steer davies gleave

Sustainable Transport Study for New Developments

Stage 2: Recommendations Report
September 2017

South Oxfordshire District Council

Our ref: 23007101

steer davies gleave

Sustainable Transport Study for New Developments

Stage 2: Recommendations Report
September 2017

South Oxfordshire District Council

Our ref: 23007101

Prepared by:

Steer Davies Gleave
28-32 Upper Ground
London SE1 9PD

+44 20 7910 5000
www.steerdaviesgleave.com

Prepared for:

South Oxfordshire District Council
135 Eastern Avenue
Milton Park
Milton
OX14 4SB

Contents

Figures

Tables

Appendices

Executive summary

In the context of this Sustainable Transport Study, 'sustainable transport' means infrastructure, services, initiatives and policy relating to walking, cycling, public transport, and new technologies relating to urban and 'intelligent mobility'.

Overview of the Sustainable Transport Study

This report is the Stage 2 report of the Sustainable Transport Study for South Oxfordshire District Council. Steer Davies Gleave was commissioned in early 2017 to support South Oxfordshire District Council with the development of a Sustainable Transport Study, with the purpose of the study being to identify the sustainable transport schemes that would support delivery of the proposed growth locations in South Oxfordshire outlined in the Council's emerging Local Plan.

The Stage 1 report [INSERT LINK] presents the findings from the analysis undertaken to define the challenges and opportunities for sustainable travel at each of the proposed growth locations within the scope of this study (17 in total, including additional growth at Didcot Garden Town, the strategic growth sites at Chalgrove and Culham, the regeneration growth site at Berinsfield, and local growth at Wallingford, Thame and Henley-on-Thames).

This Stage 2 report outlines the process taken to identify and assess sustainable transport schemes to address the challenges for instilling a culture of sustainable travel and growing sustainable travel mode share in the proposed growth locations.

The Sustainable Transport Study is not South Oxfordshire's District Council's strategy for sustainable transport across the district; it is focused on the sustainable transport connections needed now or in the near future to support the travel needs of existing and future residents in the proposed growth locations. The schemes identified and recommended in this report do not form an exhaustive list of all the sustainable transport schemes which will be brought forward, considered or supported by South Oxfordshire District Council and its partners within the Local Plan period. The Council will consider supporting other schemes not considered through this process or not shortlisted during this study as part of the normal scheme planning and delivery process, as appropriate in the future.

The process for identifying and assessing sustainable transport schemes

The process used to identify, assess and shortlist the sustainable transport schemes considered through the course of this study is consistent with Department for Transport (DfT) appraisal processes. When the schemes recommended in this report are brought forward, it will be in line with a recognised, robust process and support any bids for central government or Local Enterprise Partnership funding.

Schemes were identified in response to the site-specific challenges evidenced through Stage 1, in consultation with South Oxfordshire District Council, Oxfordshire County Council, and other key stakeholders. Three categories of schemes were recommended for further consideration:

1. **Design and development principles**: non-scheme specific principles which should be incorporated into masterplans for new developments.
2. **Enablers**: policies and actions which should be considered by South Oxfordshire District Council and its partners now in order to be well-placed to take advantage of future transport trends and technologies.

3. **New or enhanced infrastructure or services:** e.g. cycling infrastructure improvement schemes and new bus services. For these schemes, a minimum of a route (from, to, and any significant intermediate destinations) and mode (cycling, walking, bus or other) have been identified.

The longlist developed comprised 63 schemes across the three categories. An assessment framework, based on DfT's Early Assessment and Sifting Tool (EAST) was developed to shortlist schemes. This assessment framework allowed consideration of the extent to which the identified scheme met site-specific or district-wide challenges; whether the scheme complemented or aligned with local policy objectives; the indicative cost and value for money; and other deliverability criteria.

Using the assessment framework, and in consultation with South Oxfordshire District Council, partners, and key stakeholders, schemes were shortlisted and recommended for further consideration, or not shortlisted.

The schemes recommended for further consideration

A total of 43 schemes have been recommended for further consideration. This comprises:

- 10 design and development principles
- 8 enablers
- 6 bus schemes
- 9 cycling schemes
- 5 rail schemes
- 3 shared mobility schemes
- 2 Travel Demand Management schemes

An outline implementation plan for the shortlisted infrastructure schemes has been developed and it is recommended that these are added to the South Oxfordshire Infrastructure Delivery Plan as supporting the growth proposed within the South Oxfordshire Local Plan, 2033. It is expected that many of these schemes will then attract developer funding to assist their delivery, although it should be noted that other funding sources will also be required. Further detail on the schemes and expected funding sources is given in sections 6 and 7 of this report.

1 Introduction

South Oxfordshire's Local Plan

1.1 In April 2014, the councils across Oxfordshire published a Strategic Housing Market Assessment (SHMA[1]) which identified housing that was needed beyond that planned in South Oxfordshire District Council's adopted 2012 Core Strategy, leading to the development of a new statutory Local Plan for the District.

1.2 Following publication of the SHMA, Oxford City Council also indicated that they would have difficulty in meeting their own SHMA-identified housing need within the city boundary and therefore asked Oxfordshire's districts to accommodate some of their 'unmet need' under 'Duty to Cooperate' obligations.

1.3 South Oxfordshire District Council (SODC), therefore, began work on its new Local Plan in 2014 to identify how additional growth could be planned sustainably and in the most advantageous way. Consultation on the Second Preferred Options document took place between March and May 2017 and the final public consultation will take place in October, ahead of submission of the Local Plan and associated evidence studies to the Planning Inspectorate.

The Sustainable Transport Study

1.4 There are several ongoing studies to enhance the evidence base to support the emerging Local Plan 2033. This Sustainable Transport Study forms one element of the evidence base.

1.5 The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these should be applied. It identifies the requirement to consider how the travel and transport impact of significant new development can be mitigated and minimised.

> *"Plans and decisions should ensure developments that generate significant movement are located where the need to travel will be minimised and the use of sustainable transport modes can be maximised. However this needs to take account of policies set out elsewhere [in the Framework], particularly in rural areas."* (NPPF, Section 4, Paragraph 14)

[1] The National Planning Policy Framework (NPPF) placed a clear obligation on local planning authorities to objectively assess the need for new housing in their area.

1.6 The Department for Communities and Local Government's (DCLG's) Planning Practice Guidance on Local Plans includes guidance as to what a transport evidence base relating to the development of a Local Plan should comprise. With respect to sustainable travel, paragraph 002 of the guidance (reference ID 54-002-20141010) states that the evidence base "should identify the opportunities for encouraging a shift to more sustainable transport usage" and that a robust evidence base will, *"establish evidence that may be useful in:*

- *improving the sustainability of transport provision*
- *enhancing accessibility*
- *creating choice amongst different modes of transport*
- *improving health and well-being*
- *supporting economic vitality*
- *improving public understanding of the transport implications of development*
- *enabling other highway and transport authorities / service providers to support and deliver the transport infrastructure that conforms to the Local Plan*
- *supporting local shops and the high street."*

1.7 The outputs from this Sustainable Transport Study therefore form part of the evidence base for South Oxfordshire's Local Plan. The purpose of the Sustainable Transport Study is to build an understanding of the implications of new development for sustainable transport across South Oxfordshire district, identifying and evidencing the need for new and / or enhanced sustainable transport infrastructure and services.

The principal objective of the Sustainable Transport Study is to identify a prioritised list of sustainable transport improvements / schemes to support delivery of each of the proposed growth sites identified in the emerging Local Plan 2033.

Proposed growth areas considered for the purposes of this Study

1.8 The map on the following page shows the distribution of the sites that are being considered for housing development as part of the Local Plan. The Sustainable Transport Study considers the implications of growth at those sites, in the context of provision for sustainable transport. The proposed growth areas and the type of growth proposed at those sites is summarised in Table 1.1.

Table 1.1: Proposed growth areas and type of growth proposed

Type of growth proposed	Proposed growth area(s)
Garden Town	Didcot
Local	Benson, Chinnor, Cholsey, Crowmarsh Gifford, Goring, Henley-on-Thames, Nettlebed, Sonning Common, Thame, Wallingford, Watlington and Woodcote
Regeneration	Berinsfield
Strategic	Chalgrove, Culham and Wheatley

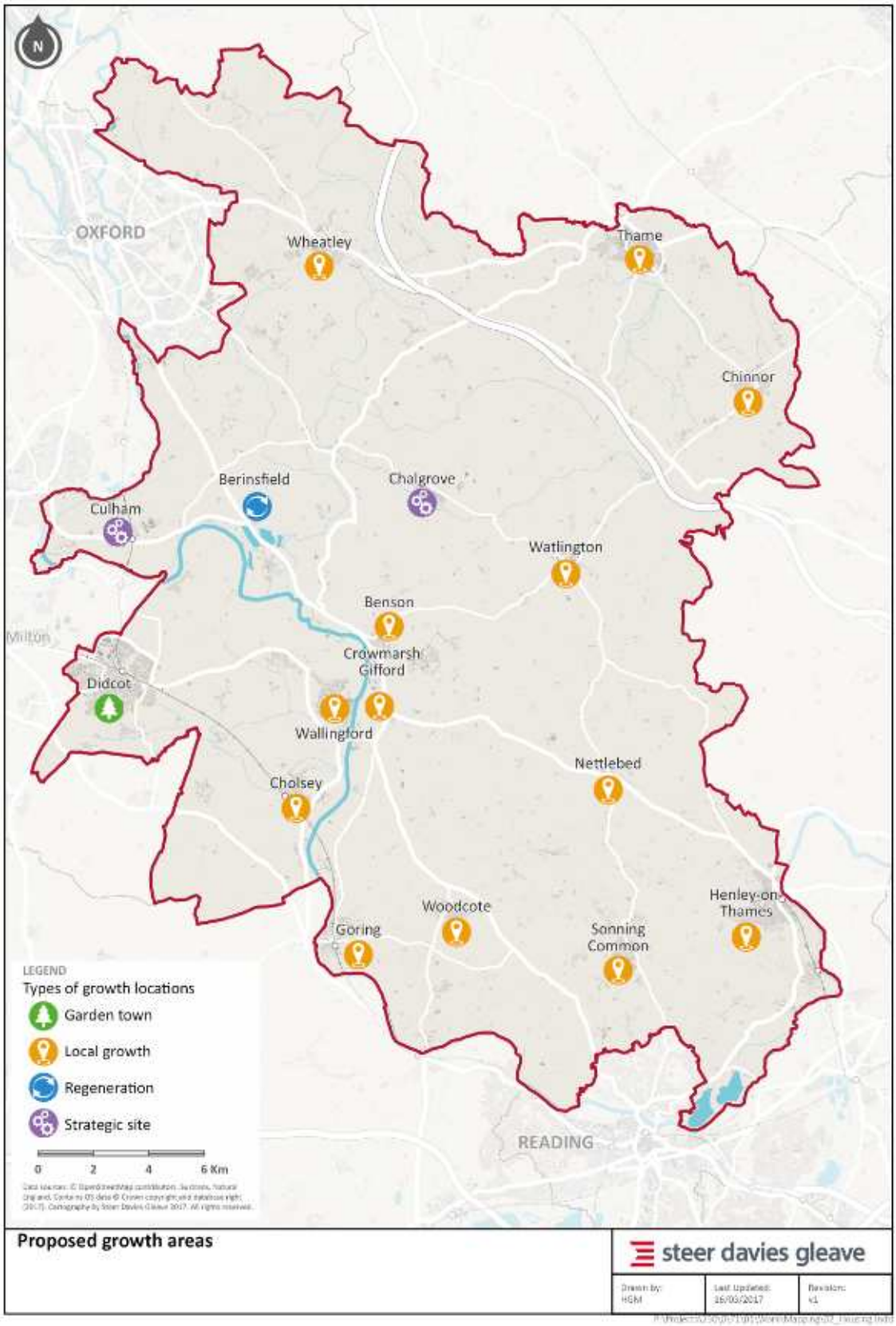
Didcot Garden Town

1.9 In December 2015, the Government announced that Didcot would become a "Garden Town" delivering 15,050 new homes and 20,000 high-tech jobs in the greater Didcot and Science Vale area, which spans both South Oxfordshire and Vale of White Horse District Councils. Of the 15,050 homes identified for delivery as part of Didcot Garden Town, 6,500 of those were identified in South Oxfordshire's 2012 Core Strategy and, therefore, for delivery within the South Oxfordshire District Council boundary.

1.10 South Oxfordshire and Vale of White Horse District Councils are working together with Oxfordshire County Council to shape the growth already identified through the South Oxfordshire and Vale of White Horse planning processes, and in June and July 2017 the Councils consulted on a proposed delivery plan for Didcot Garden Town. This delivery plan sets out the vision for Didcot Garden Town and the infrastructure needed to deliver it, including transport infrastructure.

1.11 The role of this Sustainable Transport Study is to be cognisant of the plans for Didcot Garden Town and to ensure those plans are reflected and linked to in the new schemes proposed by this study. However, it is recognised that this study is focused on reviewing sustainable transport schemes that most support new development proposed within the new South Oxfordshire Local Plan, while the Garden Town takes into account wider growth and associated infrastructure across the Didcot area in both South Oxfordshire and Vale of White Horse.

Figure 1.1: Proposed growth areas and type of growth proposed



This report

1.12 Steer Davies Gleave has been commissioned to support South Oxfordshire District Council with the Sustainable Transport Study. The Study comprises two stages, with the first focusing on existing use and quality of the sustainable transport network and existing travel patterns, and the implications of the proposed growth for sustainable transport. The first stage of the Study was completed in April 2017 and the report is available online, as part of the published evidence base for the emerging Local Plan.

1.13 The second stage of the Study, of which this report is the main output, identifies the nature of the new and / or enhanced sustainable transport infrastructure, services and supporting policies recommended as a response to the proposed growth across the district.

1.14 The remainder of this report is structured as follows:

- Section 2 provides an overview of the process taken to identify and sift schemes, and shows how this process aligns with the Department for Transport's (DfT's) Transport Appraisal process.
- Section 3 details the process of scheme identification, assessment and shortlisting.
- Section 4 presents the recommended design and development principles.
- Section 5 shows the recommended enablers (enabling policies and actions which are recommended for South Oxfordshire District Council and partners to help take advantage of future transport trends and technologies).
- Section 6 shows the new or enhanced infrastructure or services schemes recommended for further consideration.
- Section 7 presents a recommended implementation plan, showing the indicative phasing of the recommended schemes over the Local Plan period, to 2033.

2 Overview of the scheme identification and assessment process

2.1 The Department for Transport's (DfT's) *Transport Analysis Guidance: The Transport Appraisal Process* (2014)[2] outlines three stages in the Transport Appraisal process. These are:

- **Stage 1 – Option Development**. This involves identifying the need for intervention and developing options to address a clear set of objectives which express desired outcomes. These are then sifted for the better performing options to be taken on to further detailed appraisal (and funding bids, where appropriate) in Stage 2.
- **Stage 2 – Further Appraisal** of a small number of better performing options to obtain sufficient information to enable decision-makers to make a rational and auditable decision about whether or not to proceed with intervention. The focus of analysis is on estimating the likely performance and impact of intervention(s) in sufficient detail.
- **Stage 3 – Implementation, Monitoring and Evaluation.**

2.2 This Sustainable Transport Study aligns with Stage 1 of the DfT's Transport Appraisal process with regards to the identification of individual schemes and policy options to address the sustainable transport challenges and opportunities associated with the proposed growth in South Oxfordshire during the Local Plan period.

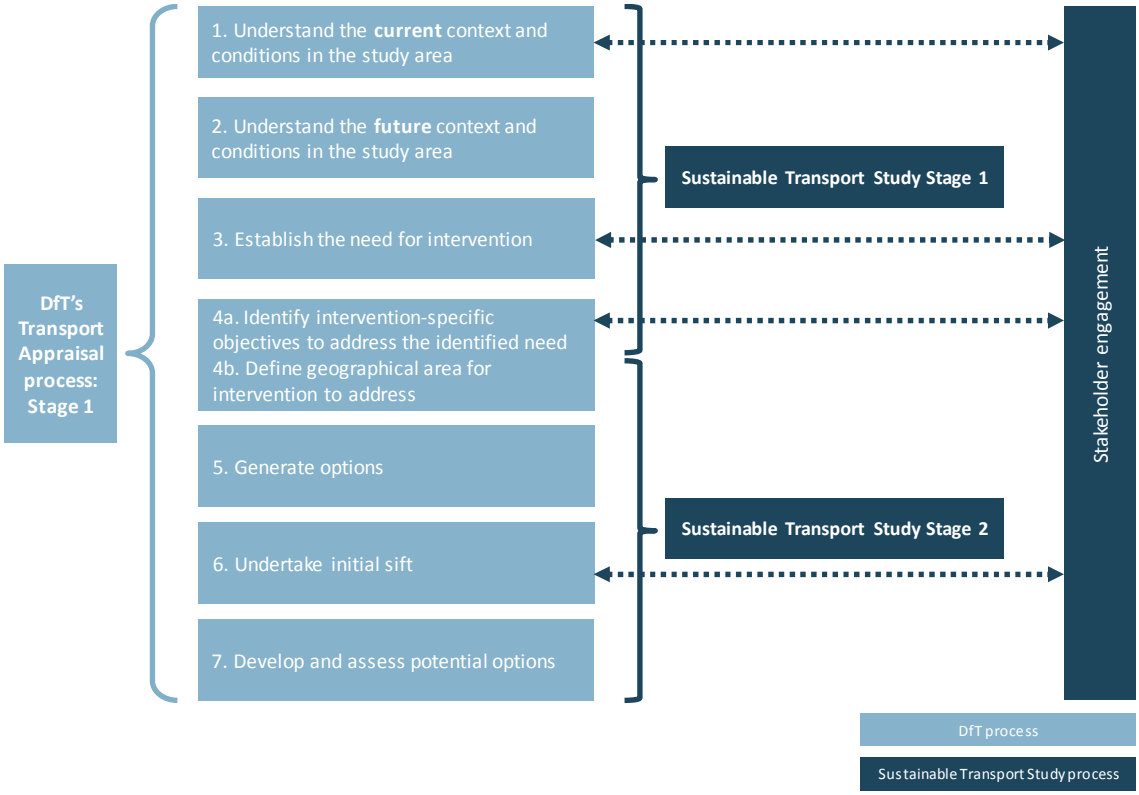
2.3 The DfT's Transport Analysis Guidance describes the steps that should be undertaken as part of Stage 1 appraisal of any type of transport intervention, including individual schemes, packages of measures, strategies and plans. These steps have been undertaken during Stage 1 and Stage 2 of the Sustainable Transport Study. Figure 2.1 on the following page shows how the process of developing the Sustainable Transport Study is aligned with DfT's process, and how the DfT's numbered steps fall between Stages 1 and 2 in the South Oxfordshire Sustainable Transport Study.

[2] Transport Analysis Guidance: The Transport Appraisal Process, DfT, 2014 **https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/431185/webtag-tag-transport-appraisal-process.pdf**

2.4 As Figure 2.1 shows, steps 1 to 4a were undertaken during Stage 1 of the Sustainable Transport Study. Stage 2 of the Sustainable Transport Study started from the point of having established, with stakeholder input, the need for intervention and the specific challenges that needed to be addressed, and work has subsequently focused on the completion of steps 4b to 8, including generating and sifting options.

2.5 The next section of this report details the option identification and sifting (assessment) process.

Figure 2.1: Overview of Stage 1 of DfT's Transport Appraisal process and alignment with Sustainable Transport Study Stages 1 and 2



3 Scheme identification, assessment and shortlisting

3.1 This section describes the process taken to identify the longlist of schemes considered in the context of this Sustainable Transport Study; the assessment framework used to appraise or 'sift' that longlist; and the final shortlisting step.

Site-specific challenges

3.2 The Stage 1 process included the identification of site-specific sustainable transport challenges. These challenges were:

- current or future barriers to **maintaining** the current level of sustainable travel to, from and within the proposed growth locations; or
- current or future barriers to **growing** the current level of sustainable travel to, from and within the proposed growth locations.

3.3 The challenges were identified through a review of data, reports, and other information and analysed to develop the evidence base. In broad terms, the purpose of the evidence base is to:

- determine the extent and quality of the sustainable transport network within South Oxfordshire;
- identify how the network is used now;
- predict how the network might be used in the future; and
- ascertain how well the future sustainable transport network would cater to future needs.

3.4 The evidence base is presented in the Stage 1 report and one of the final section includes a discussion of the site-specific challenges at each of the 17 proposed growth locations, and the full list of those evidenced challenges is included as an appendix to this report: please see Appendix A.

3.5 The site-specific challenges were then discussed with officers at South Oxfordshire District Council following development of the Stage 1 draft report, and then discussed with a wider stakeholder group at a stakeholder workshop session in May 2017. Following a small number of amendments to the list of site-specific challenges, the challenges were taken forward for further consideration in Stage 2.

Scheme identification

Initial longlist development

3.6 A longlist of sustainable transport schemes was developed in response to the site-specific challenges. The process for identifying schemes suitable for inclusion in the longlist and subsequent high-level assessment exercise included:

- a review of Oxfordshire County Council's Local Transport Plan and associated strategies. This review identified proposed or concept sustainable transport schemes of relevance to South Oxfordshire.
- a stakeholder workshop, including South Oxfordshire District and Oxfordshire County Council officers, representatives from Thames Travel and Arriva, OXTRAG (Oxfordshire Transport and Access Group), Oxfordshire Cycling Network and Sustrans.
- a gap analysis exercise to highlight areas in which there were an insufficient number or range of schemes to tackle the priority site-specific challenges. Challenges at sites where a significant number of new dwellings were proposed were more likely to be considered priority site-specific challenges due to the scale of the challenge and the number of current and new residents potentially affected.

Addressing district-wide sustainable transport challenges

3.7 There were several district-wide sustainable transport challenges which were common issues across the proposed growth locations and therefore not captured as site-specific challenges (e.g. high levels of car ownership and reliance on the private car for short and medium-distance trips). Additional sustainable transport schemes which would be relevant to all or the majority of the proposed growth locations were added to the longlist and links to proposed growth locations identified where appropriate.

Nature of the schemes identified

3.8 The sustainable transport schemes identified through this process fall into three broad categories:

4. **Design and development principles**: non-scheme specific principles which should be incorporated into masterplans for new developments.
5. **Enablers**: policies and actions which should be considered by South Oxfordshire District Council and its partners now in order to be well-placed to take advantage of future transport trends and technologies.
6. **New or enhanced infrastructure or services:** e.g. cycling infrastructure improvement schemes and new bus services. For these schemes, a minimum of a route (from, to, and any significant intermediate destinations) and mode (cycling, walking, bus or other) have been identified.

Assessing and shortlisting the schemes

Scheme assessment

3.9 The longlist developed through the process described above comprised 63 schemes. A bespoke assessment framework was developed to assess the schemes and to allow shortlisting of schemes to take place.

3.10 The bespoke assessment framework was based on DfT's Early Assessment and Sifting Tool (EAST). EAST is a high-level, outline assessment tool which allows comparison of intervention options through a clear and consistent format. It provides an initial indication of how individual indication of how individual options perform and compare. The tool does not make recommendations and is not intended to be used for making final funding decisions.

3.11 To better reflect the aims and objectives of this Sustainable Transport Study, EAST was modified and a separate spreadsheet assessment framework was developed. The assessment framework included high-level consideration of the 'five cases' that comprise a full Transport Business Case. Table 3.1 shows how the assessment framework developed for the Sustainable Transport Study reflected the categories and assessment criteria of the 'five cases'.

Table 3.1: Overview of the assessment framework and how it maps to the DfT's 'five cases'

Case	Explanation	How this was reflected in the Sustainable Transport Study assessment framework
Strategic	Consideration of the schemes' strategic fit to policy, with a clear definition of outcomes and objectives.	• Site-specific challenges addressed by scheme identified. • Other challenges (district-wide) addressed by scheme identified. • Extent to which scheme addressed relevant Oxfordshire County Council and South Oxfordshire District Council objectives and goals assessed. • Likely scale of impact of scheme at site-specific and district-wide challenge level assessed. • Expected value for money category identified (high, medium or low). • Likely funding sources identified. • Likely public / stakeholder acceptability identified (high, medium or low). • Likely delivery duration identified. • Possible phasing identified (short, medium or long term). • Technical feasibility risk identified (high, medium or low).
Economic	Consideration of the nature and extent of all the economic, environmental and social impacts of the different scheme options.	
Managerial	Consideration of how the scheme could be delivered and how feasible the option is, including expected implementation timetable, public acceptability and practical feasibility.	
Financial	Consideration of the anticipated costs of the scheme and overall affordability and cost risk.	• Indicative capital cost and revenue / operating costs estimated.
Commercial	Consideration of how the scheme could be viably procured and subject to a well-structured deal, including how flexible the option is, where funding would come from, and whether any income would be generated through the operation of the scheme.	• Key risks, including dependencies and integration with other schemes; likely land acquisition needs and associated issues; commercial viability and attractiveness to commercial operators assessed and documented.

3.12 The categories and scoring system used in the Sustainable Transport Study assessment framework is shown in Table 3.2.

Table 3.2: Categories and scoring used in the assessment framework

Category	Definition	Scoring / assessment categories
Scheme type	Type of scheme proposed, e.g. bus, cycling, walking, design and development principle or enabler	
Scheme status	Current status and certainty of scheme.	Planned, proposed or concept
Scheme name		
Further information		
Scheme location / proposed growth location link	The name of the proposed growth location(s) where the scheme would deliver sustainable travel benefits.	17 proposed growth locations listed. Each growth location benefited by scheme was identified
Site-specific challenge(s) addressed	The site-specific challenge(s) that the scheme was designed to address, or would address through delivery.	Each site-specific challenge addressed identified and listed
Other challenge(s) addressed	Other, district-wide challenge(s) (or non-site-specific challenges) that the scheme would address.	Other challenges addressed identified and listed
Objectives addressed	The extent to which the scheme would complement or 'fit' with relevant South Oxfordshire District Council's Local Plan objectives and Oxfordshire County Council's Local Transport Plan goals. The relevant South Oxfordshire District Council Local Plan objectives are listed in the section that follows this table.	Each scheme scored according to 'fit' with each identified objective, from -3 (scheme will have a negative contribution to the delivery of the objective) to +3 (scheme will have a positive contribution to the delivery of the objective)
Likely public / stakeholder acceptability	The likely degree of acceptability that the scheme would have with the local public and stakeholders.	High, medium or low likely acceptability
Capital cost	All the costs involved in setting up and mobilising the scheme.	£0-£5 million; £5-£10 million; £10-£25 million; £25-£50 million; £50-£100 million; £100-£250 million; £100-£250 million; £>250 million
Revenue / operating cost	All the costs to keep the scheme in operation (e.g. maintenance costs).	£0-£500k; £500k-£1 million; £1-£2 million; £2-£5 million; £5 million +
Likely funding sources	Organisations / funding streams which could be a source of funding for the scheme.	
Likely scale of impact at site-specific challenge level	The extent to which the scheme would address the site-specific challenges the scheme was designed to address.	High, medium or low impact
Likely scale of impact at district-wide challenge level	The extent to which the scheme would address district-wide / other challenges.	High, medium or low impact

Value for Money (VfM)	The extent to which the scheme represents a good return on investment (i.e. whether the anticipated benefits can justify the cost of the scheme).	High, medium or low
Likely delivery duration	Likely delivery duration of scheme (i.e. the time that will elapse from agreement to implement the scheme and the delivery of the scheme).	<1 year; 1-2 years; 2-5 years; 5-10 years; >10 years
Possible phasing	Possible phasing of scheme delivery within the Local Plan period.	Short term – 2018-2023; medium term – 2024-2029; long term – 2029-2033
Technical feasibility risk	Anticipated practical / technical risks associated with delivery of the scheme, e.g. extent to which the option / technology has been tested and proven to be practical and effective, whether the operator has the required statutory powers, if there are planning implications etc.	High, medium or low risk
Key risks	The key risks associated with delivery of the scheme, including but not limited to: • interaction with and dependencies on other schemes (e.g. if other infrastructure needs to be delivered in advance). • land acquisition issues, including quantity of land acquisition required, indicative availability and other associated issues. • stakeholder acceptability issues.	Key risks identified and documented

3.13 The objectives used to determine the extent to which the scheme would complement or address local policy priorities were a combination of relevant objectives from South Oxfordshire District Council's Local Plan, and the goals and associated objectives from Oxfordshire County Council's Local Transport Plan. These were:

South Oxfordshire Local Plan objectives

- Objective 1 – Settlements
  - 1.1. Support the settlement hierarchy, the growth and development of Didcot Garden Town, the delivery of new development in the heart of the District, the growth of our market towns and the vitality of our villages.
  - 1.2 Support rural communities and "their way of life", recognising that this is what attracts people to the District.
  - 1.3 Meet identified housing needs by delivering high-quality, sustainable, attractive places for people to live and work.
  - 1.4 Focus growth in Science Vale through delivering homes and jobs, retail and leisure facilities and enhanced transport infrastructure.
- Objective 4 – Infrastructure
  - 4.1 Ensure that essential infrastructure is delivered to support our existing residents and services as well as growth.
  - 4.2 Make sustainable transport an attractive and viable choice for people, whilst recognising that car travel and parking provision will continue to be important in this rural District.
- Objective 6 – Community
  - 6.1 Champion neighbourhood planning, empowering local communities to direct development within their area and provide support to ensure Neighbourhood Plans are deliverable, achievable and sustainable.
  - 6.2 Provide access to high quality leisure, recreation, cultural, community and health facilities.
  - 6.3 Ensure all communities have access to the services and facilities they value, supporting the health and wellbeing of everyone.

Oxfordshire County Council Local Transport Plan objectives

- Goal 1 – To support jobs and housing growth and economic vitality
  - Maintain and improve transport connections to support economic growth and vitality across the county.
  - Make most effective use of all available transport capacity through innovative management of the network.
  - Increase journey time reliability and minimise end-to-end public transport journey times on main routes.
  - Develop a high-quality, innovative and resilient integrated transport system that is attractive to customers and generates inward investment.
- Goal 2 – To reduce emissions, enhance air quality and support the transition to a low carbon economy
  - Minimise the need to travel.
  - Reduce the proportion of journeys made by private car by making the use of public transport, walking and cycling more attractive.
  - Influence the location and layout of development to maximise the use and value of existing and planned sustainable transport investment.

    - Reduce per capita carbon emissions from transport in Oxfordshire in line with UK Government targets.
- Goal 3 – To protect and enhance the environment and improve quality of life (including public health, safety and individual wellbeing)
    - Mitigate and wherever possible enhance the impacts of transport on the local built, historic and natural environment.
    - Improve public health and wellbeing by increasing levels of walking and cycling, reducing transport emissions, reducing casualties and enabling inclusive access to jobs, education, training and services.

Scheme shortlisting

3.14 The results of the assessment process were considered on a scheme-by-scheme basis, and from that a recommendation made as to whether the scheme should be shortlisted and considered further. It is considered poor practice to sum scores across each of the assessment categories and assess an average score for each scheme, and so each scheme's performance across the different categories was considered in the round.

3.15 The results of the assessment process and the subsequent recommendations about schemes to be shortlisted were discussed with South Oxfordshire District Council. As a result, a number of refinements were made to:

- the assessment framework (and schemes assessed again using the amended and / or additional categories);
- the detail of the scheme proposed; or
- the recommendations as to whether the scheme should be included in the shortlist or not.

3.16 New or enhanced infrastructure or services schemes which were recommended for shortlisting were then developed into one-page summaries and the design and development principles and enabler schemes were listed in tables. A technical note summarising the assessment process and the shortlisted schemes was sent to stakeholders for their feedback as to the suitability and feasibility of the shortlisted schemes.

3.17 The shortlisted design and development principles are shown in Section 4, and the shortlisted enabler schemes are shown in Section 5. The shortlisted new or enhanced infrastructure or services schemes are shown in Section 6, organised by mode.

Schemes not shortlisted

3.18 The outcome of the assessment process is that not all schemes have been shortlisted and recommended for further consideration in the context of this study. The schemes that have not been shortlisted are shown in Table 3.3.

3.19 The fact that a scheme has not been shortlisted as a result of this study does not indicate that South Oxfordshire District Council does not currently or will not in the future support the scheme. In most instances where deliverability factors associated with the scheme are not abortive (i.e. serve to rule-out the scheme), the Council will consider supporting the scheme as part of the usual scheme concept, planning and delivery process. **For some schemes not shortlisted, the Council does or will support the scheme but the scheme is not sufficiently aligned with the focus of this study (i.e. identifying sustainable transport schemes to support new development sites to be brought forward during the Local Plan period) to be taken forward through this route.**

Table 3.3: Schemes not shortlisted as part of Sustainable Transport Study process

Scheme reference	Scheme type	Scheme description	Reason for not shortlisting
BUS3	Bus	New local bus service to operate in Berinsfield and in the new development to the east of Berinsfield (or extended 114 service), at a frequency of no less than one bus per hour.	Unlikely to be commercially viable service. Withdrawal of buses that previously served Berinsfield indicates commercial viability likely to be difficult here.
BUS5	Bus	New bus service between Chalgrove, Culham and Abingdon, aligned with development timescales.	Commercial viability of service in doubt given recent withdrawal of other routes going east-west – BUS10 good alternative for east-west link. Could be extension / route variation to BUS10 if commercial case viable.
BUS8	Bus	New bus service between Chalgrove, Culham and Didcot, aligned with development timescales.	Commercial viability of service in doubt given recent withdrawal of other routes going east-west – BUS10 good alternative for east-west link. Could be extension / route variation to BUS10 if commercial case viable.
BUS9	Bus	New scheduled bus service between Didcot, Culham, Berinsfield and Oxford.	Commercial viability of service in doubt – BUS10 good alternative for east-west link and option to interchange at Berinsfield for X39/X40 to Oxford. BUS4 (shuttle bus in Berinsfield) could be extended to provide an onward service to Cowley if viability tests are satisfied.
CYC1	Cycling	Berinsfield to Oxford Ring Road cycling route (originally proposed by Oxfordshire Cycling Network).	Could be brought forward as planned development at Berinsfield is realised. The scheme currently represents low value for money due to end-to-end journey distance and likely low usage. There is potential for the Berinsfield-Oxford flow to be served through a combination of an upgraded route between Berinsfield and Culham, and rail services between Culham and Oxford.
CYC5	Cycling	Cycle Premium Route between Didcot and Milton Park.	This scheme is being delivered.
CYC7	Cycling	Henley-on-Thames to Reading primary cycling route (originally proposed by Oxfordshire Cycling Network).	Solution not sufficiently aligned with site-specific challenges.
CYC11	Cycling	Chalgrove to Oxford cycling route.	Likely to be low value for money due to end-to-end journey distance, low usage and likely land acquisition issues.
PRK1	Park and Ride	Additional car parking and improved waiting facilities at Lewknor (M40 Junction 6).	Would require extensive land acquisition on greenbelt land – feasibility low.
PRK2	Park and Ride	Shuttle-service (mini-bus) to / from Chalgrove, Watlington and Chinnor to Lewknor for express coach services	Similar scheme to BUS7. The two schemes have been combined and BUS7 has been shortlisted.
PRK3	Parking	Park & Stride facility (from under-utilised Dry Leas car park) in Henley-on-Thames.	Solution not sufficiently aligned with site-specific challenges.

Scheme reference	Scheme type	Scheme description	Reason for not shortlisting
RAI6	Rail	Additional car parking and cycle parking facilities at Cholsey rail station.	Developing station travel plan in the first instance will identify and evidence the measures required to increase the level of sustainable travel to the station.
RAI7	Rail	Additional car parking and cycle facilities at Goring and Streatley rail station.	Developing station travel plan in the first instance will identify and evidence the measures required to increase the level of sustainable travel to the station.
RAI8	Rail	Additional car parking and cycle facilities at Henley-on-Thames rail station.	Developing station travel plan in the first instance will identify and evidence the measures required to increase the level of sustainable travel to the station.
RAI9	Rail	East West Rail Phase 3	Solution not sufficiently aligned with site-specific challenges but wider, strategic benefits recognised.
RAI10	Rail	Didcot to Oxford capacity improvement, Phase 3	Solution not sufficiently aligned with site-specific challenges but wider, strategic benefits recognised.
RAI11	Rail	Oxford rail station redevelopment, Phase 3	Solution not sufficiently aligned with site-specific challenges but wider, strategic benefits recognised.
RAI12	Rail	Cowley branch line upgrade	Solution not sufficiently aligned with site-specific challenges but wider, strategic benefits recognised.
RAI13	Rail	New 'local' rail connectivity.	Solution not sufficiently aligned with site-specific challenges but wider, strategic benefits recognised.
RAI14	Rail	Direct train service to Heathrow Airport from Oxford and Didcot Parkway	Solution not sufficiently aligned with site-specific challenges but wider, strategic benefits recognised.

4 Recommended design and development principles

4.1 The recommended design and development principles, non-scheme specific principles which should be incorporated into masterplans for new developments, are shown in Table 4.1.

Table 4.1: Recommended design and development principles for new developments

Scheme reference	Scheme description
DPL1	**All new developments to be designed in such a way that promotes walking and cycling for shorter journeys within the development.** New developments to be permeable for pedestrians and cyclists and have safe, intuitive, well-lit routes with high-quality surfacing.
DPL2	**Masterplans for new developments to consider the location of key destinations within the development such as schools, supermarkets, GP surgeries, leisure destinations, rail stations and bus stops and maximise the potential for walking and cycling from residents' homes to those services and facilities.** All plans for new developments to consider the provision of key services and facilities within walking distance and the provision required to allow residents to walk safely to those. All new homes should be within a reasonable walking distance of a bus stop.
DPL3	**Masterplans for new developments to consider the potential for inter-urban walking and cycling trips and provide high-quality inter-urban walking and cycling routes where appropriate (e.g. where inter-urban trip distances are conducive to walking and cycling).** All plans for new developments to make provision for safe, intuitive, well-lit and high-quality surfaced routes for inter-urban journeys.
DPL4	**Oxfordshire County Council's walking and cycling design guidance to be used as the baseline standard for walking and cycling infrastructure in new developments.**
DPL5	**DfT's Inclusive Mobility guidance to be used as the baseline standard for access to pedestrian and transport infrastructure in new developments.**
DPL6	**Electric vehicle charging infrastructure to be provided in new developments.** Electric vehicle charging points to be provided in all new developments. The level of provision required should be informed by a district-wide electric vehicle feasibility study.
DPL7	**Pick-up and drop-off points for demand responsive transport to be provided in new developments.** The plans for new developments must consider the need for pick-up and drop-off points for demand responsive shuttles.
DPL8	**Parcel drop-off and collection solutions to be provided in new developments and at stations / Park & Ride facilities.** The plans for new developments must include provision for appropriate personal deliveries infrastructure, e.g. secure parcel drop-boxes in homes / on streets / at stations.

Scheme reference	Scheme description
DPL9	**New or enhanced bus services to be delivered according to the standards required for that corridor / route, as defined by Oxfordshire County Council and South Oxfordshire District Council.** Routes designated as 'Premium' or 'Connector' must comply with the service and infrastructure expectations associated with Premium and Connector definitions.
DPL10	**Bus service enhancements on priority corridors and routes to be considered when new developments are brought forward.** In addition to the specific bus schemes and service enhancements identified in this note, service enhancements should be considered for other corridors and routes in the context of new developments along those routes.

5 Recommended enablers

5.1 The recommended enablers, policies and actions which are recommended for consideration by South Oxfordshire District Council and partners in order to be well-placed to take advantage of future transport trends and technologies, are outlined in Table 5.1.

Table 5.1: Recommended enablers for new developments

Scheme reference	Scheme description
ENB1	**Review existing digital and data sharing policies and establish 'digital first' policies.** Establish policies that promote the digital agenda to encourage the provision of services that support the digital economy and promote using digital services that put the user at the centre of their processes.
ENB2	**Undertake feasibility study for shared mobility services.** Feasibility study to review the opportunities for shared mobility options in South Oxfordshire to enable targeted development and deployment.
ENB3	**Undertake feasibility study for electric vehicles.** Feasibility study and strategy to review the opportunities for promoting and supporting take-up of electric vehicles in South Oxfordshire.
ENB4	**Establish enabling legislation and policies for shared mobility services.** Review of local regulatory and legislative environment in order to rationalise regulations that currently apply to the taxi and private hire market, with the aim of minimising barriers to entry for new service providers and the delivery of shared mobility services.
ENB5	**Invest in enhanced connectivity infrastructure.** In conjunction with industry partners, support the roll-out of enhanced connectivity infrastructure, including superfast broadband, 5G services, or more localised vehicle-to-infrastructure communications systems.
ENB6	**Review existing development control policy / approaches for new workplaces and residential developments and engage with developers to deliver new initiatives to support alternatives to car ownership.** Encourage promotion and use of new initiatives to support alternatives to car ownership (e.g. delivery of car clubs for all new medium and large residential developments, Uber credits for new residents).
ENB7	**Transport need-based procurement of new transport services.** Consider alternative transport service procurement mechanism in partnership with Oxfordshire County Council, procuring services based on need rather than mode. An example of this could be to specify that a particular service level would need to be provided to enable accessibility for a particular area, but not to specify that the need had to be met by bus or equivalent.
ENB8	**Develop new deliveries and servicing / freight strategy.** Delivery of a new strategy and suite of complementary policies that support new and innovative approaches to deliveries and servicing in residential areas.

6 Recommended new or enhanced infrastructure or service schemes

6.1 The new or enhanced infrastructure or service schemes recommended as a consequence of this Sustainable Transport Study are detailed in this section. The schemes are set out according to mode, in this order:

- Bus — Table 6.1 to Table 6.6
- Cycling — Table 6.7 to Table 6.15
- Rail — Table 6.16 to Table 6.20
- Shared mobility — Table 6.21
- Travel Demand Management — Table 6.22 to Table 6.25

Terms and definitions

6.2 The terms used in the description of the shortlisted schemes are consistent with the terms defined in Table 3.2 in the context of the assessment framework and associated categories. The key terms used in the tables which follow are defined as follows:

- **Status**: current status and certainty of scheme – planned, proposed or concept.
- **Phasing**: possible phasing of scheme delivery within the Local Plan period - short term (2018-2023); medium term (2024-2029); and long term (2029-2033).
- **Delivery**: likely delivery duration of scheme, i.e. the time that will elapse from agreement to implement scheme and delivery of scheme.
- **Development site link**: the proposed growth area to which the scheme will link and benefit.

Recommended bus schemes

6.3 The tables that follow provide a summary of the bus schemes that are recommended in the context of the Sustainable Transport Study.

6.4 The indicative costs outlined in the tables are based on high-level cost assumptions and exclude initial infrastructure costs for bus priority or other infrastructure measures which, in the context of some premium services, would need to be delivered within the Oxford city boundary. The indicative annual operating costs shown exclude revenue.

Table 6.1: High-frequency bus service between Wallingford and Oxford

BUS1: High-frequency bus service between Wallingford and Oxford					
Scheme information					
An enhanced frequency bus route between Wallingford and Oxford, to include a stop in Benson. An enhanced service is planned to operate on this route from October 2017, increasing the frequency in the peak from two buses per hour to three. This scheme assumes an enhancement of the service from three buses per hour to four. The requirements for bus priority measures and their location will be subject to further feasibility investigations.					
Status	**Phasing**	**Delivery**	**Indicative annual operating cost**	**Likely promoter / funder**	**Development site link**
Proposed	Medium term	1-2 years	£300k (for additional bus per hour)	Developers, OCC, SODC	Benson, Wallingford
Challenges addressed					
	Challenge				**Impact**
Site-specific challenges addressed					
Other challenges addressed	Journey times between Benson and Wallingford and Benson and Oxford are currently higher in the AM peak by public transport than by car.				✓✓✓
Scale of impact at district-level	High				
Objectives fit					
Reference	**Objective**				**Alignment**
OCC 2: Reduce emissions, enhance air quality and support transition to low carbon economy	Reduce the proportion of journeys made by private car by making the use of public transport, walking and cycling more attractive.				✓✓✓
SODC 4.2: Infrastructure	Make sustainable transport an attractive and viable choice for people, whilst recognising that car travel and parking provision will continue to be important				✓✓✓
OCC 1: Support jobs and housing growth and economic vitality	Maintain and improve transport connections to support economic growth and vitality across the county				✓✓✓
Consistency of fit with remaining objectives	✓✓✓				
Indicative delivery risk assessment					
Criteria	**Comment**				**Assessment**
Stakeholder acceptability	Stakeholder acceptability untested.				
Feasibility risk	Location and scale of bus priority measures to be defined and feasibility study is required.				
Value for money	Likely to be medium cost scheme but impacts in terms of encouraging sustainable travel could be substantial.				
Key risks and dependencies	Land acquisition required for any bus priority measures.				

Table 6.2: High-frequency bus service between Didcot and Oxford

BUS2 : High-frequency bus service between Didcot and Oxford					
Scheme information					
A high-frequency bus route between Didcot (including Didcot Parkway) and Oxford, via Abingdon, at a frequency of four buses per hour or more, with early and late evening services. The requirements for bus priority measures and their location will be subject to further feasibility investigations.					
Status	**Phasing**	**Delivery**	**Indicative annual operating cost**	**Likely promoter / funder**	**Development site link**
Proposed	Short term	1-2 years	£1.2m	Developers, OCC, SODC	Didcot
Challenges addressed					
	Challenge				**Impact**
Site-specific challenges addressed	DID1: Promotion of sustainable travel options to new residents. DID3: Need to deliver new infrastructure in advance of need.				✓✓✓
Other challenges addressed	Attractiveness of public transport versus private car.				✓✓✓
Scale of impact at district-level	Medium				
Objectives fit					
Reference	**Objective**				**Alignment**
OCC2: Reduce emissions, enhance air quality and support transition to low carbon economy	Reduce the proportion of journeys made by private car by making the use of public transport, walking and cycling more attractive.				✓✓✓
SODC 1.4: Settlements	Focus growth in Science Vale through delivering homes and jobs, retail and leisure facilities and enhanced transport infrastructure.				✓✓✓
OCC 1: To support jobs and housing growth and economic vitality	Increase journey time reliability and minimise end-to-end public transport journey times on main routes.				✓✓✓
Consistency of fit with remaining objectives	✓✓✓				
Indicative delivery risk assessment					
Criteria	**Comment**				**Assessment**
Stakeholder acceptability	Stakeholder acceptability untested.				
Feasibility risk	Location and scale of bus priority measures to be defined and feasibility study is required.				
Value for money	Likely to be medium cost scheme but impacts could be limited as rail would offer more attractive journey option for Didcot-Oxford journeys.				
Key risks and dependencies	Land acquisition required for any bus priority measures.				

Table 6.3: Berinsfield – A4074 shuttle / connector service

BUS4: Berinsfield – A4074 shuttle / connector service					
Scheme information					
Provision of a scheduled mini-bus shuttle service to link new development at Berinsfield with the existing inter-urban bus service on the A4074. This service could be extended to provide an onward service to Cowley if viability tests are satisfied.					
Status	**Phasing**	**Delivery**	**Indicative annual operating cost**	**Likely promoter / funder**	**Development site link**
New	Medium term	<1 year	£150k	Operators, Developers	Berinsfield
Challenges addressed					
	Challenge				**Impact**
Site-specific challenges addressed	BER2: the stop for inter-urban bus services will be located more than 400 metres from the new Berinsfield development to the east of the existing urban area.				✓✓✓
Other challenges addressed	New development at unlikely to support a commercial bus service around Berinsfield and / or a diversion of the existing X40 service.				✓✓✓
Scale of impact at district-level	Low				
Objectives fit					
Reference	**Objective**				**Alignment**
SODC 1: Settlements	Support the settlement hierarchy, the growth and development of Didcot Garden Town, the delivery of new development in the heart of the District, the growth of our market towns and the vitality of our villages.				✓✓✓
OCC 1: To support jobs and housing growth and economic vitality	Make most effective use of all available transport capacity through innovative management of the network.				✓✓✓
OCC 2: To reduce emissions, enhance air quality and support transition to low carbon economy	Reduce the proportion of journeys made by private car by making the use of public transport, walking and cycling more attractive.				✓✓✓
Consistency of fit with remaining objectives	✓✓✓				
Indicative delivery risk assessment					
Criteria	**Comment**				**Assessment**
Stakeholder acceptability	Stakeholder acceptability untested.				
Feasibility risk	Feasibility risk low / medium as this would be a new local bus service and would not require any new enabling technology or infrastructure but if mini-buses are to be used then a commercial operator may need to purchase these vehicles.				
Value for money	Represents better value for money than BUS3 (Berinsfield local bus) but needs to be operate on a commercial basis and likely take-up unknown.				
Key risks and dependencies	Securing commercial operator and ensuring commercial viability of the service. Withdrawal of buses that previously served Berinsfield indicates commercial viability likely to be difficult here.				

Table 6.4: New scheduled service between Oxford, Chalgrove and Watlington

BUS6: Oxford – Chalgrove – Watlington increased frequency					
Scheme information					
Provision of a scheduled bus service, increasing to a minimum of four buses per hour subject to development timescales and new travel demand from Chalgrove, between Oxford, Chalgrove and Watlington.					
Status	**Phasing**	**Delivery**	**Indicative annual operating cost**	**Likely promoter / funder**	**Development site link**
New	Medium term	<1 year	£1.5m	Operators, Developers	Chalgrove, Watlington
Challenges addressed					
	Challenge				**Impact**
Site-specific challenges addressed	CHA1: ensure sustainable travel is viable choice for new Chalgrove residents. CHA4: enhanced public transport services needed to cater for Chalgrove-Oxford flow following delivery of new development. WAT1: roads around Watlington not conducive to active travel. WAT2: enhanced public transport services needed to cater for Chalgrove-Watlington flow following delivery of new development.				✓✓✓
Other challenges addressed					
Scale of impact at district-level	Medium				
Objectives fit					
Reference	**Objective**				**Alignment**
SODC 4.1: Infrastructure	Ensure that essential infrastructure is delivered to support our existing residents and services as well as growth.				✓✓✓
SODC 4.2: Infrastructure	Make sustainable transport an attractive and viable choice for people, whilst recognising that car travel and parking provision will continue to be important				✓✓✓
SODC 6.2: Community	Provide access to high quality leisure, recreation, cultural, community and health facilities.				✓✓✓
Consistency of fit with remaining objectives	✓✓✓				
Indicative delivery risk assessment					
Criteria	**Comment**				**Assessment**
Stakeholder acceptability	Stakeholder acceptability untested but likely to be high.				
Feasibility risk	Feasibility risk low as this would be a new local bus service and would not require any new enabling technology or infrastructure.				
Value for money	Demand in short to medium term unknown and may not be sufficient to sustain commercial service.				
Key risks and dependencies	Imminent withdrawal of T1 service means that this route needs to be reinstated and demand re-grown.				

Table 6.5: New mini-bus shuttle service between Chalgrove and Lewknor (for express coach services)

BUS7: Lewknor – Chalgrove – Watlington – Chinnor shuttle (for express coach services)					
Scheme information					
Provision of a scheduled mini-bus shuttle service to / from Chalgrove, Watlington and Chinnor to Lewknor (M40 Junction 6) for express coach services to Oxford and London and London Heathrow and Gatwick Airports, and provision of improved waiting facilities at the Lewknor bus coach stops, including additional cycle parking, wi-fi hotspot, real time passenger information display and toilet facilities.					
Status	**Phasing**	**Delivery**	**Indicative annual operating cost**	**Likely promoter / funder**	**Development site link**
New	Medium term	<1 year	£300k	Operators, Developers	Chalgrove, Chinnor, Thame, Watlington
Challenges addressed					
	Challenge				**Impact**
Site-specific challenges addressed	CHA1: Delivering step-change in sustainable travel provision and in advance of need. CHN1: Promotion of most sustainable travel options from Chinnor, e.g. driving to Thornhill Park and Ride.				✓✓✓
Other challenges addressed	Parking is limited and over-subscribed - this could be suppressing demand for Park & Ride services from Lewknor (and encouraging use of car for the whole journey).				✓✓✓
Scale of impact at district-level	Low				
Objectives fit					
Reference	**Objective**				**Alignment**
SODC 6.1: Community	Champion neighbourhood planning, empowering local communities to direct development within their area and provide support to ensure Neighbourhood Plans are deliverable, achievable and sustainable.				✓✓✓
OCC 1: To support jobs and housing growth and economic vitality	Maintain and improve transport connections to support economic growth and vitality across the county.				✓✓✓
OCC 2: To reduce emissions, enhance air quality and support the transition to a low carbon economy	Reduce per capita carbon emissions from transport in Oxfordshire in line with UK Government targets.				✓✓✓
Consistency of fit with remaining objectives	✓✓✓				
Indicative delivery risk assessment					
Criteria	**Comment**				**Assessment**
Stakeholder acceptability	Untested but likely to be high given that this would be a new service without new infrastructure requirements.				
Feasibility risk	Feasibility risk low / medium as this would be a new local bus service and would not require any new enabling technology or infrastructure but if mini-buses are to be used then a commercial operator may need to purchase these vehicles.				
Value for money	Likely revenues unknown and may not be sufficient to sustain commercial service.				
Key risks and dependencies	• Likely take-up - demand likely to be low in short to medium term. • Commercial viability of service and ability to charge fares for connector service.				

Table 6.6: New bus service between Berinsfield, Culham and Abingdon, with route extensions / variations to Chalgrove and Didcot

BUS10: New bus service between Berinsfield, Culham and Abingdon, with route extensions / variations to Chalgrove and Didcot when the commercial case is viable					
Scheme information					
Provision of a scheduled bus service, with a minimum of two buses per hour, between Berinsfield, Culham and Abingdon, aligned with development timescales. Option to extend / vary to Chalgrove and Didcot (including Didcot Parkway) should these variations withstand commercial viability tests as new development comes forward. Both extension / variation options would be subject to development timescales. The Didcot extension is dependent on the delivery of new infrastructure (the Culham river crossing).					
Status	**Phasing**	**Delivery**	**Indicative annual operating cost**	**Likely promoter / funder**	**Development site link**
New	Medium term	<1 year	£450k	Operators, Developers	Berinsfield, Culham
Challenges addressed					
		Challenge			**Impact**
Site-specific challenges addressed					
Other challenges addressed		Improve radial routes through district, removing need to travel via Oxford.			✓✓✓
Scale of impact at district-level		High			
Objectives fit					
Reference		**Objective**			**Alignment**
SODC 1.4: Settlements		Focus growth in Science Vale through delivering homes and jobs, retail and leisure facilities and enhanced transport infrastructure.			✓✓✓
SODC 6.1: Community		Champion neighbourhood planning, empowering local communities to direct development within their area and provide support to ensure Neighbourhood Plans are deliverable, achievable and sustainable.			✓✓✓
OCC 1: To support jobs and housing growth and economic vitality		Increase journey time reliability and minimise end-to-end public transport journey times on main routes.			✓✓✓
Consistency of fit with remaining objectives		✓✓✓			
Indicative delivery risk assessment					
Criteria		**Comment**			**Assessment**
Stakeholder acceptability		Stakeholder acceptability untested but likely to be high.			
Feasibility risk		Feasibility risk low as this would be a new local bus service and would not require any new enabling technology or infrastructure.			
Value for money		Demand in short to medium term unknown and may not be sufficient to sustain commercial service.			
Key risks and dependencies		• Likely take-up - demand likely to be low in short to medium term. • Securing commercial operator and ensuring commercial viability of the service.			

Recommended cycling schemes

Table 6.7: New cycle route between Berinsfield and Culham

CYC2: Berinsfield – Culham cycle route						
Scheme information						
Delivery of a safe, direct, well-signposted cycling route between Berinsfield and Culham, building on existing facilities, as originally proposed by Oxfordshire Cycling Network (OCN). There may be an opportunity to reallocate road space on the A415 and improve crossing facilities at Clifton Hampden if a Clifton Hampden bypass is delivered, allowing for a premium segregated route.						
Status	**Phasing**	**Delivery**	**Indicative cost**		**Likely promoter / funder**	**Development site link**
			Capital	**Revenue**		
New	Medium term	1-2 years	£0-5m	£0-500k	Developers, OCC, SODC	Berinsfield, Culham
Challenges addressed						
	Challenge					**Impact**
Site-specific challenges addressed	BER 4: New Berinsfield residents using Culham station would likely travel by car.					✓✓✓
Other challenges addressed	Existing cycle routes between Berinsfield and Culham are either in need of upgrade (off-road) or unsuitable (on-road).					✓✓✓
Scale of impact at district-level	Low					
Objectives fit						
Reference	**Objective**					**Alignment**
OCC 3: To protect and enhance the environment and improve quality of life (including public health, safety and individual wellbeing)	Improve public health and wellbeing by increasing levels of walking and cycling, reducing transport emissions, reducing casualties and enabling inclusive access to jobs, education, training and services.					✓✓✓
OCC 2: To reduce emissions, enhance air quality and support the transition to a low carbon economy	Reduce the proportion of journeys made by private car but making the use of public transport, walking and cycling more attractive.					✓✓✓
SODC 1: Settlements	Support the settlement hierarchy, the growth and development of Didcot Garden Town, the delivery of new development in the heart of the District, the growth of our market towns and the vitality of our villages.					✓✓✓
Consistency of fit with remaining objectives	✓✓✓					
Indicative delivery risk assessment						
Criteria	**Comment**					**Assessment**
Stakeholder acceptability	Stakeholder acceptability untested. May be low / medium if the level of land acquisition required to deliver route is considerable.					
Feasibility risk	Overall feasibility requires further investigation but dependent on land acquisition and nature of route to be delivered.					
Value for money	Addresses site-specific and district-wide challenges but demand in short to medium term unknown.					
Key risks and dependencies	• Alignment and specification of new or upgraded route is dependent on delivery of the New Thames Crossing at Culham. • Business case would be linked to enhancements to rail services from Culham station and associated improvements to station facilities (e.g. car and cycle parking). • Level of land acquisition required (if new route is needed).					

Table 6.8: Premium cycle route between Didcot and Culham

CYC3: Cycle premium route Didcot – Culham						
Scheme information						
Delivery of a safe, direct, well-signposted route between Didcot and Culham. This should be aligned with and delivered as part of the Garden Line: a safe cycle and pedestrian route linking Culham science campus with Didcot Parkway station and Harwell Campus.						
Status	**Phasing**	**Delivery**	**Indicative cost**		**Likely promoter / funder**	**Development site link**
			Capital	**Revenue**		
Proposed	Medium term	1-2 years	£5-10m	£0-500k	Developers, OCC, SODC	Culham, Didcot
Challenges addressed						
	Challenge					**Impact**
Site-specific challenges addressed	CUL 4: Ensure new residents in Culham and / or Didcot are aware of new sustainable travel infrastructure and encouraged to use it.					✓✓✓
Other challenges addressed	Attractiveness of existing route for less confident cyclists.					✓✓✓
Scale of impact at district-level	Low					
Objectives fit						
Reference	**Objective**					**Alignment**
OCC 3: To protect and enhance the environment and improve quality of life (including public health, safety and individual wellbeing)	Improve public health and wellbeing by increasing levels of walking and cycling, reducing transport emissions, reducing casualties and enabling inclusive access to jobs, education, training and services.					✓✓✓
SODC 6.2: Community	Provide access to high quality leisure, recreation, cultural, community and health facilities.					✓✓✓
SODC 1.4: Settlements	Focus growth in Science Vale through delivering homes and jobs, retail and leisure facilities and enhanced transport infrastructure.					✓✓✓
Consistency of fit with remaining objectives	✓✓✓					
Indicative delivery risk assessment						
Criteria	**Comment**					**Assessment**
Stakeholder acceptability	Stakeholder acceptability untested.					
Feasibility risk	Overall feasibility requires further investigation but dependent on land acquisition and nature of route to be delivered.					
Value for money	Addresses site-specific and district-wide challenges but demand in short to medium term unknown.					
Key risks and dependencies	• Likely take-up - demand likely to be low in short to medium term. • Level of land acquisition required. • Potential impact of new route on traffic flow on existing routes (if the scheme is not delivered as part of the Garden Line).					

Table 6.9: Premium cycle route between Didcot and Wallingford

CYC4: Premium cycle route Didcot – Wallingford						
Scheme information						
Delivery of a safe, direct, well-signposted route between Didcot and Wallingford, providing a more direct alternative to NCN 5 between Wallingford and Didcot.						
Status	**Phasing**	**Delivery**	**Indicative cost**		**Likely promoter / funder**	**Development site link**
			Capital	**Revenue**		
Proposed	Short term	1-2 years	£5-10m	£0-500k	Developers, OCC, SODC	Crowmarsh Gifford, Didcot, Wallingford
Challenges addressed						
	Challenge					**Impact**
Site-specific challenges addressed	WAL2: Encourage Wallingford residents to use rail for longer-distance trips, and to encourage them to travel to the station sustainably. CRW3: No direct public transport link between Crowmarsh Gifford and Didcot Parkway station.					✓✓✓
Other challenges addressed	Attractiveness of existing route for less confident cyclists.					✓✓✓
Scale of impact at district-level	Low					
Objectives fit						
Reference	**Objective**					**Alignment**
OCC 3: To protect and enhance the environment and improve quality of life (including public health, safety and individual wellbeing)	Improve public health and wellbeing by increasing levels of walking and cycling, reducing transport emissions, reducing casualties and enabling inclusive access to jobs, education, training and services.					✓✓✓
SODC 6.2: Community	Provide access to high quality leisure, recreation, cultural, community and health facilities.					✓✓✓
SODC 4.1: Infrastructure	Ensure that essential infrastructure is delivered to support our existing residents and services as well as growth.					✓✓✓
Consistency of fit with remaining objectives	✓✓✓					
Indicative delivery risk assessment						
Criteria	**Comment**					**Assessment**
Stakeholder acceptability	Stakeholder acceptability untested.					
Feasibility risk	Overall feasibility requires further investigation but dependent on land acquisition and nature of route to be delivered.					
Value for money	Addresses site-specific and district-wide challenges but demand in short to medium term unknown.					
Key risks and dependencies	• Likely take-up - demand likely to be low in short to medium term. • Level of land acquisition required (if segregated route is needed). • Potential impact of new route on traffic flow on existing routes.					

Table 6.10: Improved cycle route between Abingdon and Culham

CYC6: Improved Abingdon – Culham cycle route						
Scheme information						
Improved Abingdon-Culham cycle route: safe, direct, well-signposted route with good surface and lighting. An improved link is already proposed; a scheme to infill missing link in cycling provision between Abingdon and Culham Science Centre is in early design stage and has partial funding via the Local Growth Fund. One option for this scheme is via a new bridge between Abingdon and Culham – the capital cost estimated includes the cost of a new bridge between Abingdon and Culham.						
Status	**Phasing**	**Delivery**	**Indicative cost**		**Likely promoter / funder**	**Development site link**
			Capital	**Revenue**		
Proposed	Short / Medium term	1-2 years	£5-10m	£0-500k	OCC, SODC	Culham
Challenges addressed						
	Challenge					**Impact**
Site-specific challenges addressed						
Other challenges addressed	Link Abingdon to rail network via Culham station					✓✓✓
Scale of impact at district-level	Low					
Objectives fit						
Reference	**Objective**					**Alignment**
OCC 3: To protect and enhance the environment and improve quality of life (including public health, safety and individual wellbeing)	Improve public health and wellbeing by increasing levels of walking and cycling, reducing transport emissions, reducing casualties and enabling inclusive access to jobs, education, training and services.					✓✓✓
OCC 2: To reduce emissions, enhance air quality and support the transition to a low carbon economy	Reduce per capita carbon emissions from transport in Oxfordshire in line with UK government targets.					✓✓✓
OCC 2: To reduce emissions, enhance air quality and support the transition to a low carbon economy	Reduce the proportion of journeys made by private car but making the use of public transport, walking and cycling more attractive.					✓✓✓
Consistency of fit with remaining objectives	✓✓✓					
Indicative delivery risk assessment						
Criteria	**Comment**					**Assessment**
Stakeholder acceptability	Stakeholder acceptability untested.					
Feasibility risk	Overall feasibility requires further investigation but dependent on any further land acquisition required and agreed specification for upgraded route.					
Value for money	Addresses site-specific and district-wide challenges but demand in short to medium term unknown.					
Key risks and dependencies	• Meeting existing cyclists' expectations as to quality of infilled link and route as a whole. • Level of land acquisition required (if needed).					

Table 6.11: Didcot, Henley-on-Thames, Thame and Wallingford intra-urban routes

CYC8: Didcot, Henley-on-Thames, Thame and Wallingford intra-urban routes						
Scheme information						
Delivery of on-road and segregated infrastructure for cyclists in Didcot, Henley-on-Thames, Thame and Wallingford, including on-road cycle lanes (advisory and mandatory), advance stop lanes (ASLs) and segregated lanes where possible. Delivery of new on-road and segregated infrastructure in Didcot is linked to the transport proposals for Didcot Garden Town.						
Status	**Phasing**	**Delivery**	**Indicative cost**		**Likely promoter / funder**	**Development site link**
			Capital	**Revenue**		
New	Short term	1-2 years	£0-5m	£0-500k	OCC, SODC	Didcot, Henley-on-Thames, Thame, Wallingford
Challenges addressed						
	Challenge					**Impact**
Site-specific challenges addressed	DID2 HEN2 THM2 WAL3: increase the proportion of shorter, intra-urban trips which are made on foot or by bicycle.					✓✓✓
Other challenges addressed						
Scale of impact at district-level	Low					
Objectives fit						
Reference	**Objective**					**Alignment**
OCC 3: To protect and enhance the environment and improve quality of life (including public health, safety and individual wellbeing)	Improve public health and wellbeing by increasing levels of walking and cycling, reducing transport emissions, reducing casualties and enabling inclusive access to jobs, education, training and services.					✓✓✓
SODC 6.3: Community	Ensure all communities have access to the services and facilities they value, supporting the health and wellbeing of everyone.					✓✓✓
SODC 4.2: Infrastructure	Make sustainable transport an attractive and viable choice for people, whilst recognising that car travel and parking provision will continue to be important in this rural district.					✓✓✓
Consistency of fit with remaining objectives	✓✓✓					
Indicative delivery risk assessment						
Criteria	**Comment**					**Assessment**
Stakeholder acceptability	Stakeholder acceptability untested but could be low / medium low depending on anticipated impact to journeys by car in or through Henley.					
Feasibility risk	Overall feasibility requires further investigation.					
Value for money	Interventions likely to be low overall cost and represent medium value for money given challenges addressed and likely use.					
Key risks and dependencies	Identification of suitable routes and highways engineering required to deliver.					

Table 6.12: Didcot Parkway interchange cycling improvements

CYC9: Didcot Parkway interchange cycling improvements						
Scheme information						
Delivery of cycling improvements at Didcot Parkway station, to include upgraded information points, secure cycle parking, improved and fully featured local cycle hubs and bicycle repair service.						
Status	**Phasing**	**Delivery**	**Indicative cost**		**Likely promoter / funder**	**Development site link**
			Capital	**Revenue**		
Proposed	Short term	<1 year	£0-5m	£0-500k	DfT, Network Rail, Operator, OCC, SODC	Didcot, Wallingford

Challenges addressed		
	Challenge	**Impact**
Site-specific challenges addressed	DID2: Increase proportion of intra-urban trips in Didcot made on foot or by bicycle. WAL2: Encourage Wallingford residents to use rail for longer-distance trips, and to encourage them to travel to the station sustainably.	✓✓✓
Other challenges addressed		
Scale of impact at district-level	Low	

Objectives fit		
Reference	**Objective**	**Alignment**
OCC 3: To protect and enhance the environment and improve quality of life (including public health, safety and individual wellbeing)	Improve public health and wellbeing by increasing levels of walking and cycling, reducing transport emissions, reducing casualties and enabling inclusive access to jobs, education, training and services.	✓✓✓
SODC 6.3: Community	Ensure all communities have access to the services and facilities they value, supporting the health and wellbeing of everyone.	✓✓✓
SODC 4.2: Infrastructure	Make sustainable transport an attractive and viable choice for people, whilst recognising that car travel and parking provision will continue to be important in this rural district.	✓✓✓
Consistency of fit with remaining objectives	✓✓✓	

Indicative delivery risk assessment		
Criteria	**Comment**	**Assessment**
Stakeholder acceptability	Stakeholder acceptability untested but likely to be medium / high as limited additional infrastructure required.	
Feasibility risk	Requires further investigation but limited (if any) works to take place beyond station boundary. Specification of cycle hubs requires further investigation and scoping.	
Value for money	Interventions likely to be low overall cost and represent medium value for money given challenges addressed and likely use.	
Key risks and dependencies	• Commercial viability of cycle hub services. • Management of improvement programme while station is in use.	

Table 6.13: Science Vale bike hire scheme

CYC10: Science Vale bike hire scheme						
Scheme information						
Provision of a bike hire scheme in the Science Vale area (e.g. London's Santander Cycle Hire scheme or dockless alternative).						
Status	**Phasing**	**Delivery**	**Indicative cost**		**Likely promoter / funder**	**Development site link**
			Capital	**Revenue**		
Proposed	Short term	<1 year	£0-5m	£0-500k	Developers, OCC, SODC	Didcot, Culham
Challenges addressed						
	Challenge					**Impact**
Site-specific challenges addressed	DID2: Increase proportion of intra-urban trips in Didcot made on foot or by bicycle.					✓✓✓
Other challenges addressed						
Scale of impact at district-level	Low					
Objectives fit						
Reference	**Objective**					**Alignment**
OCC 3: To protect and enhance the environment and improve quality of life (including public health, safety and individual wellbeing)	Improve public health and wellbeing by increasing levels of walking and cycling, reducing transport emissions, reducing casualties and enabling inclusive access to jobs, education, training and services.					✓✓✓
SODC 1.3: Settlements	Meet identified housing needs by delivering high-quality, sustainable, attractive places for people to live and work.					✓✓✓
OCC 1: To support jobs and housing growth and economic vitality	Make most effective use of all available transport capacity through innovative management of the network.					✓✓✓
Consistency of fit with remaining objectives	✓✓✓					
Indicative delivery risk assessment						
Criteria	**Comment**					**Assessment**
Stakeholder acceptability	Untested but likely to be medium – high given popularity of similar hire schemes elsewhere.					
Feasibility risk	Dependent on delivery model chosen (fixed hire points or no docks) and associated land requirements if fixed hire points required.					
Value for money	Dependent on delivery model chosen and opportunities for funding – could be commercially operated.					
Key risks and dependencies	• Commercial partnerships and agreeing a viable delivery model (e.g. fixed hire points or no docks). • Likely take-up and commercial viability. • Land acquisition required for fixed hire points / docking stations (if required).					

Table 6.14: Improvements to cycle routes to rail stations

CYC12: Improvements to cycle routes to rail stations						
Scheme information						
Improvements to / provision of safe, direct, well-signposted cycle routes with good surfaces and lighting from proposed growth locations to nearby rail stations, including Wallingford-Cholsey, Thame to Haddenham and Thame Parkway, and Woodcote to Goring and Streatley. Can be complemented by the station travel plan process.						
Status	**Phasing**	**Delivery**	**Indicative cost**		**Likely promoter / funder**	**Development site link**
			Capital	**Revenue**		
New	Medium term	1-2 years	£5-10m	£0-500k	Developers, Network Rail, OCC, SODC	Cholsey, Goring, Thame, Wallingford, Woodcote
Challenges addressed						
	Challenge					**Impact**
Site-specific challenges addressed	THM4: Encourage Thame residents to travel by sustainable modes to the station. CHO2, GOR2 and WOD2: Ensure that sustainable transport facilities at the respective stations keep pace with demand.					✓✓✓
Other challenges addressed						
Scale of impact at district-level	Medium					
Objectives fit						
Reference	**Objective**					**Alignment**
SODC 4.2: Infrastructure	Make sustainable transport an attractive and viable choice for people, whilst recognising that car travel and parking provision will continue to be important in this rural District.					✓✓✓
SODC 6.1: Community	Champion neighbourhood planning, empowering local communities to direct development within their area and provide support to ensure Neighbourhood Plans are deliverable, achievable and sustainable.					✓✓✓
OCC 1: To support jobs and housing growth and economic vitality	Reduce the proportion of journeys made by private car by making the use of public transport, walking and cycling more attractive.					✓✓✓
Consistency of fit with remaining objectives	✓✓✓					
Indicative delivery risk assessment						
Criteria	**Comment**					**Assessment**
Stakeholder acceptability	Stakeholder acceptability untested.					
Feasibility risk	Overall feasibility requires further investigation but dependent on land acquisition and nature of routes to be delivered.					
Value for money	Addresses multiple site-specific and district-wide challenges but demand in short to medium term unknown.					
Key risks and dependencies	• Likely take-up - demand likely to be low in short to medium term. • Level of land acquisition required (if segregated routes are needed).					

Table 6.15: Benson to Wallingford cycle route minor improvements

CYC13: Benson to Wallingford cycle route minor improvements						
Scheme information						
Identification of a suitable cycle route between Benson and Wallingford and minor improvements to surfaces, lighting and signage to encourage more cycling journeys between Benson and Wallingford.						
Status	**Phasing**	**Delivery**	**Indicative cost**		**Likely promoter / funder**	**Development site link**
			Capital	**Revenue**		
New	Short term	<1 year	£0-5m	£0-500k	Developers, OCC, SODC	Benson, Wallingford
Challenges addressed						
	Challenge					**Impact**
Site-specific challenges addressed	BEN1: High levels of car ownership and inter-urban distances such that sustainable travel often not a viable option. WAL3: Short journeys in Wallingford could be made on foot, by bicycle or by public transport.					✓✓✓
Other challenges addressed						
Scale of impact at district-level	Low					
Objectives fit						
Reference	**Objective**					**Alignment**
OCC 3: To protect and enhance the environment and improve quality of life (including public health, safety and individual wellbeing)	Improve public health and wellbeing by increasing levels of walking and cycling, reducing transport emissions, reducing casualties and enabling inclusive access to jobs, education, training and services.					✓✓✓
OCC 2: To reduce emissions, enhance air quality and support the transition to a low carbon economy	Reduce per capita carbon emissions from transport in Oxfordshire in line with UK government targets.					✓✓✓
OCC 2: To reduce emissions, enhance air quality and support the transition to a low carbon economy	Reduce the proportion of journeys made by private car but making the use of public transport, walking and cycling more attractive.					✓✓✓
Consistency of fit with remaining objectives	✓✓✓					
Indicative delivery risk assessment						
Criteria	**Comment**					**Assessment**
Stakeholder acceptability	Stakeholder acceptability untested.					
Feasibility risk	Overall feasibility requires further investigation but dependent on land acquisition and nature of route to be delivered.					
Value for money	Addresses site-specific challenges and likely to be low cost, but demand in short to medium term unknown.					
Key risks and dependencies	• Likely take-up - demand likely to be low in short to medium term. • Level of land acquisition required.					

Recommended rail schemes

Table 6.16: Increased service frequency at Culham (1)

RAI1: Increased service frequency at Culham Stage 1						
Scheme information						
Increased train frequency at Culham station to one train per hour (Monday-Friday) from December 2018, subject to positive business case. Discussions with Network Rail are ongoing. Station improvement schemes (e.g. improvements to station facilities such as car and cycle parking) will be brought forward on completion of the station travel plan (reference TDM2).						
Status	**Phasing**	**Delivery**	**Indicative cost**		**Likely promoter / funder**	**Development site link**
			Capital	**Revenue**		
Proposed	Short term	1-2 years	£0-5m	£0-500k	DfT, Network Rail	Berinsfield, Culham
Challenges addressed						
	Challenge					**Impact**
Site-specific challenges addressed	BEN4, BER3 and CUL2: Low service frequencies at Culham (and limited station facilities) could be suppressing demand for rail travel from Benson, Berinsfield and Culham.					✓✓✓
Other challenges addressed						
Scale of impact at district-level	Medium					
Objectives fit						
Reference	**Objective**					**Alignment**
SODC 6.1: Community	Champion neighbourhood planning, empowering local communities to direct development within their area and provide support to ensure Neighbourhood Plans are deliverable, achievable and sustainable.					✓✓✓
SODC 1.4: Settlements	Focus growth in Science Vale through delivering homes and jobs, retail and leisure facilities and enhanced transport infrastructure.					✓✓✓
OCC 2: To reduce emissions, enhance air quality and support the transition to a low carbon economy	Reduce the proportion of journeys made by private car by making the use of public transport, walking and cycling more attractive.					✓✓✓
Consistency of fit with remaining objectives	✓✓✓					
Indicative delivery risk assessment						
Criteria	**Comment**					**Assessment**
Stakeholder acceptability	Likely to be high given nature of scheme (service enhancement without construction, land acquisition etc.).					
Feasibility risk	Low service enhancement achieved through timetabling change.					
Value for money	Unknown at this stage but will be investigated through business case process.					
Key risks and dependencies	• Interdependencies with other schemes proposed for Culham. • Benefits of service enhancement to operator and longer-term viability of enhanced service pattern. • Longer-term risk of enhanced service pattern to services from other stations and / or direct stopping services to London.					

Table 6.17: Increased service frequency at Culham (2)

RAI2: Increased service frequency at Culham Stage 2						
Scheme information						
Increased train frequency at Culham station from one train per hour to two trains per hour (Monday-Friday) from the 2020s as part of new Great Western franchise, subject to positive business case. Discussions with Network Rail are ongoing. Infrastructure upgrades (four-tracking) may be required to allow this enhancement without detrimental impact to services from other stations (this is not included in the indicative capital cost). Station improvement schemes (e.g. improvements to station facilities such as car and cycle parking) will be brought forward on completion of the station travel plan (reference TDM2).						
Status	**Phasing**	**Delivery**	**Indicative cost**		**Likely promoter / funder**	**Development site link**
			Capital	**Revenue**		
Concept	Medium/Long term	1-2 years	£0-5m	£0-500k	DfT, Network Rail	Berinsfield, Culham
Challenges addressed						
	Challenge					**Impact**
Site-specific challenges addressed	BEN4, BER3 and CUL2: Low service frequencies at Culham (and limited station facilities) could be suppressing demand for rail travel from Benson, Berinsfield and Culham.					✓✓✓
Other challenges addressed						
Scale of impact at district-level	High					
Objectives fit						
Reference	**Objective**					**Alignment**
SODC 1.4: Settlements	Focus growth in Science Vale through delivering homes and jobs, retail and leisure facilities and enhanced transport infrastructure.					✓✓✓
OCC 1: TO support jobs and housing growth and economic vitality	Maintain and improve transport connections to support economic growth and vitality across the county.					✓✓✓
OCC 2: To reduce emissions, enhance air quality and support the transition to a low carbon economy	Reduce the proportion of journeys made by private car by making the use of public transport, walking and cycling more attractive.					✓✓✓
Consistency of fit with remaining objectives	✓✓✓					
Indicative delivery risk assessment						
Criteria	**Comment**					**Assessment**
Stakeholder acceptability	Likely to be high given magnitude of service enhancement proposed. High degree of interaction between site-specific challenge and scheme.					
Feasibility risk	Delivery of this enhancement may require four-tracking with associated deliverability and land acquisition risks.					
Value for money	Unknown at this stage but will be investigated through business case process.					
Key risks and dependencies	• Interdependencies with other schemes proposed for Culham. • Benefits of service enhancement to operator and longer-term viability of enhanced service pattern. • Longer-term risk of enhanced service pattern to services from other stations and / or direct stopping services to London.					

Table 6.18: Increased service frequency at Culham (3)

RAI3: Increased service frequency at Culham Stage 3						
Scheme information						
Increased train frequency at Culham station from two trains per hour (Monday-Saturday), and introduce two trains per hour on Sundays by December 2029, aligned with delivery of new housing and employment. Discussions with Network Rail are ongoing. Infrastructure upgrades (four-tracking) may be required to allow this enhancement without detrimental impact to services from other stations (this is not included in the indicative capital cost). Station improvement schemes (e.g. improvements to station facilities such as car and cycle parking) will be brought forward on completion of the station travel plan (reference TDM2).						
Status	**Phasing**	**Delivery**	**Indicative cost**		**Likely promoter / funder**	**Development site link**
			Capital	**Revenue**		
Concept	Medium/Long term	1-2 years	£0-5m	£0-500k	DfT, Network Rail	Berinsfield, Culham
Challenges addressed						
	Challenge					**Impact**
Site-specific challenges addressed	BEN4, BER3 and CUL2: Low service frequencies at Culham (and limited station facilities) could be suppressing demand for rail travel from Benson, Berinsfield and Culham.					✓✓✓
Other challenges addressed						
Scale of impact at district-level	High					
Objectives fit						
Reference	**Objective**					**Alignment**
SODC 1.4: Settlements	Focus growth in Science Vale through delivering homes and jobs, retail and leisure facilities and enhanced transport infrastructure.					✓✓✓
OCC 1: TO support jobs and housing growth and economic vitality	Maintain and improve transport connections to support economic growth and vitality across the county.					✓✓✓
OCC 2: To reduce emissions, enhance air quality and support the transition to a low carbon economy	Reduce the proportion of journeys made by private car by making the use of public transport, walking and cycling more attractive.					✓✓✓
Consistency of fit with remaining objectives	✓✓✓					
Indicative delivery risk assessment						
Criteria	**Comment**					**Assessment**
Stakeholder acceptability	Likely to be high given magnitude of service enhancement proposed. High degree of interaction between site-specific challenge and scheme.					
Feasibility risk	Delivery of this enhancement may require four-tracking with associated deliverability and land acquisition risks.					
Value for money	Unknown at this stage but will be investigated through business case process.					
Key risks and dependencies	• Interdependencies with other schemes proposed for Culham. • Benefits of service enhancement to operator and longer-term viability of enhanced service pattern. • Longer-term risk of enhanced service pattern to services from other stations and / or direct stopping services to London.					

Table 6.19: Culham station development

RAI4: Culham station development						
Scheme information						
Expansion and potential relocation of station, creating a focal point as part of Culham Science Village proposal, including longer platforms, public realm and new station building. Station improvement schemes will be brought forward on completion of the station travel plan (TDM2).						
Status	**Phasing**	**Delivery**	**Indicative cost**		**Likely promoter / funder**	**Development site link**
			Capital	**Revenue**		
Proposed	Medium term	2-5 years	£10-25m	£0-500k	DfT, Network Rail, Developers, OCC, SODC	Berinsfield, Culham
Challenges addressed						
	Challenge					**Impact**
Site-specific challenges addressed	BEN4, BER3: Low service frequencies at Culham (and limited station facilities) could be suppressing demand for rail travel from Benson, Berinsfield and Culham. CUL3: Station facilities at Culham station are insufficient to accommodate increasing demand.					✓✓✓
Other challenges addressed						
Scale of impact at district-level	Medium					
Objectives fit						
Reference	**Objective**					**Alignment**
SODC 1.4: Settlements	Focus growth in Science Vale through delivering homes and jobs, retail and leisure facilities and enhanced transport infrastructure.					✓✓✓
OCC 1: TO support jobs and housing growth and economic vitality	Maintain and improve transport connections to support economic growth and vitality across the county.					✓✓✓
SODC 6.2: Community	Provide access to high quality leisure, recreation, cultural, community and health facilities.					✓✓✓
Consistency of fit with remaining objectives	✓✓✓					
Indicative delivery risk assessment						
Criteria	**Comment**					**Assessment**
Stakeholder acceptability	Untested but could be low or medium given land acquisition and expenditure required to provide new station and associated facilities.					
Feasibility risk	Requires further investigation as part of masterplan discussions.					
Value for money	Requires further investigation through business case process.					
Key risks and dependencies	• Interdependencies with other schemes proposed for Culham. • Level of land acquisition required for delivery of a new station and associated facilities.					

Table 6.20: Culham station development – 'Parkway' station delivery

RAI5: Culham railway station development – 'Parkway' station delivery						
Scheme information						
Expansion and potential relocation of station, creating a focal point as part of Culham Science Village proposal, including longer platforms, public realm, new station building and extensive car parking facilities. Station improvement schemes will be brought forward on completion of the station travel plan (TDM2).						
Status	**Phasing**	**Delivery**	**Indicative cost**		**Likely promoter / funder**	**Development site link**
			Capital	**Revenue**		
New	Medium term	2-5 years	£10-25m	£0-500k	DfT, Network Rail, Developers, OCC, SODC	Berinsfield, Culham
Challenges addressed						
	Challenge					**Impact**
Site-specific challenges addressed	BEN4, BER3: Low service frequencies at Culham (and limited station facilities) could be suppressing demand for rail travel from Benson, Berinsfield and Culham. CUL 3: Station facilities at Culham station are insufficient to accommodate increasing demand.					✓✓✓
Other challenges addressed						
Scale of impact at district-level	High					
Objectives fit						
Reference	**Objective**					**Alignment**
SODC 1.4: Settlements	Focus growth in Science Vale through delivering homes and jobs, retail and leisure facilities and enhanced transport infrastructure.					✓✓✓
OCC 1: TO support jobs and housing growth and economic vitality	Maintain and improve transport connections to support economic growth and vitality across the county.					✓✓✓
OCC 3: To protect and enhance the environment and improve quality of life (including public health, safety and individual wellbeing)	Mitigate and wherever possible enhance the impacts of transport on the local built, historic and natural environment.					✗✗✗
Consistency of fit with remaining objectives	✓✓✓					
Indicative delivery risk assessment						
Criteria	**Comment**					**Assessment**
Stakeholder acceptability	Untested but could be low or medium given land acquisition and expenditure required to provide new station and associated facilities.					
Feasibility risk	Requires further investigation as part of masterplan discussions.					
Value for money	Requires further investigation through business case process.					
Key risks and dependencies	• Interdependencies with other schemes proposed for Culham. • Level of land acquisition required for delivery of a new station and associated facilities. • Business case: whether anticipated demand would support case for Parkway-type facilities.					

Recommended shared mobility schemes

Table 6.21: Car clubs

SHM1: Operation of car clubs by one or more commercial operators						
Scheme information						
Operation of car clubs by one or more commercial operators in areas where the existing demographic and trip characteristics make car club provision commercially viable - likely to be in South Oxfordshire's larger towns (Didcot, Henley-on-Thames, Thame and Wallingford) initially, with further expansion thereafter, including at strategic growth sites.						
Status	**Phasing**	**Delivery**	**Indicative cost**		**Likely promoter / funder**	**Development site link**
			Capital	**Revenue**		
Concept	Short term	1-2 years	£0-5m	£0-500k	Operators, Developers	All
Challenges addressed						
		Challenge				**Impact**
Site-specific challenges addressed		BEN1; BER1; CHO1; CRW1; CUL1; GOR1; NET1; SON1; WAT1; WOD1: High levels of car ownership and inter-urban distances such that sustainable travel is often not a viable option for journeys. BEN2, CRW2: Fewer local trips anticipated when development takes place (RAF Benson distorts current journey to work data). CHN1: Promotion of most sustainable travel options from Chinnor, e.g. driving to Thornhill Park and Ride.				✓✓✓
Other challenges addressed		Rural and semi-rural environment means average travel distances are greater than those which could typically be walked or cycled. Existing high levels of car ownership - 45% of households in South Oxfordshire have two cars, with an average of 1.6 per household.				✓✓✓
Scale of impact at district-level		Medium				
Objectives fit						
Reference		**Objective**				**Alignment**
SODC 1.2: Settlements		Support rural communities and "their way of life", recognising that this is what attracts people to the District.				✓✓✓
SODC 4.2: Infrastructure		Make sustainable transport an attractive and viable choice for people, whilst recognising that car travel and parking provision will continue to be important in this rural District.				✓✓✓
OCC 1: To support jobs and housing growth and economic vitality		Make most effective use of all available transport capacity through innovative management of the network.				✓✓✓
Consistency of fit with remaining objectives		✓✓✓				
Indicative delivery risk assessment						
Criteria		**Comment**				**Assessment**
Stakeholder acceptability		Untested but likely to be high as does not require additional infrastructure and associated disruption.				
Feasibility risk		No additional infrastructure required.				
Value for money		Likely to be used and clear link to a number of site-specific and district-wide challenges.				
Key risks and dependencies		• Initial and continuing commercial viability of car club(s). • Provision of spaces for car club vehicles.				

Table 6.22: Demand responsive shuttle between Berinsfield and the A4074

SHM2: Berinsfield – A4074 demand responsive shuttle					
Scheme information					
Provision of a demand-responsive shuttle service to link new development at Berinsfield with the existing inter-urban bus service (and other community facilities in inter-peak periods). There is the potential for this to be an autonomous shuttle, subject to the delivery of various enablers and design principles.					
Status	**Phasing**	**Delivery**	**Indicative annual operating cost**	**Likely promoter / funder**	**Development site link**
Concept	Medium term	1-2 years	£150k	Operators, Developers	Berinsfield
Challenges addressed					
		Challenge			**Impact**
Site-specific challenges addressed		BER2: the stop for inter-urban bus services will be located more than 400 metres from the new Berinsfield development to the east of the existing urban area.			✓✓✓
Other challenges addressed		New development at Berinsfield and associated travel demand unlikely to support a new commercial bus service around Berinsfield and / or a diversion of the existing X40 service.			✓✓✓
Scale of impact at district-level		Low			
Objectives fit					
Reference		**Objective**			**Alignment**
OCC 1: To support jobs and housing growth and economic vitality		Make most effective use of all available transport capacity through innovative management of the network.			✓✓✓
SODC 1.1: Settlements		Support the settlement hierarchy, the growth and development of Didcot Garden Town, the delivery of new development in the heart of the District, the growth of our market towns and the vitality of our villages.			✓✓✓
OCC 1: To support jobs and housing growth and economic vitality		Develop a high-quality, innovative and resilient integrated transport system that is attractive to customers and generates inward investment.			✓✓✓
Consistency of fit with remaining objectives		✓✓✓			
Indicative delivery risk assessment					
Criteria		**Comment**			**Assessment**
Stakeholder acceptability		Untested but likely to be high as additional infrastructure need (and associated disruption) is limited to provision of charging infrastructure at bus stop.			
Feasibility risk		Limited additional infrastructure required but would require new technology / app to deliver. Operational feasibility unknown and needs to be tested with service providers / operators.			
Value for money		Further testing required.			
Key risks and dependencies		Securing commercial operator and ensuring commercial viability of the service.			

Table 6.23: Demand responsive shuttle between Benson, Crowmarsh Gifford, Wallingford, Didcot Parkway and / or Culham

SHM3: Benson – Crowmarsh Gifford – Wallingford – Didcot Parkway/Culham demand-responsive shuttle					
Scheme information					
Provision of a demand-responsive shuttle service to link Benson, Crowmarsh Gifford and Wallingford with Didcot Parkway and / or Culham rail stations for inter-urban rail services and other facilities and amenities.					
Status	**Phasing**	**Delivery**	**Indicative annual operating cost**	**Likely promoter / funder**	**Development site link**
Concept	Medium term	<1 year	£300k	Operators, Developers	Benson, Crowmarsh Gifford, Wallingford
Challenges addressed					
	Challenge				**Impact**
Site-specific challenges addressed	BEN5: No direct public transport link between Benson and Didcot Parkway and Culham stations.				✓✓✓
Other challenges addressed	High car mode share. Competitiveness of public transport services compared to car travel.				✓✓✓
Scale of impact at district-level	Medium				
Objectives fit					
Reference	**Objective**				**Alignment**
SODC 1.1: Settlements	Support the settlement hierarchy, the growth and development of Didcot Garden Town, the delivery of new development in the heart of the District, the growth of our market towns and the vitality of our villages.				✓✓
SODC 6.1: Community	Champion neighbourhood planning, empowering local communities to direct development within their area and provide support to ensure Neighbourhood Plans are deliverable, achievable and sustainable.				✓✓✓
OCC 1: To support jobs and housing growth and economic vitality	Make most effective use of all available transport capacity through innovative management of the network.				✓✓✓
Consistency of fit with remaining objectives	✓✓✓				
Indicative delivery risk assessment					
Criteria	**Comment**				**Assessment**
Stakeholder acceptability	Untested but likely to be high as does not require additional infrastructure and associated disruption.				
Feasibility risk	No additional infrastructure required but would require new technology / app to deliver. Operational feasibility unknown and needs to be tested with service providers / operators.				
Value for money	Further testing required.				
Key risks and dependencies	Securing commercial operator and ensuring commercial viability of the service.				

Recommended Travel Demand Management schemes

Table 6.24: Personalised Travel Planning (PTP)

TDM1: Personalised Travel Planning (PTP)					
Scheme information					
Delivery of face-to-face Personalised Travel Planning (PTP) services to all new residents to ensure that they are appraised of sustainable travel options. New journey planners should be promoted through PTP, and residents should be given access to cycle training services.					
Status	**Phasing**	**Delivery**	**Indicative cost**	**Likely promoter / funder**	**Development site link**
Concept	Short term	<1 year	£0-500k	Developers; OCC; SODC	All
Challenges addressed					
		Challenge			**Impact**
Site-specific challenges addressed		BER5 CHN1 DID3 THM4: Promotion of most sustainable travel options and new infrastructure, delivered in advance of need. CHA2 DID1 HEN1 THM1 WAL1 WHE1 WHE2: Promotion of sustainable travel options to new residents. DID2 HEN2 THM2 WAL3: increase the proportion of shorter, intra-urban trips which are made on foot or by bicycle. NET3: Promotion of the 139 bus service for local trips (to Wallingford and Henley-on-Thames. SON2: Promotion of the existing public transport services to existing and new residents of Sonning Common.		✓✓✓
Other challenges addressed					
Scale of impact at district-level		Medium			
Objectives fit					
Reference		**Objective**			**Alignment**
OCC 2: To reduce emissions, enhance air quality and support the transition to a low carbon economy		Minimise the need to travel.			✓✓✓
OCC 1: To support jobs and housing growth and economic vitality		Make most effective use of all available transport capacity through innovative management of the network.			✓✓✓
SODC 4.2: Infrastructure		Make sustainable transport an attractive and viable choice for people, whilst recognising that car travel and parking provision will continue to be important in this rural District.			✓✓✓
Consistency of fit with remaining objectives		✓✓✓			
Indicative delivery risk assessment					
Criteria		**Comment**			**Assessment**
Stakeholder acceptability		Untested but likely to be high as does not require additional infrastructure and associated disruption.			
Feasibility risk		Tried and tested method but timing of development build-out may require innovative delivery methods.			
Value for money		Benefit Cost Ratios of PTP programmes are usually high, demonstrating high value for money.			
Key risks and dependencies		Timing of development build-out and occupation may make delivery complex.			

Table 6.25: Station Travel Plans

TDM2: Station Travel Plans for Cholsey, Culham, Goring & Streatley, and Henley-on-Thames					
Scheme information					
Development of station travel plans to support increased awareness of sustainable travel options for journeys to the station, and monitoring of the need for additional station facilities. Each station travel plan developed will include an action plan identifying the capital and revenue schemes required to support increased levels of sustainable travel to and from the station, e.g. more cycle parking / improved cycle parking facilities.					
Status	**Phasing**	**Delivery**	**Indicative cost**	**Likely promoter / funder**	**Development site link**
Concept	Short/Medium term	<1 year	£0-500k (travel plan production) £0-5m (implementation of schemes)	Operators; OCC; SODC	Cholsey, Culham, Goring, Henley-on-Thames, Woodcote
Challenges addressed					
	Challenge				**Impact**
Site-specific challenges addressed	CHO2; CUL3; GOR2; HEN3; WOD2				✓✓✓
Other challenges addressed					
Scale of impact at district-level	Medium				
Objectives fit					
Reference	**Objective**				**Alignment**
SODC 4.2: Infrastructure	Make sustainable transport an attractive and viable choice for people, whilst recognising that car travel and parking provision will continue to be important in this rural District.				✓✓✓
SODC 6.1: Community	Champion neighbourhood planning, empowering local communities to direct development within their area and provide support to ensure Neighbourhood Plans are deliverable, achievable and sustainable.				✓✓✓
OCC 1: To support jobs and housing growth and economic vitality	Reduce the proportion of journeys made by private car by making the use of public transport, walking and cycling more attractive.				✓✓✓
Consistency of fit with remaining objectives	✓✓✓				
Indicative delivery risk assessment					
Criteria	**Comment**				**Assessment**
Stakeholder acceptability	Untested – dependent on the nature and feasibility of the schemes identified for implementation through the travel plans.				
Feasibility risk	Medium – travel planning is tried and tested method with proven beneficial impacts but nature of schemes to be implemented currently unknown.				
Value for money	Benefit Cost Ratios of focused travel plans are usually high, demonstrating high value for money, but potential for mode shift untested.				
Key risks and dependencies	Funding for implementation of action plans.				

7 Implementation plan

7.1 The table on the following pages contains the implementation plan for the recommended schemes, with the **enabler** schemes and **new infrastructure or service** schemes organised by possible phasing within the Local Plan period and by scheme type and mode.

7.2 The **development and design principles** are not included in Table 7.1 as these are not time-bound in the same way that enabler schemes and new infrastructure or service schemes are; the development and design principles should be given due consideration throughout the Local Plan period as new development at the proposed growth locations is brought forward.

7.3 The new infrastructure or service schemes are shown in the map in Figure 7.1. New infrastructure or service schemes which apply across multiple or all proposed development sites (for example, SHM1, Operation of car clubs by one or more commercial operators) are not shown in order to show place-specific schemes more clearly.

7.4 As previously stated, this is not an exhaustive list. Other schemes may be brought forward for consideration by South Oxfordshire District Council and its partners within the Local Plan period. This list represents the sustainable transport schemes which have been qualitatively assessed to best support and manage growth at the proposed growth locations within the scope of this study.

Table 7.1: Implementation plan

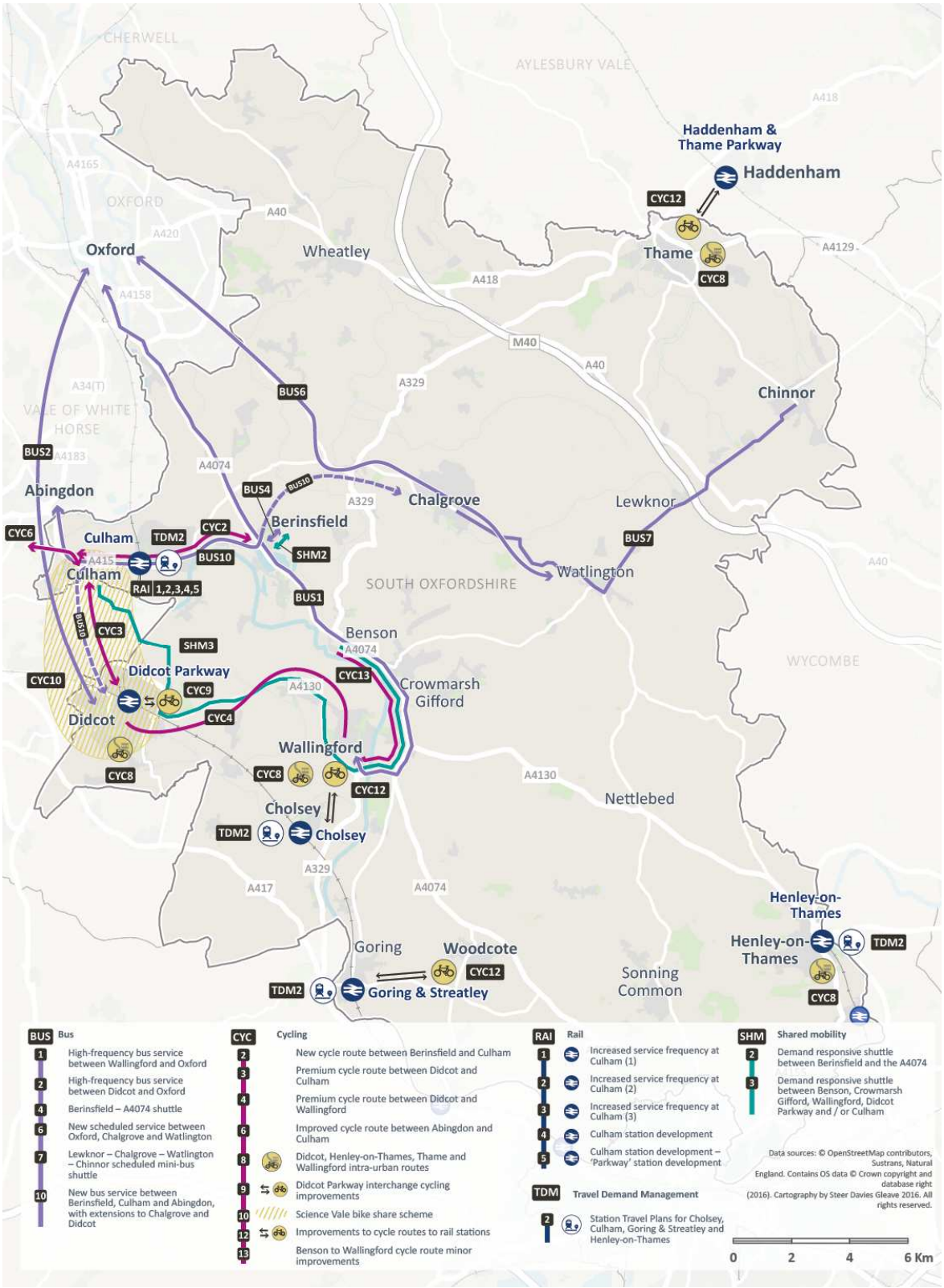
No.	Scheme ref.	Scheme type	Scheme name	Development site link	Likely promoter / funder	Indicative capital cost	Indicative annual revenue cost	Likely delivery duration	Possible phasing within Local Plan period		
									Short term (2018-2023)	Medium term (2024-2029)	Long term (2029-2033)
1	**ENB1**	Enabler	Review existing digital and data sharing policies and establish 'digital first' policies	All	OCC, SODC	<£50k		1-2 years			
2	**ENB2**	Enabler	Undertake feasibility study for shared mobility services	All	OCC, SODC	<£50k		<1 year			
3	**ENB3**	Enabler	Undertake feasibility study for shared mobility services	All	OCC, SODC	<£50k		<1 year			
4	**ENB4**	Enabler	Establish enabling legislation and policies for shared mobility services	All	OCC, SODC	<£100k		1-2 years			
5	**ENB6**	Enabler	Review existing development control policy / approaches for new workplaces and residential developments and engage with developers to deliver new initiatives to support alternatives to car ownership	All	OCC, SODC	<£100k		1-2 years			
6	**ENB8**	Enabler	Develop new deliveries and servicing / freight strategy	All	OCC, SODC	<£100k		<1 year			
7	**BUS2**	Bus	High-frequency bus service between Didcot and Oxford	Didcot	Developers, OCC, SODC	£1.2m indicative annual operating cost, excl. revenue		1-2 years			
8	**BUS7**	Bus	Lewknor – Chalgrove – Watlington – Chinnor scheduled mini-bus shuttle	Chalgrove, Chinnor, Thame, Watlington	Operators, Developers	£300k indicative annual operating cost, excl. revenue		<1 year			

No.	Scheme ref.	Scheme type	Scheme name	Development site link	Likely promoter / funder	Indicative capital cost	Indicative annual revenue cost	Likely delivery duration	Possible phasing within Local Plan period		
									Short term (2018-2023)	Medium term (2024-2029)	Long term (2029-2033)
9	**CYC4**	Cycling	Premium cycle route between Didcot and Wallingford	Crowmarsh Gifford, Didcot, Wallingford	Developers, OCC, SODC	£5-10m	£0-500k	1-2 years			
10	**CYC8**	Cycling	Didcot, Henley-on-Thames, Thame and Wallingford intra-urban routes	Henley-on-Thames	OCC, SODC	£0-5m	£0-500k	1-2 years			
11	**CYC9**	Cycling	Didcot Parkway interchange cycling improvements	Didcot, Wallingford	DfT, Network Rail, OCC, SODC	£0-5m	£0-500k	<1 year			
12	**CYC10**	Cycling	Science Vale bike share scheme	Culham, Didcot	Developers, OCC, SODC	£0-5m	£0-500k	<1 year			
13	**CYC13**	Cycling	Benson to Wallingford cycle route minor improvements	Benson, Wallingford	Developers, OCC, SODC	£0-5m	£0-500k	<1 year			
14	**RAI1**	Rail	Increased service frequency at Culham (1)	Berinsfield, Culham	DfT, Network Rail	£0-5m	£0-500k	1-2 years			
15	**SHM1**	Shared mobility	Operation of car clubs by one or more commercial operators	All	Operators, Developers	£0-5m	£0-500k	1-2 years			
16	**CYC6**	Cycling	Improved cycle route between Abingdon and Culham	Culham	OCC, SODC	£5-10m	£0-500k	1-2 years			
17	**TDM1**	Travel Demand Management	Personalised Travel Planning (PTP)	All	Developers, OCC, SODC	£0-500k		<1 year			

No.	Scheme ref.	Scheme type	Scheme name	Development site link	Likely promoter / funder	Indicative capital cost	Indicative annual revenue cost	Likely delivery duration	Possible phasing within Local Plan period		
									Short term (2018-2023)	Medium term (2024-2029)	Long term (2029-2033)
18	**TDM2**	Travel Demand Management	Station Travel Plans for Cholsey, Culham, Goring & Streatley and Henley-on-Thames	Cholsey, Culham, Goring, Henley-on-Thames, Woodcote	Operators, OCC, SODC	£0-500k for travel plan production and £0-5m for implementation of identified station improvement schemes		<1 year			
19	**ENB5**	Enabler	Invest in enhanced connectivity infrastructure	All	Government, Developers, Operators, OCC, SODC	£5-10m	£0-500k	2-5 years			
20	**ENB7**	Enabler	Transport need-based procurement of new transport services	All	OCC, SODC	<£100k		1-2 years			
21	**BUS1**	Bus	High-frequency bus service between Wallingford and Oxford	Benson, Wallingford	Developers, OCC, SODC	£300k indicative annual operating cost, excl. revenue		1-2 years			
22	**BUS4**	Bus	Berinsfield – A4074 shuttle	Berinsfield	Operators, Developers	£150k indicative annual operating cost, excl. revenue		<1 year			
23	**BUS6**	Bus	New scheduled service between Oxford, Chalgrove and Watlington	Chalgrove, Watlington	Operators, Developers	£1.5m indicative annual operating cost, excl. revenue		<1 year			
24	**BUS10**	Bus	New bus service between Berinsfield, Culham and Abingdon, with extensions / variations to Chalgrove and Didcot	Berinsfield, Culham	Operators, Developers	£450k indicative annual operating cost, excl. revenue		<1 year			

No.	Scheme ref.	Scheme type	Scheme name	Development site link	Likely promoter / funder	Indicative capital cost	Indicative annual revenue cost	Likely delivery duration	Possible phasing within Local Plan period		
									Short term (2018-2023)	Medium term (2024-2029)	Long term (2029-2033)
25	**CYC2**	Cycling	New cycle route between Berinsfield and Culham	Berinsfield, Culham	Developers, OCC, SODC	£0-5m	£0-500k	1-2 years			
26	**CYC3**	Cycling	Premium cycle route between Didcot and Culham	Culham, Didcot	Developers, OCC; SODC	£5-10m	£0-500k	1-2 years			
27	**CYC12**	Cycling	Improvements to cycle routes to rail stations	Cholsey, Goring, Thame, Wallingford, Woodcote	Developers, Network Rail, OCC, SODC	£0-5m	£0-500k	1-2 years			
29	**RAI2**	Rail	Increased service frequency at Culham (2)	Berinsfield, Culham	DfT, Network Rail	£0-5m	£0-500k	1-2 years			
30	**RAI3**	Rail	Increased service frequency at Culham (3)	Berinsfield, Culham	DfT, Network Rail	£0-5m	£0-500k	1-2 years			
31	**RAI4**	Rail	Culham station development	Berinsfield, Culham	DfT, Network Rail, Developers, OCC, SODC	£10-25m	£0-500k	2-5 years			
32	**RAI5**	Rail	Culham station development – 'Parkway' station development	Berinsfield, Culham	DfT, Network Rail, Developers, OCC, SODC	£10-25m	£0-500k	2-5 years			
33	**SHM2**	Shared mobility	Demand responsive shuttle between Berinsfield and the A4074	Berinsfield	Operators, Developers	£150k indicative annual operating cost, excl. revenue		1-2 years			
34	**SHM3**	Shared mobility	Demand responsive shuttle between Benson, Crowmarsh Gifford, Wallingford, Didcot Parkway and / or Culham	Benson, Crowmarsh Gifford, Wallingford	Operators, Developers	£300k indicative annual operating cost, excl. revenue		<1 year			

Figure 7.1: Map of recommended new infrastructure and service schemes



steer davies gleave

Appendices

A Site-specific sustainable transport challenges

Table A.1: Site-specific sustainable transport challenges

Proposed growth areas	Challenge reference	Challenge summary
Benson	**BEN1**	High levels of car ownership and inter-urban distances such that sustainable travel is often not a viable option for journeys.
	BEN2	Fewer local trips anticipated when development takes place (RAF Benson distorts current journey to work data).
	BEN3	Public transport times from Benson to Oxford considerably longer than car.
	BEN4	Low service frequencies at Culham (and limited station facilities) could be suppressing demand for rail travel from Benson.
	BEN5	No direct public transport link between Benson and Didcot Parkway and Culham stations.
Berinsfield	**BER1**	Typical journeys to work are of a distance that means walking and cycling may not be a viable option.
	BER2	Inter-urban bus services operate from a stop to the west of Berinsfield, with no stops within Berinsfield itself. The proposed development is to the east of Berinsfield, which will mean that new residents will be more than 400 metres from the bus stop.
	BER3	Low service frequencies at Culham (and limited station facilities) could be suppressing demand for rail travel from Berinsfield.
	BER4	Off-road cycle path between Berinsfield and Culham has poor quality surface and A415 not suitable for most cyclists.
	BER5	Promotion of new Park and Ride site on A4074 corridor to Oxford and promotion of sustainable modes of travel for whole journey.
Chalgrove	**CHA1**	Delivering step-change in sustainable travel provision and in advance of need.
	CHA2	Promotion of sustainable travel options to new Chalgrove residents.
	CHA3	Limited potential for cycling and walking for inter-urban journeys in Chalgrove vicinity.
	CHA4	Significant increases in population and an associated uplift in demand for travel to Oxford will necessitate frequency improvements on the T1 service and / or an amended service pattern.
Chinnor	**CHN1**	Promotion of most sustainable travel options from Chinnor, e.g. driving to Thornhill Park and Ride.

Proposed growth areas	Challenge reference	Challenge summary
Cholsey	**CHO1**	Typical journeys to work are of a distance that means walking and cycling may not be a viable option.
	CHO2	Limited station facilities at Cholsey could be suppressing demand for rail travel, or could suppress demand for rail travel in the future when the facilities are at maximum capacity on a regular basis.
Crowmarsh Gifford	**CRW1**	High levels of car ownership and inter-urban distances such that sustainable travel is often not a viable option for journeys.
	CRW2	Fewer local trips anticipated when development takes place (RAF Benson distorts current journey to work data).
	CRW3	No direct public transport link between Crowmarsh Gifford and Didcot Parkway station, therefore access to those stations would currently have to be by car.
Culham	**CUL1**	High levels of car ownership and inter-urban distances such that sustainable travel is often not a viable option for journeys.
	CUL2	Low service frequencies at Culham station could suppress demand for rail travel from Culham – both for trips to work and for other trips in the interpeak.
	CUL3	Station facilities at Culham station will likely be insufficient to accommodate increasing demand associated with strategic growth at Culham and growth at Berinsfield. There is currently no step-free access at this station.
	CUL4	A 'Cycle Premium Route' is proposed between Didcot and Culham. The challenge is to ensure that new residents in Culham and / or Didcot who need to make short journeys to either destination are aware of the Cycle Premium Route and encouraged to use it.
Didcot	**DID1**	Promotion of sustainable travel options to new Didcot residents.
	DID2	A quarter of all travel to work trips by Didcot residents are 0-5km in length, but 60% of these trips are currently made by car. The associated challenge is to increase the proportion of shorter, intra-urban trips which are made on foot or by bicycle and realise the potential for trips to be made by sustainable means.
	DID3	There are several schemes funded and / or planned which will help to deliver an integrated cycling and walking network in Didcot. The associated challenge is to ensure that existing and new residents of Didcot are encouraged to use the new infrastructure, and that the infrastructure is delivered in advance of need.
Goring	**GOR1**	There is a low proportion of journeys to work which are 0-5km in length originating from the Goring area (18% of all journeys to work are between 0-5km in length). Typical journeys to work are therefore such that walking and cycling may not be a viable option.
	GOR2	Ensuring that the station's facilities keep pace with demand, so that new residents can use the railway for their journeys to work and other leisure journeys. There are currently five cycle parking spaces and 110 car parking spaces.
Henley-on-Thames	**HEN1**	Promotion of sustainable travel options to new Henley residents.
	HEN2	40% of all travel to work trips by Henley-on-Thames residents are 0-5km in length. Though the majority of these shorter trips are currently made sustainably (on foot, by bicycle or by public transport), there is potential to increase the proportion of shorter, intra-urban trips which are made on foot or by bicycle and realise the potential for trips to be made by sustainable means.

Proposed growth areas	Challenge reference	Challenge summary
	HEN3	Ensuring that the station's sustainable transport facilities (i.e. cycle parking) keep pace with demand, so that new residents can use the railway for their journeys to work and other leisure journeys.
Nettlebed	**NET1**	High levels of car ownership and inter-urban distances such that sustainable travel is often not a viable option for journeys.
	NET2	There is currently no direct link by public transport to Oxford (and the Nettlebed-Oxford travel to work flow is the strongest travel to work flow originating from the Nettlebed area), however, overall trip volumes are currently low.
	NET3	Promotion of the 139 bus service for local trips (to Wallingford and Henley-on-Thames).
Sonning Common	**SON1**	High levels of car ownership and inter-urban distances such that sustainable travel is often not a viable option for journeys.
	SON2	Promotion of the existing public transport services to existing and new residents of Sonning Common.
Thame	**THM1**	Promotion of sustainable travel options to new Thame residents.
	THM2	37% of all travel to work trips by Thame residents are 0-5km in length. Though half of these shorter trips are currently made sustainably (on foot, by bicycle or by public transport), there is potential to increase the proportion of shorter, intra-urban trips which are made on foot or by bicycle and realise the potential for trips to be made by sustainable means.
	THM3	Enabling sustainable access to the station and ensuring the station's sustainable transport facilities (i.e. cycle parking) keep pace with demand, so that new residents can use the railway for their journeys to work and other leisure journeys.
	THM4	Using the bus or using rail from Haddenham & Thame Parkway is a viable option for longer-distance trips (e.g. those to Oxford or to Aylesbury). The challenge is to encourage existing residents of Thame to use rail bus or rail (rather than driving or using a Park and Ride facility), and to travel by sustainable modes to the station if used, i.e. by bicycle or by bus.
Wallingford	**WAL1**	Promotion of sustainable travel options to new Wallingford residents.
	WAL2	The challenge is to encourage residents to use rail for longer-distance trips, and to encourage them to travel to the station sustainably – a Cycle Premium Route is proposed between Didcot and Wallingford.
	WAL3	29% of all travel to work trips by Wallingford residents are 0-5km in length. Though the majority of these shorter trips are currently made sustainably (on foot, by bicycle or by public transport), there is potential to increase the proportion of shorter, intra-urban trips which are made on foot or by bicycle and realise the potential for trips to be made by sustainable means.
Watlington	**WAT1**	The settlement of Watlington is in a rural setting, with access to surrounding settlements via B-roads and other local roads. Such roads may not be conducive to cycling and / or walking.
	WAT2	With substantial growth proposed at Chalgrove (strategic growth site), the associated challenge is ensuring that future demand for travel between Chalgrove and Watlington (for services / facilities and employment) can be served by sustainable transport – specifically, in this context, bus services. Significant increases in population and an associated uplift in demand for travel to Oxford may necessitate frequency improvements on the T1 service or an amended service pattern.
Wheatley	**WHE1**	Promotion of sustainable travel options to new Wheatley residents.

Proposed growth areas	Challenge reference	Challenge summary
	WHE2	34% of all travel to work trips by Wheatley residents are 0-5km in length, but only 21% of such trips are currently made on foot or by bicycle. There is potential to increase the proportion of shorter, intra-urban trips which are made on foot or by bicycle and realise the potential for trips to be made by sustainable means.
	WHE3	Development of the Oxford Brookes' campus will mean that the BROOKESbus services no longer operate to Wheatley. The challenge is ensuring that there is a suitable alternative provided.
Woodcote	**WOD1**	High levels of car ownership and inter-urban distances such that sustainable travel is often not a viable option for journeys.
	WOD2	The challenge is to ensure that the station's facilities keep pace with demand, so that new residents can use the railway for their journeys to work and other leisure journeys. There are currently five cycle parking spaces and 110 car parking spaces.

CONTROL INFORMATION

Prepared by	Prepared for
Steer Davies Gleave 28-32 Upper Ground London SE1 9PD +44 20 7910 5000 www.steerdaviesgleave.com	South Oxfordshire District Council 135 Eastern Avenue Milton Park Milton OX14 4SB

SDG project/proposal number	Client contract/project number
23007101	

Author/originator	Reviewer/approver
Fiona Jenkins	Steven Bishop

Other contributors	Distribution	
Edward Robinson	*Client:*	*SDG*:

Version control/issue number	Date
Version 1.0 for client comment	01/09/2017
Version 2.0 – draft final report	11/09/2017
Version 3.0 – final report	27/09/2017