be recognisably suitable

only for specialised buses; in my view, this would help to deter unauthorised vehicles.

- 8..111 With its long and fast guideway sections, the CGB would be recognisably different from a standard bus service, even one operating on a bus only road. Provided that it were coupled with all the quality measures proposed, I believe that it would be perceived by many as an attractive and distinctive form of transport. Given that the costs would be comparable, I conclude that the CGB would offer significant advantages over a bus only road.
- 8..112 A considerable number of objectors made the case that a system of bus lanes along the A14 would prove a more cost effective solution to transport problems than would the CGB. In my view, however, it would fail to attract significantly greater numbers to public transport. In particular, it would fail to provide a direct connection to Cambridge's northern fringe.
- 8..113 As another possibility, buses would be able to use the local access roads that under the plans for upgrading the A14 would run parallel to the trunk road [6.103]. However, it is unlikely that this would allow for a rapid transit system in any way akin to the CGB. In my view, neither this option nor the bus lane option would provide an acceptable alternative to the CGB proposals.
- 8..114 **CamToo and new technology** The *camToo* project has similar aims to those of the CGB. It would follow a similar route to that of the northern part of the CGB but it would pass through the Regional College site and the Science Park, and, under Phase 2 of the proposals, it would terminate at the Grafton Centre, which it would reach via a guideway section along the main railway line and then Newmarket Road [6.105-6.108]. It is claimed that it would offer a faster route in to the City Centre than one via Milton Road.
- 8..115 By passing through the Science Park rather than alongside it as with the CGB, the *camToo* proposals would, to that extent, provide a more accessible service to firms than would the CGB. As CCC concluded at the Inquiry some CGB buses could divert to serve this particular point of demand [4.102]. However, there would be an inevitable time penalty and trade-off here.
- 8..116 The proposers of *camToo* have done some useful preliminary work in investigating the scope for an RTS extension along the main line railway corridor (Phase 3 of the CHUMMS proposals). They have made some suggestions as to how the constraints in terms of land availability might be addressed and put forward the notion that the Parry People Mover might be considered as an alternative to guided buses on this section of route [6.107-6.111]. Overall, however, their proposals are in their early stages, they are uncosted and they do not present, in my view, a viable alternative to the CGB.
- 8..117 The Inquiry also heard about another technology, Bladerunner, a vehicle able to travel on both rail and road. However, this is at an early stage in its development and its deliverability could not be assured [6.232].

8..118 As far as the Order proposals are concerned, the system would utilise Euro IV compliant buses – i.e diesel powered buses meeting the latest EU emission standards. In particular, this would minimise emissions within built up areas, including Cambridge’s historic core. In principle, however, the system could also accommodate alternatively powered vehicles using, for example, electric or hybrid systems, and offering the possibility of reduced, even zero, emissions within the core urban areas [4.173, 5.10]. With its unique circumstances, Cambridge might be a highly appropriate place to test such technology.

8..119 From this discussion of alternatives, I **conclude** that there is no obviously preferable alternative to the Order proposals. For the reasons given, I find that CCC was right to reject both light rail and heavy rail and the bus only road option. While both CAST.IRON and *CamToo* have advanced specific proposals it has not been demonstrated that they would offer any significant advantages over the CGB, the proposal before the Inquiry. At the same time, the system would embody sufficient flexibility to accommodate changed circumstances including new technologies.

- **the reasons for selecting the proposed route and the locations of the proposed bus stops, maintenance depot, control centre, park-and-ride sites and construction compounds**

8..120 **The route and the bus stops** The ‘backbone’ for the CGB route is formed by the two disused railway formations. While railway use ceased some 12 years ago, the continuity of the corridor from Cambridge to St Ives has been maintained while the former Cambridge to Bedford line remains available as far as the Trumpington Park and Ride site. In the main, the proposed route is the same as that shown on the Preferred Plan for CHUMMS.

8..121 Those two sections of former railway would be linked within Cambridge by the existing street network. While the Preferred Plan shows a Phase 3 section extending southwards from Chesterton Sidings to Cambridge Railway Station, this is described on that plan as ‘long term’. For the present, at least, the guided buses would be routed via Cambridge City Centre (the source of 40% of the demand for CGB services), following three radial routes [2.10].

8..122 The other on-road section would be between Huntingdon and St Ives. Under the CGB scheme, the route would follow the A1123 and B1514 with the buses operating in conventional mode; there would be extensive bus priority and other transport measures. CCC is seeking separate powers for this [4.138]. While this section of the route differs from that shown on the Preferred Plan, it would be a direct and logical route in my view.

8..123 Throughout, the guideways and the related on-road sections of the CGB route would connect major centres of population, employment, education, health care/research and shopping. In addition to the Cambridge City Centre and the substantial towns of St Ives and Huntingdon, those centres would include Addenbrooke’s and Hinchinbrooke Hospitals, Cambridge Regional College, Cambridge Science Park and the Arbury Park and Clay

Farm housing developments [4.86-4.88]. It would also serve four villages between St Ives and Cambridge. At the same time, the stops would be fairly widely spaced as would befit an RTS.

8..124 Northstowe would be served by an unguided bus loop that would pass through the new settlement. According to the Strategic Masterplan, this loop would connect key centres within the development with stops much more closely spaced than on the main guideway. In that way it would maximise accessibility to public transport without interrupting through, express services on the main guideway [4.175].

8..125 **Park and Ride** The locations of the two proposed Park and Ride sites follow the criteria of being easily accessible to the road network and well related to areas from which demand would be secured [4.105, 4.106]. Thus, the St Ives site would be located on the town bypass providing easy links to both the town and the A14. It would be close to the busway corridor. The Longstanton site would also provide good highway access. Moreover, it would be well located within Northstowe in that it would be at the western end of the bus loop where some services would turn round/terminate. In my view, both are logical locations for Park and Ride and I find them acceptable. The details, including landscaping, would be controlled by conditions.

8..126 The St Ives Park and Ride site would also accommodate a maintenance depot as well as the control centre for the CGB network [4.47]. They would be located away from residential property and close to the industrial sites fronting Meadow Lane. The details of these buildings would be controlled by a condition; I find the location to be acceptable.

8..127 The Swavesey 'Kiss and Ride' site and the Histon limited stay car park would be located close to the bus stops that they would serve [4.47]. The Over Road Residents have objected to the proposed siting of the Kiss and Ride site, and would prefer it to be located to the south rather than, as proposed, north of the CGB crossing [6.216, 7.44]. To my mind, however, the proposed location is acceptable on highway safety and other grounds. Regarding the siting of the Histon and Impington car park, I find that to be acceptable too, given the lack of obvious alternatives in this core area of the settlement [8.200]. I do not favour the idea of a possible additional 'park and ride' site on the northwestern edge of Histon as proposed by Clark and Butcher Limited [6.314]. Given its location on the periphery of the settlement, it would be unlikely, in my view, to attract significant passenger numbers. Its advantages would not outweigh the likely significant environmental impact in this area of Green Belt.

8..128 In respect of the construction phase, there would be site compounds every 6 to 8km or so, to ensure that the distances travelled from each compound were not too great. There would be additional local compounds at areas of significant activity such as new bridge sites. In order to minimise temporary land take, major site compounds would be located at the two new Park and Ride sites. I am satisfied that the sites are all appropriately located [4.55, 4.56].

8..129 **Alternative routes** Objectors have suggested some alternative routes for the CGB. First, the Trumpington Environmental Action Group (TEAG) proposes that the CGB route should avoid Trumpington Cutting and that the proposed southern link road should be followed instead [6.172]. However such a route would not be nearly as direct as one following the Cutting and time penalties would be likely. Also there is no agreed proposal for the road [4.205-4.207]. In my view, each of the potential routes would be disadvantageous to the operation of the CGB. In any case, I find elsewhere that, with mitigation, the use of Trumpington Cutting for the CGB would be acceptable [8.220].

8..130 RAGBUS has proposed a realignment of the route to the south west of the dwellings in Pease Way, Melvin Way and St Audrey's Close. However, this would involve a vulnerable stretch of Green Belt land in the gap between Histon and Girton [4.266]. There has also been a suggestion that the CGB route should be realigned to avoid Over Cutting and its rich butterfly and other insect populations [6.206]. In both cases, however, I find the proposed route to be acceptable, subject again to the proposed mitigation [8.195, 8.216, 8.243].

8..131 I **conclude** that, with its various branches, the proposed route is a logical one that would serve the main areas of passenger demand within the Huntingdon to Cambridge corridor as well as in the southern corridor. The proposed stops are appropriately located to serve that demand. I reach the same conclusion in connection with the proposed Park and Ride sites. The other permanent facilities as well as the construction compounds would also be appropriately located.

3. Whether there is a compelling case in the public interest for conferring on CCC powers compulsorily to acquire and use land for the purposes of the scheme, having regard to the guidance on the making of compulsory purchase orders in ODPM Circular 02/2003, paragraphs 13 to 20, and whether all of the land over which CCC has applied for such powers is required in order to secure implementation of the scheme

8..132 There were originally some 131 property based objections. However, through the extensive negotiations that took place both prior to the Inquiry and during it, over half of them were withdrawn. A total of 54 remained at the close of the Inquiry and of those 26 relate to one specific section of the proposed CGB route, Trumpington Cutting [8.243].

8..133 In respect of **Trumpington Cutting**, the views of the individual objectors are largely covered by the case of the Trumpington Environmental Action Group (TEAG). I have concluded elsewhere that, with appropriate conditions, the proposals are acceptable [8.220]. I believe that the measures covered by those conditions would address the detailed concerns of local residents, for example over the stability of the embankment sides and the effect upon wildlife. I am satisfied that all the land encompassed by the Order is needed for the purposes of the CGB project [4.200-4.204, 6.160-6.169].

8..134 Of the other objections, those of **Miss E Randall, Mrs K Cornwell and Ms**

J Baiton have been addressed by CCC's decision not to proceed with Construction Route 2 [6.310, 7.68]. Similarly, CCC no longer seeks powers in respect of **Mr N Tilbury's** interest in respect of Fen Lane track [6.296, 7.52]. Another change concerns **Mr G Barker's** objection whereby two ecological mitigation areas would be relocated to CCC land north of the railway corridor [6.298-6.300, 7.56, 7.57]. Coupled with other detailed changes I am satisfied that they would resolve the objection and that they would be otherwise acceptable. These various changes are contained within CCC's Modifications to Order Documentation (B270).

- 8..135 Regarding **Mrs J Jocelyn's** objection, this stems from the proposed loss of a private vehicle crossing at Histon, and the replacement of this by a new access track which would connect her stables business to Park Lane. This action would accord with the aim of minimising the number of breaks in the guideway system. The existing right of way across the former line would remain.
- 8..136 Her other concerns include the effect on her business of losing a strip of grazing land, security and environmental impact. In my view, however, her business would benefit from the presence of the new maintenance track which with its bridleway status would open up new opportunities for riding. I find that, with the intended mitigation, the proposals would be reasonable in planning terms and I conclude that the specified land is needed for the project [6.289-6.292, 7.46-7.48].
- 8..137 In terms of the objection from **Mr and Mrs Keyworth**, any possible impacts of the measures (involving a strip of land which would be needed for the maintenance track and a screening hedgerow) would be confined to possible effects on the ability of full sized articulated lorries to be able to turn around within the site. However, such vehicles do not appear to be used at the moment and while a planning requirement was referred to at the Inquiry, no evidence was provided of this. Were there to be such a condition it has not been demonstrated that this could not be varied [6.293, 7.49].
- 8..138 The objection of **Clark and Butcher Limited** relates to the land that would be used for the above-mentioned access track [8.135]. It also raises the question of a new stop and car park to serve the northwestern part of Histon. That proposal was rejected by CCC and, for the reasons I have given, I have reached the same conclusion [7.72, 8.127]. On the other aspects of the Clark and Butcher Limited objection, I see no reason why the proposed works should necessarily cause any significant disruption. Secondly, the proposed landscaping works would include a new hedgerow and other planting. Provided that a suitable detailed scheme were drawn up, I believe that this would create an adequate buffer [6.313-6.315, 7.70-7.72].
- 8..139 The property objection of **Mr TE Johnston** and **Mrs F H Johnston** also concerns access matters. It involves Mow Fen Drove and Middle Fen Drove, both of which would be closed to vehicles. Access would be maintained through the construction of a new access track. Again, this would be in line with the aim of minimising breaks in the guideway [6.301-6.303, 7.58-7.60].

- 8..140 The Order proposals involve the demolition of just one property, Histon Station House, which is owned by **Mr K E Hart and Mrs E A Hart**. I discuss this in some detail in paragraphs 8.199-8.203 where I conclude that the accommodation of a CGB stop at Histon coupled with the provision of a limited stay car park would necessitate and justify such action [6.316-6.318, 7.73-7.75]. There is a related objection from the tenant **Mr C Brown** [6.319, 7.76].
- 8..141 in the same general location there are objections from **Bishops of Histon Limited** and **Saini and Saini**; they concern traffic, parking and access issues at and around the CGB crossing, the CGB stop and the proposed car park. I conclude elsewhere that any delays at the crossing would be slight ones [8.154] and that the associated TROs would be in the interests of safety and the free flow of traffic [8.172]. Access to both businesses would be maintained and, although there might be some temporary disruption during the construction phase, this could be minimised through the contractor working closely with them [6.320-6.322, 6.323, 7.77-7.79, 7.80-7.82].
- 8..142 Of the other objections, one from **Biochrom Ltd** concerns the access to the proposed Cambridge Science Park stop. As provided for in the Order proposals, this would involve a walkway between Units 22 and 25. The objector is concerned about possible parking on the adjacent carriageway for the dropping off of passengers. I consider that this would be unlikely to happen in practice. I find the route to be acceptable in principle.
- 8..143 There have been discussions about a possible alternative route that would avoid the severance of a potential future development site. While that proposal was not before the Inquiry for a decision, I would simply observe that, compared to the Order proposal, it would appear to represent a less direct or obvious route for most potential users [6.324-6.326, 7.83-7.85].
- 8..144 Some other objections concern land proposed for visibility splays. Those parcels are required to facilitate bus turning movements and in the interests of safety. Only small areas of land would be involved but, in my view, that land would be needed for those purposes. The objectors concerned are **Mr L J Sanders and Mrs I M Sanders** [6.304, 7.61], **Edale Instruments (Cambridge) Ltd** [6.305-6.307, 7.63-7.66]; and **Mr D Root** [6.311-6.312, 7.69].
- 8..145 In connection with some further objections, I also accept that, for the reasons given by CCC, the land concerned is required variously for the accommodation of the guided busways and related infrastructure, ecological and landscape measures, and for construction purposes. The objectors concerned are **Mrs R M Lane** [6.294, 7.50], **Dodson Bros (Thatchers) Ltd** [6.295, 7.51], **Mr B Hunt** [6.297, 7.53-7.55], **Edale Instruments (Cambridge) Ltd** [6.305-6.307, 7.63-7.66], **Mr R J Ambrose** [6.308, 6.309, 7.67].
- 8..146 Concern is raised by the last two of those objectors about the impacts of the Longstanton Park and Ride site. However, I see nothing to indicate that it could not be accommodated satisfactorily subject to its detailed design and,

in particular, the scale and quality of its perimeter landscaping and the implementation of a lighting strategy. Those matters are covered by the proposed conditions.

- 8..147 The scheme would attract additional traffic to the area but, from the evidence presented by CCC, I do not think that any delays in terms of access to these properties would be significant. Edale Instruments are concerned about noise and vibration and about loss of privacy. However, I believe that the privacy point could be addressed through the use of obscure glazing while, given the proximity of the B1050, any additional noise and disturbance would be limited. Regarding the Dodson Bros objection, from what has been said by CCC, I have no reason to believe that the firm would lose access to its raw materials.
- 8..148 Regarding the objection from **Emmanuel College**, from the evidence, I am satisfied that the College's playing field requirements could be satisfactorily accommodated. The prospect of residential development appears to be unlikely given the Green Belt status of the land and the fact that no proposed changes are made in the Revised Deposit Cambridge Local Plan. As CCC says, were development eventually to go ahead, ways could be found to re-site the CGB balancing pond [6.329, 7.88-7.89].
- 8..149 From the evidence presented, access would also be maintained to the Foster Road allotment site during both construction and operation (**Trumpington Allotments Society, C Galloway and Mr P A LeBoutillier** [6.330, 7.90].
- 8..150 Regarding the two other objections, that of **Emma Waltham** concerns a proposed bus lane on Milton Road. I am satisfied that the land in question is needed for this purpose and also that there would be no significant impact on parking or access provision for Seeleys Court [6.327, 7.86]. I am also clear that the proposal would not prejudice the proposals by **Turnstone Estates Ltd** for a possible pedestrian bridge link to the Cambridge Station forecourt [6.328, 7.87] .
- 8..151 Some of the statutory objectors raise general concerns about the principle of the CGB, and about other matters, including the noise and pollution impacts of the buses, privacy, possible traffic congestion, parking issues and the consultation process. In so far as they are not addressed above, I deal with those points elsewhere in this report. Valuation matters would be determined through the Compensation Code.
- 8..152 Arising from my overall conclusion as to the merits of the scheme [8.303], I **conclude** that in accordance with ODPM Circular 02/2003 there is a compelling case in the public interest for giving Cambridgeshire County Council the powers proposed in the draft TWA Order, as proposed to be modified, to acquire and use land for the purposes of the Cambridgeshire Guided Busway. I have considered carefully the extent of acquisition of land and rights proposed, and I am satisfied that all the land proposed to be acquired is necessary for the implementation of the scheme. Given my conclusion as to funding, [8.289] and the clear intention of the County Council to proceed as swiftly as possible with the scheme, I do not consider that the proposed acquisition would be premature.

4. The likely impact on traffic of constructing and operating the scheme, including:

- **the effects on highway capacity, traffic flow, pedestrian movement and road safety, particularly where the busway joins or crosses existing streets, paths or other rights of way**

8..153 **Road crossings and traffic flow** The CGB guideways would be segregated from the highway network and any direct impacts upon that network would be confined to the relatively few crossing points, all of which would be on the Cambridge to St Ives section of the route. Those impacts have been assessed in the ES, supplemented by the TA [4.90-4.95].

8..154 With the CGB in place there would inevitably be intermittent delays to traffic. The ES concluded, however, that, in the main, those delays would be slight and any queues would be short ones [4.95]. There was no substantial challenge to that conclusion and I have no reason to believe that it is erroneous.

8..155 The TA looked in more detail at three CGB/road crossings. In respect of the A1096 crossing at St Ives, it showed that at 2016 two of the arms of that crossing would be approaching capacity, leading to additional delay and queuing at peak times. Already, however, traffic on that section moves slowly in the AM peak and this is said by CCC to result primarily from the roundabouts at either end of the road. In that context it is argued that with the CGB junction in place there would be no significant additional delay or queuing [4.92].

8..156 From my own observations this would seem a reasonable conclusion. The new crossing would be quite close to the Meadow Lane roundabout to the north. This is an important junction forming one of the connections between the built-up area of St Ives and its bypass. The TA shows that at 2016 (AM Peak) it would be almost at capacity on three of its arms causing delays to motorists. In that context, the nearby CGB crossing, itself catering for only limited numbers of buses, would have little additional impact.

8..157 The Meadow Lane roundabout would serve the Park and Ride site. According to the modelling, with the CGB, the ratio of flow to capacity (RFC) would increase by up to 2%. Set against the situation without CGB, I consider that the additional impact would be minimal [4.93].

8..158 In respect of the Milton Road crossing in Cambridge, the modelling indicates that even at the 2016 Peak there would be no significant additional delay or queuing [4.94]. Regarding the Longstanton Park and Ride site, there would be some additional queuing and delay by 2016 but this would be minor [4.95]. I regard all of these findings to be robust ones and I conclude that none of the junctions would give rise to unacceptable additional congestion or delays.

8..159 In terms of **safety**, the junctions have been designed to highway standards and maximum permissible speeds have been set. Stage 1 Safety Audits have been prepared to the satisfaction of the local highway authority. At

the detailed design stage they would be reviewed through Stage 2 Safety Audits [4.79].

8..160 With the exception of the vehicular rights at the CGB crossing of Byway 7/ Byway 4, referred to below, all other **rights of way** would remain [4.96].

8..161 At bridleway or footpath crossings, pedestrian users would be faced with a 'step down' and 'step up' for each of the twin guideways. However, the 1800mm involved would be the equivalent of a road kerb in height and for most people this would not present any problem. Cyclists and horse riders too should have little difficulty negotiating crossings.

8..162 I am satisfied that safety concerns would be effectively met through a combination of the proposed warning notices on the approaches to right of way crossings and detailed design, for example chicanes and holding areas on bridleway crossings [4.102, 4.103].

8..163 In terms of the crossings, it is accepted by CCC that further work would need to be done regarding the needs of those with impaired mobility [4.101]. In my view, any disbenefits for this group would be likely to be outweighed by the new opportunities opened up by the maintenance track.

8..164 No **private vehicular crossings** of the guideway would be allowed [4.104]. The Order proposals include provision for the closure of private vehicular crossings at Histon [7.46] and Mow Fen Drove and Middle Fen Drove [7.58]. In each case replacement routes would be provided.

8..165 Regarding **construction** at junctions with the public highway, this would require a detailed method of working in each case. Throughout, safety concerns would be paramount. Rights of way affected by the project would be temporarily closed or diverted [4.100].

8..166 With a few exceptions [8.171], the bus priority measures for the **on-street sections** are being promoted separately from the measures covered by the TWA.

- **the effects of closing, diverting or downgrading the paths, streets and byways detailed in Schedules 4 and 5 to the draft TWA order**

8..167 The paths and streets for which substitutes are to be provided are listed in Schedules 4 of the draft Order while those that would be temporarily stopped up are listed in Schedule 5. The important point is that there would be no permanent closure of any public footpath or bridleway. In so far as they would be affected during the construction phase, I am satisfied that all the proposals for such routes are justified in the interests of public safety. Having regard to CCC's assurance that the periods of closure or diversion would be short, I find them to be acceptable.

8..168 There would be a loss of vehicular rights in connection with parts of Byway 7/ Byway 4 as the proposals would close the guideway crossing to vehicles. I consider that this would be justified having regard to the aim of minimising the number of breaks in the guideway. I note that there has been no

specific objection to this. Full bridleway rights would remain [4.98].

8..169 I conclude that the proposals in Schedules 4 and 5 of the draft Order are acceptable.

- **the effects of the traffic regulation measures specified in Schedule 9 to the draft TWA order, including the proposed bus and cycle lanes, and restrictions on parking, loading, access and turning**

8..170 Schedule 9 to the draft Order lists a limited number of Traffic Regulation Orders (TROs). They fall into several main groups: TROs relating to stretches of highway at either end of the northern guideway section; TROs proposed for Histon, in connection with the road crossing and the parking area; and TROs associated with the Park and Ride and 'Kiss and Ride' sites.

8..171 Within the first group, there are a number of TROs related to the bus link across the A1096 at St Ives. These are all needed to help ensure the effective operation of the CGB as a dedicated corridor for buses. The same would apply to the proposed bus lane at Milton Road, Cambridge. This would incorporate a cycle lane that would connect to the CGB maintenance track; that would help secure continuity of provision for cyclists [4.66, 4.67].

8..172 The Histon TROs would provide the necessary controls for the limited stay parking area adjacent to the bus stops and they would impose waiting and loading restrictions on the approaches to the crossing as well as on the car park access road; that would be in the interests of safety and the free flow of traffic. I am satisfied that following some detailed modifications, there would be adequate provision for parking in conjunction with the shops on Cambridge Road [4.70-4.72].

8..173 The final group of TROs would be aimed at ensuring orderly parking on the Park and Ride sites, and they would also control the use of the bus lanes on the access road to the Longstanton site as well as waiting at the Swavesey Kiss and Ride site. All are necessary to ensure the effective operation of these facilities [4.68, 4.69].

8..174 There would be other TROs associated with the remainder of the route. These would be dealt with under other powers and they are outside the scope of the draft Order.

8..175 I **conclude** that all of the Traffic Regulation Orders listed in Schedule 9 are necessary and justified.

5. The likely impact on local residents, businesses and the environment of constructing and operating the scheme, including:

- **noise, vibration and dust**

8..176 Noise and vibration assessments were carried out as part of the ES. In terms of construction there would be some short term impacts on both counts. Their mitigation would be through implementation of the CoCP

[4.59].

- 8..177 In terms of operational noise, there would be two distinct elements. First, there would be the noise pertaining to the guideways in which the buses would be a new noise source. Secondly, there would be the on-road sections where the noise from additional buses would mix with the background of existing traffic noise. Within those latter sections the effect upon traffic volumes, and consequently upon the noise environment, would be negligible [4.245].
- 8..178 For the guideway sections, CCC's assessment took as its starting point ambient noise levels at representative locations. The predictions of noise were based on measurements made for the Leeds guided bus system. In my view, this was the right approach. While there are clear differences between the Leeds system which is an urban one and the CGB which would pass to a considerable extent through rural areas, the essential technology is the same. Thus the prediction takes account of not only the engine and exhaust noise but also the interactive noise between the wheels and running surface and the guide wheels and containment kerbs.
- 8..179 For most areas, the analyses show that the CGB would have little impact in noise terms. Indeed, in some cases, the highest predicted noise levels of between 59 dBL_{Aeq} by day and 56 dBL_{Aeq} between 2300 hours and midnight (at residential properties within 10m of the guideway) would be below ambient noise levels. From the data, I am satisfied that, in terms of the effect upon dwellings, any significant increases in noise would be confined to Histon. Two areas would be affected. First, the project would impact upon dwellings on the north western edge of the settlement; those in St Audrey's Close, Melvin Way and Pease Way in particular. The second group are at Villa Place close to the former Histon Station.
- 8..180 At about ten properties the noise level increase would be more than 10dB, while for another 35 it would be more than 3dB. The ES describes the impacts on the former as 'major adverse'. CCC proposes to mitigate these effects through the erection of noise barriers such that no property would be subject to an increase of more than 3dB [4.246].
- 8..181 In reaching my conclusions as to the acceptability of the proposals, I consider that two periods should be considered, first, that between 0700 and 2300 and, secondly, the hour before and the hour after. Collectively, this period accounts for the planned 18 hour operating day for the CGB. The categorisation corresponds with the approach taken in PPG24 *Planning and Noise*. Thus the 16 hours between 0700 and 2300 hours is regarded as 'day-time' while the two additional hours fall within the 8-hour 'night-time' period [4.249].
- 8..182 To take the day-time period first, I am in no doubt that the LAeq measure is the one to use. It is defined in the PPG as 'the equivalent continuous sound level – the sound level of a notionally steady sound having the same energy as a fluctuating sound over a specified measurement period'. In terms of the day-time, certainly its use accords with the World Health Organisation (WHO) guidelines, with BS7445:1/2003 and, indeed, the advice of the

adopted Local Plan [4.250].

- 8..183 Looking at the effects of the CGB, the worst affected properties would experience an increase of sound levels of up to 13dB. From the relatively quiet environment that they now enjoy, without measures to mitigate the impact of the CGB, residents would experience a significant increase in sound levels. That is acknowledged by the ES. From the evidence, and from experience elsewhere, I am satisfied that suitably designed and placed noise barriers would provide the necessary mitigation.
- 8..184 I turn now to the two additional 'night-time' hours. At those times it would be reasonable, in my view, to apply predictions based on L_{Amax} as well as L_{Aeq} to take into account potential sleep disturbance. The 2300 to midnight period is the time when many adults are seeking to get to sleep. While people vary greatly in their sleeping patterns, and their ability to get to sleep, for some that hour may be a particularly sensitive one.
- 8..185 Some guidelines on this are provided by the WHO. Under these, the indoor guideline value for bedrooms is 30dB L_{Aeq} with 45dB L_{Amax} for single sound events. That translates to a figure of 60dB L_{Amax} outside the window, assuming that the window is open [4.253].
- 8..186 Based on the Leeds data, the noise at the closest dwelling would be up to 73dB(A) and allowing for a 10dB(A) attenuation provided by the proposed barrier, the level would be 63dB(A) at the dwelling façade. On that basis, the figure within rear facing bedrooms would be 48dB(A), assuming open windows. That would be outside the guideline figure but, as CCC says, it could be met provided the window in question was partially shut [4.253].
- 8..187 It must be stressed that the WHO guidelines are just that. They are not rigid requirements. However, it seems to me that they would be reasonable targets to aim for. Based on the evidence provided by CCC they could be achieved subject to a suitable specification for the proposed acoustic fence [4.257].
- 8..188 However, that evidence is disputed on a number of fronts. One area of dispute concerns the validity of the 73dB figure. Measurements obtained on behalf of Histon and Impington Parish Council (HIPC) suggest that the maximum noise level would be higher, by some 3 dB(A). There is also the argument that the CGB buses would travel significantly faster than those in Leeds – at 55mph rather than 30-40mph [6.151-6.155].
- 8..189 Taking those arguments, how valid, therefore, are the predictions? First, it seems to me that the differences between the parties in respect of the Leeds data are relatively small. Following PPG24, a 3dB(A) change in noise terms is regarded as the minimum perceptible under normal conditions.
- 8..190 On the question of speed, the CGB buses would be travelling on a route that is practically level, whereas the measurements made in Leeds were of buses going up a slight incline with their engines therefore under load. On the other hand, the CGB buses would generally be going faster, and in one direction and eastwards of the Park Lane crossing they would be

accelerating. That acceleration, in particular, might be expected to be a source of additional noise.

- 8..191 To set against that, the guideways themselves would have somewhat different acoustic properties. In Leeds the guideway corridors are hard surfaced across their entire width, whereas the CGB ones would have grass strips between the running tracks. Such a surface is likely to have greater absorptive power than an entirely solid one. Taking all of these factors together, I consider that the Leeds figures are likely to provide a reasonable basis for assessing the likely noise levels in Histon. On that basis, therefore, the CCC figure of 73dB at the nearest dwellings would give a fair indication of maximum noise levels before mitigation.
- 8..192 There was considerable discussion at the Inquiry regarding frequencies; this was in the context of the objectors' concerns about low frequency noise [4.259, 4.260, 6.154]. In general, though, the dB(A) measure takes variations in frequency and perception through the human ear into account in its A weighting. In my view, there is nothing particularly unusual about a bus as a noise source and nothing to suggest that the use of an A weighted index is the wrong approach to the assessment of noise emission effects upon dwellings.
- 8..193 Both HIPC and RAGBUS dispute the likely benefits of the barrier [6.154]. However, its provision would follow established practice in respect of new highway and railway schemes. Precisely how effective it would be, would be determined by its detailed specification and further work would need to be carried out on this. That work might indicate a need to achieve a higher attenuation than the 10dB(A) cited at the Inquiry. Technically that could be done.
- 8..194 From the evidence, I have no reason to doubt that a significant degree of mitigation could be achieved and that this should be sufficient to achieve the WHO guidelines in respect of sleep disturbance. While this should not be regarded as an absolute, it would be a reasonable target to aim for.
- 8..195 **I conclude** that the proposed CGB would give rise to a significant increase in noise in respect of some 45 specified properties in Histon. However, with suitable noise barriers in place, that noise could be attenuated to an acceptable level. In Section 7 of these conclusions I recommend appropriate conditions.
- 8..196 **Vibration** From the evidence, vibration levels from the operation of the CGB would have a negligible impact [4.262].
- 8..197 **Dust** Potential dust emissions from construction would be controlled through the CoCP (CoCP) [4.59]. I consider that, in terms of its operations, the system should give rise to no more dust than any other tyre based transport system. Provided the guideways were regularly swept, which should form part of normal maintenance, the incidence of such dust could be expected to be low .

- **the effects of the scheme on the built environment, including the loss**

of any heritage

- 8..198 While the scheme would have a major visual impact overall, much of that impact would be in terms of the local landscape through which the CGB would pass. It would affect primarily the corridor of planting that has developed along the two railway corridors. In direct terms, the effect upon the built environment would be far less, given the small number of built structures along the line.
- 8..199 That would be reflected in the limited amount of demolition proposed. Within the guideway sections the main structures affected would be Windmill Bridge which would need to be replaced because it lacks the headroom for double-deck buses, and Histon Station House together with its canopy and its platforms [4.49, 4.268].
- 8..200 Though not listed, the latter building is an attractive one. With its restored canopy and its entrance from the platform, it is a powerful reminder of the former railway and an important feature at this crossing point of the old line. Under the proposals, the Station structures would make way for a car park and one of two guided bus platforms, the other platform being located to the eastern side of the former crossing [4.269].
- 8..201 In my view, this would amount to a loss in townscape terms. However, while there was some investigation at the Inquiry of the scope for retaining the old station in some form, this was shown not to be a viable option within the tight corridor of land that is available. Also, even if the horizontal alignment of the CGB route allowed this, there would still be the problem of completely different platform heights. My conclusion, regrettably, is that the CGB proposals are incompatible with the retention of the old station.
- 8..202 Were the CGB to proceed, it would be desirable for there to be two forms of mitigation at Histon Station. One would entail architectural salvage and storage coupled with documentation of heritage resources [7.75]. This should be considered not only for Histon Station but also in respect of affected railway heritage items elsewhere along the two former lines.
- 8..203 The second would mean paying the closest possible attention to the detailed layout, design and landscaping of this area. Doubtless, the two stops would become a new focal point for this area and while the new environment, and setting, would differ considerably from that of the former Station, every effort should be made to make it as attractive as possible.

- **The effects of the scheme on access to property**

- 8..204 CCC has put forward a range of proposals to provide access to property that would be affected by the construction works. They cover access to a range of businesses, to Cambridge Railway Station, to Cambridge Regional College and to properties that would be affected by the construction of the two Park and Ride sites. They also provide for diversionary routes to private tracks where vehicular rights would be severed. These would be provided in advance of the loss of those routes.

8..205 They would cover the surface car park at Unex House, Hills Road which would be reduced in size during construction works, and also the need to amend the service road at Trumpington Park and Ride site as a result of construction of the new guideway junction [4.57, 4.58].

8..206 In conclusion, I believe the proposals are comprehensive in their scope and that they would provide for adequate access during the construction phase of the CGB. In terms of the operations of the scheme, I am not aware of any particular effects that it would have upon access to property.

- **The visual impact of the scheme on the landscape**

8..207 As I have concluded earlier [8.198], the CGB would have a major impact upon the local landscape through which it would pass. I do not think that the guideways themselves would necessarily be unattractive. They would become a new and distinctive feature with the concrete trackways replacing the former steel rails, sleepers and ballast that are still present along much of the St Ives line. The two pairs of running surfaces would each be separated by a drainage strip 1.2m wide. Together with the central reservation between the tracks these would provide opportunities for grass mix or other planting which would help give the tracks a 'green' appearance appropriate to their largely rural setting. From my visit to Essen, I was able to see that this approach can be very successful.

8..208 In other respects, however, the project would be locally damaging, in particular along the northern section of the route and at Trumpington Cutting. It would involve the destruction of a great deal of the vegetation that has colonised the former railway lines and it would create a scar across the landscape. The effect would vary according to the section of the route. It would be greatest where the maintenance track would run directly alongside the trackways, and in some areas there would be a new private access track as well (for example, to the west of the Swavesey stop).

8..209 Along another stretch, that to the west of Holywell Ferry Road, the impact would be tempered by the fact that the former railway tracks have already been replaced by a roadway comparable in width to the proposed tracks. Also, where the trackways would be on an embankment, the maintenance track would be at its foot. In such circumstances it might prove possible to retain some of the existing planting on the embankment sides; that would reduce the impact of the clearance to some extent.

8..210 However, while the impact would vary from place to place, the overall effect within the northern section of the route would be considerable. This would be unavoidable. The works would impinge in particular upon the numerous users of local rights of way. This would be especially the case in the Lakes area which has an extensive area of paths [6.193].

8..211 There is an extensive mitigation strategy that would replace lost vegetation by new trees, hedgerows and scrub. It includes Ecological and Landscape Compensation Areas on land adjacent to the guideways. The strategy has considerable potential in my view. Over time, it would mitigate much of the damage caused by the construction works while the maturation of the

compensatory planting areas would create attractive new features in the landscape.

- 8..212 The two **Park and Ride sites** would each have a significant visual impact. They would introduce large car parking areas and associated buildings into areas that are currently open land. In each case they would impinge upon the outlook of local residents [6.307, 6.308].
- 8..213 Substantial parts of both areas would be devoted to landscaping and there would be a lighting strategy to minimise the potential impact of glare. The details of both would be governed by conditions [7.66, 7.67]. However, from the information available to me there would be adequate scope to protect the amenities of those living nearby and to integrate the development within the wider landscape.
- 8..214 Earlier in this section, I addressed the issue of noise impacts upon the residents of certain lineside properties in **Histon** [8.179-8.195]. A related issue that would mainly affect those living in St Audrey's Close, Melvin Way, and Pease Way concerns the visual impact of double-decker buses and possible loss of privacy. Currently, the residents involved enjoy largely open views across their back gardens and the disused railway to the countryside beyond [6.158].
- 8..215 Without mitigation, I believe that the buses would be quite intrusive, particularly when seen from the closest properties. The proposed acoustic fence would block out views of the lower parts of the vehicles but the upper halves would still be visible. As was discussed at the Inquiry, further mitigation could be secured through planting of the land on the north-east (property) side of the fence. One possibility would be to include light foliage tree species such as silver birch which would provide a degree of screening of the buses but without entirely blocking out the view [4.263, 4.264].
- 8..216 In my view, there would be the potential to achieve an adequate degree of mitigation. The precise details would need to be agreed by the County Planning Authority in consultation with the affected residents.
- 8..217 Within the southern section of the route, the greatest impact in visual terms would be at **Trumpington Cutting**. The steep sides of this Cutting are thickly cloaked in mature trees and shrubs which collectively form an attractive backdrop to the houses which line it. They are also more generally visible from the Hauxton Road and Shelford Road.
- 8..218 CCC proposes to coppice most of the slope vegetation. This would encourage strong root growth which, together with other measures would act to stabilise the Cutting slopes. Visually, the loss of the present backdrop would have a significant adverse effect on the area. To the extent that CCC's action would help to stabilise those banks, the tree clearance might also be beneficial to some local residents who have experienced subsidence to their properties.
- 8..219 The mitigation would comprise interplanting of the coppiced trees with new trees and shrubs. Over time this would re-establish the value of the

Cutting in urban landscape terms. Clearly it would be many years before it would have anything like the scale that it has now; for safety reasons there might, in any case, need to be constraints regarding the heights to which particular trees would be allowed to grow. However, while the Cutting would look quite different - coppiced trees have a distinctive shape – I see no reason why the new planting should not itself become an attractive feature of this area.

8..220 I discuss elsewhere the impacts of the works upon wildlife [8.239-8.240] and TEAG's suggested alternatives [8.129]. My overall **conclusion** on Trumpington Cutting is that the proposals would be acceptable subject to the proposed mitigation.

8..221 Regarding the visual impact of the proposed bridge to the Addenbrooke's Hospital site, there is no doubt that this would be a new and prominent feature in this otherwise open area. Assimilating it successfully would be a matter of good design and landscaping. I am in no doubt that this could be achieved.

- **The effects of the scheme on flora and fauna, including any disturbance to habitats along the corridor, and the results of any relevant surveys undertaken before or since the application was made**

8..222 The impact of the scheme on the ecology of this area is analysed in the ES together with a series of supplementary reports. Individually those reports address the likely effects on a range of species, while one of them deals with birds. It relies principally on data collected independently of the ES including that of the Wetland Bird Survey (WeBS) and of the Cambridgeshire Bird Reports. It confirms that the most important site for birds along the route is the Fen Drayton nature reserve. Together with other waterbodies in the St Ives area, this is used by large populations of wintering and breeding birds [6.179].

8..223 While man-made, resulting from the relatively recent flooding of gravel pits, the **Fen Drayton Lakes** have become an important habitat for many bird species. With their highly irregular shapes and islands and their reed beds and other perimeter vegetation, the lakes provide abundant shelter for over wintering and other birds. While this nature reserve provides for considerable public access, the routes that human visitors can take are strictly controlled. Also, there is dense tree screening around many of the lake edges. With this degree of shelter there are large areas to which birds can resort to avoid disturbance.

8..224 The proposed guided buses would run on an embankment through the midst of the Lakes area. As discussed in the last section, the works would remove a considerable amount of vegetation, although the degree of destruction would vary. It would be greatest on the stretch to the east of Holywell Ferry Road where the old tracks remain and have become very overgrown. It would be much less to the west of that point because there is an existing tarmac road. To a large measure the maintenance track would be separated from the guideways and it would run at the foot of the embankment on its

southern side. Its construction would entail the clearance of a 4m wide strip together with any necessary margin.

- 8..225 Looking first at the operations of the guided bus, the removal of any screening has the potential to disturb birds, although different species vary in their susceptibility. Regarding the buses themselves, I consider that most species would quickly adapt to them. Unlike traffic on a normal road, they would be relatively infrequent and the sound that they would individually make would vary little. In my view, the people that they would bring in would have more potential to cause disturbance because their movements would be less predictable.
- 8..226 However, controlling that would be a question of management and education, using the same means that have created the present balance between visitors and wildlife interests. I see no reason why this area should not be able to successfully absorb more visitors. Indeed, that is what this project would encourage through a combination of the request stop (initially proposed by the RSPB) and the additional access from St Ives and other places that the maintenance track would open up. In principle, this would be in accordance with countryside recreation policy.
- 8..227 Undoubtedly the greatest level of disturbance would occur during construction. The contractor who would be operating at all times under the CoCP would need to be particularly sensitive to this within this area. It is inevitable, nevertheless, that there would be a degree of disturbance, although the actual works would be largely confined to the narrow corridor of the former railway, including the land needed for the maintenance track. Most bird species would simply move to a quieter area, at least temporarily. I neither heard nor did I see any evidence on my site visits to suggest that the Lakes are in any respect at their carrying capacity or that most birds would be unable to cope in this way.
- 8..228 However, special care would need to be taken in respect of the bittern, of which there are believed to be a maximum of 3 on the Fen Drayton lakes and smew, which is also present in very small numbers; both of are listed in Annex 1 of the EU Birds Directive. During the winter months, it would be a question of avoiding carrying out the works within those areas that were known to be particularly sensitive for these species. To some degree at least, the works could be screened through the use of willow walls [4.191].
- 8..229 Regarding breeding birds, the main effect would be in terms of the loss of nesting habitat; this would be considerable and would apply along the length of the route, including the section that passes through the Lakes area. The aim throughout should be to carry out vegetation clearance when birds would be least likely to be nesting. An experienced ecologist should be on-site in known sensitive areas and where the period of active nesting could not be fully avoided. He or she would be there to ensure that no unlawful damage occurred and to advise generally on how to minimise disturbance to breeding birds [4.182].
- 8..230 Save the Lakes (StL) has proposed that the Lakes area be designated as an **SSSI** and that there should be separate consideration of a possible Special

Protection Area (SPA) designation. It is clear that this is a fine area in nature conservation terms and EN has indicated that consideration is indeed being given to a possibility of the Lakes becoming an SSSI [6.188]. To my mind, however, a decision to go ahead with the CGB would not prejudice such a designation. This would be largely on the basis of its wintering birds and, provided that the works were carefully done, I do not consider that that assemblage would be significantly affected.

- 8..231 Regarding the possibility of an SPA, I believe that the same would apply [4.189]. However, on the related point made by StL that the granting of planning permission for the CGB would be in breach of the Birds Directive [6.188, 6.189], the plain fact is that this area is not an SPA (or even a potential SPA) and neither the Directive nor UK Government policy on potential SPAs would apply. Much further work would need to be done before any such designation could be applied, if at all.
- 8..232 Larvae of **great crested newts** have been tentatively identified in one pond that would be directly affected by the works. There are nine other ponds within 500m of the Limits of Deviation containing this species with populations ranging from very low to medium. While that one pond would be lost, it would be replaced by some 12 others that would be capable in principle of supporting the species [4.192, 4.193, 6.183, 6.184]. I am satisfied that within CCC's mitigation strategy there would be the potential to provide improved habitat for this protected species. I address the matter of the licence application under Section 6 of these Conclusions.
- 8..233 Regarding **other protected species** I consider that any effects would be limited. They would include the need to close a few subsidiary badger setts and the disruption of some badger routes. [4.196, 4.197]. I am satisfied that within the new habitats that would be created as part of the mitigation/compensation strategy there would be ample potential to create favourable conditions for these species. The necessary mitigation would include the provision of mammal ledges within new culverts to aid the passage of water voles and otters [4.199].
- 8..234 Two Wildlife Sites (a CWS and a CiWS) would be particularly affected by the CGB scheme. First, the profile of **Over Cutting** would be significantly changed by the measures and great concern has been expressed about the effect on its butterfly population, notably its grizzled skippers but also some 20 other species. There are also several species of bee and wasp as well of ant and hoverfly [6.203].
- 8..235 While I was not able to visit the site during the months when butterflies are active, it is clear that conservation work in the Cutting has created an environment that is very favourable to butterflies. In particular, this has entailed the removal of much scrub on the northern, south facing, slope which has enabled herbaceous species to flourish. As a result the grizzled skipper population has grown to the extent that it is now one of the largest in the county [4.209, 6.204].
- 8..236 Under the proposed works, the Cutting base would be raised above the existing level and works would be carried out to the Cutting slopes to

stabilise them. Contrary to what was suggested in the ES it would be possible now to retain most of the valuable northern slope although the ballast which appears to support food plants for grizzled skipper caterpillars would have to be moved. CCC would re-use this within the adjacent Ecological and Landscape Compensation Area D although this has been criticised by objectors as failing to reproduce the sheltered warm habitat of the cutting base [4.210].

- 8..237 Evidence was produced at the Inquiry of a second, smaller colony of grizzled skippers at a point to the east where the Cutting is much less pronounced. This suggests that temperature of itself may not be absolutely critical for the establishment of this species [4.211]. That said, mitigation and the satisfactory re-establishment of the grizzled skipper would pose a considerable challenge and could not be guaranteed in the short-term.
- 8..238 However, I believe that there is a reasonable prospect that it could be achieved. From what was said at the Inquiry, a considerable amount is now known about the requirements of this butterfly at the different stages of its life cycle. The necessary mitigation should build on this knowledge with full involvement of local experts as well as CCC. It is likely that the re-creation of conditions that would favour the grizzled skipper would also support other butterfly species as well as other invertebrates.
- 8..239 The CiWS to be affected would be **Trumpington Cutting**. The landscape implications of the works have already been discussed. The ecological effects would be similarly severe; in particular the works would displace the birds for which the present trees provide a favourable habitat [4.202, 6.164].
- 8..240 Under the works those trees would be coppiced and supplemented by additional planting. The planting plan and the management of this area should be designed as much for its wildlife as its landscape value.
- 8..241 During the Inquiry there was some discussion about the likelihood of small animals, toads for example, becoming trapped within the guideways. This is a matter that should be investigated further as part of the Ecological Management Plan with a view to appropriate measures being taken [6.198, 7.40].
- 8..242 CCC has proposed a substantial package of mitigation that includes 16 Landscape and Ecological Compensation Areas. This would result in a net gain in habitat. It would be implemented through a detailed Ecological Management Plan [4.181, 4.182]. It seems to me that with the additional land there would be considerable scope both to restore lost biodiversity and over the longer term to create new habitats of value to a range of wildlife, including protected species.
- 8..243 In **conclusion**, the works would lead to the removal of a great deal of vegetation from these former railway routes. There would be a loss of biodiversity as a result and, in particular, a loss of nesting habitat for birds. The scheme would also affect a number of CiWS and CWS. However, no nationally or internationally designated sites would be affected. On the

basis of the strong mitigation package, and the proposed Ecological Management Plan, I conclude that the works would be acceptable in ecological terms.

- **The effects of the scheme on water resources, contaminated land and air quality**

8..244 The former St Ives railway line crosses the flood plain of the River Great Ouse and a number of other watercourses and local drains. It is a drainage sensitive area that has a history of flooding. The most severe flooding on record occurred in 1947 when train services had to be suspended. I consider that there are two main issues to be addressed. They are, first, the impact of the scheme on the flooding regime and secondly the potential risk to the scheme from future flooding [4.213].

8..245 **Impact on flooding** A flood risk assessment has been carried out in accordance with PPG25 *Development and Flood Risk*. Based on the preliminary design for the project, this concluded that, subject to proposed mitigation, there would be no adverse effect on the planning regime for the area. That conclusion has been essentially confirmed through work done by Atkins for the EA [4.215, 4.216].

8..246 The project works provide for the reinstatement of a section of embankment to the north of the Great Ouse Viaduct that was removed during the course of gravel extraction works. As it would be a replacement for what was originally there, the EA has agreed in principle. Mitigation for the loss in flood volume as well as flood protection for the populations of Fen Drayton and Fenstanton would come in the form of a line of flood culverts which would be provided beneath the southern embankment, to the immediate south of the Viaduct [4.217, 4.218].

8..247 Elsewhere, it would be the aim of detailed design work to ensure that there were no adverse impact upon current flow conditions. In line with that principle, the maintenance track would generally be at the foot of embanked sections and it would not normally impinge upon floodplain capacity. Where that were not the case, where it were required to rise up to the level of road crossings for example, additional flood culverts would be constructed to provide compensation storage. Another aim of the design work would be to minimise vulnerability to scour [4.219].

8..248 The design of the guideways would incorporate a sustainable drainage system in the form of infiltration trenches between the running tracks. There would also be balancing ponds to provide further storage and attenuation. The same SuDS principles would apply at the two Park and Ride sites where surface water run-off would be restricted to the equivalent green field run-off. Oil/petrol interceptors would be located at such sites to clean surface water prior to discharge [4.221, 4.222].

8..249 I conclude that on the basis of the present plans, allowing for designed-in mitigation, the CGB scheme would have a neutral impact on the flooding regimes of the areas through which it would pass.

- 8..250 **Flood risk and the scheme** The 1947 floods provided an extreme test for the infrastructure that the proposed CGB would re-use. There have also been lesser, though still significant, floods of a level that, reproduced in the future, would cause the closure of the St Ives Park and Ride site. Added to this there is the challenge posed by the onset of climate change which is likely to increase the risk of flooding. Over the long term, the effects could be very significant – the Foresight report on Future Flooding predicts a 2 to 4 times increase in the risk of flooding by the 2080s with specific locations experiencing changes well outside that range [4.223-4.225].
- 8..251 There have been two significant floods affecting Cambridgeshire during the last seven years. On each occasion, in the floods of both Easter 1998 and 2002/3, it is estimated that the guideways would have been flooded had they been in place. While there is no reliable data for the first event, in the latter case, the duration would have been some 3.5 days. The maintenance track would have been closed for significantly longer periods; over the last seven years, the longest period of closure would have been 66 days [4.226].
- 8..252 Recent modelling suggests that the section of the guideway between the River Great Ouse and Swavesey would begin to flood during flood events with a return period in excess of one in ten years. With climate change, the return period would become in excess of one in five years by the 2080s. The same data indicates that the St Ives Park and Ride site would begin to flood during flood events with a return period of about 25 years, again the incidence becoming greater with climate change [4.228, 4.229].
- 8..253 The implication for the CGB is that there would be times when the guideways would have to be closed and diversions put in place. This would generally affect only the section between Longstanton and St Ives. Thus, the more heavily used section – including the new settlement of Northstowe - would usually remain in use. In respect of the St Ives Park and Ride site, special procedures would be set up to ensure the safety of the car park at times of flood risk [4.234, 4.235].
- 8..254 Were flooding to become a very regular event, it could begin to affect the economic performance of the system while any period of closure could affect users in both social and economic terms. On the basis of the latest estimates, however, closure would remain a relatively rare event and the effects, though inconvenient at the time, would be short-term. The maintenance track would be closed for longer periods. However, while that would obviously affect its recreational function, except at times when the guideways themselves became flooded, it would still be possible to run the buses.
- 8..255 CCC indicates that, were the necessary approvals to be granted, it would investigate the possible scope to raise the height of the embankment over those sections that are at greatest risk of flooding. A relatively small increase in minimum guideway levels, say of 0.3m, would significantly reduce that risk [4.230]. Such works fall outside my remit. Having regard to the long term, however, this would be a prudent option for CCC to investigate. A salient factor would be the implications for possible flood risk

elsewhere and whether such risk could be mitigated.

8..256 **Contaminated land** From the ES, I am satisfied that with mitigation, any potential adverse effects arising from ground contamination would be reduced to a negligible level. On the same basis, the scheme itself would have a negligible impact upon the quality of ground resources along the route [4.236, 4.237].

8..257 **Air Quality** It would be a condition of access to the guideways that vehicles meet Euro IV vehicle emission standards. Thus, the individual vehicles using the system would be significantly cleaner than earlier generations of buses. In principle, and compared to those older buses, that should have benefits for human health, particularly within concentrated urban areas, such as Cambridge City Centre where nitrogen dioxide levels currently exceed the objective set nationally [4.238, 4.239].

- **The impact of the scheme on public health and security including any safety implications of constructing the maintenance track at a different level to that of the guideway**

8..258 The introduction of the CGB would be based on many millions of miles of safe operation in other cities. This has demonstrated that the guided bus is an inherently safe system. Its introduction would significantly increase the number and proportion of trips by public transport in the Huntingdon to Cambridgeshire corridor and that in itself would reduce accidents. But also by using a dedicated highway the number of potential conflicts between buses and other traffic would be reduced and accident rates could be expected to be reduced further. The TA suggests that the mode shift from the car to the guided bus might prevent up to 80 accidents over a 30 year period [4.77].

8..259 While many details would need to be resolved at the design stage the main safety features of the system are clear. Thus, appropriate speed limits would be set at junctions and warning notices would be set up at public right of way crossings [4.73, 4.103]. The safety of the system would be certified by HMRI who would be presented with a safety procedures case and operating regime. Operational safety procedures would be established with the emergency services [4.73, 4.74].

8..260 I am satisfied that the maintenance track would prove an effective way of reaching a stationary vehicle in the event of any emergency. This would run directly alongside the guideway tracks or only a short way from them. The detailed procedures to be established would need to take into account those situations where the track would be vertically separated from the guideways, in other words along those embanked sections of the route where it would run at the foot of the embankment. As well as being below the guideways, in some such places the track would be subject to occasional flooding placing it temporarily out of action.

8..261 From my site inspections, I do not believe that the separation of the track from the guideways would necessarily present an access problem. It should be possible to frame procedures that would cope with a wide variety of

circumstances. In any case, however, the guideways themselves would normally be available as a second possible access route and one that would need to be used were the maintenance track to be flooded.

8..262 HMRI does not favour the fencing off of the maintenance track from the guideways. I agree for the reasons that they have given [4.76]. It seems to me that what is planned should be a perfectly safe arrangement. Given the good visibility along this largely straight former railway alignment there would be plenty of warning of on-coming buses and the maintenance track would be wide enough for users, including horse riders on the northern section, to keep a reasonable distance from the guideways.

8..263 A number of fears have been expressed about the possibility of guideway wheels breaking off. Minimising this would be a matter both of careful detailed design, again, learning from the experience of others, and of careful driver training. Measures such as CCTV and passenger information at the guideway stops would enhance personal security [4.78, 4.81]

8..264 I conclude that with the proposed safety measures in place the CGB would be a safe and secure system.

6. The measures proposed by CCC for mitigating any adverse impacts of the scheme, including:

- **The proposed Code of Construction Practice**

8..265 A draft Code of Construction Practice (CoCP) forms part of the Order documents. It covers a range of environmental and safety issues and it seeks to limit the inevitable impacts arising from construction activities; to that end it sets out hours of working and numerous other working practices. It would be developed in consultation with the relevant authorities and included within the construction contract. In my view, it forms the basis for a comprehensive document aimed at limiting the construction impacts of this substantial project [4.59].

- **Any compensatory measures proposed for residents and businesses affected by the scheme**

8..266 No specific compensation measures are proposed other than in connection with those land and property objectors to whom the statutory compensation code would apply.

- **Any measures to avoid, reduce or remedy any impacts of the scheme upon protected species**

8..267 In Section 5, I draw attention to the possible presence of great crested newts in one pond that would be directly affected by the works and to their known presence in other ponds within 500m of the Limits of Deviation. The proposed mitigation would involve the temporary exclusion of newts from working areas, the relocation of individuals to suitable habitats and a general watching brief. As described below, a licence application has been made to DEFRA.

8..268 I address the likely impacts on other protected species, as well as mitigation, in Section 5.

- **Arrangements for obtaining any necessary licences in relation to the disturbance of protected species**

8..269 CCC has submitted a licence application to DEFRA in respect of great crested newts. In addition to pronouncing itself satisfied with the proposed mitigation and monitoring, EN has indicated its agreement with the assessment of licence requirements. On that basis, I am satisfied that there is a reasonable prospect that the licence would be granted.

8..270 A badger licence would also be required. EN is satisfied with CCC's proposals in connection with badgers and with the assessment of licence requirements. Again, I am satisfied that there is a reasonable prospect that such a licence would be granted.

- **Any measures to avoid, reduce or remedy any other significant adverse environmental impacts of the scheme**

8..271 I have addressed the mitigation of other environmental impacts in Section 5.

- **Whether, and if so to what extent, any adverse environmental impacts would still remain after the proposed mitigation measures had been put in place**

8..272 In Section 5, I concluded that the CGB would have a significant adverse environmental effect in both landscape and ecological impact terms. That would arise from the inevitable destruction of vegetation along the route of the guideways. It would affect the northern section of the route in particular but also Trumpington Cutting in the south. The proposed mitigation and compensation scheme is comprehensive and well thought-out; subject to its fine details it is likely to be effective. But the scale, quality and diversity of what would have been lost could not be replaced overnight and it would be some years before the replacement landscapes and habitats could provide an effective substitute.

8..273 Other parts of the proposed development would themselves look quite raw initially. That could be said of the two Park and Ride sites in particular. With their large areas of car parking and lighting they would appear prominent from nearby properties. While the sites would be comprehensively landscaped, again this planting would take time to mature.

8..274 Regarding other impacts, I believe that a number of homes in Histon would suffer some loss of privacy arising from the passage of double-decker buses. While this would be mitigated to some extent through the provision of the proposed acoustic fence and the landscaping behind it, again that landscaping would take some time to become effective. In the short term, the impact would be adverse.

7. The conditions proposed to be applied to deemed planning permission

for the scheme, if given, and in particular whether those conditions meet the tests in DoE Circular 11/95 of being necessary, relevant, enforceable, precise and reasonable.

- 8..275 I have considered the ten conditions contained within the draft Order in the light of the discussion at the Inquiry and the tests set out in paragraph 14 of Circular 11/95. They had previously been discussed with the local planning authorities.
- 8..276 I accept that all the conditions are necessary, relevant, enforceable and reasonable. Arising from the discussion at the Inquiry, however, I am recommending some small amendments to ensure that all rights of way users, including cyclists and equestrians, are covered. This is in the interests of precision.
- 8..277 The proposed acoustic fencing to Pease Way, Melvin Way and St Audrey's Close, and at Villa Way, Histon is covered by Condition 3 and Condition 8. The former covers design and I take this to encompass acoustic performance as well as simply appearance. Further to the discussion at the Inquiry, I have decided not to recommend a performance standard, as the WHO guidelines on sleep disturbance are not requirements [8.187]. They would be a reasonable target to aim for, however, and I would expect the fence specification to take them into account.
- 8..278 I do not recommend that the three conditions suggested by CCiC be imposed [6.14]. They would not meet the tests set by the Circular. In any case, the position at the end of the Inquiry essentially was that the points covered are agreed in principle [4.134-4.137].
- 8..279 Regarding the representations of Cambridge Cycling Campaign on the possibility that a smooth tarmac type surface might be provided on the maintenance tracks, possibly across part of the width of the track, this is a detail that could be considered as part of Condition 3(a) (iv) [6.137; 7.38].
- 8..280 Should the Secretary of State be minded to grant deemed planning permission, I recommend that this be on the basis of the ten conditions as I have amended them. They are set out in paragraph 8.294, together with any necessary further explanation.

8. The adequacy of the Environmental Statement submitted with the application for the TWA Order and whether the statutory procedural requirements have been complied with.

- 8..281 In paragraphs 3.8-3.13 of my report, I addressed the objections made prior to the Inquiry concerning the adequacy of the ES. That issue was aired at the Pre-Inquiry Meeting and CCC together with StI and the Wildlife Trusts made further statements. CCC went on to submit some further reports covering birds and a range of other species. That information was advertised in accordance with Rule 17(4) of the Transport and Works (Applications and Objections Procedure) Rules 2000. Having studied this additional information, EN withdrew its objection.

8..282 In opening the Inquiry, I ruled that on the basis of what I had read and heard at that time there were insufficient grounds for me to conclude that the ES was inadequate. In the light of all the evidence that I have seen and heard since, I remain of that view. While the parties differ on the interpretation that has been made of that information, in my view the necessary information is there, taking into account the additional material, particularly that on birds. Also the likely significant effects have been identified. Collectively the material constitutes the ES for the purposes of the application. I have taken it fully into account in reaching my conclusions and recommendation.

8..283 At the close of Inquiry it was confirmed on behalf of CCC that the statutory procedural requirements had been complied with.

9. CCC's proposed arrangements for protecting the interests of statutory undertakers and whether they are sufficient to enable those undertakings to be carried out effectively, safely and in compliance with any statutory and contractual obligations.

8..284 There has been liaison with all the statutory undertakers. All are content with the proposals and appropriate arrangements have been put in place [4.60-4.64].

10. Whether the proposals are reasonably capable of attracting the necessary funding

8..285 In December 2003, Government funding for the 'Cambridge to Huntingdon Rapid Transit' was announced. The agreed contribution, subject to the outcome of this Inquiry, was £65 million towards the then estimated cost of £73.8 million. It was expected that the remaining costs would be secured through Section 106 Agreements with developers.

8..286 The total cost has since been adjusted to £86.4 million. The increase has come about in part through the addition of two branches to the guideway, the Arbury Park link, and the link to Addenbrooke's Hospital involving the need to bridge the main railway line. It is likely that both would be significant sources of demand for CGB services, Addenbrooke's particularly so. Other reasons for the increase include the costs of accommodating Network Rail's requirements in the Hills Road bridge area and widening the northern section of the maintenance track so that it could function additionally as a bridleway.

8..287 At the Inquiry, there was no substantial challenge to this revised estimate and nothing emerged to cause me to question its accuracy.

8..288 As far as the £21 million funding gap is concerned, it was said at the Inquiry that CCC expects to receive funding contributions in connection with at least four developments – Arbury Park, the Cambridge Station area, Clay Farm and the Addenbrooke's Hospital development. In its evidence, CCC also raises the possibility of some additional DfT funding and mentions the scope that local authorities have to borrow to cover short-term deficits [4.130].

8..289 From the evidence, it seems to me that there are a number of potential sources of funding to cover the remainder of the capital costs involved. In my view, the proposals are reasonably capable of attracting the necessary funding.

Other Considerations

8..290 **Consultation** Many objectors criticise the extent and nature of the public consultation in respect of the CGB proposals. That criticism extends to previous consultations too, in respect of CHUMMS in particular. There is a feeling among some that only sub-optimal rail options have been put forward and that the guided bus proposals themselves do not reflect what was originally envisaged in the CHUMMS study. In particular, there is no direct link to Cambridge Railway Station. On this last point, however, the Preferred Plan for CHUMMS dated July 2001 clearly shows the Chesterton to Cambridge Railway Station link as a long term development dependent on the remodelling of the station and other developments.

8..291 It seems to me that the present detailed proposals have been the subject of significant consultation. In any event, the Public Inquiry, which extended over 31 days, provided a major opportunity for groups and individuals to have their objections heard and for questions to be put to CCC's witnesses.

8..292 **Patronage** SITC and StL regard the section of the CGB to the west of Longstanton as the least beneficial part of the route in patronage terms but the most damaging in environmental terms [6.23, 6.191]. The suggestion is that the CGB should stop at Northstowe. As CCC points out, however, 20% of patronage at 2016 would involve origins or destinations to the west of Swavesey [7.12]. There would be no case, in my view to reduce the scheme. St Ives and Huntingdon would be important origins/destinations as would be Huntingdon Railway Station and Hinchingsbrooke Hospital.

8..293 CAST.IRON claims that the attractiveness of the CGB would diminish after five years with the opening of the upgraded A14 [6.56]. That is a potential challenge that the CGB would face; for those with a choice of transport, the car option would be likely to become relatively easier than before. However, by that time the system would have become very well established and this would be likely, in my view, to limit any substantial switch to the car. That would depend upon it having maintained its quality. Also, much would depend upon developments in terms of demand management, especially within Cambridge. For people wishing to travel into Cambridge, the effect of such changes might be to reduce the attraction of using a car.

Conditions

8..294 Further to paragraphs 8.275-8.280, I recommend that the following conditions be attached to the deemed planning permission, if granted:

1. Time Limits

The development shall begin within five years from the date when the Order comes into force.

This is a standard requirement that accords with Section 91 of the Town and Country Planning Act 1991.

2. Contaminated Land

- (a) *The development shall not begin until the applicant has secured the implementation of a programme to deal with contamination, including gaseous and non-gaseous contamination of soil and groundwater, in accordance with a written investigation report and monitoring scheme which has been submitted to and approved in writing by the County Planning Authority;*
- (b) *The development shall be carried out in accordance with the scheme as approved or, if the County Planning Authority gives prior written approval to any amendment or alteration, subject to such amendment or alteration.*

The ES identified several features along the route where potential contamination impacts might arise. Given the former use of this land, this condition is clearly needed so as to secure any necessary remedial action.

3. Design and external appearance

- (a) *Work shall not begin on each of the following items of development until in each case prior written approval of their design and external appearance has been obtained from the County Planning Authority:*
 - (i) *any building or bus stop;*
 - (ii) *bridges and associated structures;*
 - (iii) *the formation, laying out or alteration of any means of access to any highway used by the vehicular traffic;*
 - (iv) *the formation, laying out or alteration of any pedestrian, cycle or equestrian route (so far as provided for by the development);*
 - (v) *permanent fencing and any acoustic fencing associated with the busway system;*
 - (vi) *Park and Ride sites, including finished ground levels for sites located within the indicative floodplain.*
- (b) *The works shall be carried out in accordance with the approval given by the County Planning Authority or, if that authority gives prior written approval to any amendment or alteration, subject to such amendment or alteration.*

This condition is required so as to ensure the satisfactory appearance and

functioning of the development, in the interests of highway safety, and in the case of (v) to enable noise attenuation.

4. Landscaping

- (a) *No development shall begin on the site of any work until the following have been submitted to and approved in writing by the County Planning Authority:*
 - (i) *A scheme for the landscaping of the site of that work, including the maintenance of such landscaping;*
 - (ii) *Details of the specification and position of any fencing and any other measures to be taken to protect and maintain retained trees and landscaping from damage before or during the course of the works.*
- (b) *The landscaping scheme for any work shall be carried out before or not later than 12 months from the date of the works authorised by the Order being brought into operation;*
- (c) *Any trees or shrubs planted in accordance with this condition which are removed, die, become seriously damaged, or become seriously diseased within five years of planting shall be replaced within the next planting season. Replacements must be of a similar size and species to those originally required to be planted;*
- (d) *The works shall be carried out in accordance with the approval given by the County Planning Authority or, if that authority gives prior written approval to any amendment or alteration, subject to such amendment or alteration.*

This condition is needed to secure the comprehensive, high quality, landscaping of the development and to ensure that the landscaping is maintained.

5. Lighting

- (a) *Details of the lighting system and switching arrangements proposed at all stops and along the off-highway sections of the route and to new and replacement footpaths, cycleways and bridleways shall be submitted to and approved in writing by the County Planning Authority before that part of the development is brought into operation;*
- (b) *The works shall be carried out in accordance with the approval given by the County Planning Authority or, if that authority gives prior written approval to any amendment or alteration, subject to such amendment or alteration.*

A condition on lighting is needed in the interests of safety of users and visual and residential amenity.

6. Archaeology

- (a) *No development shall take place until the applicant has secured the implementation of a programme of archaeological work in accordance with a written scheme of investigation which has been submitted to and approved in writing by the County Planning Authority;*
- (b) *The scheme will provide for:*
 - (i) *archaeological investigation of all balancing ponds;*
 - (ii) *an archaeological report with recommendations on the protection, recording or preservation of items of archaeological interest;*
 - (iii) *an archaeological watching brief along sections of the route identified as having archaeological potential;*
 - (iv) *the submission of the final report on the findings and conclusions of the studies.*
- (c) *The development shall be carried out in accordance with the scheme as approved or, if the County Planning Authority gives prior written approval to any amendment or alteration, subject to such amendment or alteration.*

This condition is needed to safeguard the cultural heritage.

7. Drainage

- (a) *No development shall begin until the applicant has secured the implementation of arrangements for the disposal of foul and surface water during construction and operation in accordance with a scheme which has been submitted to and approved in writing by the County Planning Authority;*
- (b) *The development shall be carried out in accordance with the scheme as approved or, if the County Planning Authority gives prior written approval to any amendment or alteration, subject to such amendment or alteration.*

This condition seeks to prevent flooding and pollution of the water environment in the interests of amenity.

8. Operational Noise

The scheduled works listed below shall be constructed to incorporate the following elements, each of which shall, in relation to the work in question, be completed before that work is brought into operation and then maintained thereafter whilst the work remains in operation:

Work No.8 A noise barrier along the north-eastern edge of the

guideway from Girton Crossing to approximately chainage 16+000 at the rear of the properties in Pease Way, Melvin Way and St Audrey's Close;

Work No.8 A noise barrier along the southern edge of the guideway from approximately chainage 17+000 to chainage 17+500 at the rear of properties in Villa Way.

This condition seeks to mitigate potential for increased noise intrusion in the interests of residential amenity.

9. Ecological Management Plan

- (a) The development shall not begin until an ecological management and monitoring scheme has been submitted to and approved by the County Planning Authority. That scheme shall generally accord with and give effect to the principles for such a plan proposed in the Environmental Statement submitted with the application for the Order;*
- (b) The development shall be carried out in accordance with the scheme as approved or, if the County Planning Authority gives prior written approval to any amendments or alteration, subject to such amendment or alteration.*

This condition seeks to mitigate the impact of the development on the ecology of the locality in the interests of nature conservation.

10. Code of construction practice

- (a) The development shall not begin until a code of construction practice has been submitted to and approved by the County Planning Authority. That code shall generally accord with and give effect to the principles for such a plan proposed in the Environmental Statement submitted with the application for the Order;*
- (b) The development shall be carried out in accordance with the code as approved or, if the County Planning Authority gives prior written approval to any amendment or alteration, subject to such amendment or alteration.*

This condition seeks to help protect the environment and preserve local amenity.

Overall Conclusions

8..295 In my view, this development would fully accord with the aim of integrating land use and transport planning making it consistent with planning policies at the national, regional and local levels. It would also accord with the recommendations of CHUMMS as one part of a threefold strategy to address

the transport needs of the Cambridge to Huntingdon corridor and it is consistent with the strategies of the Cambridgeshire Local Transport Plan 2004-2011.


- 8..296 Taken as a package, with all of the proposed quality measures in place, I believe that the CGB would be an attractive and reliable public transport service that, for many, would form a genuine alternative to the car. From the evidence, there is every likelihood that it would attract the predicted amount of custom, amounting to 20,000 trips per day by 2016. But there would be the potential for it to do even better subject to the appropriate policies being applied. These would include further demand management and as far as Cambridge City is concerned, there is already a strong commitment to that.
- 8..297 The scheme would accord with the broad objectives set out in CCC's case [4.18]. On the first, it would extend transport choice within the corridor providing for journey times that would be competitive in many instances with those of a journey by car. On the second, it would directly serve a number of major existing and planned developments. By being well integrated with those developments, in particular, Northstowe and Addenbrooke's Hospital, it would be likely to be well used. By reducing dependence on the car it would contribute to the aims of sustainable development.
- 8..298 The third objective is concerned with improving access to public transport where there is poor provision. That would apply in particular to journeys to and from Cambridge's northern fringe which are poorly connected to Huntingdon and St Ives and to other settlements in that corridor. On the fourth objective of integration, the CGB would provide effective, frequent connections to the main railway system at both Cambridge and Huntingdon. There would be significant scope too for integration with conventional bus services while the proposed Park and Ride sites would encourage combined journeys by car/bus. While many people would be within walking distance of a CGB stop, as I discuss earlier there would be significant opportunities to encourage cycling.
- 8..299 The CGB would encourage social inclusion by opening up high speed travel opportunities to a range of destinations. As I conclude in my report, however, its full effectiveness here would depend on the success in encouraging appropriate feeder services. On the final objective, safety, I believe that the CGB would in itself be a particularly safe form of transport. By forming an alternative to the car for many people, it would be likely to reduce significantly the number of deaths and injuries in the corridor.
- 8..300 There has, of course, been a very considerable amount of opposition to this development. The largest single concern has been in respect of the loss of an option to resurrect a rail service on the Cambridge to St Ives line. It is an understandable one, given the fondness that many people have for the train, and the real practical benefits of train services in many areas. In the circumstances of this case, however, I have concluded that, for a range of reasons, a restored train service would perform significantly less well than would the proposed CGB. I have taken into account the potential network

benefits but there has been insufficient evidence to show that those benefits would outweigh the likely substantial costs.

- 8..301 The attraction of the CGB for this area would be in its flexibility and its frequency. I am satisfied that, with the planned bus priority measures in place, there would be an effective, reasonably free flowing route through Cambridge City connecting the two guideway sections. The planned on-street measures on the Huntingdon to St Ives section too would contribute significantly to the effectiveness of the system. My main reservation concerns the constraint on through journeys between the northern and southern sections of the guideway. Genuine through services would be possible, but they would not necessarily be at the 'turn up and go' frequencies planned for the route as a whole.
- 8..302 In terms of the environmental impacts, for a scheme of this scale, relatively few properties would be directly affected. I address the impacts on these in my report. However, there would be a considerable impact in landscape and ecological terms along much of the St Ives to Cambridge corridor, and in particular at Fen Drayton Lakes, Over Cutting and Trumpington Cutting. I believe that those impacts could be mitigated over time through CCC's package of mitigation and compensation measures. I address the question of the flooding regime and the potential impacts in respect of the CGB. I also comment on a number of other points as requested by the Secretary of State in his Statement of Matters. My conclusions make a number of references to the 'future proofing' questions that I posed to the Inquiry [3.3-3.7, 8.78-8.82, 8.98, 8.102, 8.119].
- 8..303 I have had regard to all of the other matters raised both at the Inquiry and in the written representations but they do not alter the conclusions I have reached. They are that the scheme would meet its objectives and that the benefits that it would bring to the Huntingdon to Cambridge Corridor would outweigh the disbenefits. I propose to recommend that Cambridgeshire County Council be granted the powers necessary for the Cambridgeshire Guided Busway to proceed.

9.RECOMMENDATIONS

- 9..1 I recommend that the Cambridgeshire Guided Busway Order as set out in the draft Order dated 19 February 2004 and attached as Document CCC.A2 be modified as set out in attached Document CCC.B270 and that the Order so modified be made.
- 9..2 I recommend that planning permission be granted within the various limits provided for in the draft Order and subject to the conditions set out in paragraph 8.294 of this report.

A handwritten signature in black ink that reads "Chris Gossop". The signature is written in a cursive, slightly slanted style.

Chris Gossop
INSPECTOR