Market Harborough
Transport Strategy 2017 – 2031

Sept 2016

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1.1 Executive Summary

1.2 Overview

This report presents the overriding findings of a study jointly funded by Leicestershire County Council and Harborough District Council concerning the transport network in and around the settlement of Market Harborough, Leicestershire; hereafter referred to as *'The Study Area'*.

The report makes recommendations for the promotion of a medium to long term (up to 2031) highway orientated transport improvement strategy for the study area, which will serve to:

- *Support economic and population growth in the context of future land allocation and development; ensuring the town is not adversely impacted by traffic growth, and remains a vibrant and prosperous place for people to live, work and visit.*
- *Form the necessary foundation on which the long term delivery of future highway/transport improvements in the study area can be based.*

The report is structured into five chapters;

Chapter 1 - Executive Summary

Chapter 2 - A detailed overview of the background to the study, its local and national policy context, the objectives of the study and the adopted approach.

Chapter 3 - Consideration of transport models used in the study and their suitability.

Chapter 4 - A summary of the condition and performance of the transport network in Market Harborough in the base (2011) / current (2015) and future (2031) year scenarios

Chapter 5 - Recommendations for an evidence led package of transport measures, based on the issues and findings established and presented in Chapter 4, forming the basis of an initial outline transport strategy for the town centre.

1.3 Policy context

In March 2015 the County Council's Cabinet approved the 2015/16 LTP3 Implementation Plan; a key action of which was to undertake a transportation study of Market Harborough town centre; building on work carried out for the District Council's 2011 Core Strategy and for the proposed Strategic Development Area to the west of the town.

Although the Core Strategy was only adopted in 2011, in the light of recent published data on future housing needs, it is already considered to be out of date. As such, a new Local Plan will be published by the District Council in 2017.

When complete, it is intended that the transport strategy will assist with the implementation of new Local Plan and ensure the County Council continue to deliver an efficient transport network and develop well-planned infrastructure that is compatible with future housing and employment growth.

In April 2016 the County Council submitted an outline business case to the Leicester and Leicestershire Enterprise Partnership (LLEP) for consideration for a future phase of potential growth funding. This study will also therefore assist in providing the enhanced context and robust justification required to support this future growth funding bid; seeking the necessary levels of funding required to deliver a comprehensive package of transport measures in the town centre.

1.4 Methodology

In order to understand the existing and likely future transport issues on the network, a large scale exercise of data collection and extraction was undertaken. Much of the data required was extracted from the models/databases that the County Council already maintains or has subscribed access to; the Leicester & Leicestershire Integrated Transport Model (LLITM), TrafficMaster, Accsmap and Geomap for example.

Observed traffic (pedestrian/cycle/vehicular) data collected on site was used to inform the decision making process and to validate outputs from the models.

In parallel to the collection/extraction of numerical data, discussions were held with colleagues at both the County Council, Harborough District Council, and in the local community with key stakeholder representatives to understand local, often more anecdotal issues.

Where issues have been identified that adversely affect the performance of the network, or that constrain the development of the town, recommendations have been made to develop mitigation measures, or improvement schemes (outputs) that will satisfy the strategic transport outcomes of the study.

The study is broadly segmented into 3 core phases;

1.4.1 Phase 1

Phase 1 is the subject of this report, and involves the identification of issues and transport solutions; it consists of the following individual stages outlined below:

- data collection (e.g. traffic surveys, workshops)
- issue identification, inc' initial stakeholder consultations
- solution optioneering
- localised testing of options
- Selection of preferred solution options
- Draft study report/recommendations and outline transport strategy
- Submission of initial LLEP 'pipeline' project bid
- County Council and District Council Member consideration

Phase 1 involves a great deal of concurrent activity to capture and extract the data and information required to understand how, when, where and by whom the network is being used; where developments are due to take place, and which matters are arising as the current and future transportation issues for the study area.

Much of the data required was extracted from the models/databases that the County Council already maintains or has subscribed access to; the Leicester & Leicestershire Integrated Transport Model (LLITM), TrafficMaster, Accsmap and Geomap for example. Observed traffic (pedestrian/cycle/vehicular) data collected on site was used to inform the decision making process and to validate outputs from the models.

In addition an initial key stakeholder workshop was held early on in the study to inform the initial direction of Phase 1 providing a starting point for further investigation and the identification of work stream requirements.
Once a sound understanding of the overall network conditions had been established and understood, potential measures to address/improve the network were identified, assessed and a preferred selection of potential measures put forward for recommendation.

Phase 1 will therefore provide an evidence based package of potential transport solutions/outputs. In turn these outputs will provide an initial outline transport strategy which will inform Harborough District Council's Local Plan as to the required nature, location and potential implementation of improvements necessary to facilitate development; affording the opportunity to secure funding via S.106 / CIL contributions when the opportunity arises.

1.4.2 Phase 2

Phase 2 consists of the following individual stages:

- Incorporate key stakeholder and wider public feedback
- Test and consider measures in combination across town
- Development of network wide package
- Testing of preferred package
- Refine transport strategy and delivery profile

Phase 2 is firstly concerned with undertaking an engagement and consultation exercise on the outcomes of Phase 1, in order to incorporate consultation feedback. Secondly adopting a menu of preferred schemes from the work undertaken in Phase 1 (those identified in this report), which complement one another, rather than being effective only in isolation, hence providing a single coherent package of improvements across the study area. In doing so refining the initial outline transport strategy and delivery profile.

1.4.3 Phase 3

The third and final phase of the study consists of the following individual stages:

- Obtain figure for Benefit Cost Ratio (BCR)
- Obtain figure for Gross Value Added (GVA)
- Test solutions with inclusion of southern relief road
- Finalise and adopt transport strategy and delivery profile

Phase 3 is concerned with taking the preferred package of schemes and converting it into a final strategy and delivery programme suitable for obtaining funding via the Single Local Growth Fund and implementation.

1.5 Findings

Summarised below are the key overarching findings arising from the studyinto the condition, suitability, and performance of the highway transport network in the study area.

1.5.1 Traffic volume in the town is forecast to increase by 24% between 2011 (base year for the study) and 2031. Transport modelling work indicates increased queues and travel time on the network as a result.

1.5.2 It is evident from transport modelling and site observations that there are a number of junctions within the study area that currently, and in the future perform more poorly than others. Those junctions are:

- A6 / B6047 (aka McDonalds Roundabout)
- The Square / St Mary's Road / Coventry Road
- Northampton Road / Springfield Street
- Northampton Road / Welland Park Road
- Springfield Street / Kettering Road
- St Mary's Road / Kettering Road / Clarence Street
- Rockingham Road / Gores Lane
- A6 / Harborough Road / Dingley Road / A4304
- Sainsbury's store entrance / Springfield Street

1.5.3 Traffic modelling work suggests that during the peak traffic periods:

a) the greatest proportion of trips on the network are those going from within the study area to outside of the area, or vice versa.
b) around a third of the trips using the study area over the peak hours in 2011 were making internal trips.
c) 'through' traffic (traffic using the roads in the town to get to/from destinations outside the town) accounts for approximately 10% of trips.

1.5.4 Two of the three 'A' and 'B' classified routes (the B6047 and the A4304) within the study area both converge on The Square and therefore much of the traffic in the study area is reliant upon using the very heart of the town centre; in excess of 13,000 vehicles per day.

1.5.5 Feedback from local residents and stakeholders suggests that this results in an unwelcome mix of vehicular traffic in an area which local residents and stakeholders feel ought to be primarily dominated by pedestrians.

1.5.6 The classification of roads in the study area is not wholly representative to the amount of traffic they currently carry and are forecast to carry in the future.

1.5.7 The control and management of HGV and high sided vehicles (typically HGVs) routing through the town is constrained by low underpass height on a number of bridges, often necessitating passage to sites in the south of the town from the north via the town centre.

1.5.8 Whilst a localised scheme to reduce sign clutter in The Square was carried out in the town recently, traffic signing across the area lacks a coherent strategy and is in need of review.

1.5.9 Infrastructure for walking, cycling and public transport is generally quite good. However, there are clear gaps in the existing elements, which would benefit from improving.

1.5.10 Both on-street and off-street parking is generally well catered for in the study area. However, it is essential that one coherent parking strategy is developed for the town, incorporating a range of measures/parking controls which take account of the parking requirements of local residents, shoppers, visitors, disabled motorists, local business and workers.

1.5.11 All but a small minority of recorded vehicle speeds are generally in line with the posted speed limits and do not cause undue concern for highway safety.

1.5.12 Market Harborough consistently records a comparatively low level of road traffic collisions, compared to other similar areas (towns) in the county. Furthermore the frequency of accidents on the 4 main routes across the town, the A4304 (west), A4304 (east), A508 and B6047, fall below that which might be expected on similar roads nationally.

1.5.13 Feedback from early stakeholder workshops suggests that the town centre's public realm is perceived to be in need of updating

1.5.14 Without addressing the traffic issues within the town through the combinationof highway improvements, walking and cycling improvements, delivered in combination with a series of complimentary softer measures, it is likely that the area will continue to suffer from congestion which will ultimately limit the delivery of housing. In addition, it is likely that the town will become less attractive to developers, reducing housing and economic growth in the area. Failing to address congestion will stifle growth, leave the town centre poorlyconnected and prevent economic growth opportunities from being exploited.

1.5 Recommendations

Based on the strong evidence base derived from the study a series of recommendations, have been identified and presented in Chapter 5, paragraph 5.2.

The series of recommendations can also be seen geographically in **Figures 27, 28 and 29.**

- **Figure 27** shows a recommended package of localised improvement measures which utilises the existing road network, and traffic routing.

- **Figure 28** shows a second stage of recommendations which would build on the recommendations in Figure 26 but introduce more significant measures resulting in changes to the network and traffic routing.

- Finally **Figure 29** shows a third stage of reconditions, again based on those shown in Figure 26 but with the introduction of a relief road to the south east of the town.

These recommendations have been evaluated on the basis of key desired transport outcomes identified in Chapter 2 and have provided a framework for the identification of an initial £14.9 million package of infrastructure and smarter choice measures /outputs (excluding the relief road).

1.6 Transport Strategy - next steps

The recommended schemes derived from this study provide the basis of an initial outline transport strategy for Market Harborough. However, the work carried out as part of this study (Phase 1) will need to be developed and worked up in significantly more detail in some areas, to try to obtain the funding necessary for the implementation of the final overall strategy.

The milestones for the development of the strategy and potential implementation are outlined below:

2015/16 Complete	**Study Phase 1 (Issues & Solutions')*
2016 /17	*Study Phase 2 '(Solution Coordination & Stakeholder feedback) '* *Study Phase 3 (Finalise Strategy & Prepare Funding bid)*
2017/18	*Scheme Consultation / Detailed Design*
2018/19	*Implementation and Delivery*
March 2021	*Completion*

**Covered by this report*

2.1 Introduction

2.2 Purpose of Report

This report presents the overriding findings of a study jointly funded by Leicestershire County Council and Harborough District Council concerning the transport network in and around the settlement of Market Harborough, Leicestershire; hereafter referred to as *'The Study Area'*.

The report makes recommendations for the promotion of a medium to long term (up to 2031) highway orientated transport improvement strategy for the study area, which will serve to:

- *Support economic and population growth in the context of future land allocation and development; ensuring the town is not adversely impacted by traffic growth, and remains a vibrant and prosperous place for people to live, work and visit.*
- *Form the necessary foundation on which the long term delivery of future highway/transport improvements in the study area can be based.*

2.3 Context

2.3.1 General

Market Harborough is a thriving market town; however it faces growth pressures on its transport network, with approximately 3,000 extra dwellings proposed in the town before 2031, including a total of 1,500 dwellings proposed in a Strategic Development Area to the west of the town.

Whilst Market Harborough's transport network has been subject to varying degrees of analysis for the purpose of allocating land for development and scrutinising the likely impact of the same, there has been little in the way of a comprehensive and holistic transport assessment since the 1990's when the 'Bypass Demonstration Project' resulted in the diversion of the A6 to the east of the town.

Similar exercises have been recently undertaken in other county towns; notably that of Hinckley, as a basis for developing programmes of schemes and projects for implementation in future years.

2.3.2 Policy context

An efficient transport network combined with well-planned infrastructure is widely recognised as a key element in supporting economic growth and the delivery of economic ambitions. The Economic Assessment for Leicester and Leicestershire commissioned by the Leicester and Leicestershire Enterprise Partnership (LLEP) concluded that an efficient transport system has a key role to play in helping local economic prosperity and growth; It enables people to travel to and from work, leisure, services and education.

- Employers can access employees more easily.
- Businesses can transport their goods and services and operate more effectively.
- It can increase the attractiveness of the area to invest in, live in, visit and work.
- Is also an important factor for businesses in choosing where to locate.

2.3.3 Policy context – Leicestershire County Council

Each local transport authority in England is required to produce a Local Transport Plan (LTP) for their area. Local Transport Plans are the key mechanism for delivering integrated transport at a local level, and helping to promote transportation as an enabler of economic growth and social prosperity.

In March 2015 the County Council's Cabinet approved the 2015/16 LTP3 Implementation Plan; a key action of which was to undertake a transportation study of Market Harborough town centre; building on work carried out for the District Council's 2011 Core Strategy and for the proposed Strategic Development Area to the west of the town.

When complete, the study will ensure the County Council continue to deliver an efficient transport network and develop well-planned infrastructure to support economic and population growth ambitions in the Market Harborough area.

2.3.4 Policy context – Harborough District Council

National planning policy requires local planning authorities such as Harborough District Council to support 'sustainable development' and to plan

positively for it by preparing new local plans. Although the Core Strategy was only adopted in 2011, in the light of recent published data on future housing needs, it is already considered to be out of date. As such, a new Local Plan will be published by the District Council in 2017.

When complete, it is intended that the transport strategy will assist with the implementation of new Local Plan and ensure the County Council continues develop and deliver transport measures that are compatible with future housing and employment growth, supporting the long term sustainability of planned housing, employment and retail growth in the Market Harborough area, including approximately 1,500 dwellings to the north west of the town.

2.4 Aims and objectives

The overriding aim of the study is to develop a holistic transport strategy that is sufficiently robust to:

- *Support economic and population growth in the context of future land allocation and development; ensuring the town is not adversely impacted by traffic growth, and remains a vibrant and prosperous place for people to live, work and visit.*

- *Form the necessary foundation on which the long term delivery of future highway/transport improvements in the study area can be based.*

In order to the develop the strategy the objectives of the study are twofold;

1) Firstly, to develop a strong evidence base bringing together existing known, and future anticipated transport issues across the town, providing the enhanced context and justification required to exploit future funding / delivery opportunities.

2) Secondly, to identify possible solutions and recommend a package of preferred measures/outputs which will deliver specific key outcomes, meeting LTP3 strategic transport goals, as shown in **Fig 1** below.

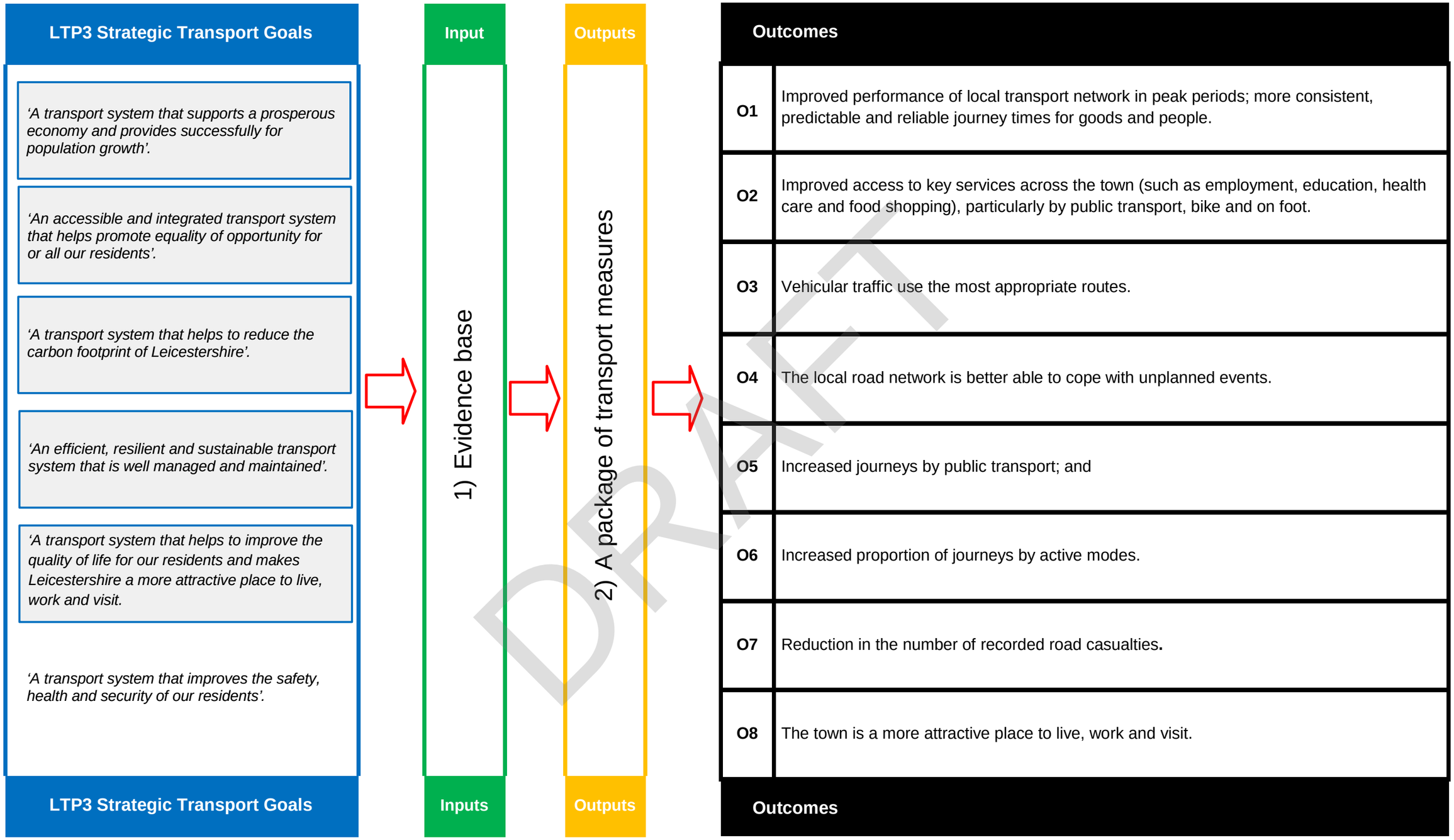

Fig 1: LTP3 strategic transport goals and project outcomes

It is also imperative that the strategy derived is:

- Supported and shaped by input from key stakeholders
- Deliverable within an agreed timeframe.
- Provides value for money.
- Coordinated with other proposals to minimise levels of disruption on the network.

2.5 Scope and limitations

The study is primarily concerned with investigating the existing road and highway transport network, and its suitability in serving the type and frequency of its users, whether they are vehicular (including private, passenger and commercial vehicles), or active modes of travel (such as cyclists and pedestrians).

The study has a particular emphasis on being strategic and holistic in its nature. As such the study will consider a wide range of themes;

- The Local Road Network (LRN)
- Impact of the Strategic Road Network (SRN) on the LRN,
- Strategic routing and signing (including car parks) on the LRN
- Future land allocation and development
- Current demography of the town
- Current and future travel patterns across the network
- Walking and cycling infrastructure
- Public transport infrastructure
- Congestion on the LRN at major junctions and corridors.
- Accident sites
- On-street parking and loading controls
- The distribution of speed limits
- Vehicle access and movement restrictions
- Public realm and streetscape
- Highway maintenance
- Complementary smarter travel measures
- Other complementary programmed/committed works in the study area.

With regards to future land allocation and development all modelled future year (2031) outputs take due account of any committed major development

sites to be implemented between now and 2031. However, the outputs do not include further and currently (October 2015) uncommitted developments that may arise in the intervening time.

That said, improvement measures derived from the study do encompass solutions that factor in the geographical location and size/impact of known but currently uncommitted development sites.

Whilst the strategy may serve to be of assistance in the future viability assessment of further development sites, it has not been produced with the express intention of being used to that end.

The geographical extents of the study are shown in **Figure 2.** The study area encompasses four district wards: Great Bowden and Arden, Little Bowden, Welland and Logan.

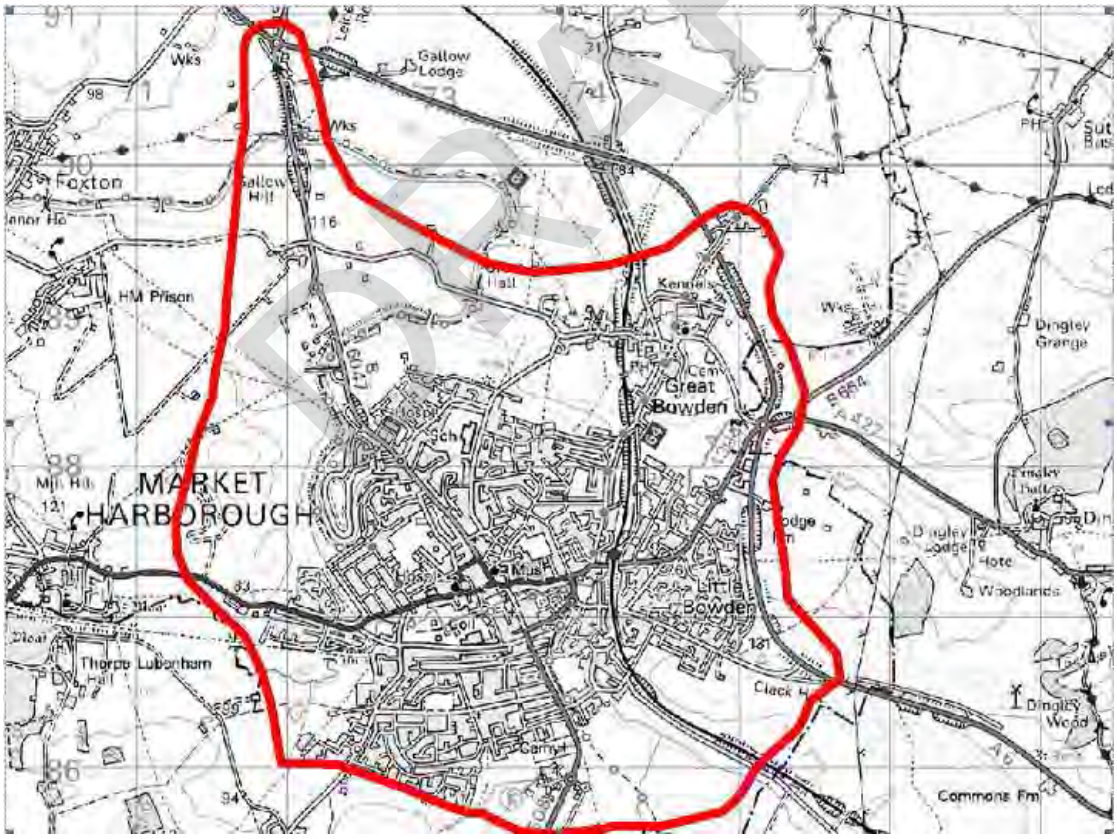

Figure 2- Plan to show geographical scope of study

2.6 Funding for implementation

If taken forward for implementation, a programme of works will be developed to address any issues identified in the study. Depending on the outcome of the study, funding for measures could be sought from a number of sources, including developer S106 contributions and the Government's Single Local Growth Fund (SLGF), which is allocated via a competitive bidding process administered by the Leicester & Leicestershire Enterprise Partnership (LLEP). At this point no funding is available for implementation; however in April 2016 the County Council submitted an outline business case to the LLEP for consideration for a future phase of growth funding. This outline business case can be found in **Appendix A.**

This study will therefore assist in providing the enhanced context and robust justification required to support this future growth funding bid; seeking the necessary levels of funding required to deliver a comprehensive package of transport measures in the town centre.

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2.7 Adopted approach

The approach of the study can be broadly segmented into 3 core phases, as illustrated in the diagram in **Figure 3** below;

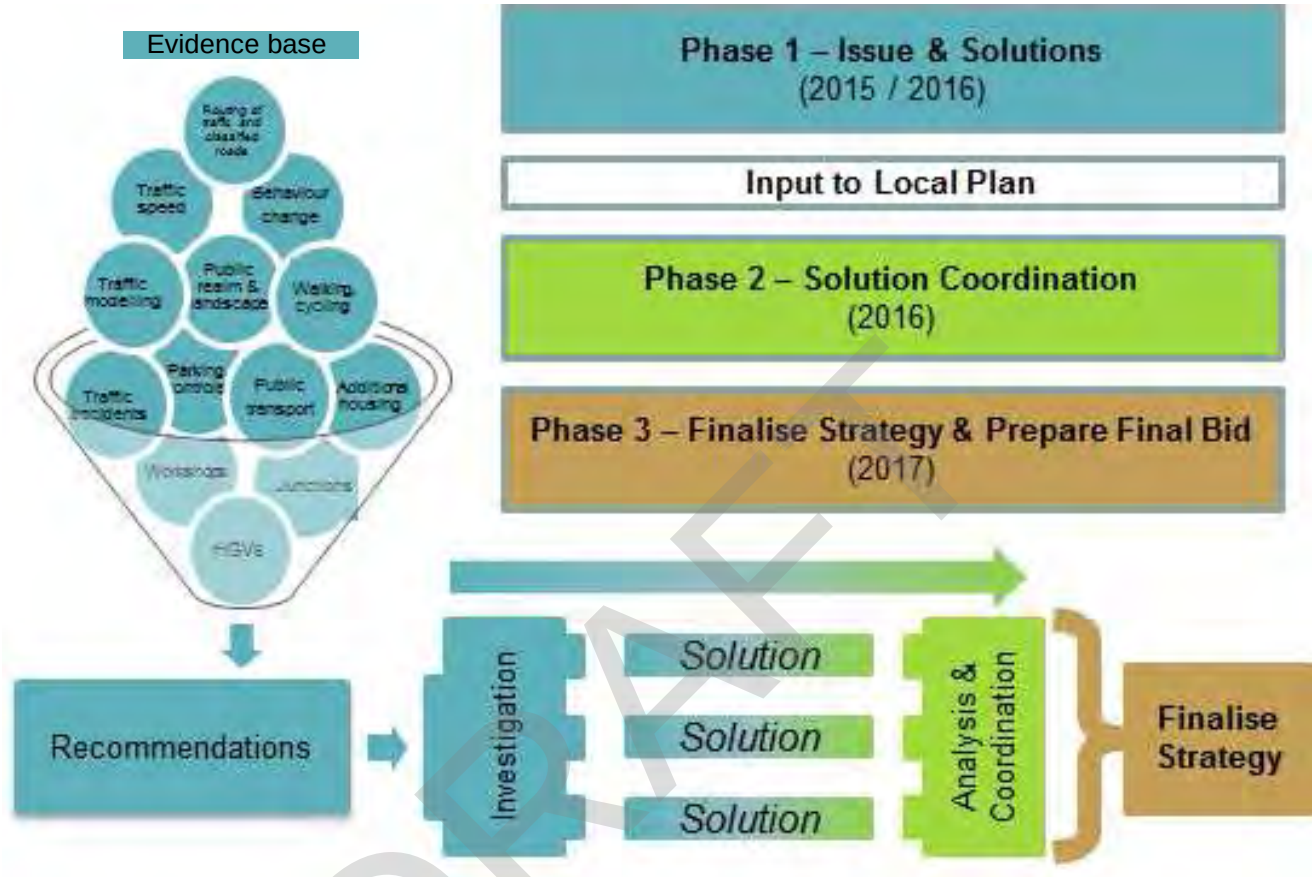

Figure 3- Study phasing

2.7.1 Phase 1 – 'Issues & Solutions'

Phase 1 i the largest of the 3 phases and forms the foundation on which phases 2 and 3 will be undertaken. It broadly consists of the following individual stages outlined below:

- o data collection (e.g. traffic surveys)
- o issue identification, inc' initial stakeholder consultations
- o solution optioneering
- o localised testing of options
- o Selection of preferred solution options
- o Draft study report/recommendations and outline transport strategy
- o County Council and District Council Member consideration

Before any measures can be devised and a strategy developed, it is essential to gain an appreciation of the existing, and the forecast future conditions on the network. Phase 1 therefore involves a great deal of concurrent activity to capture and extract the data and information required to understand how,

when, where and by whom the network is being used; where developments are due to take place, and which matters are arising as the current and future transportation issues for the study area.

Table 1 below identifies the data and information captured and extracted for Phase 1 of the study.

Source	***Data / information***
Network Data & Intelligence team	*Current traffic data, including vehicle, pedestrian and cycle counts, queue lengths and vehicle speeds*
Geomap	*Speeds, highway extents, TROs etc*
Traffic Management historical ad-hoc requests	*TROs, signs and lining improvements*
Market Harborough Cycling Network Plan	*Cycle network and infrastructure*
Public Transport Team Operations / Strategy	*Bus routing information / maps, operator issues*
Accsmap/STATS19	*Accident data*
Harborough District Council	*Core Strategy and SHLAA plans.*
LTP3 evidence base Research & Insight team	*Demographics, economy and other non-transport related information*
Officer workshops	*Planned /committed/ programmed works, issue identification and scheme aspirations*
LLITM	*Existing and future journey patterns/ times, delay and link volume /capacity data*
Traffic Master	*Existing journey times*
Market Harborough Civic Society	*Issue identification and scheme aspirations*
On- site officer observations	*Traffic and road behaviour and site measurements*

Table 1. Data and information sourced for Phase 1

In addition, key stakeholder workshops were held in July 2015 and attended by: the Chamber of Trade and Commerce; local businesses the Civic Society; Sustrans and a number of other organisations. The workshop informed the initial direction of Phase 1 providing a starting point for further investigation and the identification of work stream requirements. A Further follow up consultation exercise with key stakeholders is planned during phases 2 and 3 of the study to refine and develop solutions derived from Phase 1.

Once fundamental matters are understood, work can begin to devise potential measures to address/improve the network. A holistic approach will be taken

when devising possible improvement measures to encompass solutions which will benefit walking, cycling, public transport as well as vehicular traffic.

Clear justification will be provided on why measures have been proposed, the evidence on which they are based and the benefits that will flow if they are implemented.

At this stage, whilst measures will be tested to establish whether they are likely to be viable, they will only be tested using very local assumptions, and not necessarily refined to a point that their wider impact and suitability on a network wide basis can been tested.

Phase 1 therefore provides an evidence based package of preferred transport solutions/outputs. In turn these outputs provide an outline transport strategy which (in April 2016) formed the basis of an initial project pipeline bid to the LLEP for a future phase of growth funding, and will inform the Local Plan as to the required nature, location and potential implementation of improvements necessary to facilitate development; affording the opportunity to secure funding via S.106 / CIL contributions when the opportunity arises.

This report focuses on Phase 1.

2.7.2 Phase 2 – 'Solution Coordination'

Phase 2 consists of the following individual stages:

- Incorporate key stakeholder and wider public feedback
- Test and consider measures in combination across town
- Development of network wide package
- Testing of preferred package
- Refine transport strategy and delivery profile

Phase 2 is firstly concerned with undertaking an engagement and consultation exercise on the outcomes of Phase 1, in order to incorporate consultation feedback. Secondly adopting a menu of preferred schemes from the work undertaken in Phase 1 (those identified in this report), which complement one another, rather than being effective only in isolation, hence providing a single coherent package of improvements across the study area. In doing so refining the initial outline transport strategy and delivery profile.

2.7.3 Phase 3 – 'Finalise Strategy & Prepare Final Bid

The third and final phase of the study consists of the following individual stages:

2.7.3.1 Obtain figure for Benefit Cost Ratio (BCR)
2.7.3.2 Obtain figure for Gross Value Added (GVA)
2.7.3.3 Test solutions with inclusion of southern relief road
2.7.3.4 Finalise and adopt transport strategy and delivery profile

Phase 3 is concerned with taking the preferred package of schemes and converting it into a final strategy and delivery programme suitable for obtaining funding via the Single Local Growth Fund and implementation.

3.1 Transport modelling

3.2 Overview

Transport models provide arguably the single most valuable tool in the assessment and forecasting of transport related issues and the viability of any likely solutions. The evidence they provide assists the County Council in making informed decisions on how best to allocate resources; securing funding, appraising highways schemes and mitigating the impacts of future development.

The county wide Leicester & Leicestershire Integrated Transport Model (LLITM) has been used in the high level assessment of traffic and travel in the study area, whilst more detailed specialist models such as ARCADY and LINSIG have been utilised in the finer assessment of individual junctions.

3.3 Model suitability

Much of the data required for both the baseline (2011) and future case (2031) scenarios have been extracted from LLITM. Where necessary, observed data has also been collected to validate data extracted from the traffic model. For the purposes of the study and in order to ensure a robust and credible assessment, LLITM has been re-validated over the town's Area of Influence (AoI) using extensive traffic flow data collected in 2015. Additionally a number of network/development changes that had occurred in the intervening time since the model was last validated have been programmed in.

In the consideration of the future year scenario, the following known committed development sites (as shown in **Table 2**) were written into the model's assumptions:

Committed Development Site	No. of Dwellings
Farndon Road, Market Harborough	323
Lubenham Hill (part of SDA)	119
Land west of Leics Road (part of SDA)	450
Land at Airfield Farm (part of SDA)	924
Land at Lathkill Street	47
Land at Glebe Road	83
Land east of Northampton Road	27
Overstone House, Kettering Road	48
Land at Waterfield Place	24

Table 2 Committed development sites

Other known sites still to be determined by the District Council, such as Overstone Park (600 dwellings) are not reflected in the future year scenario outputs presented in the report, however improvement measures derived from the study do encompass solutions that factor in the geographical location and size/impact of these known development sites.

Subsequent to the above referenced re-validation, the model is considered to be adequately calibrated for use in the undertaking of the study work. A copy of the full Local Model Validation Report (LMVR) is available as a supplement to this report in **Appendix B.**.

4.1 Current & Future Conditions

4.2 Chapter Overview

This chapter draws on various sources of information and summarises in general terms the overriding condition and performance of the transport network in the base (2011) / current (2015) and future (2031) year scenarios. It is the intention of this chapter to identify broad areas/initiatives where some level of investment could be considered in order to improve the performance of the network, or guard against its deterioration.

4.3 Background Social, Economic and Demographic information

Market Harborough is identified as Harborough districts only sub-regional centre (SRC) with a population of around 25,000.

Market Harborough plays an important role in providing services, employment, leisure and range of travel modes to surrounding district population. It is also a service centre for parts of North Northamptonshire.

Its location means that Market Harborough has strong functional relationships with Northampton, Kettering and Corby

.

4.3.1 Economy / jobs and workers

Most employment land and economic activity is concentrated around the town centre.

There is a low unemployment rate within the district compared with the county and region.

Market Harborough is becoming increasingly attractive to London commuters given frequent and fast train travel to London and house price differential

4.3.2 Deprivation

The district of Harborough is one of the least deprived areas in England and the least deprived district in Leicestershire.

However, central Market Harborough has been identified as a neighbourhood which suffers multiple deprivations and is the seventeenth most deprived areas in Leicestershire. - Key issues include health, education, skills and training, employment, community safety, children and young people, older people and housing.

4.3.3 Health

Obesity rates amongst adults in Market Harborough (23%) are similar to the district, county and national average (**Table 3**).

Geographical area	% adults obese	
District	Harborough	23%
County	Leicestershire	24.3%
Country	England	24.2%

Table 3, Obesity rates: Source: Leicestershire 2010 JSNA

14% of Year 6 children in the district of Harborough are classed as either overweight or obese (lower than the county average of 28.3%).

People in the district of Harborough are generally healthier than Leicestershire averages and significantly better than national average.

4.4 Land allocation & development

The outcomes and recommendations of this study must be considered in the context of current and future land allocation and development, as broadly set out in the new Harborough Local Plan (estimated 2017).

In Market Harborough approximately 3,000 potential extra dwellings are proposed between 2011 and 2031. This includes a more immediate plan to bring forward a Strategic Development Area (SDA) to the north west of Market Harborough to help meet the requirement for new dwellings, and to provide to new employment, educational and recreational opportunities. Due to the scale of the SDA site a new distributor road is planned to serve the site.Three developers have committed to building in the SDA equating to approximately 1500 dwellings. There are also numerous smaller, albeit still significant developments committed in areas such as sites on Farndon Road and Glebe Road etc.

The commercial / industrial / residential development of land is typically the single most significant factor in the local growth of demand on the highway network, for example how those who live or work in a new development are likely to travel, including the routes they will take, their choice of transport and the impact this will have on the network.

Figure 4 shows the committed areas for development below, it also further depicts areas identified for potential future development.

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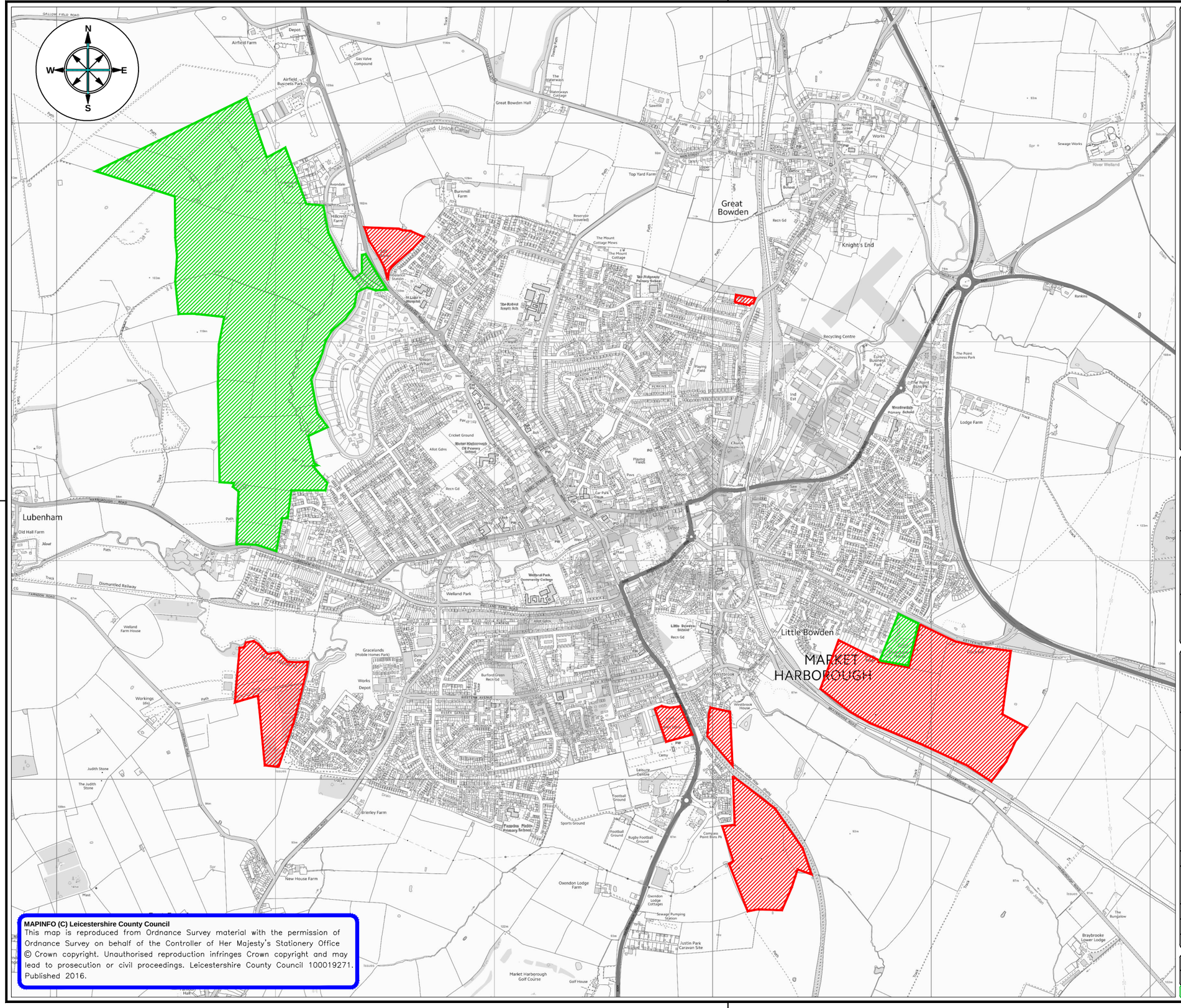
Figure 4: Map showing committed and future development



COMMITTED FUTURE DEVELOPMENT

POTENTIAL FUTURE DEVELOPMENT

Leicestershire County Council

ENVIRONMENT AND TRANSPORT DEPARTMENT

INVESTOR IN PEOPLE

PHIL CROSSLAND
DIRECTOR

DESIGN & DELIVERY GROUP

MARKET HARBOROUGH

TITLE:
COMMITTED AND FUTURE DEVELOPMENT SITES

DRAWING NUMBER		SCALE
N / A		NTS
PREPARED BY:	R DAVIES	DATE: MARCH 2016
CHECKED BY:	M ARCHER	SIZE : A3
APPROVED BY:	M ARCHER	CORR. FILE :

COUNTY HALL * GLENFIELD * LEICESTER * LE3 8ST
Tel: 01163 050001 * Fax: 0116 3050006
E.Mail address: customerservices@leics.gov.uk www.leics.gov.uk

4.5 Road network and strategic routing

Market Harborough is well connected with nearby links to the nationally strategic road network (SRN) and being directly served by the A508/A4304 primary route between the A14 and the A6.

Whilst diverting the A6 to the east of the town in the 1990s provided a viable alternative route for what would otherwise have been north/south through traffic, the absence of an orbital route around the town means that the remaining classified roads in the study area continue to converge and rely upon The Square in the very heart of the town centre to distribute much of the towns traffic; in excess of 13,000 vehicles per day[1]. The result is an unwelcome mix of vehicular traffic, including large goods vehicles, in what many in the community consider ought to be a primarily pedestrian dominated area[2].

With the exception of a new distributor road linking the A4304 with the B6047 to the west of the town, there are no firm plans for any additional major infrastructure.

4.6 Traffic Volume

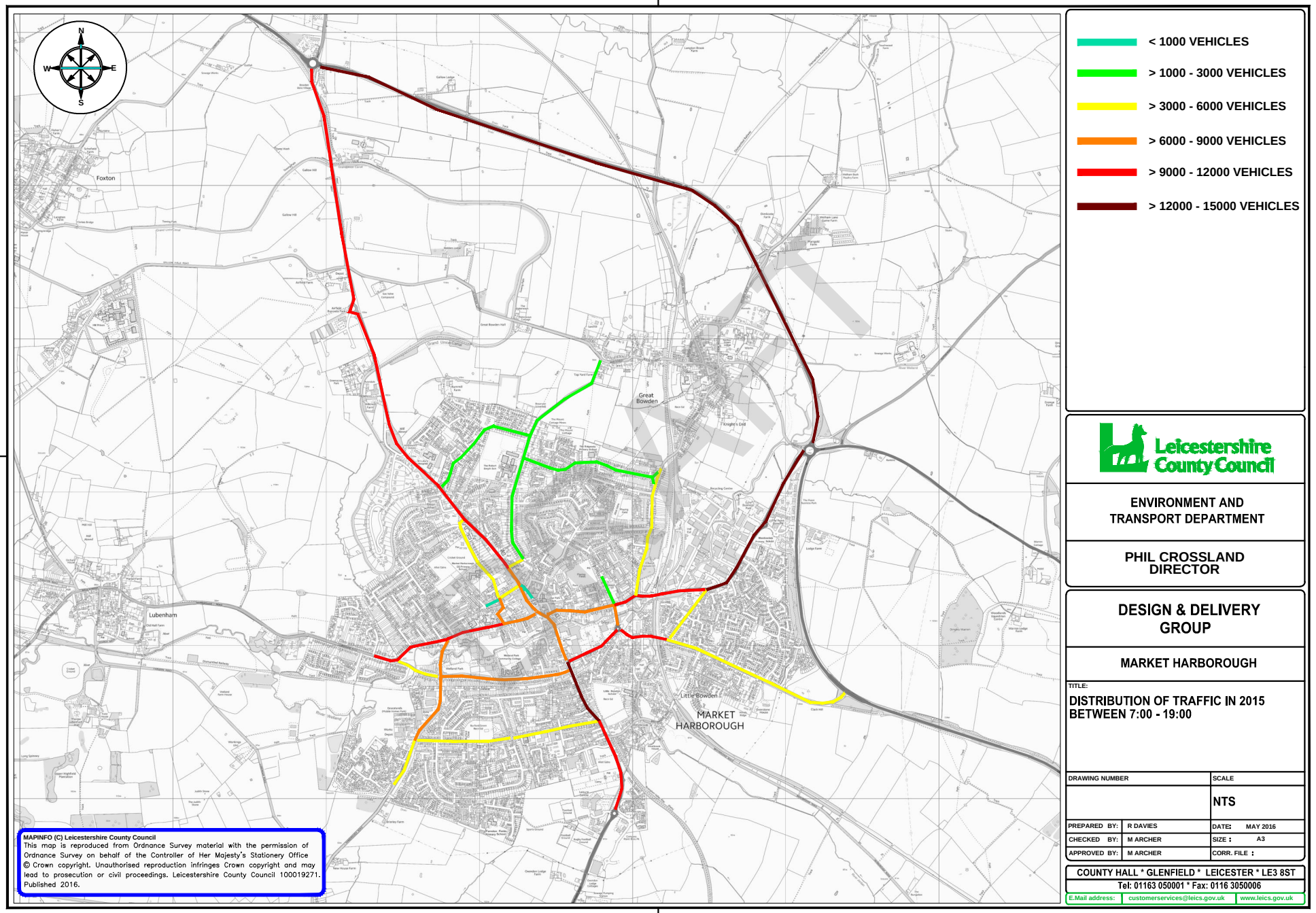
4.6.1 Current traffic volume and distribution on road network

The distribution of traffic, as derived from observed traffic counts (2015) can be seen in **Figure 5**, and serves as an effective tool to quickly identify the most heavily used routes across the town. It is important to note that the plan does not make any reference or representation as to the performance of the network. A densely trafficked route for instance may well perform better than that of a lesser trafficked route. Whilst the most heavily used routes are, unsurprisingly, the 'A' and 'B' roads across the town, the classification of roads in the study area is not wholly representative to the amount of traffic they currently carry. Some unclassified roads such as Farndon Road and Welland Park Road carry almost as much traffic as those classified routes within the study area..

[1] 24 hour ATC 6th – 12th June 2015

3 Community workshop held Thursday 9th July 2015

Figure 5: Map showing distribution of traffic in 2014 between 7am and 7pm



4.6.2 Future traffic volume and distribution on road network

As shown in **Table 4** traffic volume in the town during the combined peak periods (8am - 9am and 17.00- 18.00) is forecast to increase by 24% between the modelled baseline year 2011 and the future forecast year 2031.

Year	Total Traffic Volume (combined peak periods), in PCUs
2011	8,246
2031	10,856

Table 4: Traffic volume (PCUs) over combined peak periods (2011-2031)

Figures 6 & 7 illustrate the changes in traffic volume across the network between 2011 and 2031 for the AM and PM peaks respectively. A red depicts an increase in flow/volume, whilst a green line depicts a decrease in traffic flow/volume.

Figure 6; Flow change between 2011 – 2031 (AM)

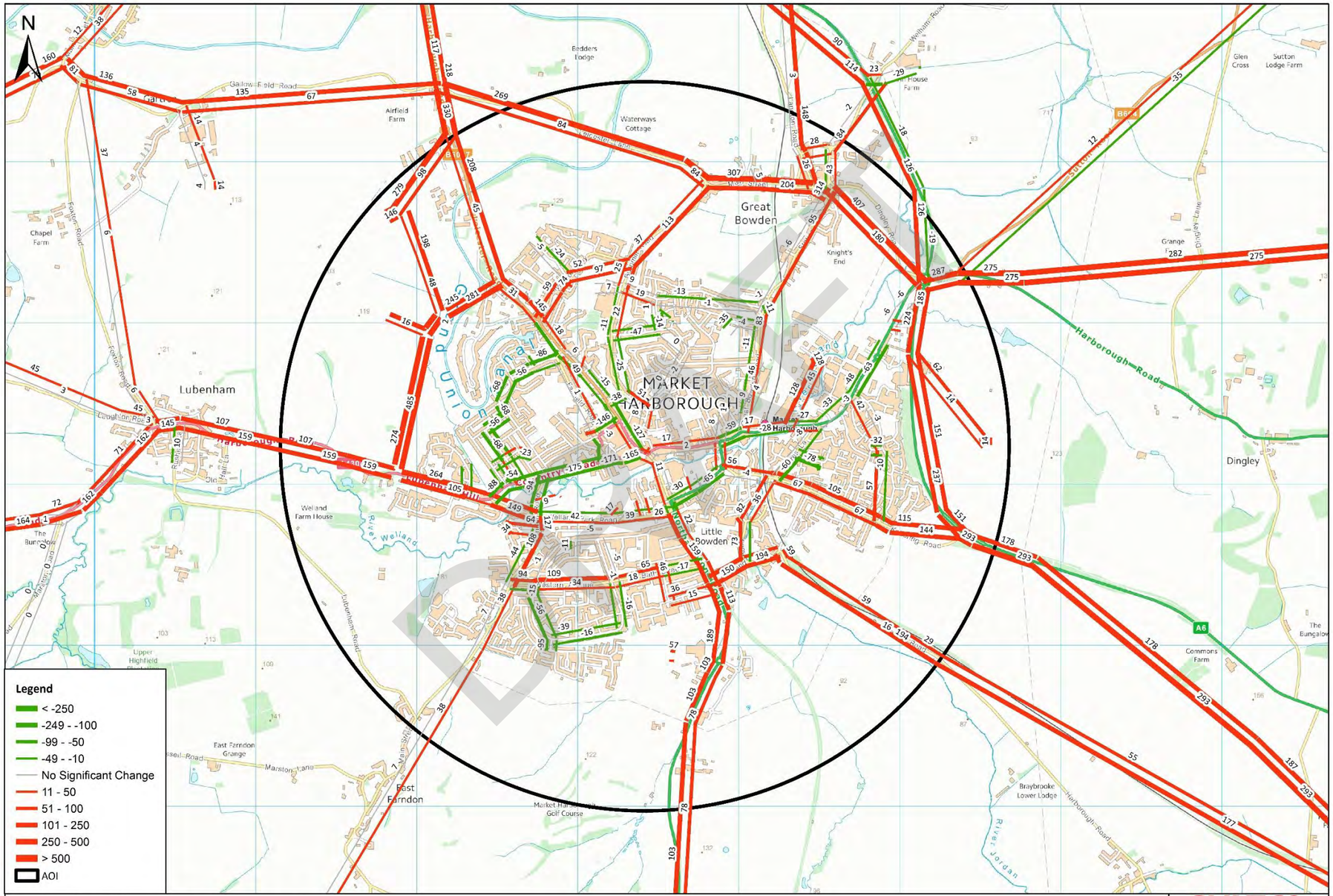
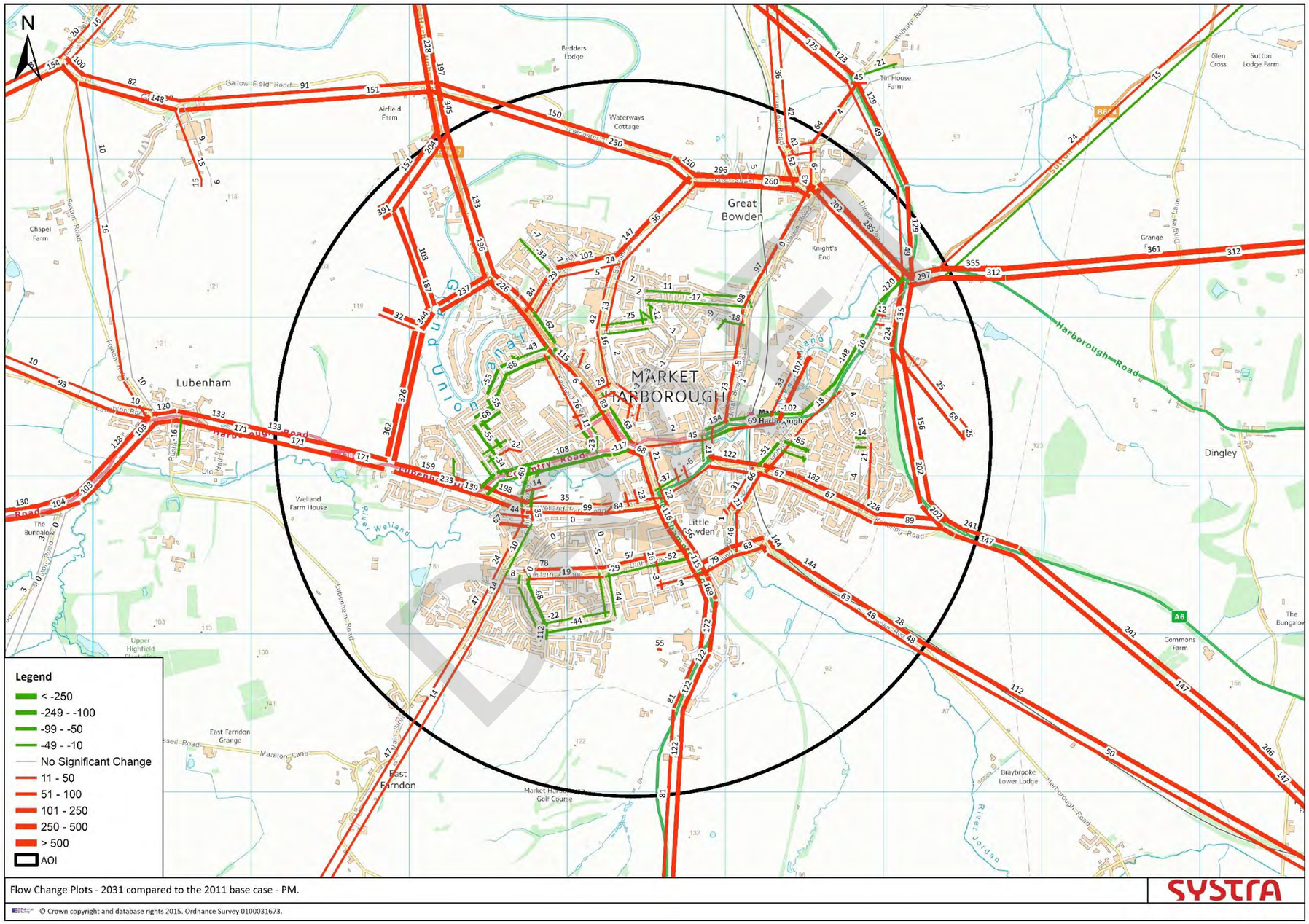


Figure 7 – Flow change between 2011 – 2031 (PM)



Figures 6 and **7** indicate that there is an increase in traffic volume along the following roads within the study area;

- Harborough Road (A4304)
- Farndon Road
- Northampton Road (A508)
- Welland Park Road
- Braybrook Road
- Rockingham Road (A4304)
- A6 (North & South)
- Burnmill Road
- Harborough Road (B6047)

The general increase in flows can be linked to the general growth in traffic volume between the 2011 and 2031 scenarios across the study area. It would appear that that the routes generally around the periphery of the town centre witness an increase in flow for both the morning and evening peak periods, largely due to the redistribution as a result of new development within Market Harborough.

Conversely, a reduction in traffic is forecast to occur on;

- Coventry Road
- Logan Street
- Springfield Street

This can be linked to the general decrease of through traffic using the town centre roads, resulting from redistribution along the new local distributor road modelled on the north west of Market Harborough, in turn this would appear to result in a larger proportion of vehicles using the peripheral routes.

Whilst the proposed distributor road is being delivered primarily to facilitate access to the SDA, traffic modelling suggests that the new road will be well used as a strategic link in the network and will consequently serve to reduce the overall volume of traffic using the town centre; this being in despite of the general trend of traffic volume being forecast to increase over the same period of time.

In order to maximise the potential benefits of the new road, it is proposed for it to be permitted for use by all traffic except the very largest of vehicles; those with a maximum gross weight in excess of 18 tonnes being prohibited except for the purpose of loading.

Closer examination of the change in traffic flow on 9 main route links as identified in **Figure 8** has been undertaken and the results tabulated below in **Table 5** which shows the difference in modelled traffic volume between the base and future year scenarios over the combined AM/PM peak periods.

Figure 8: Main Route Link Flow Locations.

Ref	Location	Flow (2011)	Flow (2031)	Diff	% Diff
A	Lubenham Hill (A4304)	1,937	2,412	+475	+25%
G	Welland Park Road	1,699	1,994	+295	+17%
B	Farndon Road	1,464	1,819	+355	+24%
D	Rockingham Road (A4304)	1,792	1,693	-99	-6%
C	Northampton Road (A508)	1,552	1,679	+127	+8%
H	Northampton Road	1,467	1,622	+155	+11%
F	Coventry Road (A4304)	1,756	1,528	-288	-12%
E	St Mary's (A4304)	1,086	1,113	+27	+2%
I	Leicester Road (B6047)	1,197	962	-235	-20%

Table 5 Change in flow on main route links 2011-2031

Analysis of **Table 5** above identifies that in 2031, despite being only a C classified road with extensive traffic calming, Welland Park Road is forecast to be carrying one of the highest vehicle flows across the town, and nearly a third (30%) more traffic than that of the A4304 Coventry Road; to which it already serves as a popular, informal alternative.

Welland Park Road does have many beneficial characteristics over Coventry Road in providing this movement; not least by serving to avoid the immediate town centre (The Square). It is unsurprising therefore that its use to that end is forecast to increase by 2031, whilst a further comparable decrease in flow is to be experienced in the use of Coventry Road.

Clearly there are some disparities both currently and also in the future between the recorded status of some roads and their intended/actual use.

As the correct designation of routes has implications beyond merely the aspired routing of traffic; potentially affecting the funding and scheduling of maintenance activities, planning applications, and the management of third party works (utility company street works etc), it is important to periodically review designations and make changes where appropriate.

Subject to a detailed viability assessment, rather than resist, it may be preferable for engineering improvements to be made to Welland Park Road that would facilitate the demand; including, if appropriate, being re-designated as the A4304 in favour of Coventry Road so that it can more suitably accommodate the existing and forecast future demand of traffic; thus reducing the dependency on the immediate town centre.

4.7 Travel demand on the network

Sectoral analysis of journeys undertaken in the study area makes it possible to identify the distribution of trips with an origin, destination or both within Market Harborough. This information can assist in understanding the type of infrastructure required in the future, and can serve to highlight the future trend of travel. **Figure 9** shows a plan of the core zones used to determine travel demand.

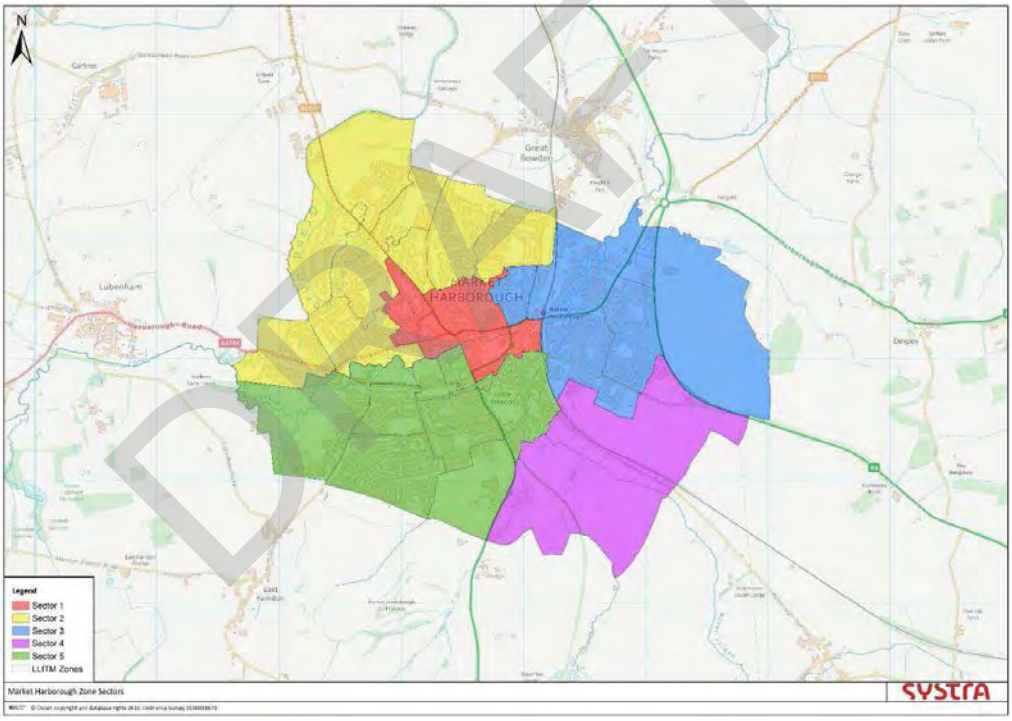


Figure 9: Study area sector plan.

Traffic modelling suggests that 36% of the traffic using the study area over the peak hours in 2011 is making internal trips[3]. That is to say that they have both an origin and destination within the study area.

The greatest proportion of trips on the network are those going from within the study area to outside of the area, or vice versa (internal/external trips); these accounting for 57% of the total.

Whilst the frequency of future internal trips as a proportion of the total trips being made experiences a drop to a quarter (25%) of all journeys, the absolute number of those internal trips remains to be significant; around 4,000 over the peak hours. Conversely, the frequency of internal/external trips being undertaken increases as a proportion of the total to around 68%.

In view of the above, there would clearly be benefit in encouraging as many ofthose persons as possible to find an alternative to undertaking their journeys by car; reducing the number of vehicles on the network and thus helping to accommodate the forecast growth. Enhancement and extension to thewalking, cycling and public transport infrastructure, coupled with a programmeof behavioural change initiatives is the common practice employed to that end.

It is important also to acknowledge from the sectoral analysis that the majorityof journeys are internal/external; a trend that is forecast to continue. Such journeys are unlikely to be influenced by sustainable/active travel improvements due to their distance and complexity. As such, it is equally as important for improvements to the highway network that will accommodate that demand to be considered, just as it is important to provide for alternative modes.

Table 6 below shows the proportional distribution between the different origins/destinations of trips on the network in both the base and future year scenarios.

Trip Category	2011 AM		2011 PM	
	Totals (PCUs)	Proportion	Totals (PCUs)	Proportion
Internal to Internal	2,314	35%	2,312	36%
Internal to External	1,774	27%	1,870	29%
External to Internal	2,040	31%	1,701	27%
External to External	422	6%	470	7%

Trip Category	2031 AM		2031 PM	
	Totals (PCUs)	Proportion	Totals (PCUs)	Proportion
Internal to Internal	2,026	25%	2,009	25%
Internal to External	2,517	31%	2,908	37%
External to Internal	3,052	38%	2,379	30%
External to External	485	6%	594	8%

Table 6 Trip origin/destination distribution

4.7.1 Through traffic

Whilst being bordered by the A6 serves to divert much of the potential through traffic, sectoral analysis of journeys undertaken in the study area

indicates around 10% of all trips continue to have neither an origin nor a destination within the study area; a figure that grows broadly in line with the general increase of traffic forecast. **Table 7** shows the proportion of through traffic over the combined peak periods for both the base and future year scenarios.

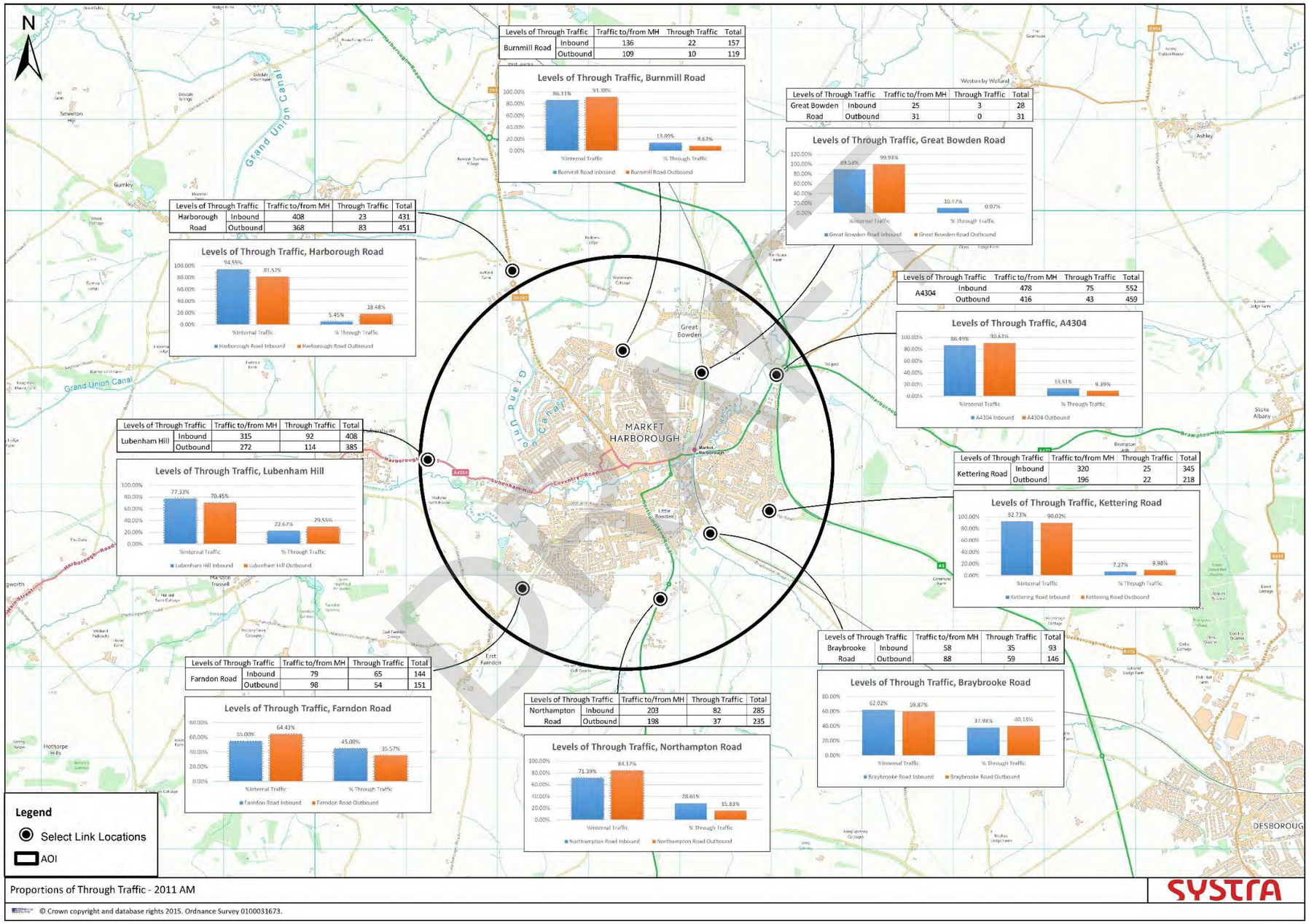
	Total Traffic	**Through Traffic**	**Through Traffic (%)**
2011	8,246	892	11%
2031	10,856	1,079	10%

Table 7 – Through traffic over combined peak periods (PCUs)

However, the distribution of that through traffic does change between the base (2011) and future case (2031) scenarios. The presence of the distributor road in the west of the town results in decrease in the use of internal routes in the town centre; removing traffic journeying between Lubenham Hill and Harborough Road and a larger proportion of vehicles using the strategic network. In the future, those through traffic vehicles are likely to be using the peripheral routes of the study area rather than the town centre.

Figures 10 to **13** illustrate the degree of through traffic for each of the main routes into/out of the town

Figure 10 : Proportion of through traffic- 2011 (AM)



Levels of Through Traffic		Traffic to/from MH	Through Traffic	Total
Burnmill Road	Inbound	136	22	157
	Outbound	109	10	119

Levels of Through Traffic		Traffic to/from MH	Through Traffic	Total
Great Bowden Road	Inbound	25	3	28
	Outbound	31	0	31

Levels of Through Traffic		Traffic to/from MH	Through Traffic	Total
Harborough Road	Inbound	408	23	431
	Outbound	368	83	451

Levels of Through Traffic		Traffic to/from MH	Through Traffic	Total
A4304	Inbound	478	75	552
	Outbound	416	43	459

Levels of Through Traffic		Traffic to/from MH	Through Traffic	Total
Lubenham Hill	Inbound	315	92	408
	Outbound	272	114	385

Levels of Through Traffic		Traffic to/from MH	Through Traffic	Total
Kettering Road	Inbound	320	25	345
	Outbound	196	22	218

Levels of Through Traffic		Traffic to/from MH	Through Traffic	Total
Farndon Road	Inbound	79	65	144
	Outbound	98	54	151

Levels of Through Traffic		Traffic to/from MH	Through Traffic	Total
Braybrooke Road	Inbound	58	35	93
	Outbound	88	59	146

Levels of Through Traffic		Traffic to/from MH	Through Traffic	Total
Northampton Road	Inbound	203	82	285
	Outbound	198	37	235

Figure 11 : Proportion of through traffic- 2011 (PM)

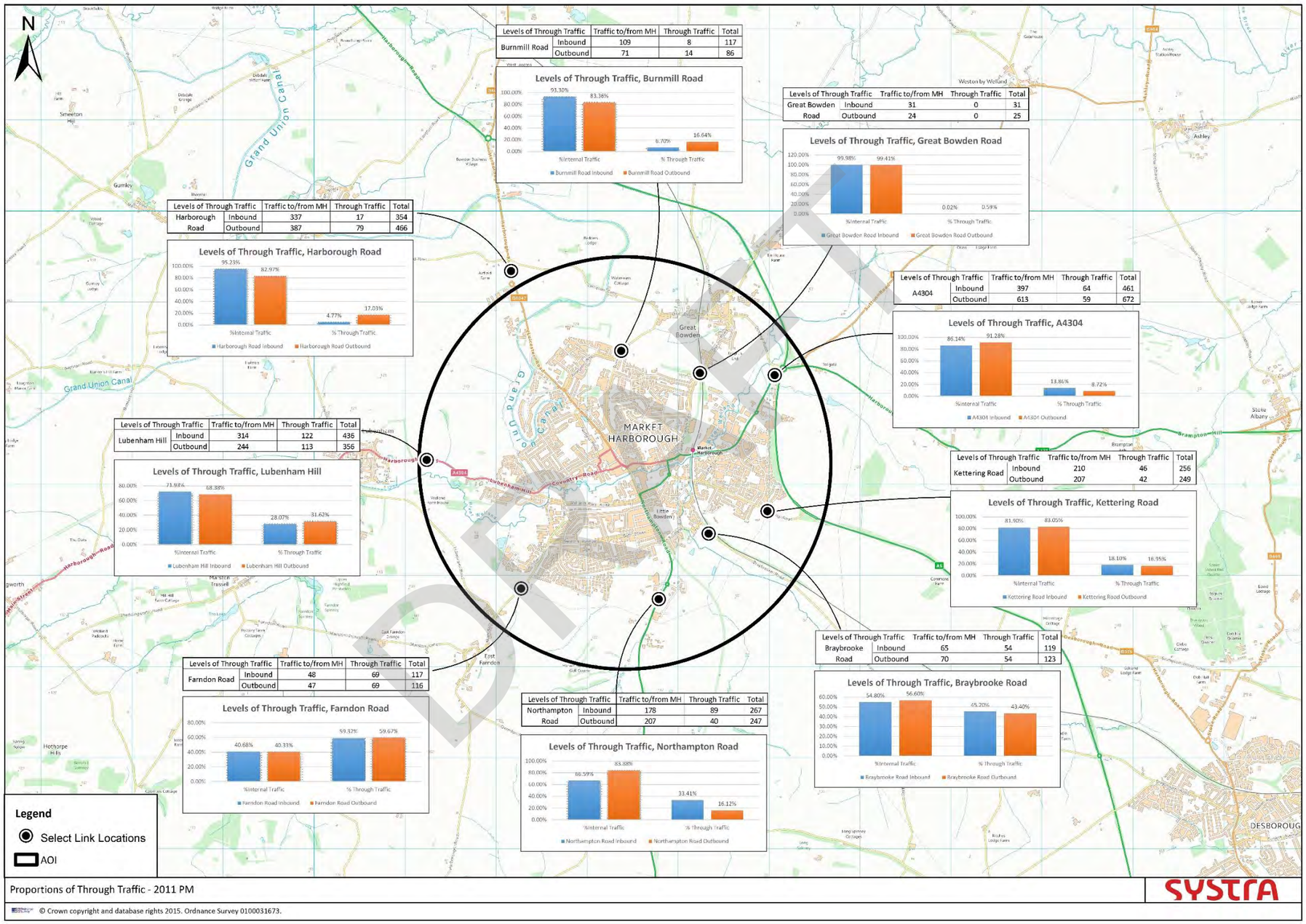


Figure 12: Proportion of through traffic- 2031 (AM)

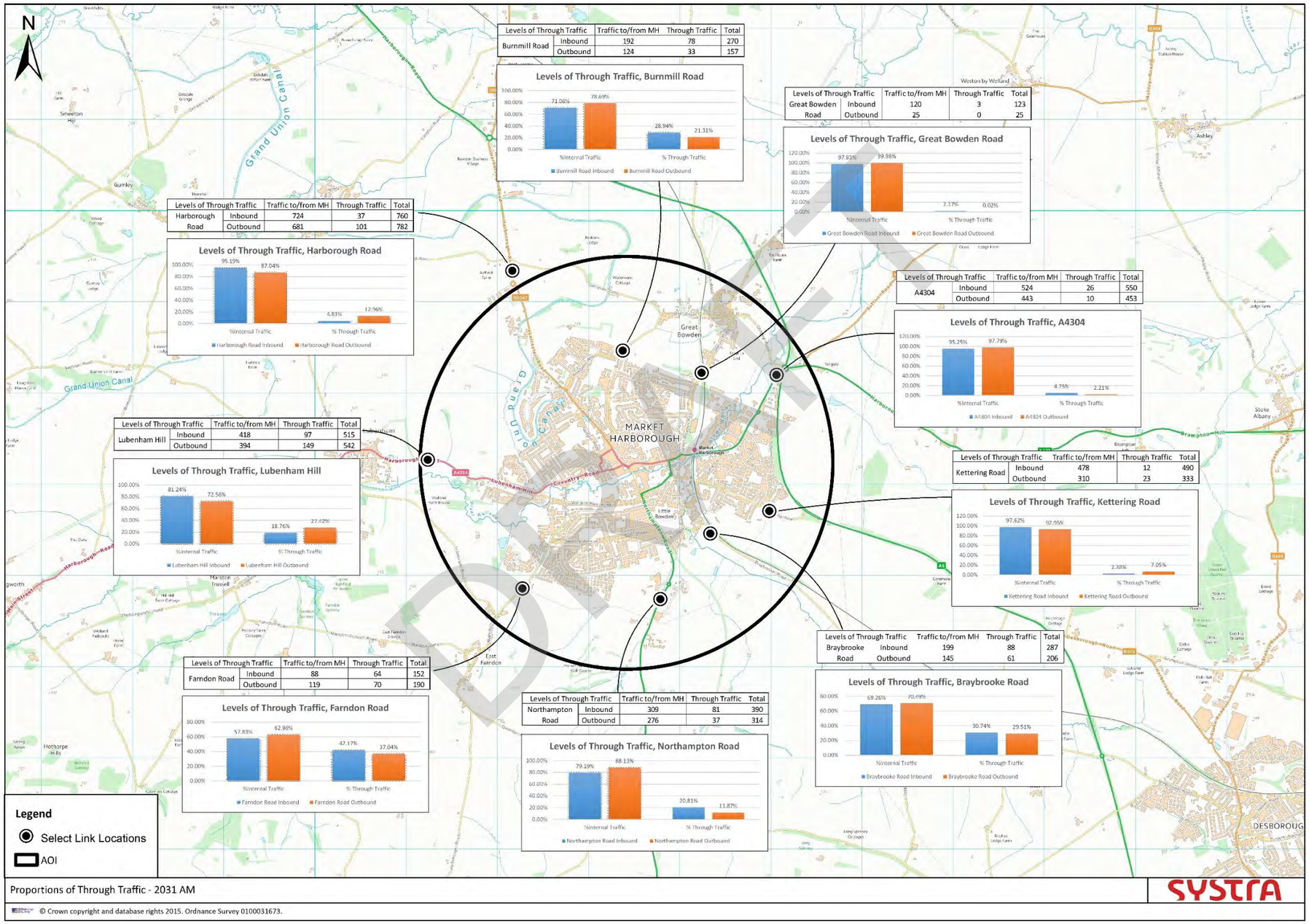
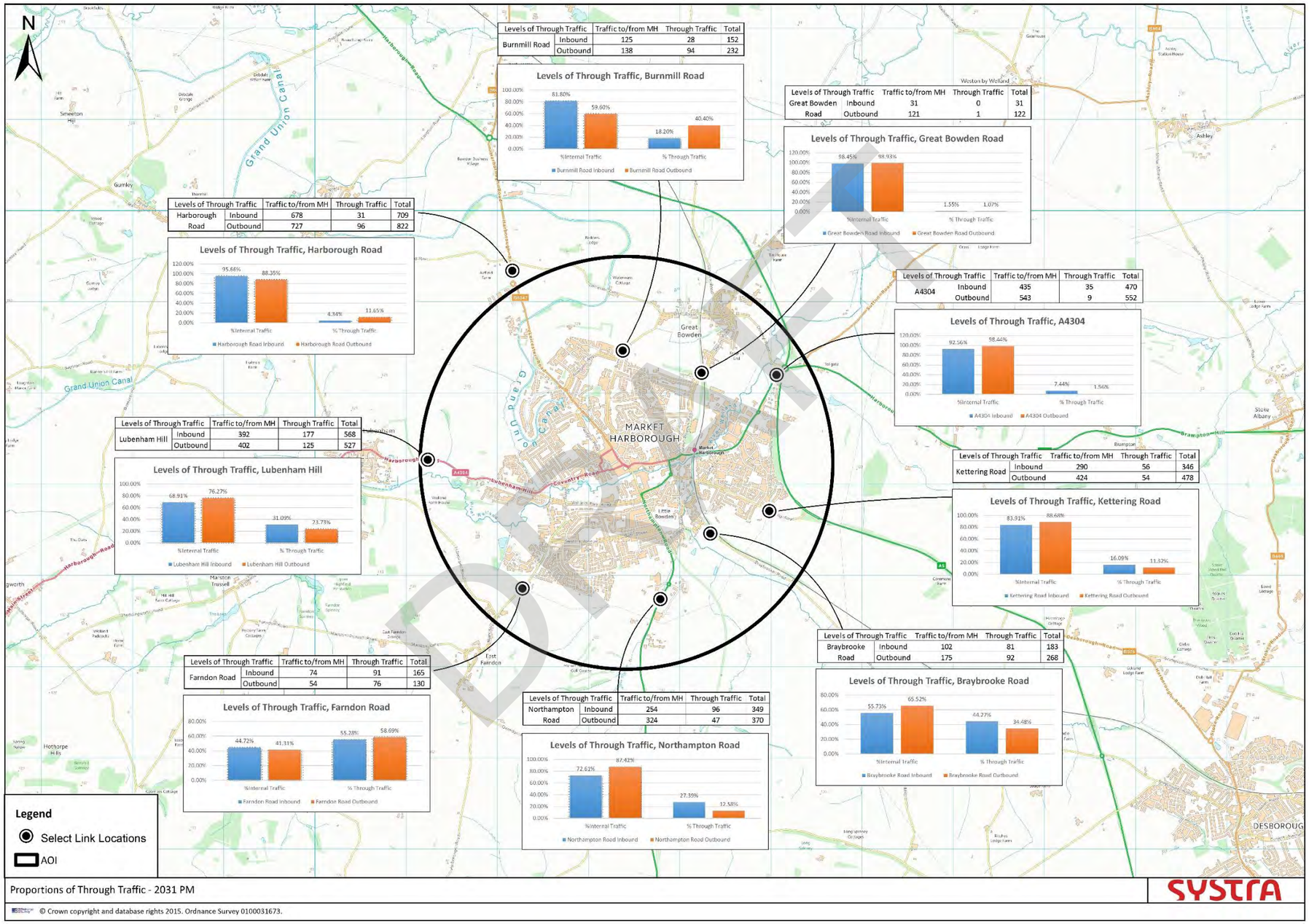


Figure 13: Proportion of through traffic- 2031 (PM)



The following roads are identified to have a high proportion of through traffic in the 2011 peak periods;

- Farndon Road, 50%
- Braybrook Road; 42%
- Lubenham Hill 28%
- Northampton Road; 24%

In 2031, the roads with the greatest proportion of through traffic over the peak periods are;

- Farndon Road 48%
- Braybrook Road; 30%
- Burnmill Road, 26%

Despite the proportion of through traffic using Braybrook Road, Burnmill Road and Farndon Road being comparatively high, the absolute numbers of through traffic on those routes are relatively low.

4.8 Congestion / Network performance

There is a direct link between the performance of a transport network and the economic / social prosperity of an area; easy and reliable access to goods, services, education, and nationally strategic links all being positive influences.

Poorly performing networks often manifest themselves through being congested, unreliable and difficult to negotiate.

Notwithstanding the above, the presence or degree of congestion experienced can be difficult to quantify; often being perceived in very subjective terms, one person's opinion or tolerance will likely vary greatly to another's based on their own personal points of reference.

As such, for the purpose of this study, and in order to quantify and empirically contrast the performance of the network across the study area, congestion will be considered in the context of capacity, delay and journey time.

Network links should, in general terms be free flowing, and any 'congestion' issues are therefore most likely to arise from junctions or other points of potential conflict between different highway users where some form of traffic management measure has been employed to manage their interaction. That management may be formally or informally administered (i.e. traffic signals / zero priority junctions).

With that in mind, congestion 'hot-spots' will become most evident from the assessment of these highway junctions.

4.8.1 Junction Volume/ Capacity (V/C)

Junction congestion can be measured by determining the ratio of the volume of traffic using a junction, to the capacity of traffic that can theoretically be accommodated by the junction. The figures used in this report have been calculated from LLITM.

Four critical thresholds of V/C percentage are commonly used when analysing data;

- Below 70% V/C — indicates that the link is operating within capacity and therefore remains effective.
- ≥70% V/C — indicates that the link is nearing its effective operational capacity; that some queuing and delay may occur on occasion or at peak times.
- ≥85% V/C — indicates that the link has exceeded its effective operational capacity to the extent that delays and queues are likely to be observed.
- ≥100% V/C — indicates that the link has exceeded its theoretical maximum capacity, and that queuing and delays are likely to be a significant and recurring issue.

Based on the criteria above, LLITM indicates that the junctions shown in **Table 8** are currently exceeding their operational capacity during the morning peak period, to the extent that delays and queues are likely to be observed. Whilst the remaining junctions within the study area may experience some queuing and delay on occasions the model does not show that they are currently exceeding the level of traffic they are theoretically designed to withstand during the morning peak period.

V/C %	AM	PM	Junction
≥100%	✔		A508 Springfield Street / Sainsbury's access
≥85%	✔		A4304 Rockingham / Gores Lane
	✔		A4304 St Marys Road / Clarence Street / A508 Kettering Road
	✔		Welland Park Road / A508 Northampton Road;

Table 8: Junctions in study area currently exceeding operational capacity

The model further suggests that all junctions in the study area are operating within capacity for the 2011 evening peak period. Is it important to note though that some capacity issues are not picked up through the V/C analysis by LLITM; most common are temporary obstructions, such as on street parking, which disrupts the highway geometry and subsequent flows.

For the future 2031 scenario the following junctions shown in **Table 9** are forecast to be over the 85% threshold during the either the morning and/ evening peak period. Three of four junctions that the model suggests are currently exceeding capacity are forecast to remain over capacity in 2031; the exception is the A4304 Rockingham / Gores Lane junction. An additional three junctions; the A4304 St Marys Road / The Square/ Northampton Road junction, the Springfield Street/ A508 Northampton Road junction, plus the Roundabout of A6/Harborough Road/A4304/Dingley Road are now forecast to be over capacity, with queues and delays more likely to be a frequent issue.

V/C %	AM	PM	Junction
≥100%	✔		A508 Springfield Street / Sainsbury's access
	✔	✔	Roundabout of A6/Harborough Road/A4304/Dingley Road
≥85%	✔		A4304 St Marys Road / Clarence Street / A508 Kettering Road
	✔	✔	Welland Park Road / A508 Northampton Road
	✔	✔	Springfield Street/ A508 Northampton Road
	✔		A4304 St Marys Road / The Square/ Northampton Road

Table 9: Junctions in study area forecast to be over capacity in 2031

Overall the following junctions are thought to be over capacity (exceeding a V/C figure of 85%) either now, or in the future case scenario, to the extent that delays and queues are likely to be observed;

REF	JUNCTION
1	A4304 Rockingham Road /Gores Lane
2	A4304 St Marys Road /Clarence Street/ A508 Kettering Road
3	Welland Park Road/A508 Northampton Road
4	A508 Springfield Street/Sainsbury's access
5	A508 Springfield Street /A508 Northampton Road
6	A4304 St Marys Road / The Square/ Northampton Road
7	Roundabout of A6/Harborough Road/A4304/Dingley Road

4.8.2 *Junction delay*

Whilst no standard measure exists for delay, it is considered to be reasonableto assume that a perceivable delay to the motorist would be one in excess of 3 minutes.

- The junction of A508 Springfield Street/Sainsbury's access has a delay of in excessof 3 minutes in the morning peak period for both 2011 and 2031 scenarios,
- whilst the junction of the A4304 St Marys Road/Clarence Street/Kettering Road has a delay of between 2 and 3 minutes.
- Additionally, the roundabout of the A6 Harborough Road/A4304/Dingley Road has a delay of between 2 and 3 minutes in the2031 (AM)scenario.
- In both the 2011 and the 2031 evening peak periods scenarios none of thejunctions have a delay in excess of 2 minutes.

Whilst the modelled outputs identify specific junctions, their accuracy should be considered primarily with regard to the identification of trends. It is evident from the plotting of V/C and delay issues that a recurring number of junctions along a particular transport corridor; the A508/A4304 primary route, are suffering the worst.

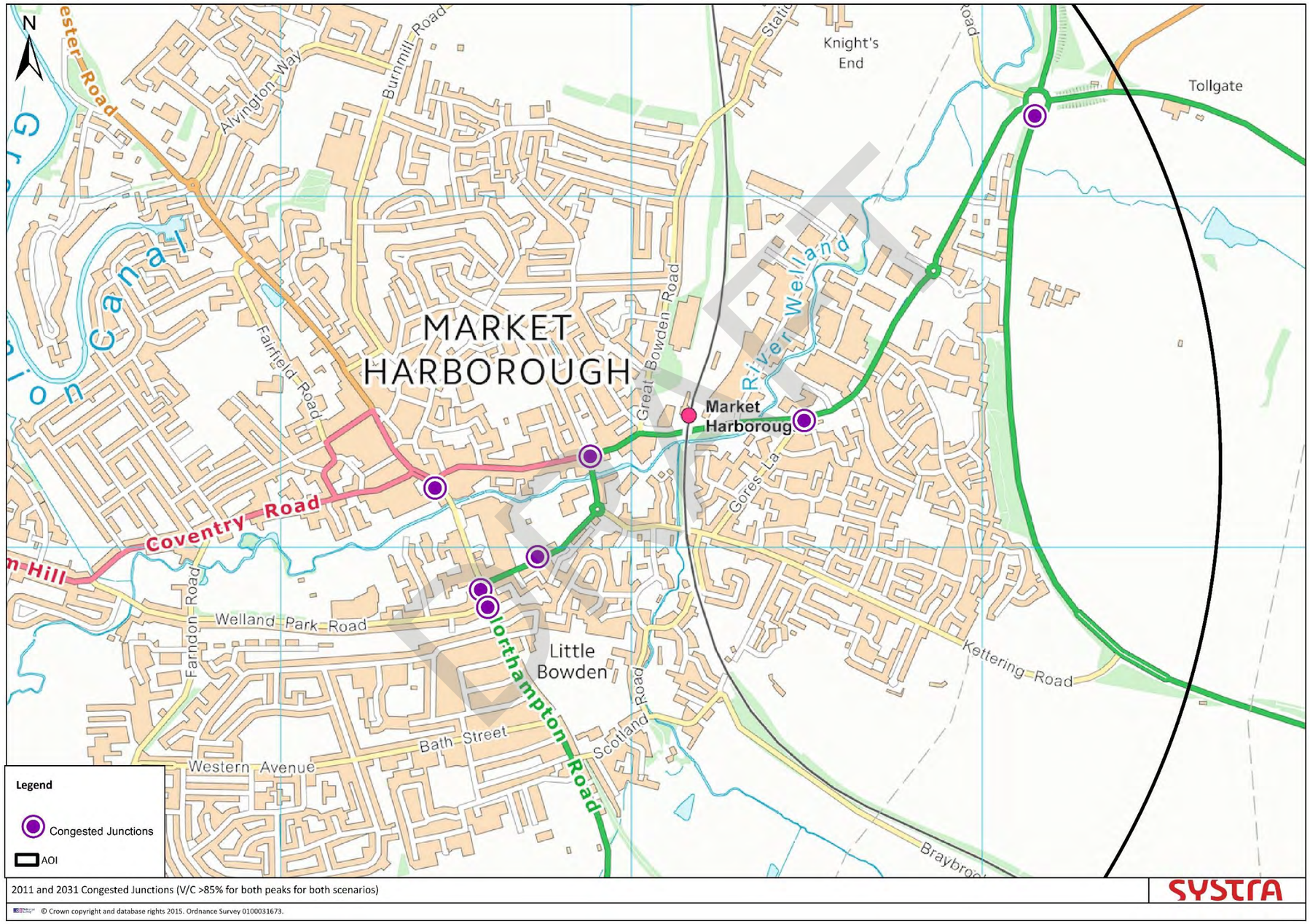
4.8.3 *Combined Junction Volume/ Capacity (V/C) and Delay*

Those junctions identified to have issues with insufficient capacity or likely delays are shown in **Table 10** have been plotted and can be seen on **Figure 14** below.

Junction REF	(V/C) 2011		(V/C) 2031		Delay 2011		Delay 2031	
	AM	PM	AM	PM	AM	PM	AM	PM
1	≥85%							
2	≥85%		≥85%		2-3mins		2-3mins	
3	≥85%		≥85%	≥85%				
4	≥100%		≥100%		>3mins		>3mins	
5	≥85%		≥85%	≥85%				
6			≥85%					
7			≥100%	≥100%			2-3mins	

Table 10: Junctions in study area with current and future insufficient capacity / likely delays

Fig 14: Key junctions with insufficient capacity / likely delays



4.8.4 Journey time analysis

As a barometer of performance across the over network an assessment of journey time on 3 selected routes across the town has been undertaken. The time taken to travel along each of the routes has been modelledand compared between the base (2011) and future year (2031) scenarios. **Figure 15** showsthe 3 pre-determined routes on which journey time analysis has been undertaken.

Figure 15 – Pre-determined routes used in journey time analysis

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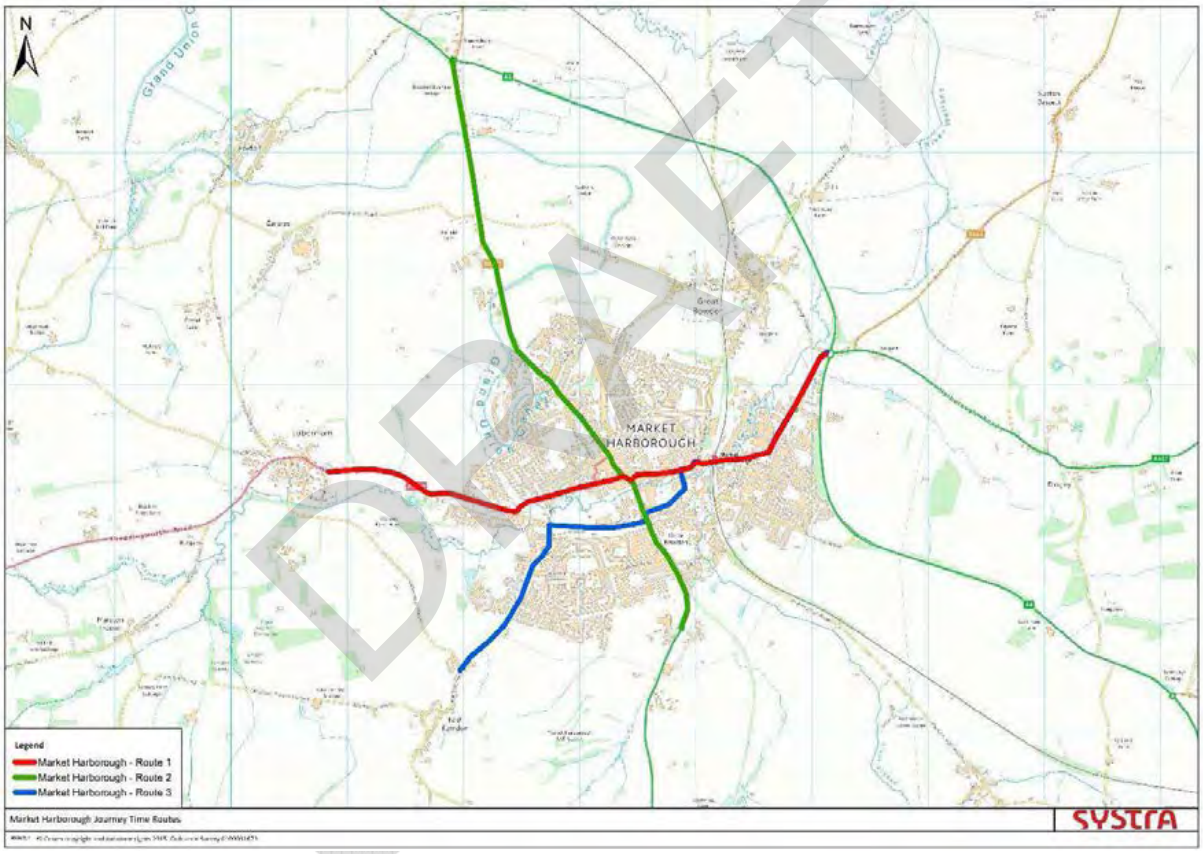


As shown in **Table 11** .for each route across the study area, journey time is forecast to increase. This is not wholly surprising given the forecast that traffic flows are likely to increase by around 24% and due to the routes taking in each of the key junctions around the study area, which themselves are forecast to experience varying degrees of deterioration in their performance.

Route 2 (Northbound) A508 Northampton Rd to B6047 Leicester Road and Route 2 (Southbound) Leicester Road B6047 to A508 Northampton Rd have the highest change in journey time between the two scenarios for the morning peak. Whilst, Route 3 (Eastbound) Farndon Road to A4304 Rockingham Road and Route 1 (Eastbound) on the A4304 have the highest change in the evening peak period.

	AM			
Route	2011 (seconds)	2031 (seconds)	Change (seconds)	Change (%)
1 (EB)	545	572	+27	+5%
1 (WB)	496	505	+9	+2%
2 (NB)	508	547	+40	+8%
2(SB)	593	632	+39	+7%
3 (EB)	555	549	-6	-1%
3 (WB)	498	502	+3	+1%

	PM			
Route	2011 (seconds)	2031 (seconds)	Change (seconds)	Change (%)
1 (EB)	554	631	+77	+14%
1 (WB)	503	515	+12	+2%
2 (NB)	492	531	+39	+8%
2(SB)	566	611	+45	+8%
3 (EB)	521	606	+84	+16%
3 (WB)	489	499	+11	+2%

Table 11 – Journey times 2011/2031 & AM/PM

Beyond simply looking at the degree of congestion, there are a number of general highway indicators can be used to gauge the performance of the network. These indicators both the direct impact of additional trips owing to development and growth, as well as the indirect re-assignment of non-development trips.

The four highway indicators considered in this study are as set out below;

Total Travel Distance (PCU Kms)	Total distance travelled over the modelled area
Total TravelTime (PCU Hrs)	Total time travelled over the modelled area.
Over Capacity Queues (PCU Kms)	Time spent queueing at junctions that are over capacity.
Average Speed (Km/Hrs)	Average speed for all traffic in the model area

The figures in **Table 12** show that the time spent queueing at over capacityjunctions, the total distance & time travelled all increase between the baseand future year scenarios; supporting the notion of increased traffic and adecrease in network performance.

Indicator	AM (peak period)			PM (peak period)		
	2011	2031	Difference	2011	2031	Difference
Total Travel Distance (PCU Kms)	30,062	39,685	9,623	29,468	39,474	10,006
Total Travel Time (PCU Hrs)	750	1,004	254	694	971	277
Over Capacity Queues (PCU Kms)	12	45	33	0	22	22
Average Speed (Km/Hrs)	40	39	-1	43	41	-2

Table 12 – Highway Indicators

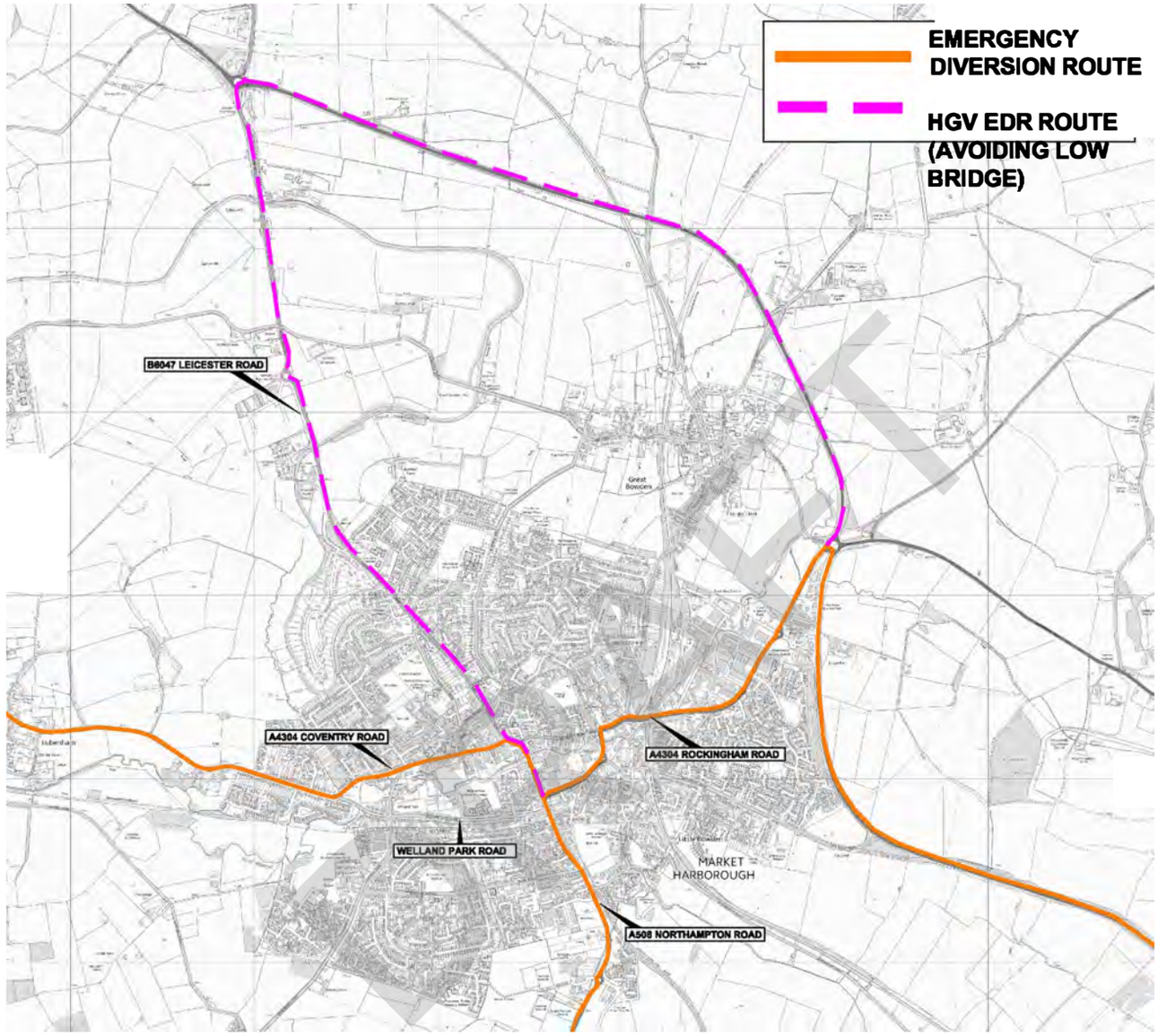
4.8.5 Emergency Diversion Routes (EDR)

The A508 and A4304 serve as an emergency diversion route (EDR) for the Strategic Road Network (SRN). When a need arises to temporarily close parts of the A14, vehicles are directed instead via Market Harborough, using A508 and A4304. However, due to the afore mentioned low underpass height at the Rockingham Road bridge, it is necessary for the EDRs to split; high sided vehicles being directed along the B6047 Leicester Road; directly through the heart of the town centre.

Figure 16 shows the EDR routes through the study area

In order to reduce the burden on the town centre, an alternative route for the EDR traffic, and/or an engineering solution to facilitate high sided vehicles under the low bridge on Rockingham Road would be advantageous.

Fig 16 – Roads utilised for EDR routing



4.8.6 Heavy Goods Vehicle (HGV) routing

HGVs (most vehicles with a plated maximum gross weight of 7.5 tonnes or more) provide the essential delivery/collection of goods to/from both commercial and domestic premises throughout the country; a service on which much of industry and commerce is reliant.

However, HGV traffic is often cited as a cause of damage to highway infrastructure, being a danger to pedestrians and cyclists, as well as having a generally undesirable impact on the amenity/character and wellbeing of an area.

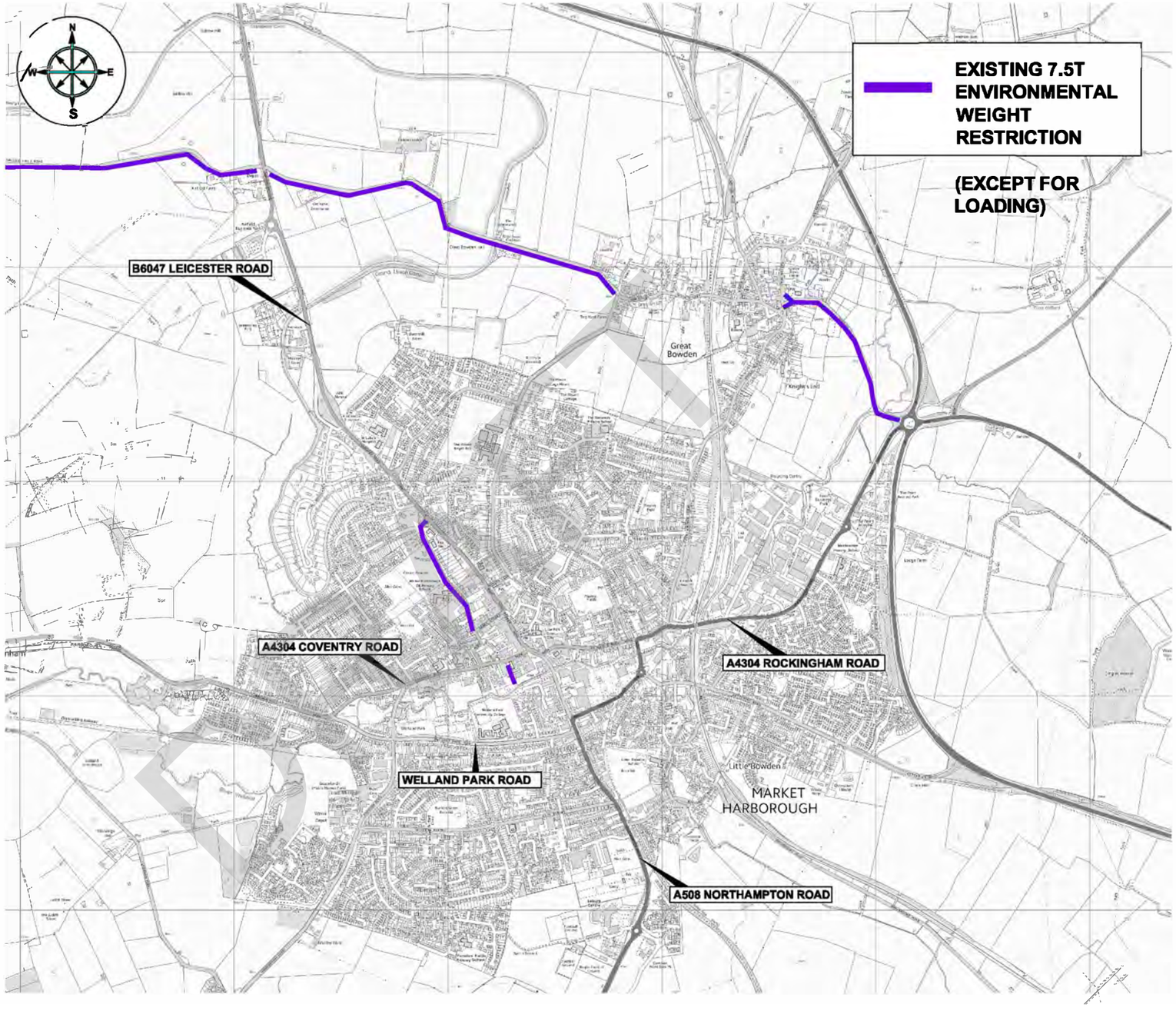
The County Council's established practice is that HGVs are encouraged to use strategic A and B classified roads, and where possible other routes are weight restricted to discourage the use of any alternatives. This practice helps to create a balance between maintaining access for HGVs whilst safeguarding an area from their potentially negative impacts.

Low underpass heights at rail bridges over Kettering Road and Rockingham Road restrict passage for some high sided heavy goods vehicles (HGVs), resulting in HGV access to service the south of the town being sought fromthe north via the B6047 Leicester Road.

Whilst the number of recorded instances/complaints of HGVs using unclassified roads in order to take an alternative route through the study area are low, there are a number of residential streets that do lend themselves to such exploitation and it would be desirable if the opportunity arose for those routes to be prohibited for use by HGVs (except for loading) to avoid any continued or increased use by HGVs in the future.

The limited number of routes around the study area, coupled with the need to retain through route access for HGVs owing to the low bridges and EDR requirements currently preclude any attempt to impose significant HGV controls, beyond those already in place (as shown in **Figure 17** in much of the study area, and to do so would only be feasible should an alternative be found to divert the classified routes away from the town centre.

Fig 17 – Existing 7.5t HGV restrictions



4.9 Walking, cycling and public transportation

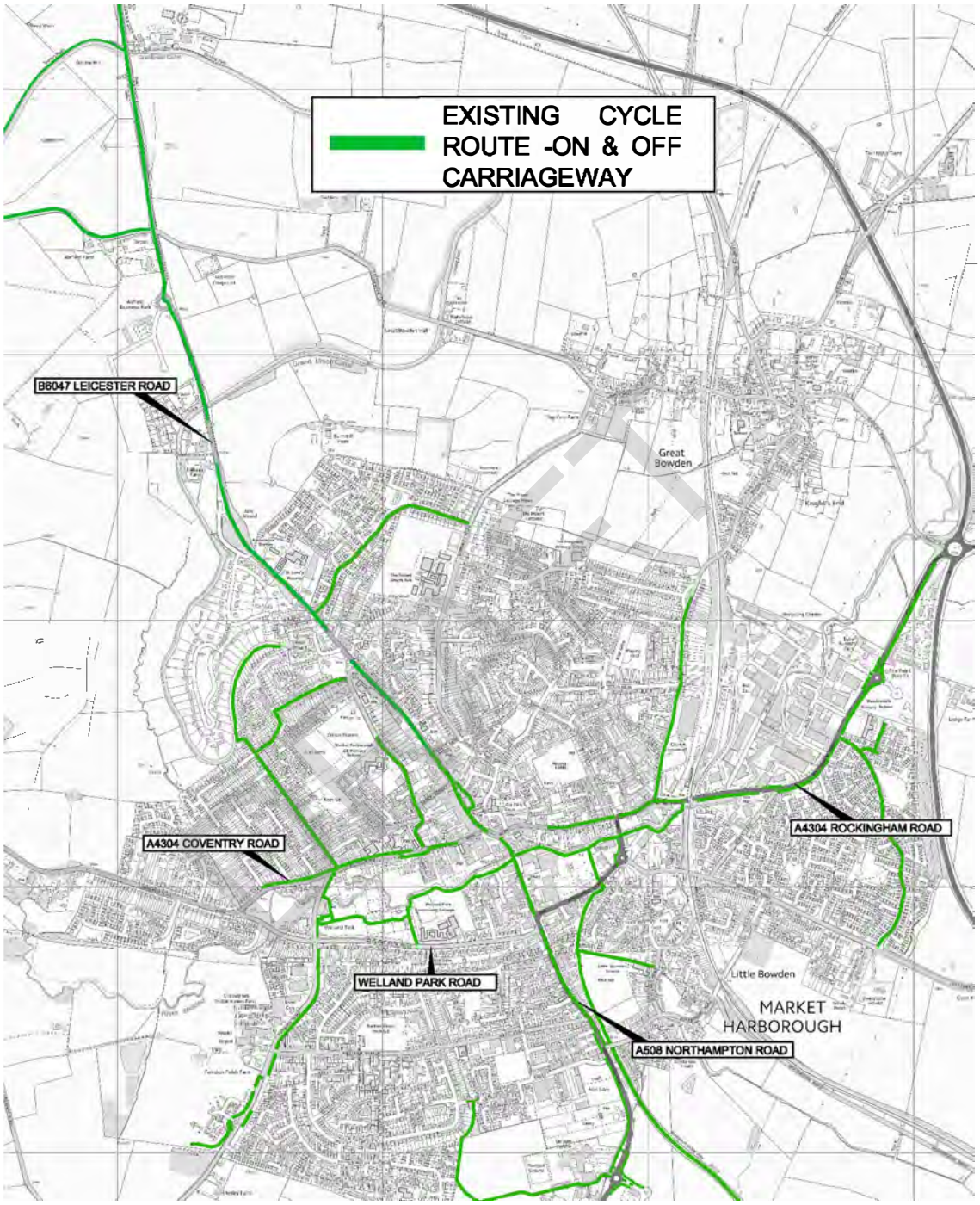
4.9.1 *Walking and Cycling*

Market Harborough already enjoys an extensive cycle and walking network due to investment in infrastructure made possible over the past 25 years through projects such as the Bypass Demonstration Project, Millennium Mile, Sustrans national cycle network and through local development. The existing network is shown in **Figure 18.**

Although there is decent walking and cycling infrastructure in and around Market Harborough, it would appear that provision has, in places, failed to keep pace as development and amenities have evolved. As such, the provision is now quite disjointed and some existing elements would also benefit from upgrading.

An upgraded walking and cycling network, free of barriers will help to maintain Market Harborough as an attractive place to live, work and visit; encouraging more residents to change to more sustainable travel modes; enable sustainable development and provide a high quality environment that people feel safe to walk and cycle in.

Figure 18: Existing cycle network in study area



4.9.2 *Buses*

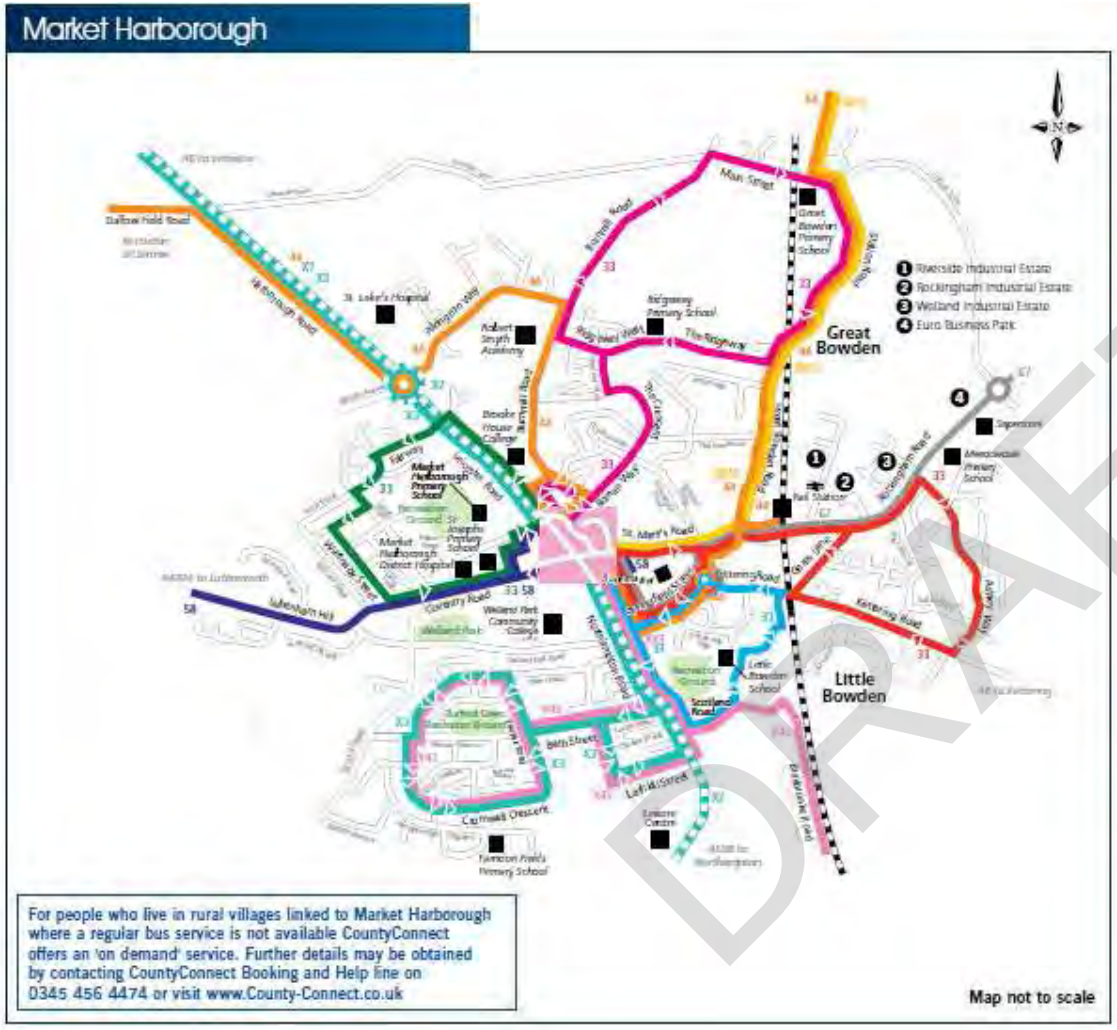
Currently, there are 12 bus services operating at 103 bus stops in Market Harborough and the surrounding areas of Great Bowden, Lubenham and Little Bowden.

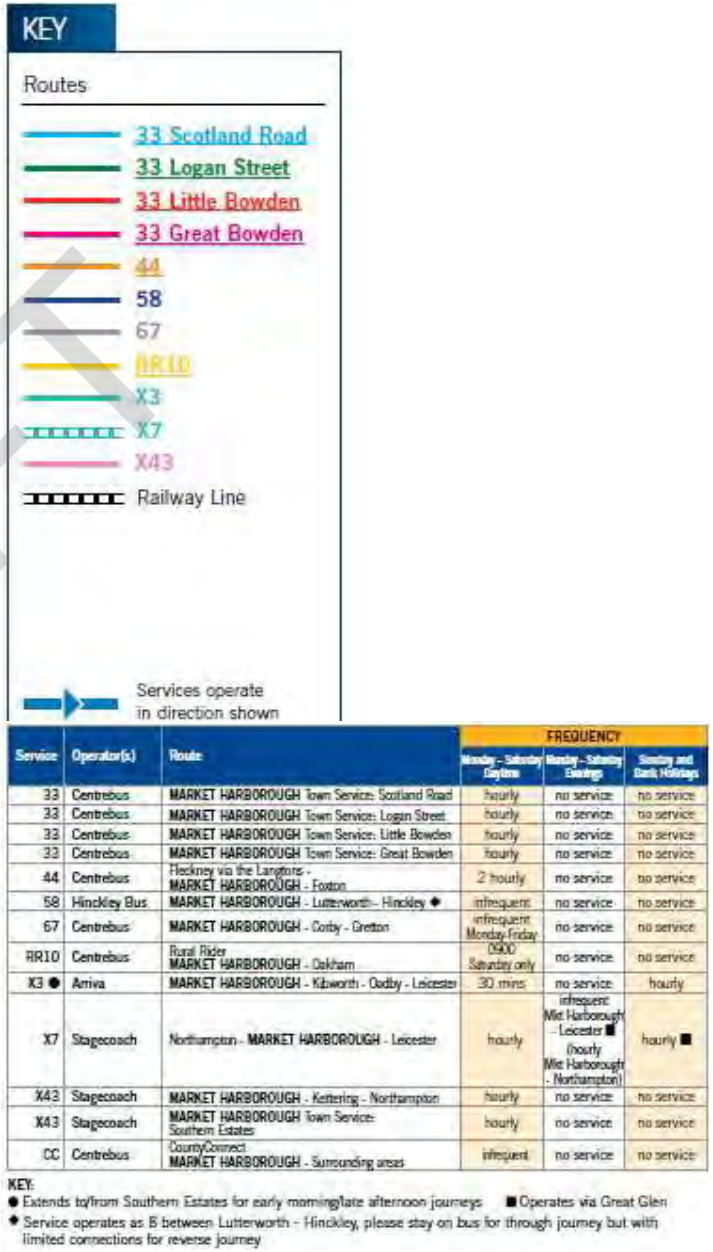
These are provided through a mix of commercial and supported local bus services. The commercial network provides some local connections within the town and also key links to Leicester, Corby and Northampton. The supported services provide more local connections with the town centre facilities.

The main hubs for public transport in Market Harborough are located in the Square and outside the Market Hall. Good quality infrastructure (bus stops, shelters and accessible kerbs) support bus service operation at key locations across the town. However local requests for better connections and infrastructure at the Rail Station have been received and there may be opportunities to explore this as part of the plans to upgrade Market Harborough Station. These plans are described in the 'Rail' section of this report

The majority of bus stops in the study area are at fixed locations identifiedby a bus stop flag. There are 6 bus routes where buses operate a hail andride service on part of the route. These are mainly on estate roads.

Within the study area, there are 18 bus stops with shelters, 33 have raised kerbs and 35 have facility for timetable information. Details of the current timetable and bus routes are shown in **Figure 19**.





Service	Operator(s)	Route	FREQUENCY Monday - Saturday Daytime	Monday - Saturday Evenings	Sunday and Bank Holidays
33	Centrebus	MARKET HARBOROUGH Town Service: Scotland Road	hourly	no service	no service
33	Centrebus	MARKET HARBOROUGH Town Service: Logan Street	hourly	no service	no service
33	Centrebus	MARKET HARBOROUGH Town Service: Little Bowden	hourly	no service	no service
33	Centrebus	MARKET HARBOROUGH Town Service: Great Bowden	hourly	no service	no service
44	Centrebus	Heckney via the Langtons - MARKET HARBOROUGH - Foxton	2 hourly	no service	no service
58	Hinckley Bus	MARKET HARBOROUGH - Lutterworth - Hinckley ◆	infrequent	no service	no service
67	Centrebus	MARKET HARBOROUGH - Corby - Gretton	infrequent Monday-Friday	no service	no service
RR10	Centrebus	Rural Rider MARKET HARBOROUGH - Oakham	0900 Saturday only	no service	no service
X3 ●	Arriva	MARKET HARBOROUGH - Kibworth - Oadby - Leicester	30 mins	no service	hourly
X7	Stagecoach	Northampton - MARKET HARBOROUGH - Leicester	hourly	infrequent Mkt Harborough - Leicester ■ (hourly Mkt Harborough - Northampton)	hourly ■
X43	Stagecoach	MARKET HARBOROUGH - Kettering - Northampton	hourly	no service	no service
X43	Stagecoach	MARKET HARBOROUGH Town Service: Southern Estates	hourly	no service	no service
CC	Centrebus	CountyConnect MARKET HARBOROUGH - Surrounding areas	infrequent	no service	no service

KEY:
● Extends to/from Southern Estates for early morning/late afternoon journeys ■ Operates via Great Glen
◆ Service operates as B between Lutterworth - Hinckley, please stay on bus for through journey but with limited connections for reverse journey

Fig 19 Bus timetable and routing

With regard to route locations, frequency and duplication of services, buses in Market Harborough are run by commercial operators and they are responsible for managing their routes and timetables within a commercial market.
As part of this study bus stops on existing routes within the study area have been considered for upgrading in order to improve accessibility and availability of information.

4.9.3 *Rail*

Market Harborough is located on the Midland Mainline. London St Pancras International is 70 minutes south. Northbound trains operate to Leicester Nottingham, Sheffield, Leeds and York.

The train station is located on Rockingham Road around ½ mile from the town centre (The Square); it is used by approximately 1250 passengers per day (2014).

There are two current and notable projects of note being undertaken by Network Rail on the rail network in the Market Harborough area.

Midland Mainline line speed improvement

As part of their enhancement works programme for the Midland Mainline, Network Rail are proposing to re-align the track through Market Harborough rail station, reconstruct the platforms and add new station facilities as part of their line speed improvement programme.
The County Council and Harborough District Council will work with Network Rail to ensure Netwrok Rail proposals:

- increase car parking capacity at the station,
- provide bike storage facilities,
- improve disable access,
- encourage bus services that currently terminate in the Town Centre to terminate at the train station where this is commercially viable
- take account of car parking issues in adjacent residential streets

The works do not include the reconstruction of the rail bridge over Rockingham Road.

Little Bowden Level Crossing

In July 2015, the railway level crossing in Little Bowden (that links Glebe Road to Braybrook Road) was closed by Network Rail. The company stated that this closure was under the Health & Safety at Work Act. The County Council has been seeking assurances from Network Rail that a solution to reinstate this pedestrian route will be provided at the earliest opportunity.

Initially, Network Rail had proposed signalling changes to make the warning lights at the level crossing more consistent. However, Network Rail has since stated funding is available to provide a bridge at the site, and this is now their objective. This will also take account of future electrification. Network Rail has advised the County Council that preliminary work has begun on a bridge to replace the level crossing and that this proposal will require planning permission. This planning permission will be sought through Harborough District Council. Network Rail has yet to confirm a programme to construct this bridge and re-open this pedestrian route.

The County Council will work with Network Rail, to ensure that any roadworks and road closures associated with the above works on the rail network do not clash with other works on the highway network - or each other, and help to plan appropriate diversion routes to minimise disruption. Furthermore, the County Council, in its capacity as Local Highway Authority, will check proposed designs as they develop to ensure the highway network is restored as close to its original layout as feasible, and to seek enhancements where appropriate and possible.

4.10 Traffic signing

By ensuring that certain classes/types of vehicles and journeys are undertaken on the most appropriate route; that suitable contingencies are in place for diverting traffic around incidents; and by keeping motorists well informed, directional traffic signing can make a significant contribution to creating a well-managed and resilient transport system that seeks to reduce the carbon footprint of Leicestershire, whilst helping to improve the safety and quality of life for those who live, work and visit the county.

Traffic signing is also used extensively to require and prohibit actions of certain highway users, as well as inform and warn them of potential hazards; contributing positively to reducing congestion and improving highway safety.

However, poor traffic signing is often criticised as being unsightly, costly to maintain, confusing, contradictory, unnecessary, or even an obstruction to pedestrians, cyclists and other vulnerable highway users. Often too easilynow overlooked in an age of satellite navigation, there is clearly still merit in arobust system of traffic signing. That notwithstanding, it is near impossible totruly quantify the positive impact traffic signing can have. Traffic signing in the study area, as with many market towns, has been installed incrementally to meet emerging needs over a number of decades, see photograph in **Figure 20** Whilst a localised effort to reduce and rationalise, or 'de-clutter' a number of the towns traffic signs was undertakenin recent years, there has been little opportunity to give wider consideration toan overriding strategy.

In order to ensure that the traffic signing in Market Harborough remains fit for purpose in the future, it is thought to be advantageous for a thorough review of all traffic signing to be undertaken and where necessary revisions made to implement a consistent signing strategy throughout the town, taking due consideration of the location, size, content and design of each sign. Where localised highway alterations / improvements are undertaken, the opportunity to review traffic signing should be included in the context of a wider overriding strategy.

Fig 20 - Traffic signs – The Square, Market Harborough

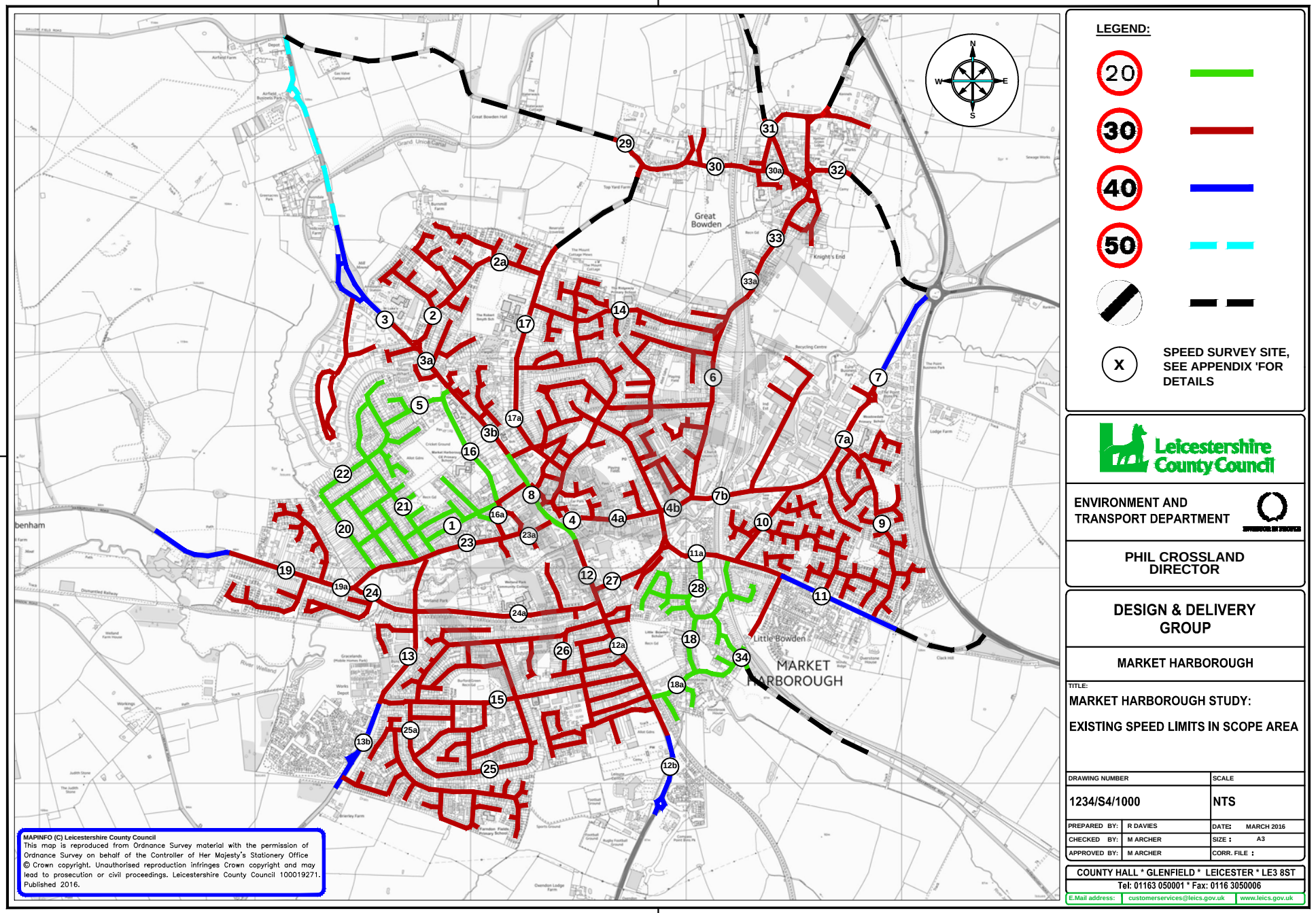
4.11 Speed limit distribution and recorded vehicle speeds

As with most settlements in the county, much of Market Harborough is covered by a 30mph speed limit; this being reflective of the function of the roads concerned, the mix in different types of highway users, the presence and frequency of likely conflict points, and the density of residential properties.

Figure 21 shows the distribution of speed limits across the study area and in and **Figure 22** the actual mean and 85th percentile speeds recorded are presented. Locations have been highlighted where at least one of those speed readings is at, or in excess of the Association of Chief Police Officers' (ACPO) threshold for enforcement. That is to say, the point at which the Police will more readily take active enforcement action against those driving in excess of the posted speed limited and where manufacturer inaccuracies in a vehicles speedometer would be unlikely to form a credible defence.

The recorded speeds are positive and reflect a general adherence to the limits across the study area. Where the recorded speed is in excess of the ACPO limit it may be beneficial to look in greater detail as to whether any engineering measure would be appropriate to restrain speeds.

Fig 21 - Distribution of speed limits



Map Ref	Location	Mean speed (mph)		85th %-ile (mph)		Within ACPO limit	Type	Date	Aprrox time
1	Nelson Street	14.7 (E)	15.5 (W)	21 .0 (E)	19.0 (W)		Radar	Jun-15	9:00 - 9:45 1 day
2	Alvington Way	24.12 (N)	26.55 (S)	27.64 (N)	30.26 (S)		ATC	Jun-15	00:00 - 00:00 7 day
2a	Alvington Way	15.0 (E)	15.0 (W)	17.0 (E)	18.0 (W)		Radar	Mar-09	11:00 - 12:00 1 day
3	Leicester Road	36.9 (NW)	34.8 (SE)	42.0 (NW)	39.0 (SE)		Radar	Jun-15	11:50 - 12:30 1 day
3a	Leicester Road	29.43 (W)	24.37 (E)	32.7 (W)	27.29 (E)		ATC	Jun-15	00:00 - 00:00 7 day
3b	Leicester Road	29.6 (N)	28.6 (E)	34.0 (N)	32.0 (S)		Radar	Jun-15	10:30 - 11:05 1 day
4	St Marys Road	15.51 (E)	13.51 (W)	17.66 (E)	15.29 (W)		ATC	Jun-15	00:00 - 00:00 7 day
4a	St Marys Road	23.9 (E)	23.5 (W)	28.0 (E)	26.0 (W)		Radar	Jun-15	10:00 - 10:55 1 day
4b	St Marys Road	19.36 (E)	24.28 (W)	24.69 (E)	27.44 (W)		ATC	Jun-15	00:00 - 00:00 7 day
5	Fairway	23.9 (E)	22.5 (W)	28.0 (E)	26.0 (W)		Radar	Jun-15	11:05 - 11:50 1 day
6	Great Bowden Road	25.4 (N)	25.6 (S)	29.0 (N)	29.0 (S)		Radar	Jun-15	11:00 - 12:05 1 day
7	Rockingham Road	35.41 (N)	33.0 (S)	39.12 (N)	36.16 (S)		ATC	Jun-15	00:00 - 00:00 7 day
7a	Rockingham Road	32.5 (NE)	30.4 (SW)	35.0 (NE)	34.0 (SW)		Radar	Jun-15	12:10 - 12:35 1 day
7b	Rockingham Road	26.3 (E)	26.4 (W)	29.0 (E)	29.0 (W)		Radar	Jul-15	12:35 - 13:00 1 day
8	High Street	16.4 (NW)	14.8 (SE)	19.0 (NW)	18.0 (SE)		Radar	Jun-15	9:00 - 10:00 1 day
9	Ashley Way	22.7 (N)	21.5 (S)	26.0 (N)	26.0 (S)		Radar	Jun-15	08:25 - 09:10 1 day
10	Gores Lane	32.7 (NE)	32.0 (SW)	38.0 (NE)	37.0 (SW)		Radar	Jul-15	07:30 - 08:25 1 day
11	Kettering Road	39.7 (E)	38.9 (W)	47.0 (E)	43.0 (W)		Radar	Jun-15	09:10 - 09:50 1 day
11a	Kettering Road	26.0 (E)	27.0 (W)	29.0 (E)	30.0 (W)		Radar	Mar-09	10:00 - 10:45 1 day
12	Northampton Road	22.05 (N)	25.78 (S)	25.41 (N)	28.75 (S)		ATC	Jun-15	00:00 - 00:00 7 day
12a	Northampton Road	27.3 (N)	27.8 (S)	31.0 (N)	32.0 (S)		Radar	Jun-15	10:30 - 11:10 1 day
12b	Northampton Road	32.18 (N)	29.86 (S)	35.26 (N)	32.98 (S)		ATC	Jun-15	00:00 - 00:00 7 day
13	Farndon Road	30.1 (NE)	29.5 (SW)	35 (NE)	33.0 (SW)		Radar	Jun-15	12:00 - 12:30 1 day
13b	Farndon Road	27.6 (N)	29.7 (S)	32.0 (N)	34.0 (S)		Radar	Jun-15	12:30 - 13:30 1 day
14	Ridgeway West	16.1 (E)	15.3 (W)	20.0 (E)	19.0 (W)		Radar	Jun-15	12:15 - 13:15 1 day
15	Western Avenue	21.2 (E)	21.5 (W)	24.0 (E)	25.0 (W)		Radar	Jun-15	11:15 - 12:00 1 day
16	Fairfield Road	28.1 (N)	24.5 (S)	33.0 (N)	29.0 (S)		Radar	Jun-15	07:45 - 08:25 1 day
16a	Fairfield Road	-	-	20.4 (E)	20.3 (W)		Radar	Nov-09	00:00 - 00:00 3 day
17	Burnmill Road	23.9 (N)	23.2 (S)	28.0 (N)	26.0 (S)		Radar	Jun-15	09:00 - 09:30 1 day
17b	Burnmill Road	29.0 (N)	28.0 (S)	32.0 (N)	31.0 (S)		Radar	Nov-09	13:15 - 14:20 1 day
18	Scotland Road	19.1 (N)	20.7 (S)	22.0 (N)	24.0 (S)		Radar	Jun-15	07:30 - 08:15 1 day
18a	Scotland Road	19.0 (NE)	19 (SW)	22.0 (NE)	22.0 (SW)		Radar	May-09	10:45 - 12:00 1 day
19	Lubenham Hill	30.0 (E)	31.4 (W)	33.0 (E)	36.0 (W)		Radar	Jun-15	09:30 - 10:15 1 day
19a	Lubenham Hill	29.37 (E)	29.37 (W)	31.52 (E)	32.24 (W)		ATC	Jun-15	00:00 - 00:00 7 day
20	Gardiner Street	20.2 (N)	20.1 (S)	26.0 (N)	24.0 (S)		Radar	Jun-15	10:30 - 11:00 1 day
21	Logan Street	18.7 (NW)	19.2 (SE)	21.0 (NW)	22.0 (SE)		Radar	Jun-15	11:30 - 12:30 1 day
22	Knoll Street	19.0 (NE)	17.0 (SW)	19.0 (NE)	20.0 (SW)		Radar	Jun-15	11:00 - 11:30 1 day
23	Coventry Road	22.5 (E)	20.5 (W)	26.0 (E)	25.0 (W)		Radar	Jun-15	09:45 - 10:30 1 day
23a	Coventry Road	N / A	16.62 (W)	N / A	18.93 (W)		ATC	Jun-15	00:00 - 00:00 7 day
24	Welland Park Road	27.87 (E)	27.72 (W)	30.18 (E)	30.49 (W)		ATC	Jun-15	00:00 - 00:00 7 day
24a	Welland Park Road	24.0 (E)	24.0 (W)	26.0 (E)	27.0 (W)		Radar	Oct-10	08:30 - 09:30 1 day
25	Cromwell Crescent	32.0 (E)	31.0 (W)	36.0 (E)	34.0 (W)		Radar	May-08	07:30 - 08:45 1 day
25a	Cromwell Crescent	29.0 (N)	29.0 (S)	33.0 (N)	32.0 (S)		Radar	May-08	08:45 - 09:45 1 day
26	Newcombe Street	-	-	18.0 (N)	17.0 (S)		Radar	Aug-08	00:00 - 00:00 4 day
27	Springfield Street	22.35 (E)	22.28 (W)	25.03 (E)	25.23 (W)		ATC	Jun-15	00:00 - 00:00 7 day
28	Rectory Lane	25.0 (N)	26.0 (S)	28.0 (N)	29.0 (S)		Radar	Mar-15	10:00 - 11:15 1 day
29	Leicester Lane	30.0 (NW)	29.0 (SE)	33.0 (NW)	31.0 (SE)		Radar	Nov-09	07:55 - 09:00 1 day
30	Main Street	27.0 (E)	28.0 (W)	30.0 (E)	30.0 (W)		Radar	Nov-09	11:15 - 12:10 1 day
30a	Main Street	24.0 (W)	24.0 (E)	27.0 (W)	27.0 (E)		Radar	Nov-09	12:15 - 13:15 1 day
31	Langton Road	31.0 (N)	30.0 (S)	34.0 (N)	33.0 (S)		Radar	Mar-08	07:45 - 08:45 1 day
32	Dingley Road	24.0 (E)	25.0 (W)	26.0 (E)	29.0 (E)		Radar	Nov-09	13:30 - 14:30 1 day
33	Station Road	30.0 (NE)	31.0 (SW)	33.0 (NE)	35.0 (SW)		Radar	Nov-09	10:00 - 11:00 1 day
33a	Station Road	29.0 (NE)	29.0 (SW)	32.0 (NE)	33.0 (SW)		Radar	Nov-09	11:00 - 11:50 1 day
34	Braybrooke Road	25.0 (NW)	25.0 (SE)	28.0 (NW)	25.0 (SE)		Radar	May-08	10:00 - 11:15 1 day

Leicestershire County Council

ENVIRONMENT AND TRANSPORT DEPARTMENT

INVESTOR IN PEOPLE

PHIL CROSSLAND
DIRECTOR

DESIGN & DELIVERY GROUP

LOCATION: MARKET HARBOROUGH

TITLE: SPEED DATA FOR EXISTING SITES

DRAWING NUMBER		SCALE
		NTS
PREPARED BY:	R DAVIES	DATE: MARCH 2016
CHECKED BY:	M ARCHER	SIZE: A4

COUNTY HALL * GLENFIELD * LEICESTER * LE3 8RJ
Tel: 0116 2323232 * 0116 3050001 * Fax * 0116 3050006
Email address: customerservices@leicsgov.uk | Website: www.leics.gov.uk

Figure 22 - Actual recorded speed data

4.12 Parking

4.12.1 *Provision*

There is a mix of parking provision within Market Harborough, which includes County Council provided and managed on-street parking and District Council provided and managed off-street parking.

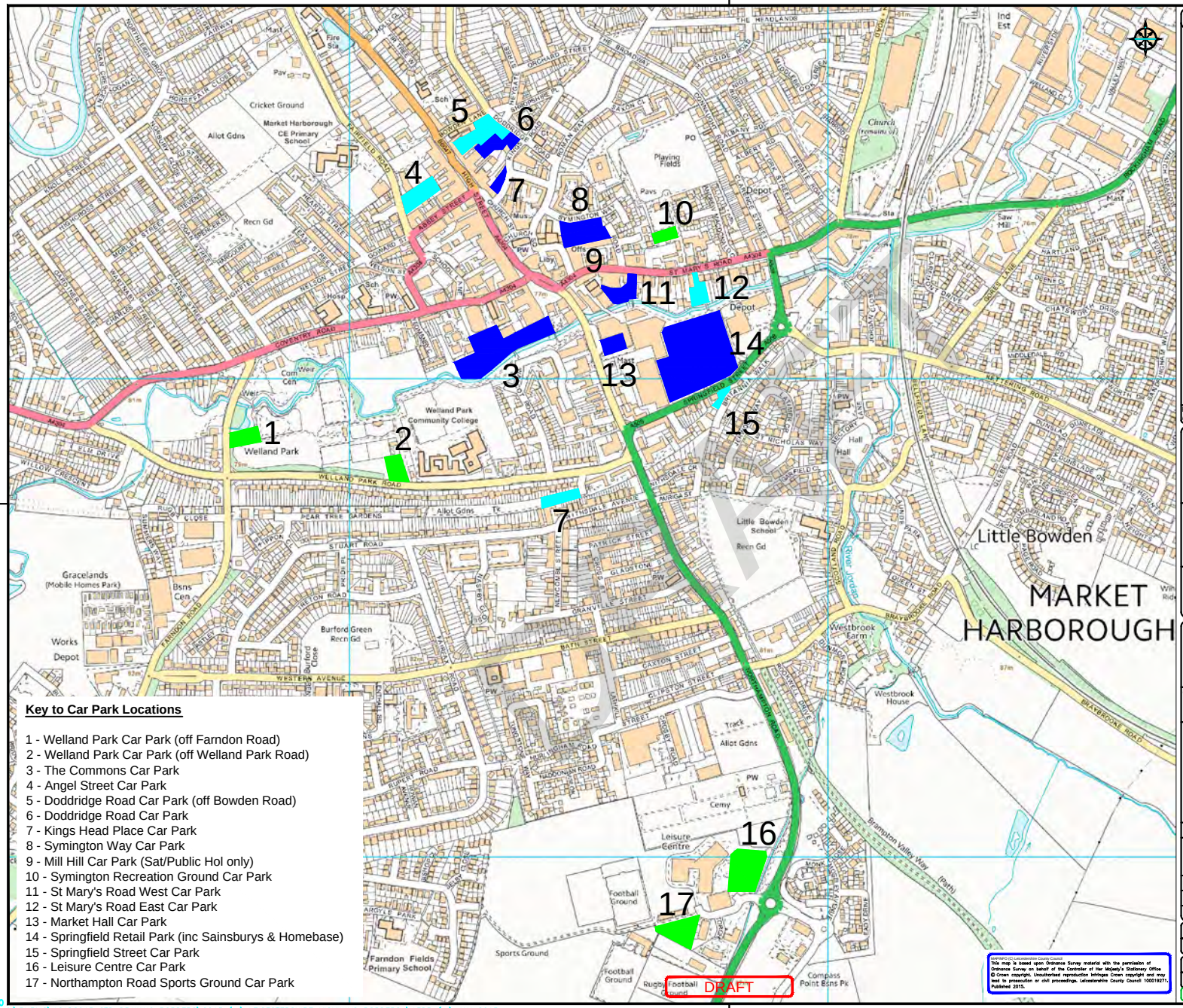
There are a number of off street car parks in the town centre available for shoppers, visitors and workers. The car parks are divided between long stay and short-stay. The arrangement of off –street car parks can be seen in **Figure 23.**

As shown in **Table 13** below there are 108 on street short-stay (40mins) parking places within close proximity of the core town centre (The Square) to facilitate short shopping trips. Further away from the immediate town centre there are a number (27) of longer-stay (2 hours maximum stay) spaces in St Mary Road. Outside of these locations on-street parking is generally uncontrolled (i.e. there are no restrictions on the period of stay).

Road name	**Control**	**Spaces**
Adam & Eve Street	40 mins	7
Bowden Lane	40 mins	11
Church Square	40 mins	12
Coventry Road	40 mins	4
High Street	40 mins	67
Kings Head Place	40 mins	7
Sub-Total		*108*
Roman Way	2 hours	27
TOTAL		135

Table 13 – On-street parking spaces, Market Harborough Town Centre source: Draft '*Harborough Parking Strategy*'

Fig 23 - Map to show car park locations



Key to Car Park Locations

1 - Welland Park Car Park (off Farndon Road)
2 - Welland Park Car Park (off Welland Park Road)
3 - The Commons Car Park
4 - Angel Street Car Park
5 - Doddridge Road Car Park (off Bowden Road)
6 - Doddridge Road Car Park
7 - Kings Head Place Car Park
8 - Symington Way Car Park
9 - Mill Hill Car Park (Sat/Public Hol only)
10 - Symington Recreation Ground Car Park
11 - St Mary's Road West Car Park
12 - St Mary's Road East Car Park
13 - Market Hall Car Park
14 - Springfield Retail Park (inc Sainsburys & Homebase)
15 - Springfield Street Car Park
16 - Leisure Centre Car Park
17 - Northampton Road Sports Ground Car Park

NOTES:

MARKET HAROROUGH CAR PARKS

FREE CAR PARK

PAY AND DISPLAY CAR PARKS:

LONG STAY

SHORT STAY

REVISION APPROVED	AMENDMENT	SIGNED/DATE	REV.

Leicestershire County Council

ENVIRONMENT AND TRANSPORT DEPARTMENT

PHIL CROSSLAND
DIRECTOR

LEICESTERSHIRE HIGHWAYS

CLIENT: TRAFFIC MANAGEMENT

TITLE: MARKET HARBOROUGH DISTRICT COUNCIL CAR PARKS

DRAWING NUMBER		SCALE	
			N.T.S
PREPARED BY:	A. TAYLOR	DATE:	27/04/15
CHECKED BY:	M. PALFREYMAN	SIZE:	A3
APPROVED BY:	M. PALFREYMAN	CORR. FILE:	

AUTOCAD PROJECT DIR:	K:\
AUTOCAD FILENAME:	

COUNTY HALL * GLENFIELD * LEICESTER * LE3 8RJ
Tel No : 0116 3050001 | Direct Dial : 0116 305****
E.Mail address: customerservices@leics.gov.uk | www.leics.gov.uk

MICROFICHE SCALE 105mm x 10mm NORTHLIGHTS

0,0 S:\PUBLIC\ACAD2015 STD DRAWING BORDERS\2015 (m) LEICESTERSHIRE HIGHWAYS BORDERS..\A3DB (m) JAN 2015

4.12.2 Usage

The following information regarding the occupancy of on- street parking spaces is sourced from the draft '*Harborough Parking Strategy*'.

Weekday parking demand on-street is very popular for short-stay visits (40 minutes maximum stay, free of charge). In the majority of town centre locations all the spaces are occupied during the peak period of the day. The two hour maximum stay bays are also in significant demand, being fully occupied most of the day.

On Saturdays, town centre on-street parking demand in the town is again popular although occupancy rates are lower than during the week. The parking demand on the uncontrolled sections of road is reduced, indicating that all-day (commuter) parking demand is reduced. On-street parking demand is reduced, primarily due to the availability of the Market Place and a reduced demand in Station Road (abutting Market Place). The on-street parking spaces are well used for short stay visits. The occupancy rate exceeds 85% in the vast majority of instances during the week. On Saturday the occupancy rate is reduced, with a greater number of visitors/shoppers using the car parks for anticipated stays of longer than 40 minutes.

4.12.3 Additional issues / demand

On-street parking throughout the town is mostly free of charge; there are two controlled 'workplace' parking permit zones in place in industrial areas in the vicinity of the train station. These zones were introduced to control parking overflow from the train station car park. They provide a number of day time on –street parking spaces for businesses on Clarence St, Fernie Road and Riverside. Businesses/employees pay a yearly charge, however the zone does permit motorists to park for free, for a maximum of 2hrs.

Longer term the County Council are exploring the potential of charging for short stay on-street parking on the highway in market towns and other larger urban areas . It is anticipated that implementation of such a scheme could assist with the management of parking demand.

There is demand in the Newcombe street / Granville Street area of the town for residents only permit parking, however in general requests for parking provision / parking controls involve more localised issues.

Moving forward it is essential that one coherent parking strategy is developed for the town incorporating a range of measures/parking controls which take into account the parking requirements of local residents, shoppers, visitors, disabled motorists, local business and workers.

4.13 Accident Investigation

All recorded instances of a Road Traffic Collision (RTC) resulting in personal injury; hereafter referred to as 'accidents', are bought to the attention of the County Council by Leicestershire Police using the nationally adopted 'STATS19' reporting process.

Collisions not reported to the Police, or where no personal injury arises as a result of the collision are generally not bought to the attention of the County Council. Whilst accounts of such instances may serve as anecdotal evidence, they would not typically be referenced in a quantitative assessment of highway safety.
Poorly performing traffic networks can often manifest themselves as a poor accident record; being indicative of conflicting movements, inappropriate traffic speeds, poor highway design, or general user frustration/confusion.

Accident data is therefore an important indicator of not only potential highway safety problems, but also the overriding performance of a network/link/junction.

4.13.1 Accident trend (comparable & absolute)

The extent of an accident problem, i.e. their frequency and severity, must be considered in relative terms. Analysis shows that 293 accidents were recorded in the Market Harborough study area[4] over the 10 year period 2005-2014. **Table 14** shows how those accidents contribute to the accident totals for;

i. the county of Leicestershire
ii. the 'built up' area of the county (those roads with a speed limit of 40mph or less)
iii. the Harborough District area
iv. the Market Harborough study area

That data is plotted by means of an index in **Figure 24** to illustrate the relative trend in accident frequency between each category.

[4] Study area excludes the A4304/A6/A427 roundabout which is within the Northamptonshire county boundary.

Category	Accidents (per calendar year)										Total
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	
County	2,079	1,908	1,777	1,677	1,589	1,566	1,414	1,396	1,388	1,449	16,243
'Built Up Area'	1,046	938	848	867	853	843	710	825	735	759	8,324
Harborough District	299	290	248	242	226	215	205	195	190	184	2,294
Study Area	29	28	34	37	28	36	17	31	19	34	293

Table 14: Accident totals 2005 – 2014

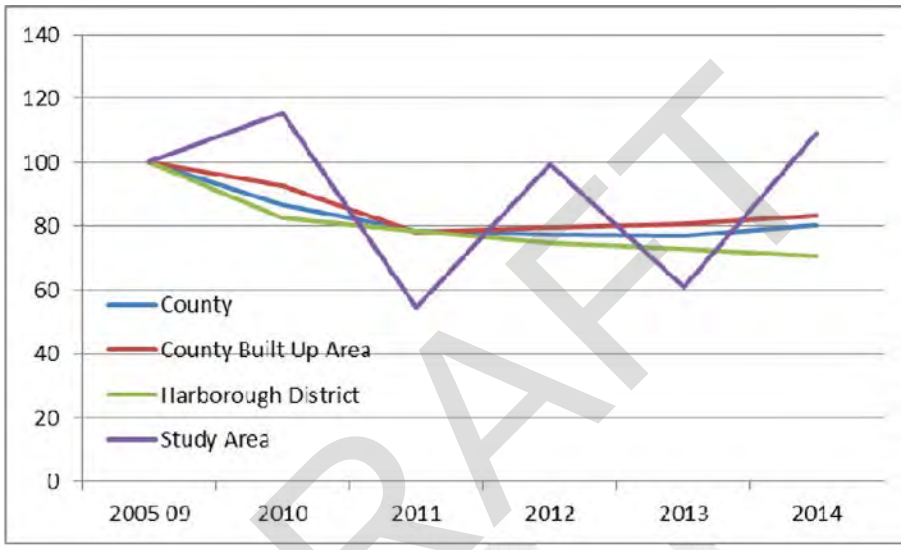


Figure 24; Graph to show relative trend in accident frequency between each category.

As the study area is largely made up of roads subject to a speed limit of 40 mph or less, the 'Built Up Area' category ought to provide the best tool for comparison in understanding how the accident trend in the study area compares with that of other broadly similar roads in the county.

Unfortunately however, and as can be seen in **Figure 24,** the likelihood of drawing any meaningful comparison between the two entities appears to be limited. This is likely attributable to the variation in accident frequency year on year within the study area; something that is regularised when considered in the 'Built Up Area' category which includes a far greater number of roads.

Whilst the trend of accidents in the study area cannot reliably be contrasted against that of all other similar roads in the county (built up area), it is still possible to analyse the general trend of the study area in itself.

Making use of the data in **Table 9** and using the 5 year average between 2005-2009 as a base figure, it is apparent that the frequency of accidents in 2014 were 20% lower across the County as a whole, 17% lower in the 'built up areas' of the county, 30% lower in Harborough district, and 9% higher in the study area. However, the study area will be more prone to showing an increase due to the sensitivity involved which such comparatively low figures. When the accident rate in the study area is plotted as a trend, these variancesare regularised out; and it is evident that the frequency of accidents in the study area is actually in steady decline (see **Figure 25**).

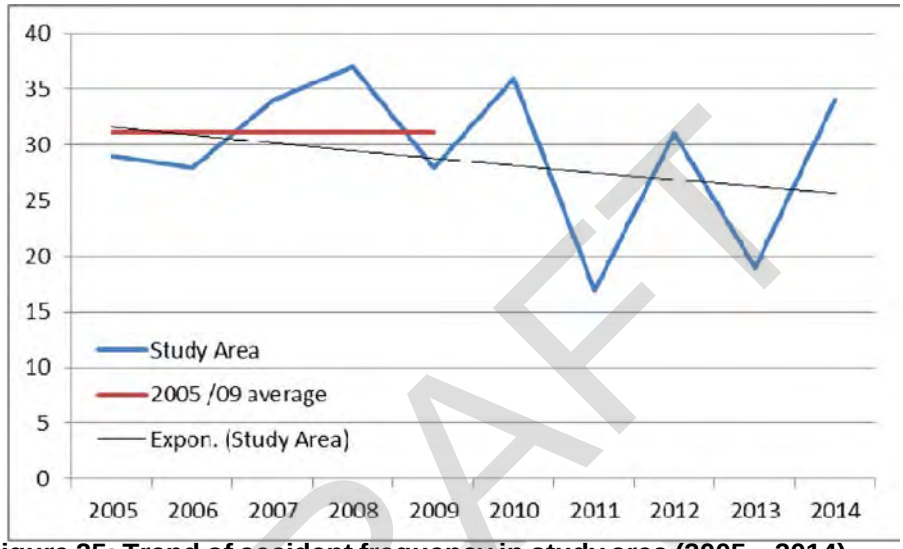


Figure 25: Trend of accident frequency in study area (2005 – 2014)

4.13.2 *Accident frequency (comparable and absolute)*

Due to the restricted geographical area inherent to most local studies, it is expected that the absolute frequency of accidents recorded will be proportionately low when considered in respect of the 'county' and 'built up area' wide totals. Accidents recorded in the Market Harborough study area are no different; being less than 2% and 4% respectively.

A more important indicator is how the absolute frequency of accidents compares to other broadly similar areas in the county; namely that of other market town centres.

In the absence of defined study areas for other market towns, a comparison of absolute accident numbers for settlement boundaries has been used instead; see **Table 15**.

It is apparent that the Market Harborough area records a consistently low rate of accidents when compared to that of other similar areas in absolute terms.

Settlement	Year						
	2005/09 Average	2010	2011	2012	2013	2014	2005/14 Total
Market Harborough	22.2	31	11	24	10	27	214
Ashby de la Zouch	24.2	17	14	15	14	20	201
Coalville	41.4	34	31	31	23	27	353
Hinckley	70.6	45	53	45	46	63	605
Loughborough	116.2	116	96	84	95	103	1,075
Melton Mowbray	43.2	47	40	45	43	32	423

Table 15: Accidents in built up (40 mph or less) areas of settlements

4.13.3 *Accident distribution*

Of the 293 accidents recorded across the overall study area between 2005-2014, analysis shows that they primarily occur on the main 'A' and 'B' classified roads through the town.

Despite being concentrated to the main routes, accidents are widely distributed, with very few locations that could reasonably be considered as a cluster site, or area of particular concern.

71% of the accidents involving a pedestrian are concentrated within an area of roughly half a mile in radius of the town centre.

4.13.4 *Casualty type and severity*

The 293 accidents recorded in the study area resulted in 366 casualties, of which;

a) 2 were fatalities
b) 36 were classed as 'serious'
c) 328 were classed as 'slight'

Of the 293 accidents;

a) 261 involved a car
b) 47 involved a cyclist
c) 44 involved a motorcyclist
d) 42 involved a pedestrian
e) 6 involved a goods vehicle

Table 16 shows a breakdown of those casualties by the type of highway user and compares those figures as a proportion of the total with that of the county as a whole, and the 'built up area' of the county. Also tabulated and compared are the proportion of those accidents classed as Killed or Seriously Injured (KSI); that being the number of fatalities and serious casualties combined.

User type	Severity			Study Area Total	Study Area %	County Built Up Area %	Study Area KSI %	County Built Up Area KSI %
	Killed	Serious	Slight					
Pedestrian	1	6	36	43	12	16	18	28
Cyclist	0	5	42	47	13	12	13	14
M'cyclist	0	14	30	44	12	11	37	23
Car	1	11	202	214	58	58	32	32
Bus	0	0	3	3	1	1	0	1
Goods veh	0	0	15	15	4	2	0	2
Other	0	0	0	0	0	1	0	0
Total	2	36	328	366	100	100	100	100

Table 16: Frequency of casualty type and severity 2005 - 2014

Proportionally speaking, the study area has a broadly similar breakdown of casualty type as other built up areas in the county; the only negative difference of note being a higher proportion of motorcycle KSI casualties.

4.13.5 *Predicted accident frequency*

Making use of Department for Transport (DfT) guidance, it is possible to make high level predictions of the likely accident frequency on any given link; effectively providing a benchmark against which a site can be compared forthe rate of accidents with other similar sites in the country.

Using the above procedure, the 4 main links crossing the study area have been assessed to compare their actual accident rate with that of their predicted accident rate (see **Table 17**).

a)	A4304 (WEST)	between parish boundary on Lubenham Hill to High Street and The Square (including one way sections)
b)	A4304 (EAST)	between The Square and the county boundary on Rockingham Road
c)	A508	between St Mary's Road and the 30/40mph speed limit terminal
d)	B6047	between The Square and the 40/50mph speed limit terminal

Links assessed for predicted vs actual accident frequency

Link	Length (km)	Average Annual Daily Traffic	Annual Accident Frequency	
			Predicted	Actual
A4304 (West)	2.01	9,116	4.7	4.4
A4304 (East)	1.99	13,106	6.7	3.4
A508	1.83	10,634	5.0	2.8
B6047	1.69	10,690	4.6	2.8

Table 17 Predicted vs. Annual Accident Frequency by Link (2005-2014)

It is clear that the frequency of accidents recorded falls below that which might typically be expected nationally given the status of the links and the density of the trafficusing them.

4.14 Environment (Public Realm)

Whilst the public realm of an area may not share the obvious ties with transportation that are evident with walking, cycling and congestion etc; there are clear and well defined links between a high quality public realm and the economic prosperity of local businesses that depend on patronage by foot. The same can be said for tourism and the general desirability of living or working in an area.

As much of the town centre occupies highway designated land, a transport study such as this affords a unique opportunity to review the public realm and ensure that it remains fit for purpose. Likewise, any incidental changes to the public realm that might arise from other proposals can be more sympathetically accommodated.

The existing public realm is predominately focussed around the St Dionysius Church and the Old Grammar School in the town centre; much of which is covered by the Market Harborough Conservation Area. A number of listed buildings contribute to the attractiveness of this historic market town. Whilst elements of the public realm are criticised as looking 'tired' and 'out of date', it remains in a safe and serviceable condition.

Furthermore;

- The pedestrian link between the town centre and the train station could be improved by a major redesign of the parking bays and tree planting areas and refurbishment of the footways.
- The pedestrian link between the main car park and the town centre could be improved.
- The pedestrian link along the Millennium Mile to the town centre could be improved
- There is an opportunity to improve the appearance of the bus hub in front of the Market Hall.

4.15 Highway Maintenance

Highway maintenance activities normally revolve around statutory obligations and duties contained in various legislation, and as a result do not normally fall into overarching transport strategies. Though, in light of the size and scope of the study, it will necessary to incorporate/ consider maintenance activities in relation to the other associated proposals.

The road network as a whole in Market Harborough is in a reasonably good condition. Reductions in Central Government funding over the past five years has naturally had in impact on the amount of cyclic maintenance that can be delivered (i.e. resurfacing work), however every effort is being made to maximise the resilience of the network with the available funding. **Appendix C** details identified schemes and aspirations in the study area.

4.16 Flooding

Flooding can place significant stress on our transport network and cause issues for the local population and economy. An efficient drainage system is therefore an important factor in the reliance of the transport network.

4.16.1 *Site Background*

Market Harborough is situated on hills and valleys falling towards the River Welland. The River Welland runs from west to east and effectively bisects the town (north and south). The town centre is located on the northern side of the River Welland. The River Welland is classified as a 'Main River' which means that the Environment Agency has permissive powers to undertake work to reduce flood risk. The town centre is located within Flood Zone 1 of the Environment Agency Main River flood map. The Environment Agency defines Zone 1 as a location *'where flooding from rivers and the sea is very unlikely. There is less than a 0.1 per cent (1 in 1000) chance of river flooding occurring each year'.*

4.16.2 *Drainage systems and responsibilities*

There is only a single watercourse within Market Harborough town centre and this is the River Welland. The town centre is served by both a combined and dedicated storm public sewer system. This system is maintained by Anglian Water as the relevant water and statutory sewerage authority. The responsibility for lateral connections onto the main sewer varies and can either be the responsibility of the adjacent landowner or water company (Anglian Water). The public sewer network across England and Wales (and particularly in historic towns such as Market Harborough) has evolved rather than been designed.

The County Council is responsible for maintaining highway gullies (drains) and the lateral connections to the public sewer. This is indicated by **Figure 24** below:

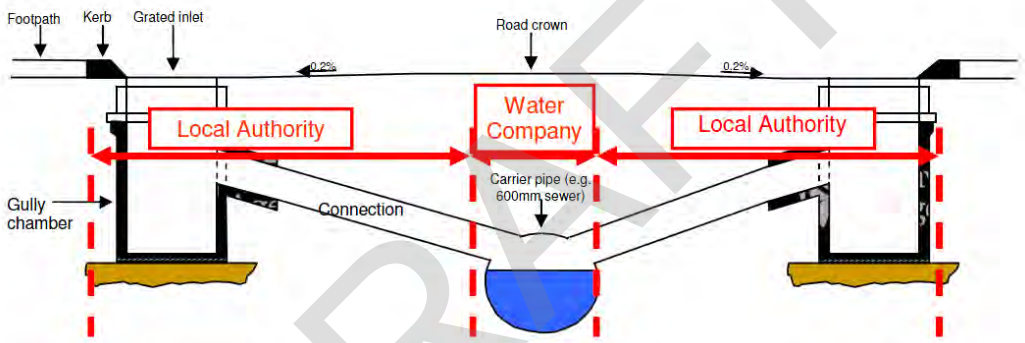


Fig 26 : Highway Drainage Responsibilities

4.16.3 *Drainage schemes*

In 2005 Anglian Water installed an attenuation tank within the Commons Car Park to retain storm water and provide a 1:30 year level of protection to the town centre (broadly around The Square).

More recently in early 2015, Anglian Water installed new surface water drainage from Coventry Road to the River Welland to further increase the drainage capacity from the town centre and reduce the flood risk to businesses and residents on Coventry Road.

The County Council is intending to improve highway drainage at the junction of Welland Park Road and Northampton Road. Improvements will need to be coordinated with any vehicle capacity junction improvements derived from this study.

Further investigation of flooding problems at Nithsdale Avenue and Northampton Road is also proposed.

4.17 Street lighting

In 2010 the authority made a commitment to invest in LED lighting technology to reduce the financial cost and environmental impact of the running of street lights. The project continues previous work already undertaken to switch off certain street lights between midnight and 5am.

The £25.1m programme of conversion to LED lighting is being part funded by a successful bid to the Department for Transport for £5.1m and will see the conversion to LED of the county's entire stock of 68,000 street lights.

The new technology allows the lighting to be centrally operated meaning the Council can truly tailor individual lanterns to operate at their most effective level; being switched on/off at hours of low demand, and dimmed where amenity issues require.

The programme of LED conversion in Market Harborough is scheduled to commence in Spring 2017.

4.18 Chapter summary

The following section provides a summary of the key transport issues identified during Phase 1 of the study

Findings

The key transport findings below are based on various sources of information; whilst in some cases they appear to be obvious and well known, the study provides the evidence necessary to support bidding opportunities. They are derived from the study and relate to the current and future condition and performance of the transport network.

Traffic volume in the town is forecast to increase by 24% between 2011 (base year for the study) and 2031. Transport modelling work indicates increased queues and travel time on the network as a result.

It is evident from transport modelling and site observations that there are a number of junctions within the study area that currently, and in the future perform more poorly than others. Those junctions are:

- A6 / B6047 (aka McDonalds Roundabout)
- The Square / St Mary's Road / Coventry Road
- Northampton Road / Springfield Street
- Northampton Road / Welland Park Road
- Springfield Street / Kettering Road
- St Mary's Road / Kettering Road / Clarence Street
- Rockingham Road / Gores Lane
- A6 / Harborough Road / Dingley Road / A4304
- Sainsbury's store entrance / Springfield Street

Traffic modelling work suggests that during the peak traffic periods:

- the greatest proportion of trips on the network are those going from within the study area to outside of the area, or vice versa.

- around a third of the trips using the study area over the peak hours in 2011 were making internal trips.

- 'through' traffic (traffic using the roads in the town to get to/from destinations outside the town) accounts for approximately 10% of trips.

Two of the three 'A' and 'B' classified routes (the B6047 and the A4304) within the study area both converge on The Square and therefore much of the traffic in the study area is reliant upon using the very heart of the town centre; in excess of 13,000 vehicles per day.

Feedback from local residents and stakeholders suggests that this results in an unwelcome mix of vehicular traffic in an area which local residents and stakeholders feel ought to be primarily dominated by pedestrians.

The classification of roads in the study area is not wholly representative to the amount of traffic they currently carry and are forecast to carry in the future.

The control and management of HGV and high sided vehicles (typically HGVs) routing through the town is constrained by low underpass height on a number of bridges, often necessitating passage to sites in the south of the town from the north via the town centre.

Whilst a localised scheme to reduce sign clutter in The Square was carried out in the town recently, traffic signing across the area lacks a coherent strategy and is in need of review.

Infrastructure for walking, cycling and public transport is generally quite good. However, there are clear gaps in the existing elements, which would benefit from improving.

Both on-street and off-street parking is generally well catered for in the study area. However, it is essential that one coherent parking strategy is developed for the town, incorporating a range of measures/parking controls which take account of the parking requirements of local residents, shoppers, visitors, disabled motorists, local business and workers.

All but a small minority of recorded vehicle speeds are generally in line with the posted speed limits and do not cause undue concern for highway safety.

Market Harborough consistently records a comparatively low level of road traffic collisions, compared to other similar areas (towns) in the county. Furthermore the frequency of accidents on the 4 main routes across the town, the A4304 (west), A4304 (east), A508 and B6047, fall below that which might be expected on similar roads nationally.

Feedback from early stakeholder workshops suggests that the town centre's public realm is perceived to be in need of updating

Without addressing the traffic issues within the town through the combinationof highway improvements, walking and cycling improvements, delivered in combination with a series of complimentary softer measures, it is likely that the area will continue to suffer from congestion which will ultimately limit the delivery of housing. In addition, it is likely that the town will become less attractive to developers, reducing housing and economic growth in the area.

Failing to address congestion will stifle growth, leave the town centre poorly connected and prevent economic growth opportunities from being exploited.

5.1 Recommendations & Strategy Development

5.2 Chapter Overview

Chapter 5 provides draft recommendations, based on the issues and findings presented in the previous chapter, for an evidence led package of strategic transport measures/ outputs to take forward for the town.

5.3 Recommendations for outline transport strategy

The draft recommendations shown in **Table 18**, have been identified to address theissues highlighted in the previous chapter.

Each recommendation has been evaluated on the basis of key desired transport outcomes identified in Chapter 2. Taken together the recommendations provide the foundation for an initial outline transport strategy.

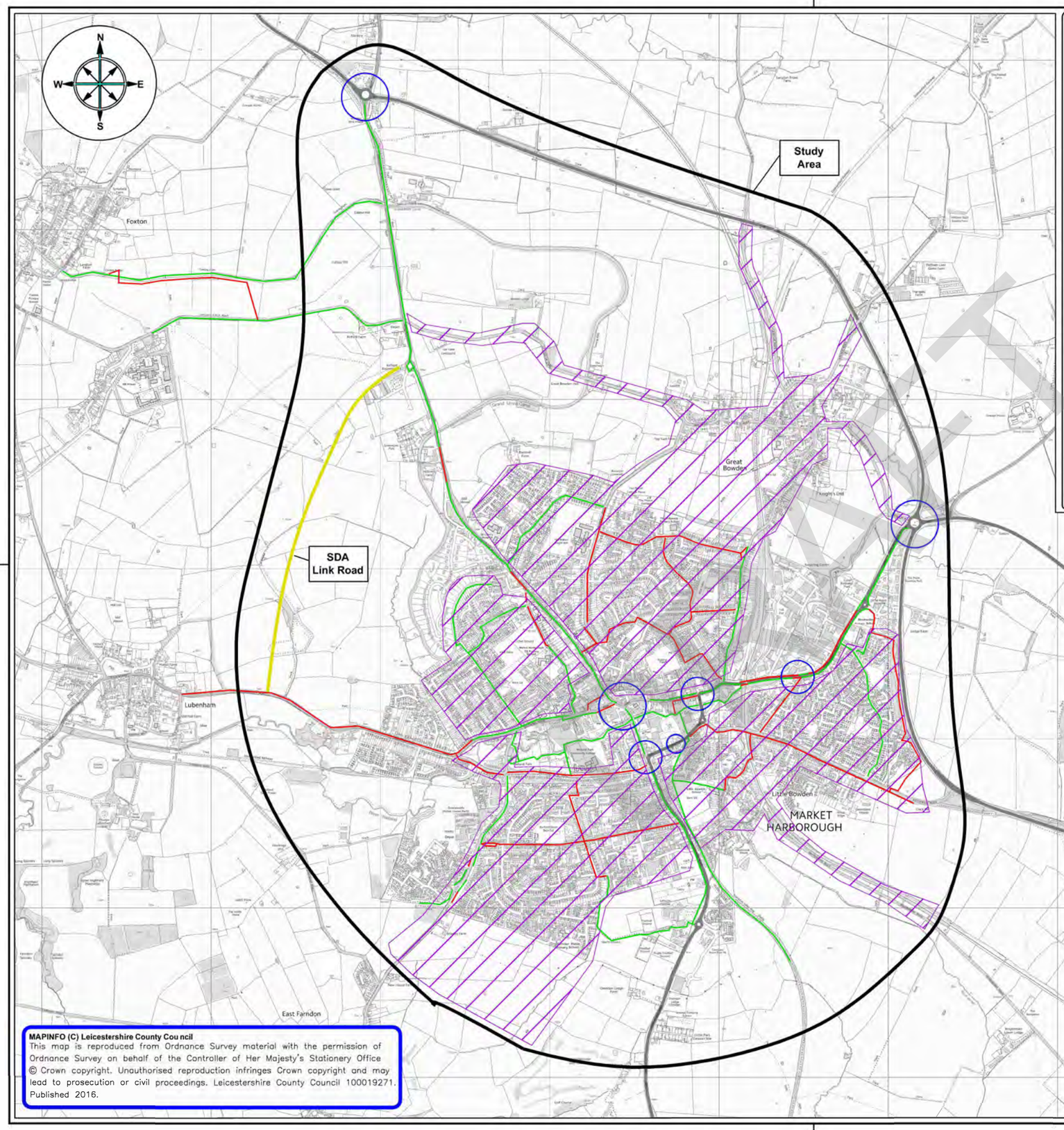
The table of draft recommendations is also presented geographically in **Figures27, 28 and 29.**

- **Figure 27** shows a recommended package of improvement measures which retain the existing road network, and traffic routing arrangements.

- **Figure 28** shows a second stage of recommendations which would build on the recommendations in Fig x but introduce more significant measures resulting in changes to the network and traffic routing.

- Finally **Figure 29** shows a third stage of recommendations, again based on those shown in Fig x but with the introduction of a southern relief road (SRR).

Figure 27 - Package of recommendations 1



Emerging outline recommendations		
Capacity / Congestion Improvements		
R1	Undertake option appraisals for capacity improvements at the following key junctions: (i) A6 / B6047 (aka McDonalds Roundabout) (ii) The Square / St Mary's Road / Coventry Road (iii) Northampton Road / Springfield Street / Welland Park Road (iv) A4304 St Mary's Road / Kettering Road / Clarence Street (v) A4304 Rockingham Road / Gores Lane (vi) A6 / Harborough Road / Dingley Road / A4304 (vii) Sainsbury's store entrance / Springfield Street	
Recommendations that result in changes to the network and traffic routing		
R2	Consider the upgrade of Welland Park Road to become the A4304, with a respective downgrading of Coventry Road. Determine the associated engineering, accommodation & complementary works to facilitate this work	See Recommendations Plan 2
R3	Identify opportunities to divert Highways England emergency diversion routes away from the town centre	See Recommendations Plan 2
R4	Determine the viability of increasing underpass height on Rockingham Road Rail Bridge	See Recommendations Plan 2
R5	Consider the principle of providing a relief road between the A508 & A6 to the south-east of the town	See Recommendations Plan 2
Sustainable transport infrastructure / behaviour change initiatives		
R6	Extend and enhance the walking and cycling network	Existing cycle route / Proposed cycle route
R7	Make local bus / public transport infrastructure improvements	Across study area
R8	Identify a suite of 'tailored' behaviour change initiatives to encourage modal shift in travel choice towards active and sustainable travel	Across study area
Safety Improvements		
R9	Continue to monitor Road Traffic Collisions (RTC) within the study area. If an RTC occurs within, or adjacent to, a proposed improvement scheme proportionate efforts should be made where appropriate to include complementary measures that could reduce further RTCs.	Across study area
Traffic Management Improvements		
R10	Devise and implement a new strategy for traffic signing across the study area	Across study area
R11	Review parking controls in the vicinity of the town centre and train station, with particular regard to the need/benefit of further permit parking zones	Across study area
R12	Sites with recorded speeds in excess of the Association of Chief Police Officers enforcement threshold should be reviewed	Across study area
HGV controls		
R13	Identify undesirable routes for HGVs and impose suitable prohibitions. Whilst the promotion of a town wide environmental weight restriction would be preferable, two key routes are particularly vulnerable to exploitation by inappropriate HGV traffic and should be adopted as a minimum: (i) Ashley Road /Kettering Road between the A4304 and the A6	
R14	Send updated map to 'sat-nav' contacts, advising of HGV controls	Across study area
Public Realm / Highway Maintenance		
R15	Extend the public realm to encompass the nearby rail and bus terminals. Make general aesthetic upgrades to existing materials and arrangement	Across study area
R16	In light of the size and scope of the study, incorporate / consider maintenance activities in relation to improvement proposals	Across study area

KEY

Leicestershire County Council

ENVIRONMENT AND TRANSPORT DEPARTMENT

INVESTOR IN PEOPLE

PHIL CROSSLAND
DIRECTOR

DESIGN & DELIVERY GROUP

MARKET HARBOROUGH

TITLE:

TRANSPORT STRATEGY:
PACKAGE OF RECOMMENDATIONS 1

(WITH NO CHANGE TO EXISTING ROAD NETWORK)

DRAWING NUMBER		SCALE
N / A		NTS
PREPARED BY:	R DAVIES	DATE: MARCH 2016
CHECKED BY:	M ARCHER	SIZE : A3
APPROVED BY:	M PALFREYMAN	CORR. FILE :

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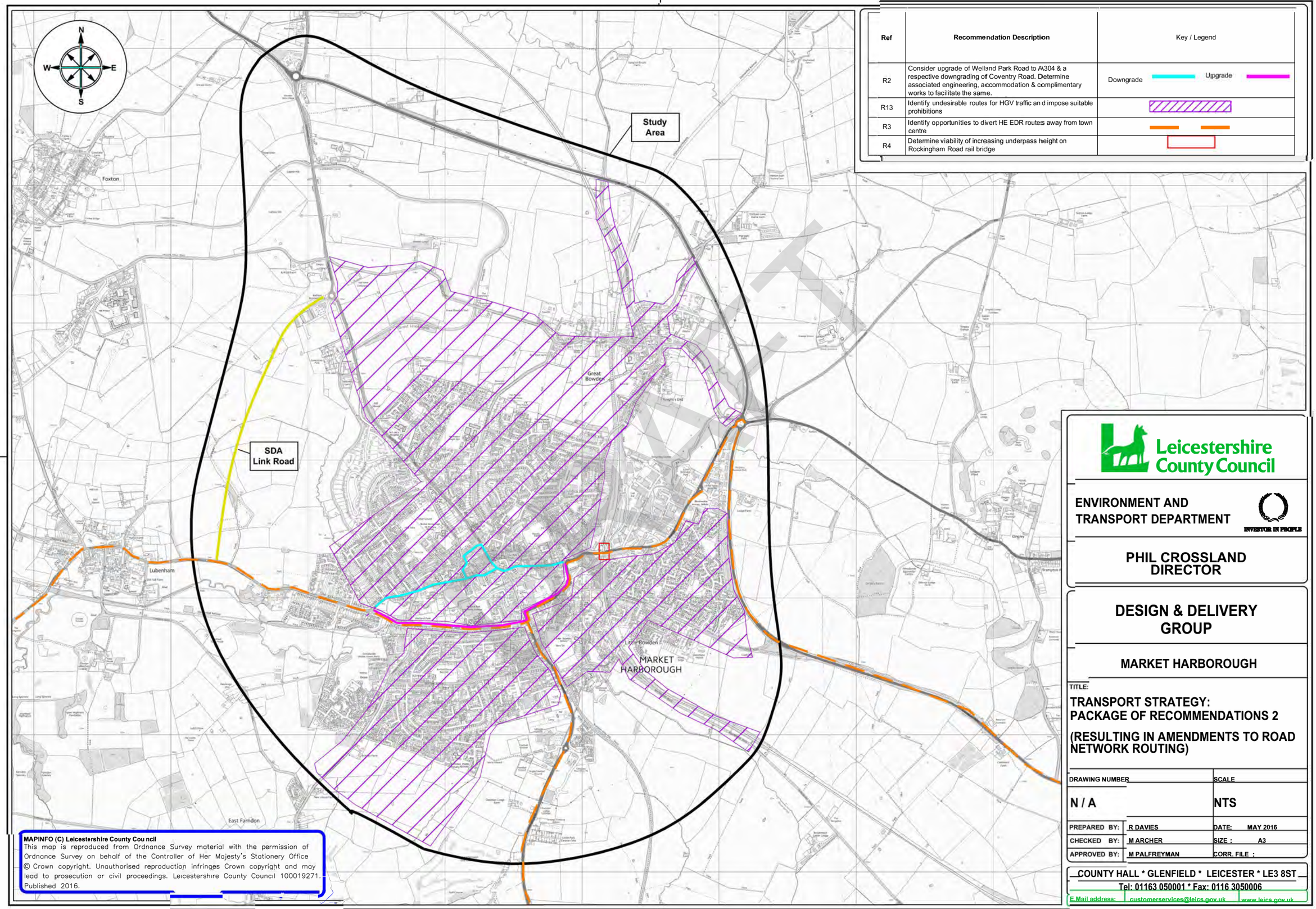
Figure 28 - Package of recommendations 2



Ref	Recommendation Description	Key / Legend
R2	Consider upgrade of Welland Park Road to A304 & a respective downgrading of Coventry Road. Determine associated engineering, accommodation & complimentary works to facilitate the same.	Downgrade / Upgrade
R13	Identify undesirable routes for HGV traffic and impose suitable prohibitions	
R3	Identify opportunities to divert HE EDR routes away from town centre	
R4	Determine viability of increasing underpass height on Rockingham Road rail bridge	

Leicestershire County Council

ENVIRONMENT AND TRANSPORT DEPARTMENT

INVESTOR IN PEOPLE

PHIL CROSSLAND
DIRECTOR

DESIGN & DELIVERY GROUP

MARKET HARBOROUGH

TITLE:

TRANSPORT STRATEGY: PACKAGE OF RECOMMENDATIONS 2

(RESULTING IN AMENDMENTS TO ROAD NETWORK ROUTING)

DRAWING NUMBER	SCALE
N / A	NTS

PREPARED BY:	R DAVIES	DATE:	MAY 2016
CHECKED BY:	M ARCHER	SIZE :	A3
APPROVED BY:	M PALFREYMAN	CORR. FILE :	

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Figure 29 - Package of recommendations 3

Ref	Recommendation Description	Key / Legend
R2	Consider upgrade of Welland Park Road to A304 & a respective downgrading of Coventry Road. Determine associated engineering, accommodation & complimentary works to facilitate the same.	Downgrade / Upgrade
R13	Identify undesirable routes for HGV traffic and impose suitable prohibitions	
R3	Identify opportunities to divert HE EDR routes away from town centre	
R4	Determine viability of increasing underpass height on Rockingham Road rail bridge	
R5	Consider the benefit of providing a relief road between the A508 & A6 to the south east of the town	Bypass / Rockingham Rd downgraded

Study Area

SDA Link Road

Foxton

Lubenham

Great Bowden

Little Bowden

MARKET HARBOROUGH

East Farndon

Leicestershire County Council

ENVIRONMENT AND TRANSPORT DEPARTMENT

INVESTOR IN PEOPLE

PHIL CROSSLAND
DIRECTOR

DESIGN & DELIVERY GROUP

MARKET HARBOROUGH

TITLE:

TRANSPORT STRATEGY: PACKAGE OF RECOMMENDATIONS 3

(RESULTING IN AMENDMENTS TO ROAD NETWORK)

DRAWING NUMBER		SCALE
N / A		NTS
PREPARED BY:	R DAVIES	DATE: MAY 2016
CHECKED BY:	M ARCHER	SIZE : A3
APPROVED BY:	M PALFREYMAN	CORR. FILE :

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Ref	Recommendation Description	Associated Outcomes
Capacity / Congestion Improvements		
R1	Undertake option appraisals for capacity improvements at the following key junctions: (i) A6 / B6047 (aka McDonalds Roundabout) (ii) The Square / St Mary's Road / Coventry Road (iii) Northampton Road / Springfield Street / Welland Park Road (iv) A4304 St Mary's Road / Kettering Road / Clarence Street (v) A4304 Rockingham Road / Gores Lane (vi) A6 / Harborough Road / Dingley Road / A4304 (vii) Sainsbury's store entrance / Springfield Street	O1, O4
Recommendations that result in changes to the network and traffic routing		
R2	Consider the upgrade of Welland Park Road to become the A4304, with a respective downgrading of Coventry Road. Determine the associated engineering, accommodation & complementary works to facilitate this work	O1, O3, O4
R3	Identify opportunities to divert Highways England emergency diversion routes away from the town centre	O1, O3, O4
R4	Determine the viability of increasing underpass height on Rockingham Road Rail Bridge	O1, O3, O4
R5	Consider the principle of providing a relief road between the A508 & A6 to the south-east of the town	O1, O3, O4, O7, O8
Sustainable transport infrastructure / behaviour change initiatives		
R6	Extend and enhance the walking and cycling network	O1, O2, O4, O6
R7	Make localised public transport infrastructure improvements	O1, O2, O4, O5
R8	Identify a suite of tailored behaviour change initiatives to encourage modal shift in travel choice towards active and sustainable travel.	O2, O5, O6
Safety Improvements		
R9	Continue to monitor Road Traffic Collisions (RTC) within the study area. If an RTC occurs within, or adjacent to, a proposed improvement scheme proportionate efforts should be made where appropriate to include complementary measures that could reduce further RTCs.	O1, O2, O6, O7, O8
Traffic Management Improvements		
R10	Devise and implement a new strategy for traffic signing across the study area	O1, O3, O4
R11	Review parking controls in the vicinity of the town centre and train station, with particular regard to the need/benefit of further permit parking zones	O8
R12	Sites with recorded speeds in excess of the Association of Chief Police Officers enforcement threshold should be reviewed	O1, O2, O6, O7
HGV controls		
R13	Identify undesirable routes for HGVs and impose suitable prohibitions. Whilst the promotion of a town wide environmental weight restriction would be preferable, two key routes are particularly vulnerable to exploitation by inappropriate HGV traffic and should be adopted as a minimum: (i) Ashley Road /Kettering Road between the A4304 and the A6 (ii) Bath Street/Western Avenue between the A508 and Farndon Road	O1, O3, O4
R14	Send updated map to 'sat-nav' contacts, advising of HGV controls	O1, O3, O4
Public Realm / Highway Maintenance		
R15	Extend the public realm to encompass the nearby rail and bus terminals. Make general aesthetic upgrades to existing materials and arrangement	O8
R16	In light of the size and scope of the study, incorporate / consider maintenance activities in relation to improvement proposals	O1,O4, O8

Table 18: Draft recommendations for outline transport strategy

5.4 Recommendation profiles

Each of the draft recommendations could be promoted as a standalone scheme ontheir individual merits; and it is on that basis that they have initially been summarised in the below recommendation profiles.

That notwithstanding, the aspiration is to have a single coherent strategy, rather than a series of individual initiatives. It is inevitable that certain elements of the recommendations which are viable in isolation would come into conflict with one another when considered holistically.

As such, a further process of consolidating those individual recommendations into one overarching strategy must be undertaken (modelling and testing measures together) as part of the next phase the study

.

Recommendation R1

Undertake option appraisals for key junctions and make capacity improvements

Overview

The recommendation is to assess options for increasing the capability and resilience of key strategic junctions around the town to cope with peak hour demand.

Rationale

It is evident from transport modelling that the performance of the network is in places already poor, and forecast to deteriorate further in the future. Without appropriate intervention those poorly performing junctions will impede the economic growth of the area and generally be to the detriment of those who live, work and visit the town.

Findings

To date, 9 junctions have been identified for consideration. Of those; 7 were identified via the LLITM modelling;

1. The Square / St Mary's Road / Coventry Road
2. Northampton Road / Springfield Street
3. Northampton Road / Welland Park Road
4. St Mary's Road / Kettering Road / Clarence Street
5. Rockingham Road / Gores Lane
6. A6 / Harborough Road / Dingley Road / A4304
7. Sainsbury's store entrance / Springfield Street

and a further 2 junctions were selected for inclusion by LCC officers with local knowledge of where issues either exist now, or may be likely to arise in the future as a consequence of traffic growth/re-distribution;

8. A6 / B6047 (aka McDonalds roundabout)
9. *Springfield Street / Kettering Road*.

These 9 junctions are shown geographically in **Figure 30.**

Sainsbury's car park / Springfield Street, is yet to be considered for potential improvements. With that being the only exception, all of the junctions identified have had a detailed analysis of their capacity and performance undertaken using specialist software (LinSig / Arcady etc) that is more detailed than that of LLITM. *That detailed modelling has confirmed that mitigation is required at all of the junctions tested except for the roundaboutjunction of Springfield Street and Kettering Road; which is shown to have sufficient reserve capacity. On site observations suggest that the site is susceptible to problems caused by queuing originating from St Mary's Road / Kettering Road / Clarence Street and the Sainsbury's store entrance / Springfield Street junctions

To date, and subsequent to an exercise of solution optioneering, a preferred mitigation scheme has been selected for junctions 1, 2, 3, 4, 5 and 8. Those schemes are summarised in **Table 19** below.

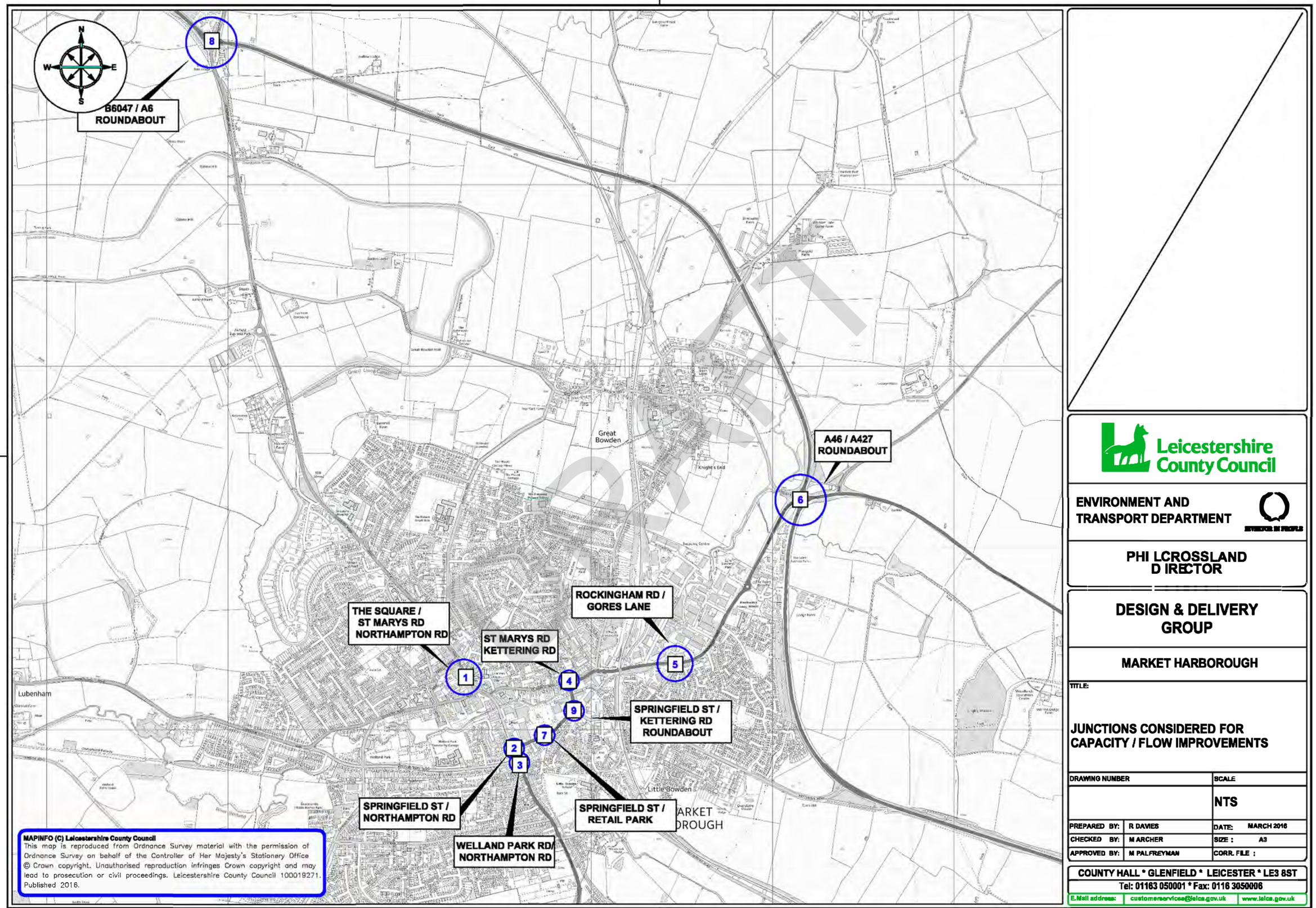
Scheme drawings of the proposed mitigation schemes, along with more detailed summaries of the option appraisal process and model outputs are available in **Appendix F.**

The next stage of the study will be to test/model the impact of the individual junction proposals across the network to see if collectively they work together.

Jn. No.	Location	Existing Reserve Capacity (2015 Flows)		Forecast Reserve Capacity (2031 Flows)		Preferred Mitigation Option	Mitigation Capacity (2031 Flows)		Mitigation Scheme Cost
		AM	PM	AM	PM		AM	PM	
1	The Square / St Mary's Rd / Coventry Rd	-31%	-33%	-28%	-58%	No suitable mitigation identified at this time. Further analysis required. Consideration of one way system: Two potential one way systems have been proposed for consideration. • The first option makes St Mary's Road one way from The Square towards the Kettering Road / Clarence Street junction. Whilst this has highlighted that The Square / St Mary's Road junction would significantly benefit from the scheme, other junctions along Springfield Street may not cope with the additional traffic. • Another option proposes a partial one way on St Mary's from the main junction at the Square towards Adam & Eve Street (which is currently already one way).Traffic would eventually exit on the main street near the junction adjacent to the church at Church Square.The junction of A4304 Main St and Church Square could be signalised with pedestrian facilities. The existing zebra crossing would be removed which could help co-ordinate this junction with the Square.	N/A	N/A	N/A
2&3	Northampton Rd / Springfield St / Welland Park Rd	-4%	-9%	-15%	-17%	***Option no.2*** Additional lanes on both Northampton Road approaches. Additional islands on both Northampton Rd approaches to allow pedestrians to cross both side road whilst running Northampton Road ahead. Signal timings adjusted to link Welland Park Road & Springfield Road better and reduce blocking of internal stop lines	+11%	-5%	£310,000 to £550,000 (excluding Stats & Fees & Land costs)
4	St Mary's Road / Kettering Road / Clarence Street	-6%	-16%	-7%	-18%	***Option no. 2*** Validate MOVA to ensure optimum junction performance. Make Clarence Street One Way (Away from junction) and remove stage 3 from the sequence.	+14%	-3%	Approx £40-60k (Excluding any necessary alterations to Great Bowden Road/Rockingham Road)
5	Gores Lane / Rockingham Rd	-1%	-4%	-1%	-6%	***Option no.1*** Installation of on crossing pedestrian/cyclist detectors that will extend the intergreen period if required. This will allow the intergreen period to be reduced and only extended if necessary.	+7%	+2%	£3k-£5k (£30k-£40k) (If the signals are required to be renewed and converted to LED)
8	A6 / B6047 (Roundabout)	26%	24%	-4%	-3%	***Option no.1*** Provide widening on the B6047 Nth approach. Part of mitigation measure for a development. 0.85 RFC normally the threshold for capacity. With the mitigation measure RFC is only just tipped over 0.85.	0.82	0.89	Approx. £225k (excluding utility diversions)

Table 19- Summary table of preferred junction enhancement schemes

Figure 30 - Key junctions considered for mitigation



Leicestershire County Council

ENVIRONMENT AND TRANSPORT DEPARTMENT

PHI LCROSSLAND
D IRECTOR

DESIGN & DELIVERY GROUP

MARKET HARBOROUGH

TITLE:

JUNCTIONS CONSIDERED FOR CAPACITY / FLOW IMPROVEMENTS

DRAWING NUMBER		SCALE
		NTS
PREPARED BY:	R DAVIES	DATE: MARCH 2016
CHECKED BY:	M ARCHER	SIZE : A3
APPROVED BY:	M PALFREYMAN	CORR. FILE :

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Recommendation R2

Consider upgrade of Welland Park Road to A4304 & a respective downgrading of Coventry Road. Determine associated engineering, accommodation & complimentary works to facilitate the same.

Overview

The recommendation is to designate that section of Welland Park Road between Lubenham Hill and Northampton Road as the A4304 and consequently to downgrade the existing A4304 route along Coventry Road between Lubenahm Hill to the junction of St Marys with Kettering Road; the point at which the 2 potential routes converge.

Rationale

Welland Park Road serves as the only alternative route to Coventry Road/St Marys for east/west movements across the town.

Whilst Coventry Road is promoted as the 'A' classified route, analysis points towards Welland Park Road as being the more strategically favourable of the two.

As per **Table 20** of this report, it is evident that whilst the two routes currently carry a similar amount of traffic, that which is carried by Welland Park Road in the future is forecast to exceed Coventry Road by some 30%. Coventry Road is actually predicted to experience a decrease in the absolute number of vehicles of around 300 per day over the combined peak periods; comparable to the increase predicted for Welland Park Road. This suggests that Coventry Road traffic is naturally opting to re-distribute onto Welland Park Road.

Further analysis of the 2 routes between the points at which they diverge at Lubenham Hill, and then meet at Rockingham Road demonstrates that the Welland Park Road route is not only the shortest of the 2, but also has fewer likely conflict points between highway users. More importantly still is that Welland Park Road avoids the pedestrian dense town centre. These attributeshave been tabulated in **Table 21**

Location	Flow (2011)	Flow (2031)	Diff	Diff (%)
Welland Park Road	1,699	1,994	+295	+17%
Coventry Road (A4304)	1,756	1,528	-288	-12%

Table 20: Change in flow, Coventry Road vs Welland Park Road, 2011-2031

Attribute	Coventry Road	Welland Park Road
Route distance	1,850 metres	1,770 metres
Bus stops	12	1
Junctions with public highway	22	11
Minor private access onto highway (e.g driveways)	105	140
Major private access onto highway (e.g. Supermarket)	5	5
Formal pedestrian crossing points	17	13
Proximity of residential properties to centre of carriageway	14 metres	20 metres

Table 21: Route attributes comparison, Welland Park Road vs. Coventry Road

Rather than simply re-designate the status of a route, there would likely be a number of complimentary changes required to both facilitate the intended re-designation, and to deter the use of other, less desirable routes.

A number of junctions along the Welland Park Road route have been identified as suffering from congestion/delay. It would not be advantageous to exacerbate those issues by promoting more traffic through those junctions.

In view of the above, and in order to facilitate the designation of Welland Park Road as the A4304, it would be necessary to sufficiently upgrade those junctions to satisfactorily accommodate the increased demand.

Welland Park Road currently features extensive traffic calming by the way of priority chicanes and vertical speed reducing ramps. These features would

need to be assessed with a view to reducing the impedance they impose upon the free flow of traffic, whilst continuing to suitably well restrain vehicle speeds to a safe and appropriate level.

Consideration would need to be afforded to the imposition of traffic regulation orders along Welland Park Road to prohibit the parking of vehicles.

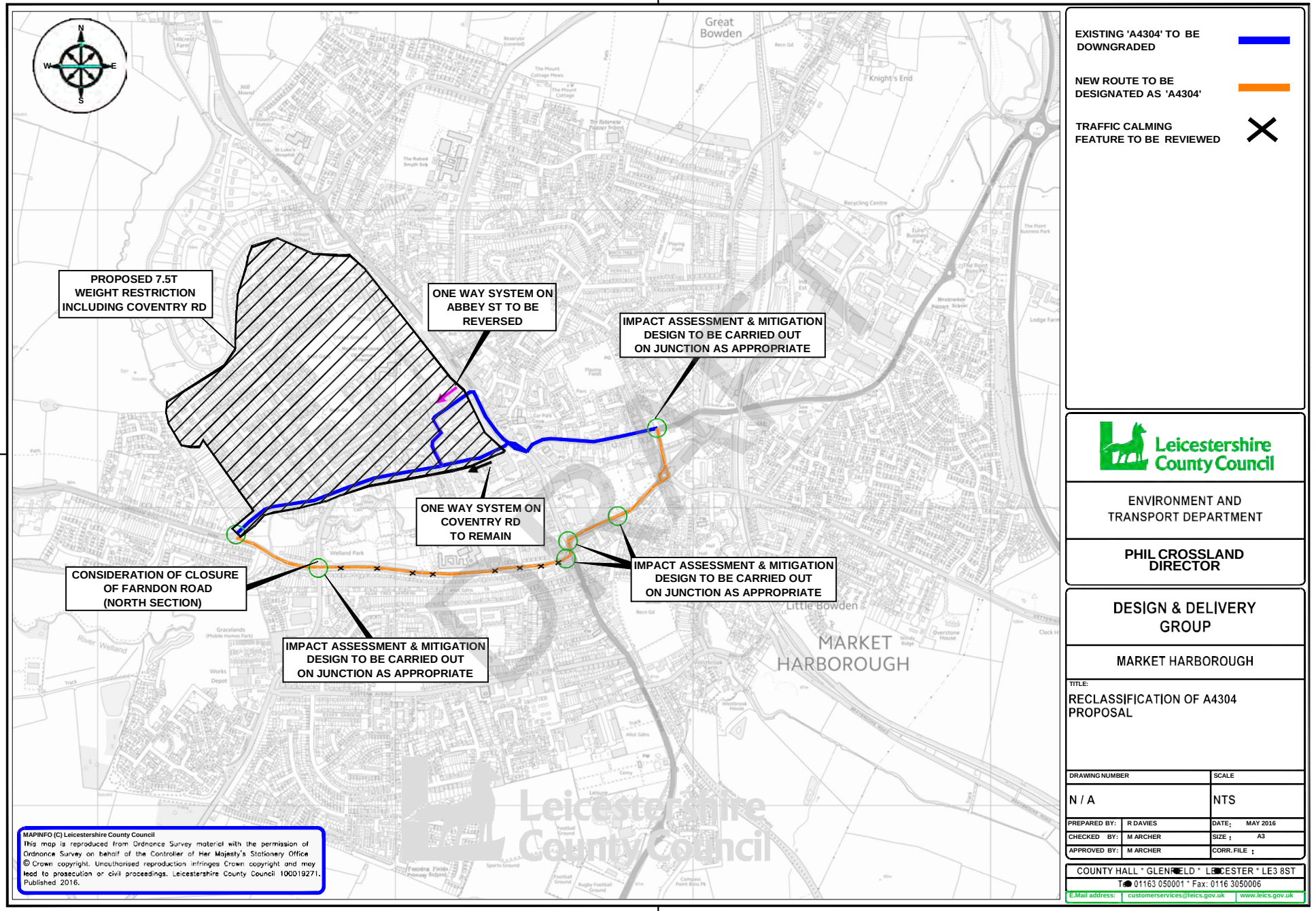
The junction of Welland Park Road and Farndon Road is known to be a site with a history of RTCs. Whilst an accident remedial scheme was implemented in 2015, there may, as a result of the proposed re-classification, be benefit in again reviewing the road layout at that location, with particular consideration being afforded to the potential of closing Farndon Road (north). In doing so, the number of movements at the junction would be simplified, and traffic would be discouraged from using Farndon Road to reach Coventry Road; opting instead to use Welland Park Road.

In addition to the potential closure of Farndon Road, further efforts should be made to deter the use of Coventry Road, and ultimately the town centre. Suggested options for further investigation would be reversing the one way traffic order on Abbey Street to require vehicles to travel west on Abbey Street rather than east towards the town centre, and the imposition of an environmental 7.5 tonne weight restriction on that section of the CoventryRoad route between Lubenham Hill and High Street.

In order to determine whether formally re-designating the A4304 would be viable and of benefit, it will be necessary to undertake a further phase of testing using traffic modelling software and a more detailed impact assessment of the complimentary works outlined above.

Figure 31 illustrates the different components concerned with the re-designation of Welland Park Road.

Figure 31 - Plan to show implications of re-routing A4304



Recommendation R3

Identify opportunities to divert HE EDR routes away from the town centre

Overview

The recommendation is to reduce the burden imposed upon the town owing to the presence of Highways England's off network diversion routes.

Rationale

Concerns over the detrimental impact on the amenity of the town, highway safety and network performance have been raised citing the general amount of traffic using the town centre. This matter is particularly exacerbated during times when the A14 EDR routes are initiated. It is considered to be advantageous to identify opportunities to re-route this traffic away from the town centre.

Findings

The EDR route currently makes use of Coventry Road via The Square owing to its status as an 'A' classified route. However, as previously identified in the review of classified roads through the study area (Chapter 4, para 4.2), it is apparent that Welland Park road may well have the potential to be a more suitable alternative to Coventry Road; regardless of its classification.

Re-designation of the EDR on to Welland Park Road would facilitate diverting the EDR away from the town centre. The only remaining signed EDR route through the town centre would be those high sided vehicles currently unable vehicles to pass under the low bridge on Rockingham Road.

Recommendation R4 considers the proposal of an engineering solution to facilitate the passage of high sided vehicles under the low bridge on Rockingham Road. Should this be deemed viable, it would be possible to designate routes for the EDR that are not dependent on using the town centre.

Figure 32 and 33 illustrate the alternatives for EDR routing should the EDR be moved on to Welland Park Road and an engineering solution be found for facilitating the passage of high sided vehicles under the low bridge on Rockingham Road.

Figure 32 - Possible alternative EDR using Welland Park Road

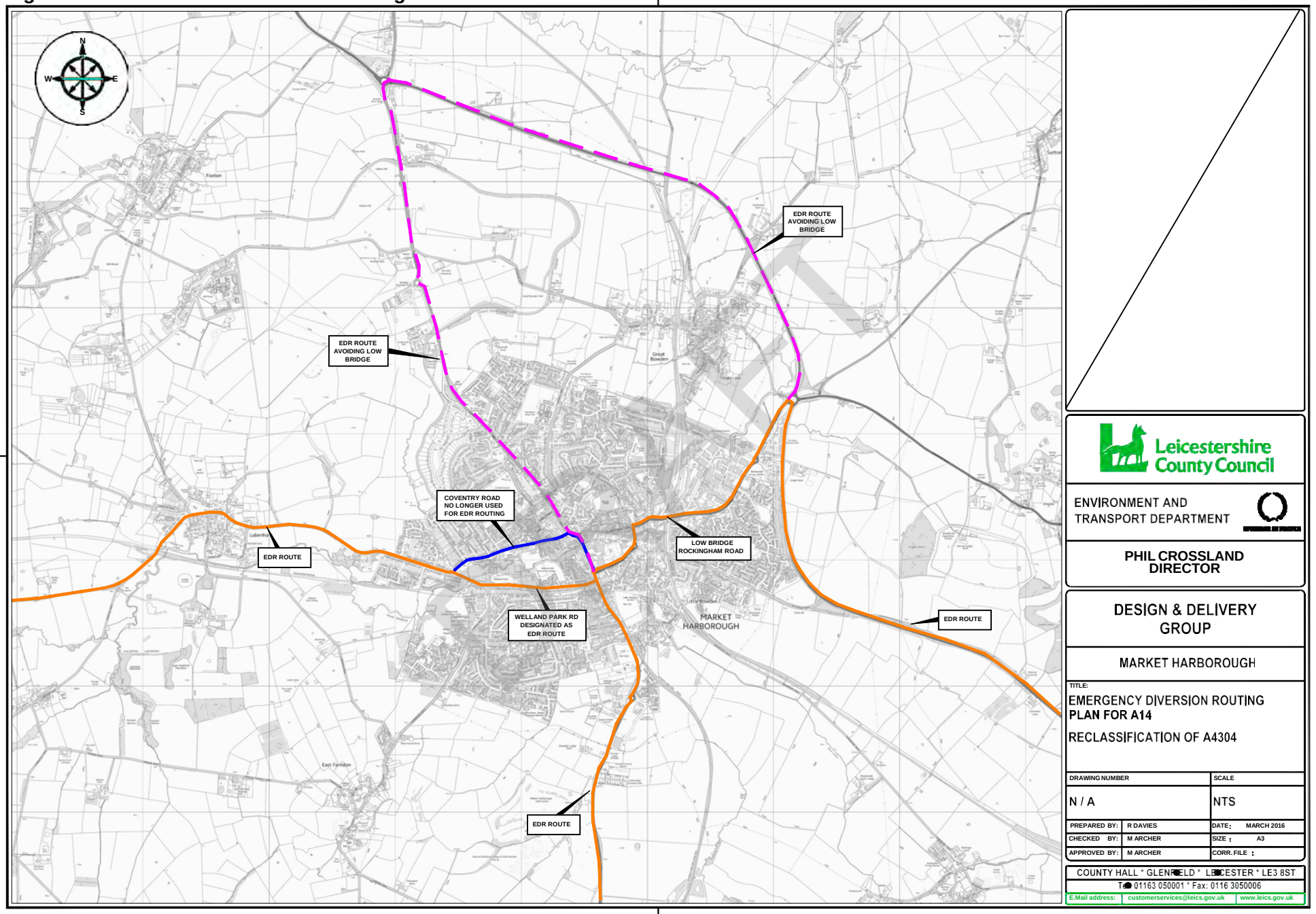
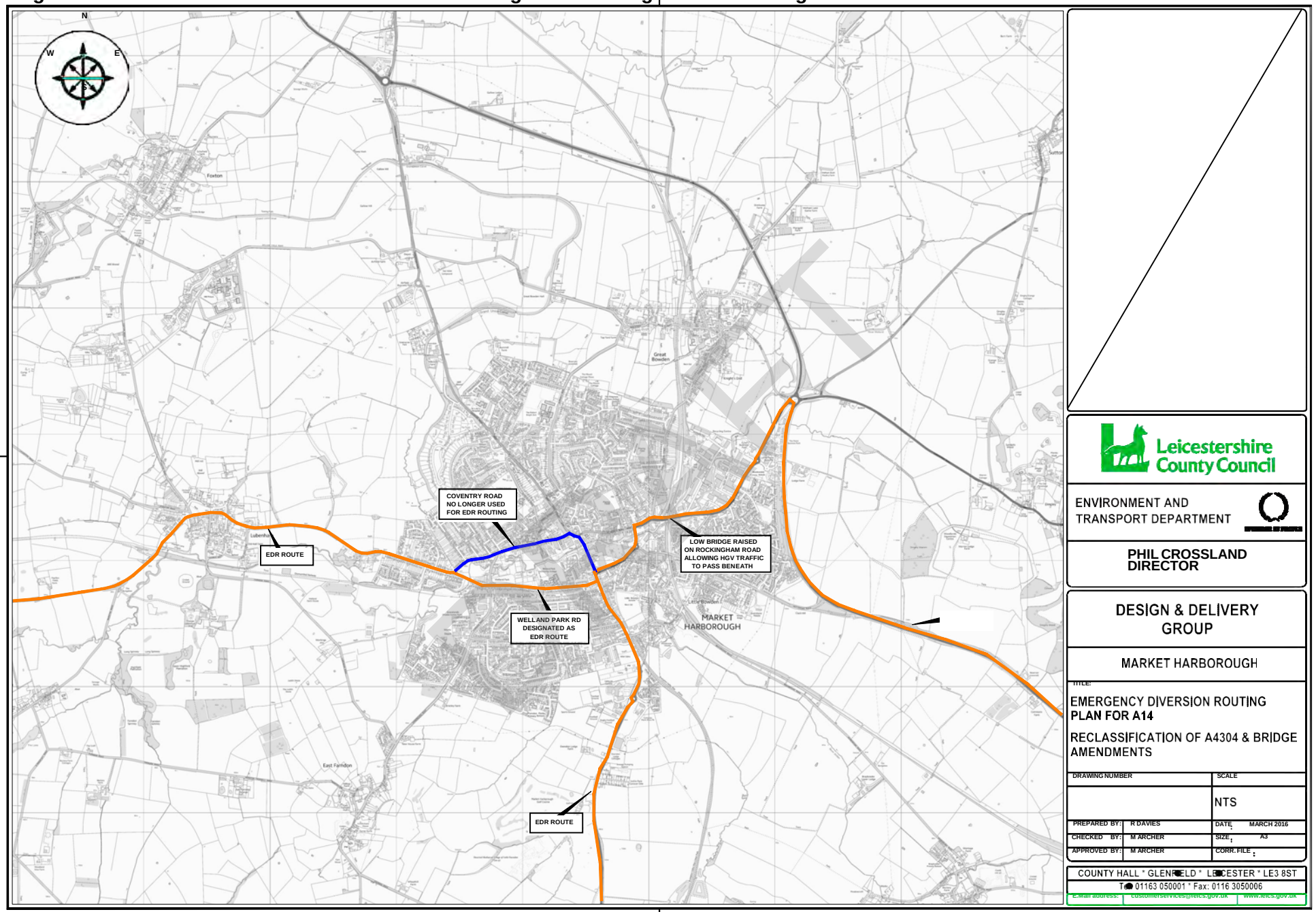


Figure 33 - Possible alternative EDR route with changes to Rockingham Road Bridge



Recommendation R4

Determine the viability of increasing underpass height on Rockingham RoadRail Bridge.

Overview

The recommendation is to determine whether a viable engineering solution can be found to facilitate the passage of high sided vehicles beneath the Rockingham Road Bridge.

Rationale

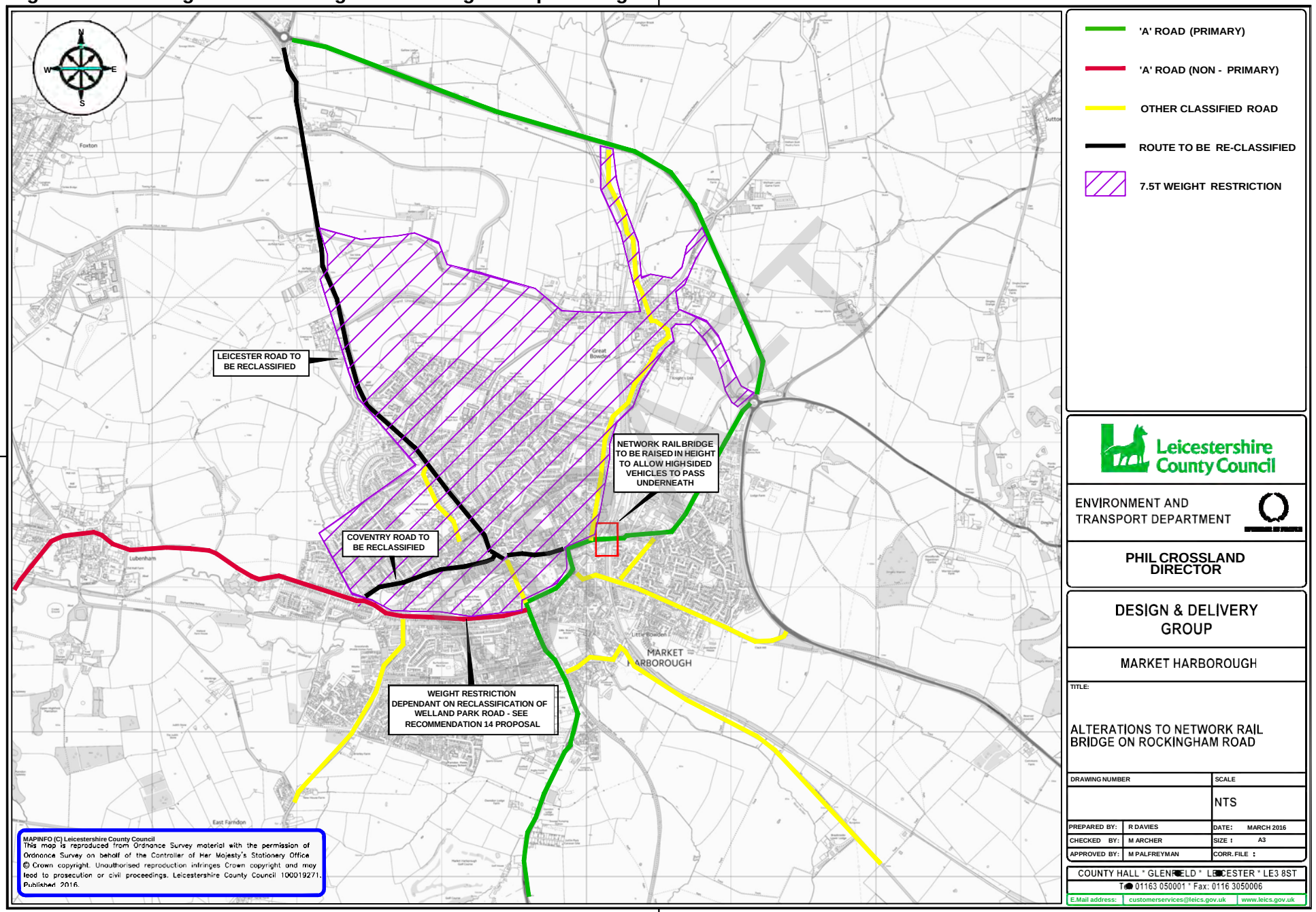
The low underpass height of the Rockingham Road Rail Bridge does present a point of impasse for some high sided vehicles, and an obstruction/point of conflict for others of varying height; including private cars; the latter owing to the need for high vehicles to straddle both lanes and pass beneath the arch bridge at its highest point.

The principle issue the low bridge causes is the inability for high sided vehicles to access/exit the south of the town from/to the A6 without using the B6047 main road through the centre of the town. This is the case for day to day access to businesses, and is particularly pertinent when exacerbated by the additional HGVs using the Emergency Diversion Routes when the A14 is closed.

Should the underpass height be increased, it would be possible for all high sided vehicles to access the south of the town from the A6/A14 via the A508/A4304 primary route.

An additional benefit of increasing the underpass height would be the opportunity it affords to place an environmental weight restriction on the town centre, as well as reducing the likelihood of bridge strikes; of which there are currently around 3-4 per year; resulting in costly road/rail closures and the potential for serious injury. The resultant network changes made possible by increasing the underpass height can be seen in **Figure 34.**

Figure 34 - Rockingham Road bridge - increasing underpass height



Findings

Discussions with Network Rail; the owners of the bridge, has suggested that whilst it may be feasible to increase the underpass height, there may, due to the engineering complexities, need to be a compromise between where the additional height is found; namely a combination of road lowering and a raised bridge deck.

It is the intention to commission a full survey and option appraisal exercise to both determine the true extent of what can be achieved and establish the estimated costs of the same to inform the decision on whether the concept should be progressed. Current, albeit crude estimates have suggested that such alterations to the bridge could cost up to £2,000,000.

In the progression of this recommendation it is necessary to first obtain fee proposals from appropriate structural consultants to undertake the option appraisal before settling with a preferred consultant who will be commissioned to undertake the review and report their findings. Upon receipt of completed appraisal review whether to further develop the proposal

Recommendation R5

Consider the principle of providing a relief road between the A508 & A6 to thesouth east of the town.

Overview

The recommendation is to determine whether it would be beneficial for the town to provide a south eastern relief road linking the A508 and the A6; diverting the primary route away from the town centre.

Rationale

This report has identified a general trend of decline in the performance/capacity of the network and its ability to accommodate forecast growth without engineering interventions.

A number of those issues identified; congestion, access for high sided vehicles, presence of EDR route etc. could each likely be alleviated by the reduction in demand afforded by a suitable alternative route being provided to orbit the town; reducing through traffic and connecting the main arterial routes into/out of the town.

The town will already be bypassed to the north, east and west by the A6 and, albeit to a lesser extent, the SDA link road. As such, an additional relief road to the south of the town; linking the A508 and the A6, would be the most strategic location, and provide the opportunity to divert the primary route (A508 and A4304) from passing through the study area.

Findings

A high level appreciation of the introduction of a southern relief road (SRR) has been undertaken using the LLITM software. For the purposes of that appraisal an assumed speed limit of 60mph, and a peak in demand between 08:00-09:00hrs and 17:00-18:00hrs for the morning and evening peak respectively has been used.

An indicative route of the SRR can be seen in **Figure 35**. It is important to note the presence of a potential future development site enveloped between the A6 and Kettering Road that would need to be skirted by the SRR to ensure that the viability of the site was not compromised as a result. Likewise,the development site should be configured in such a way that it does not negatively prejudice the potential delivery of an SRR.

In addition to the site allocated for development, a number of special engineering difficulties exist on the proposed route of the SRR; namely the need to cross rail line and the River Jordan. The land on which the SRR

would be constructed can also be prone to flooding which too would require special consideration.

Initial high level estimates suggest that the cost to deliver the SRR is likely to be in the region of £35,000,000 - £45,000,000. It is with good cause therefore that the benefit of such a scheme should be sufficient to warrant the cost.

Modelling suggests that the SRR will draw in traffic from the existing nearby classified road network including the;

- A6 (North)
- A6 (South)
- Sutton Road (B664)
- Harborough Road (A427)
- Harborough Road (A508)

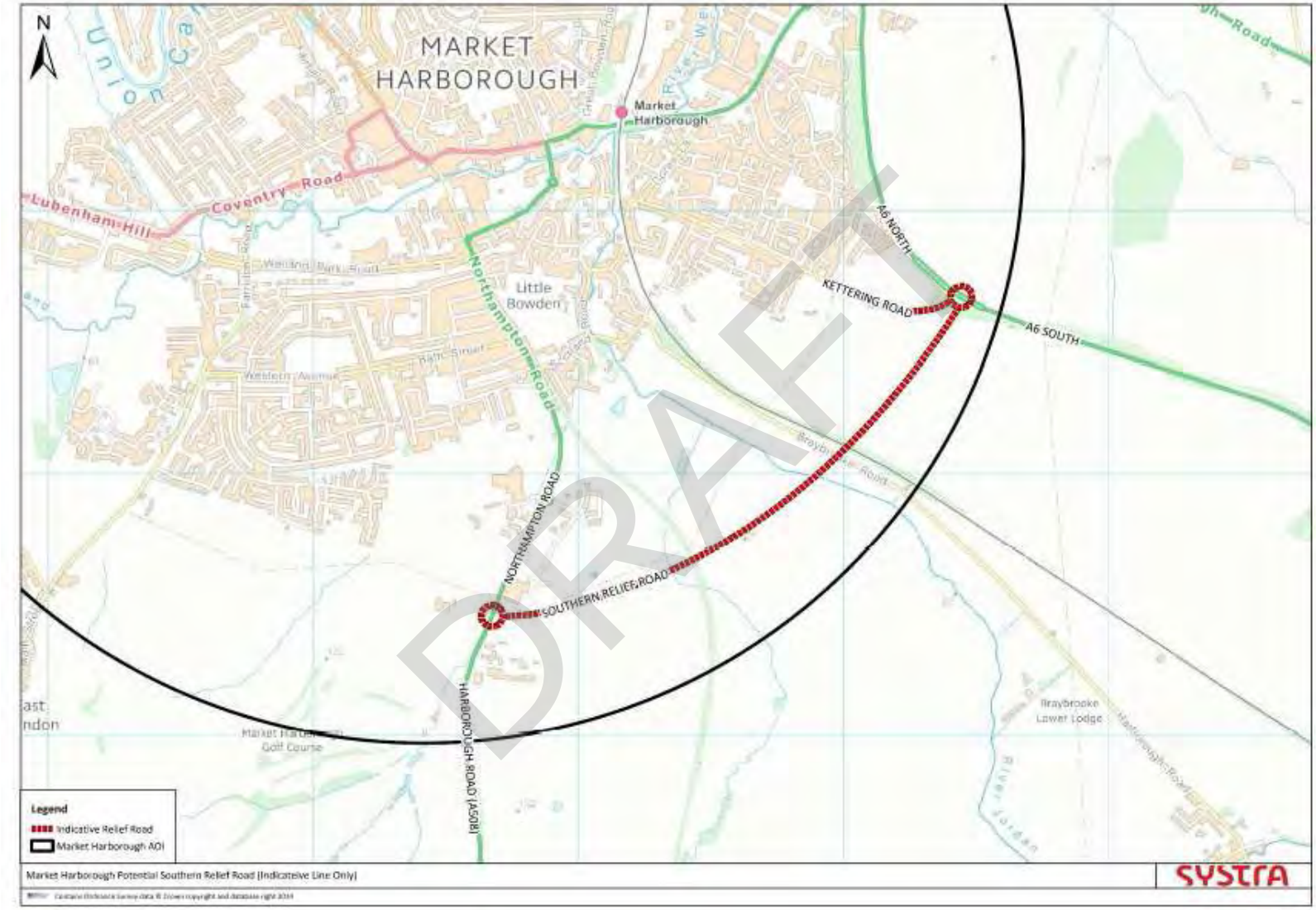
The vast majority of that traffic using the SRR is through traffic; having neither an origin nor destination in the study area. In the absence of the SRR that traffic would likely have travelled, at least to some extent, through the town.

Standard modelled network indicators such as V/C ratio, average speed and the time spent queueing at over capacity junctions all suggest that the presence of a SRR is modelled to have a generally positive impact, especially during the morning peak period. However, those benefits are less prevalent during the evening peak period, and on occasion actually deteriorate; likely due to delays arising on the A6 and at either end of the SRR prompting some traffic to re-distribute back on to the local road network.

The principle of a SRR would appear to have some merit. However, further and more detailed analysis of the impact; beneficial or otherwise, and how that compares with the financial outlay is necessary.

A full copy of the SRR viability appraisal; undertaken by consultants Systra is available in **Appendix I.**.

Figure 35: Indicative route of a SRR



Recommendation R6

Extend and enhance the walking and cycling network

Overview

The recommendation is to undertake a thorough audit of the walking and cycling network with a view to identifying opportunities to upgrade and extend the network.

Rationale

A significant proportion of trips occurring over the study area have both an origin and a destination in a relatively short geographical distance of one another. These types of journeys lend themselves to being undertaken by 'active' or 'sustainable' modes of transport; typically walking, cycling, or by public transport. Journeys undertaken by alternative modes of transport to the car are likely to improve the function and resilience of the network through reduced demand, whilst bringing about incidental social improvements such as reduced instances of obesity.

Findings

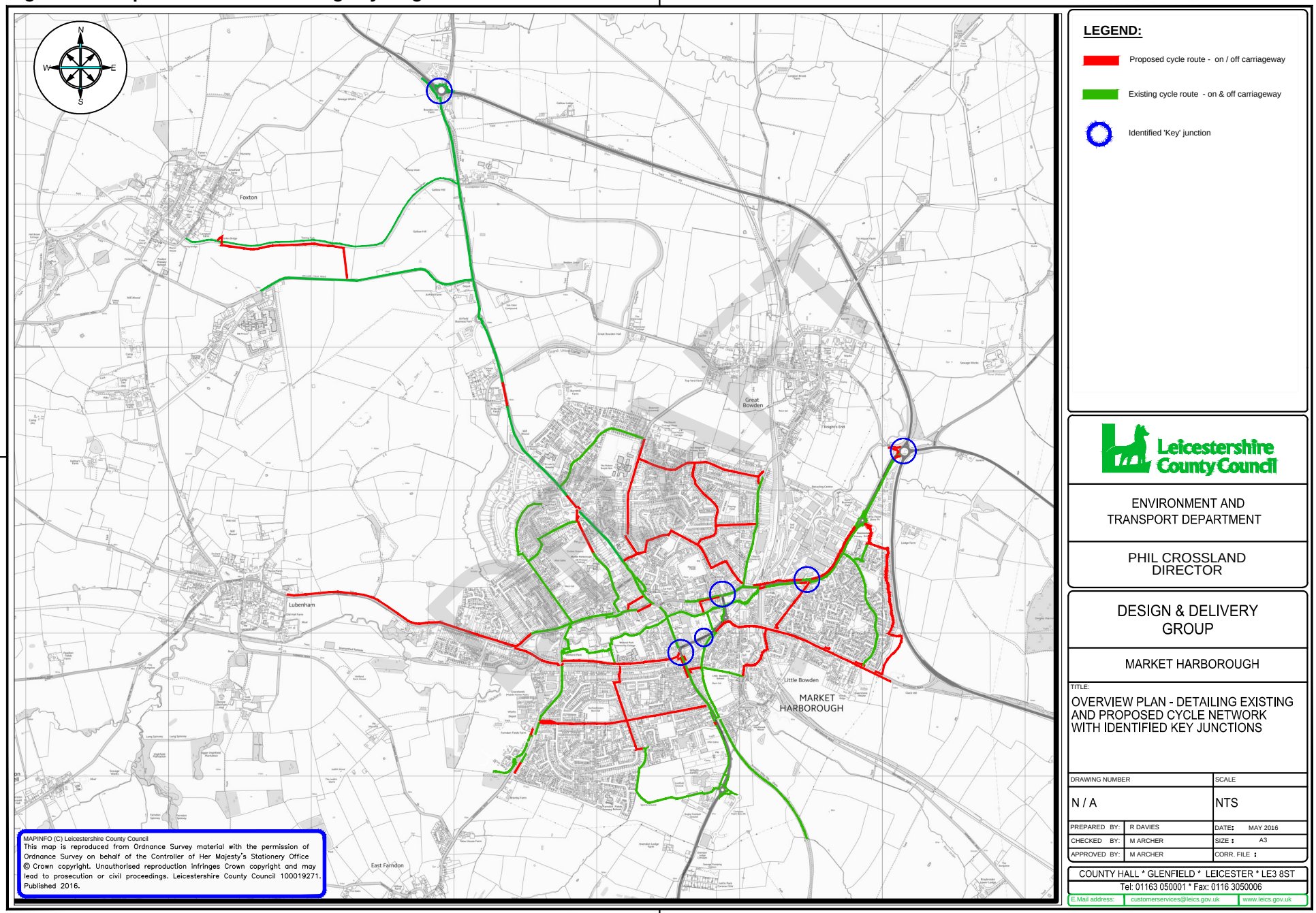
As previously stated, Market Harborough is not without purpose built facilities for walking and cycling. However, there are missing links and existing infrastructure that would benefit from being enhanced/upgraded.

Analysis of the existing walking and cycling network contrasted with the town's known key amenities, places of work and residence soon demonstrates the scale and potential for further development of the network.

In total, 20 routes comprising of a mixture of existing and new infrastructure have been identified for upgrade or construction to assist in delivery of the studies strategic outcomes.

The proposed resultant walking/cycling network is shown in **Figure 36**. A detailed explanation of each route is available in **Appendix D**. It is important to note that these are the promoted routes only. Other infrastructure for walking and cycling will exist elsewhere beyond those routes.

Figure 36: Proposed resultant walking / cycling network



Recommendation R7

Make localised public transport infrastructure improvements

Overview

The recommendation is to deliver a package of public transport (bus) infrastructure improvements throughout the study area.

Rationale

As per Recommendation R6, a good proportion of travel in the town is local; and on that basis would lend itself more readily to modal conversion, away from the car to other modes, such as public transportation; reducing the number of vehicles on the network.

Public transport in the UK was deregulated by the 1985 transport act and as such the majority of services are run on a commercial basis by private companies and as such the County Council does not have any control over these services and the decision on bus service frequency and hours of operation is a commercial one, made by the bus operators themselves. The County Council does subsidise a number of services which may not otherwise be commercially attractive, but are considered to be socially necessary. In Market Harborough the no.33, no.44, and no. 58 services are all subsidised to some extent. However, the effect of public sector austerity and reductions in revenue funding mean that local government's ability to continue to fund such services is being severely curtailed.

An investment through the introduction of new bus stops, new and improved bus shelters and real time timetable displays is to encourage bus patronage which in turn would strengthen the commercial viability of services allowing operators to look at increasing frequency or extending the hours of the service; which can in turn negate the need for continued financial support from the Council.

Findings

With regard to route locations, frequency and duplication of services, buses in

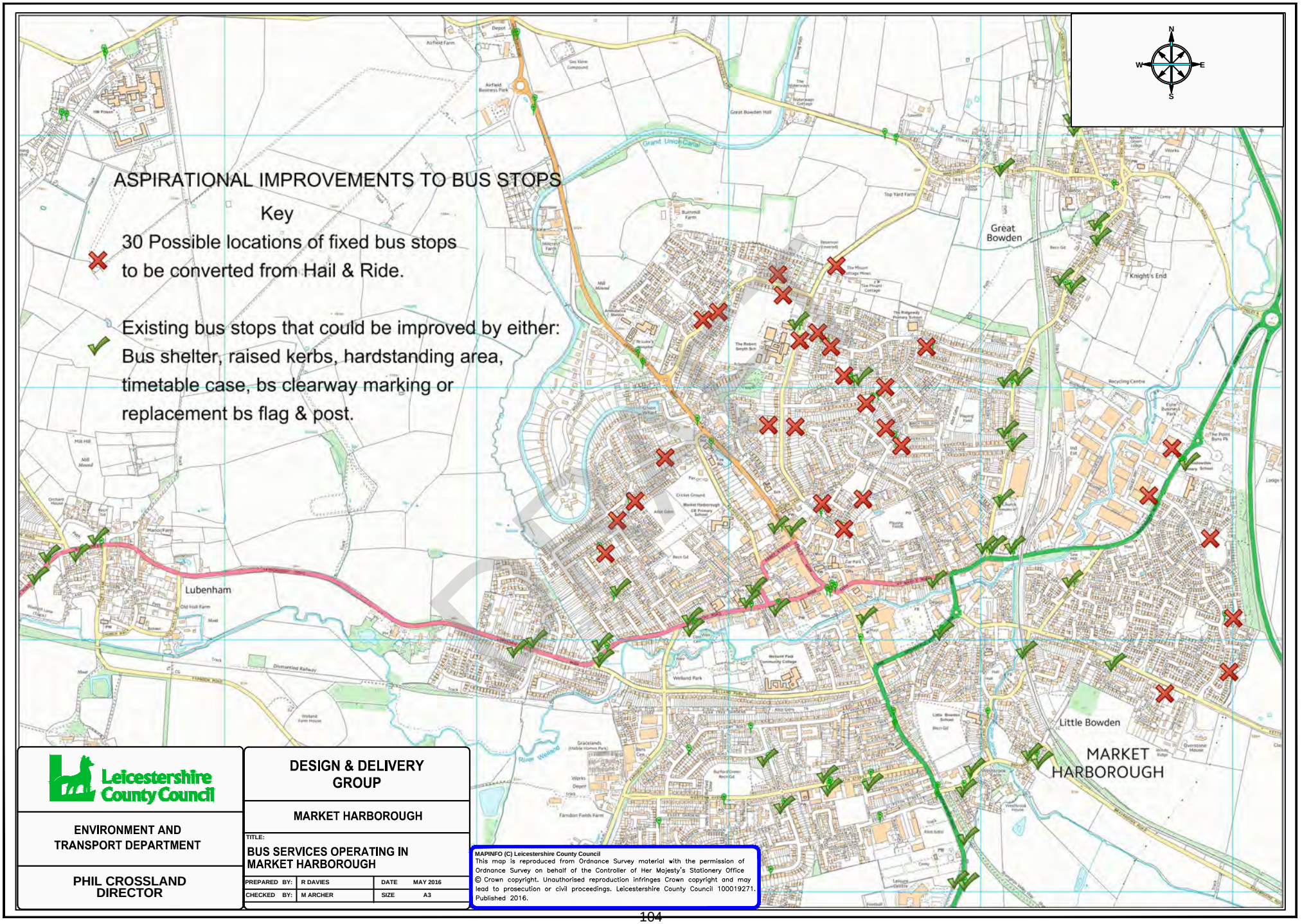
for managing their routes and timetables within a commercial market.

A suite of potential bus infrastructure improvements have been identified for the study area including raised bus stop kerbs to improve accessibility when boarding/alighting; new/upgraded shelters to encourage patronage; and conversion of hail and ride services to fixed service points to improve safety, reliability and punctuality.

Fig 37 shows the location of possible bus infrastructure improvements and sites of hail & ride conversions.

A more detailed summary of the findings is available in **Appendix D and E**

Figure 37: Location of possible bus infrastructure improvements



Recommendation R8

Identify a suite of tailored behaviour change initiatives to encourage modalshift in travel choice towards active and sustainable options.

Overview

The recommendation is to promote and deliver across the study area a tailored package of initiatives that work towards encouraging and facilitating a modal shift in behaviour towards non-car dependent modes of transport such as walking, cycling and public transport (supporting Recommendations 6 and 7).

Rationale

As per recommendation R6, a significant number of trips undertaken onthe network have both an origin and destination within the study area. Theselocal trips are the most easily influenced towards alternative modes of transport. Experience demonstrates that the most effective method of drivingthat modal shift is through a coordinated package of infrastructure improvements and a complimentary series of softer measures such as training, journey planning, education and information provision.

Findings

A tailored package of behaviour change initiatives has been provided in **Appendix H.**

Recommendation R9

Continue to monitor Road Traffic Collisions (RTC) within the study area. If an RTC occurs within, or adjacent to, a proposed improvement scheme proportionate efforts should be made where appropriate to include complementary measures that could reduce further RTCs.

Overview

The recommendation is to ensure that wherever an RTC resulting in personal injury has occurred within close proximity to a proposed scheme arising from this strategy, efforts should be made to extend the scope of that scheme to include for mitigation works to reduce the likelihood of further such incidents of an RTC from occurring.

Rationale

Market Harborough consistently records a comparatively low level of road traffic collisions, compared to other similar areas (towns) in the county. Furthermore the frequency of accidents on the 4 main routes across the town, the A4304 (west), A4304 (east), A508 and B6047, fall below that which might be expected on similar roads nationally. However, by making minor refinements to other nearby works, it may be possible to deliver minor, albeit unrelated highway safety improvements that otherwise would have been unlikely to have attracted financial investment.

Recommendation R10

Devise and implement a new strategy for traffic signing across the study area

Overview

The recommendation is to establish and implement a new and comprehensive traffic signing strategy for the town to replace the current provision.

Rationale

Despite the known benefits of a managed and proactive approach, there is no recorded strategy for signing; either strategic or local, for traffic in the study area. In the absence of which, the performance of the network cannot be optimised.

Whilst amendments to the signing can be retrospectively made in a piecemeal fashion; there are likely to be a multitude of changes prompted by the delivery of other recommendations made by this report that afford a unique opportunity to 'start again'; ensuring that the new strategy is reflective of the modern day expectation and function of traffic signing.

Findings

A proposed strategy for the signing can be found in **Appendix G**.

Estimated implementation costs of a previous, similar initiative in Hinckley was around £100,000

Recommendation R 11

Review parking controls in the vicinity of the town centre and train station, with particular regard to the need/benefit of further permit parking zones.

Overview

The recommendation is to review all traffic regulation orders pertaining to on-street parking within the study area with a view to determining the ongoing suitability of existing controls and locations where a need for additional or revised controls may exist now, or is likely to emerge in the future.

Rationale

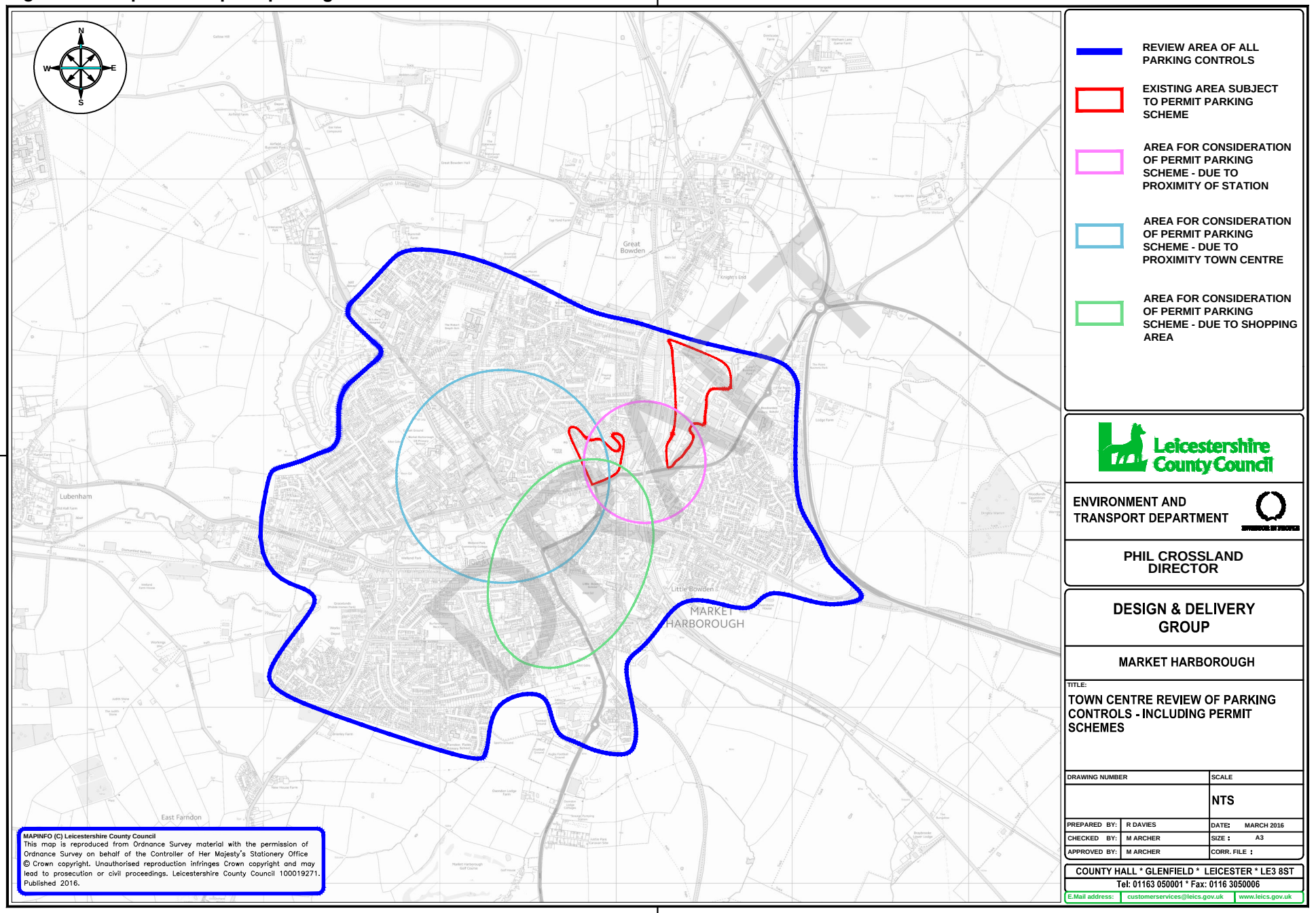
As with traffic signing; despite the known benefits of a managed and proactive approach to the effective management of on street parking, there is little in the way of a recorded strategy in the study area. In the absence of which, it is not truly possible to know whether the existing provision is fit for purpose.

The forecast trend of an increase in traffic, coupled with an aspiration to improve the town's economic prospects and the quality of life of its residents and visitors requires a strategic approach to parking management that is able to balance the often competing needs of all.

An area based review therefore presents a unique and ideal opportunity to ensure that an appropriate, proportionate and tailored suite of complimentary controls exist; all of which are working towards one common goal.

Figure 38 shows the extents of where the proposed review as well as areas where a permit to park scheme may need to be considered due to their proximity to the town centre, shopping/amenity hubs or the local rail station.

Figure 38: Proposed scope of parking review



Recommendation R12

Sites with recorded speeds in excess of the ACPO enforcement threshold should be reviewed.

Overview

The recommendation is to take a proactive look at each of the 13 sites where the average speed; whether that be the mean speed or the 85th percentile speed, has been recorded to be in excess of the threshold necessary to prompt enforcement action by the Police.

Should a viable and cost effective engineering measure exist that is likely to restrain speeds below the prescribed threshold these should be considered for delivery to improve compliance, and thus highway safety. It is important to note that the figures cited portray the worst of the readings taken for each site. It may well become evident on closer inspection that the majority of readings taken do not warrant any further action.

No appraisal of possible options has been undertaken to date

Recommendation R13

Identify undesirable routes for HGVs and impose suitable prohibitions.

Overview

The recommendation is to identify and prohibit the use of undesirable routes that may now, and in the future be vulnerable/attractive to exploitation by HGV drivers seeking an alternative route to the classified road network.

This recommendation should be considered to be a precautionary measure; safeguarding against the potential for inappropriate routing, rather than a reactive response to address a significant current issue.

Rationale

Whilst the number of recorded instances/complaints of HGVs using unclassified roads in order to take an alternative route through the study area is low, there are a number of residential streets that do lend themselves to such exploitation. Existing low underpass heights at bridges on Rockingham Road and Kettering Road restrict the ease of movement. That, combined with a general growth in traffic can each contribute to the use of undesirable routes by HGVs, potentially causing damage to the highway and dissatisfaction amongst local residents.

It is important to note that this recommendation should be read as a standalone initiative; it does not therefore consider the potential for incidental HGV controls arising as a direct result of other recommendations.

Findings

Whilst the promotion of a town wide environmental weight restriction such as that illustrated in **Figure 39** would be the default level of provision to be promoted in the study area, two key routes particularly vulnerable to exploitation by inappropriate HGV traffic have been identified;

1. Ashley Road /Kettering Road between the A4304 and the A6

2. Bath Street/Western Avenue between the A508 and Farndon Road.

Should it not be possible to implement an extensive scheme covering the entire town; it is recommended that those 2 routes are promoted as a minimum.

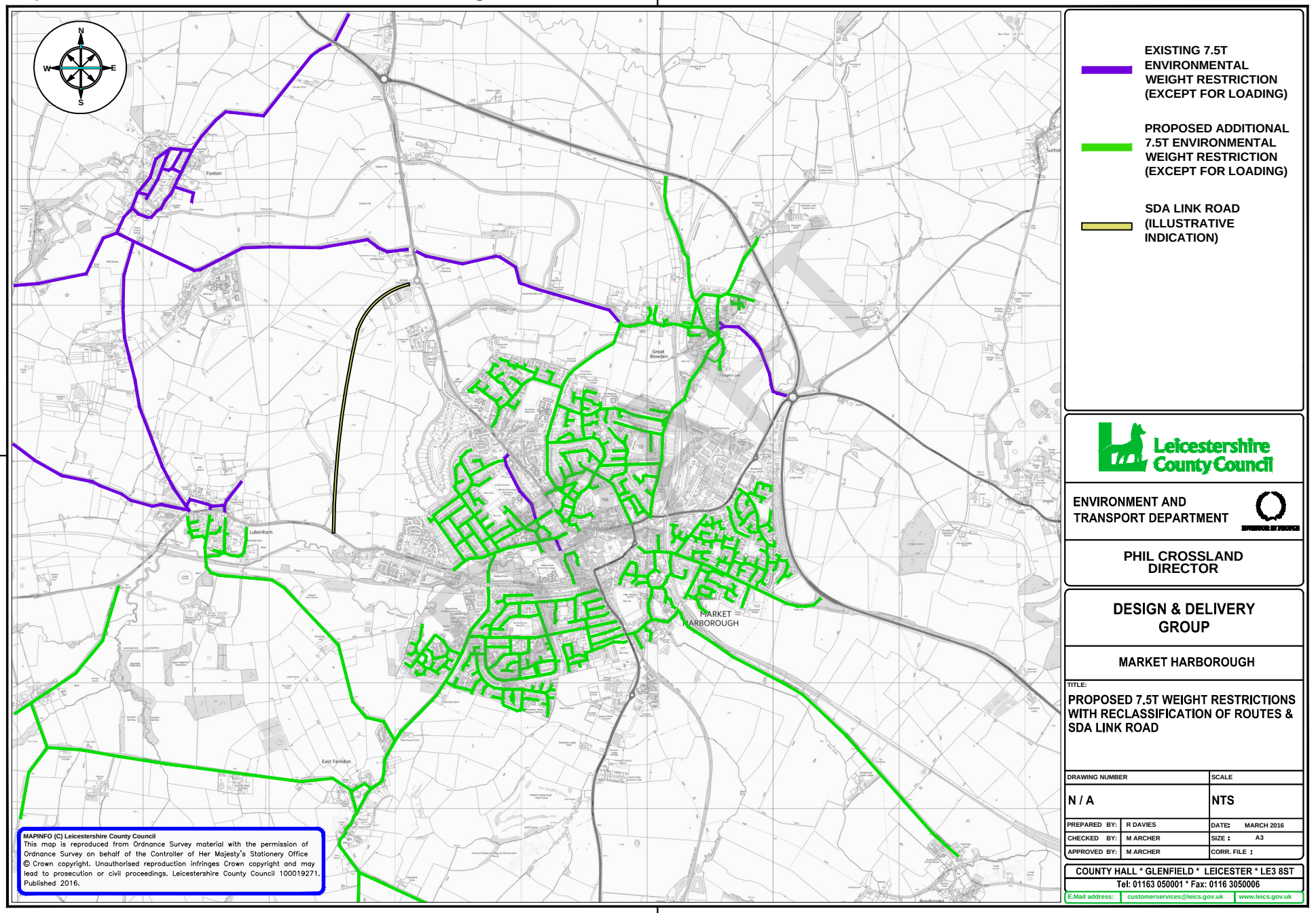
8

Recommendation R14

Send updated map to 'sat-nav' contacts advising of HGV controls

The recommendation is to provide key satellite navigation and mapping companies (e.g. TOM TOM / Ordnance Survey) with all details pertaining to the changes in route designation, traffic orders, preferred routes etc to ensure that the records they hold are current and reflect any changes arising as a result of the strategy.

Figure 39: Possible town wide 7.5t environmental weight restriction



Recommendation R15

Extend the public realm to encompass the nearby rail and bus terminals.Make general aesthetic upgrades to existing materials and arrangement.

Overview

The recommendation is to upgrade/update the existing public realm; creating purpose made market gateways to the town centre, and to extend the reach of the public realm to encompass the rail and bus terminals.

Rationale

Improving the link between the town centre and strategic transport hubs for commuters, residents and visitors would increase the desirability to live, work and visit the town; supporting businesses, tourism, and demand for local housing.

Findings

Initial assessment of the public realm has been undertaken by the County Council's Landscape Architects. A plan showing initial officers comments can be seen in **Figure 40.**

The detail of any Public Realm enhancements is likely to be dependent on first having a confirmed strategy for infrastructure alterations/enhancements as these are likely to have some impact on the opportunities / options that exist for public realm extension.

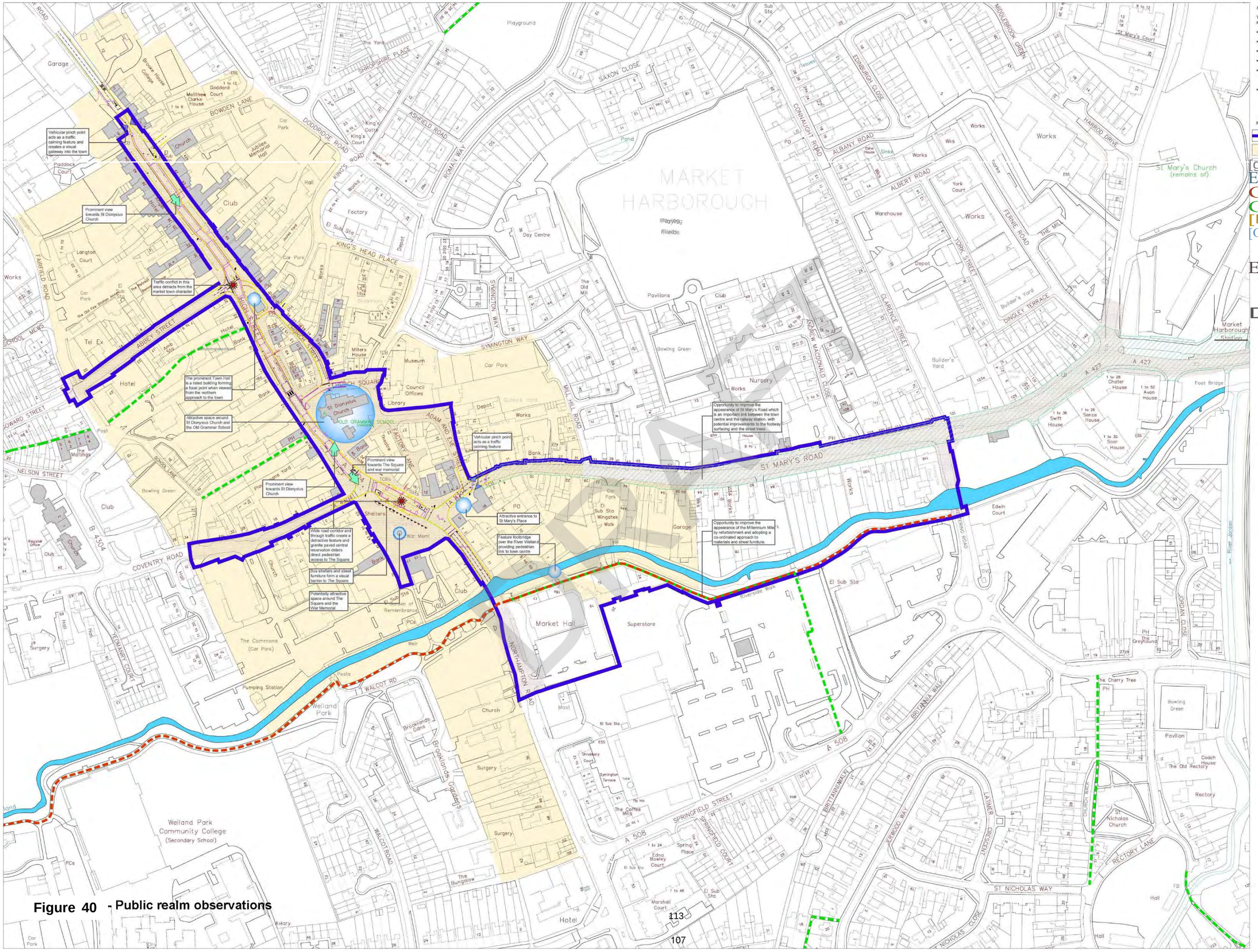


Figure 40 - Public realm observations

Recommendation R16

In light of the size and scope of the study, incorporate/ consider maintenance activities in relation to improvement proposals.

Overview

The recommendation is to use the implementation of the schemes arising as a consequence of this report as the vehicle by which long standing maintenance aspirations can be delivered.

Rationale

The ability of the County Council to deliver maintenance, restoration and condition improvements beyond the most safety critical schemes has reduced in recent years owing to financial constraint. This issue is only likely to worsen in the future due to continued public sector austerity.

However, the delivery of those schemes can become economically viable when the benefits of economies of scale etc afforded by the delivery of area wide schemes is taken into consideration. Any maintenance schemes delivered as a result will inevitably contribute to the objectives of the transport strategy, as well as reduce the burden on the future maintenance budget. Preventative maintenance works, to arrest deterioration or avoid problems from occurring at all are particularly beneficial

5.5 Scheme costs

The estimated total cost for designing and delivering the draft recommended package of infrastructure and smarter choices measures /outputs is £14.9 million (using highest cost scheme options). This excludes the SRR, which is estimated to cost in the region of £35 - £45 million. A breakdown of scheme/output costs can be found in **Table 22**.

The £14.9 million includes allowances for further scheme design and development work, risk and contingency. The schemes are at a feasibility stage and will be subject to change or recosting as schemes or packages are developed further in the future.

Of the total scheme costs £11.7 million is allocated for the delivery of the infrastructure measures and a further £3.2 million on the complimentary smarter choices elements of the scheme. These costs have been estimated based on the costs of the delivery of schemes of a similar scale in Leicestershire; however, the scheme is currently in the early stages of development with further refinement of the measures, design work and stakeholder engagement/consultation required. An accurate estimation of costs will be determined following this additional work

Currently there is approximately £2.0 million secured from a number of S106 developer contributions, including £1.4 million from the SDA site. It is hoped that further funding towards the softer measures can be secured from the Department for Transport's (DfT) Access Fund later in 2016.

The costings provided in **Table 22** formed the basis for the County Council's recent (in April 2016) outline business case to the LLEP, for consideration for funding from the Government's Single Local Growth Fund (SLGF).

Scheme Cat	Scheme Ref	TRANSPORT MEASURES/ OUTPUTS	Cost	Associated Recommendation
A	***Junction capacity improvements***			
	1	A6/B6047	£650,000	**R3, R9**
	2	The Square / St Mary's Rd / Coventry Rd	£700,000	
	3	Welland Park Rd / Northampton Rd / Springfield St (Option 2)	£820,000	
	4	St Marys Rd / Kettering Rd / Clarence St	£280,000	
	5	Gores Lane / Rockingham Road (Option 2)	£450,000	
	6	A6 / Rockingham Road / Dingley Road	£1,100,000	
	7		£600,000	
			£4,600,000	
B	***Walking & cycling improvements***			
	1	New routes, links, crossings etc	£3,110,000	**R3**
	2	Cycle parking	£30,000	
	3	Route signing	£60,000	
			£3,200,000	
C	***Public transport improvements***			
	1	Bus shelters	£32,000	**R4**
	2	Raised bus stop kerbs	£38,000	
	3	'Hail & Ride' conversion	£110,000	
	4	Miscellaneous (timetable cases etc)	£20,000	
			£200,000	
D	***Modal shift initiatives (over a four year period)***			
	1	'Getting to Work & Training'	£1,200,000	**R3, R4, R5**
	2	'Information & Behaviour Change'	£1,200,000	
	3	Coordination & management	£800,000	
			£3,200,000	
E	***Infrastructure resulting in changes to network or traffic routing***			
	1	Works required to facilitate the upgrade of Welland Park Road to A4304 and respective downgrade of Coventry Road	£700,000	**R13, R14, R15**
	2	Increasing underpass height on Rockingham Road rail bridge	£2,000,000	
			£2,700,000	
	3	South East Relief Road between the A508 and the A6	**£35 – 45 million**	**R16**
F	***Traffic Management Improvements***			
	1	HGV weight restrictions and update sat- nav contacts	£75,000	**R1, R2, R6, R7, R8**
	2	Traffic directional signing	£100,000	
	3	Parking controls , including consideration of residents parking	£25,000- £75,000	
	4	Traffic calming (in support of walking / cycling network)	£200,000 - £300,000	
			£400,000- £550,000	
G	***Public Realm improvements***			
	1	Refurbishment of paved areas and street furniture	£100,000- £450,000	**R13**
			£100,000- £450,000	

Total Cost (excluding the SRR):	**£13.7 million** (lowest cost scheme options) **£14.9 million** (highest cost scheme options)

Table 22 : Breakdown of estimated scheme / output costs

5.6 Strategy development and project milestones

The draft recommended schemes outlined in this chapter provide the basis of an initial outline transport strategy for Market Harborough. However, the work carried out as part of this study (Phase 1) will need to incorporate further stakeholder feedback. Subject to consideration by LCC and HDB members, and availability of funding, further work would be need to be undertaken to adopt a menu of preferred schemes from those recommended in the study, to bring these schemes together into a single coherent package of improvements across the study area. The preferred package of schemes could then be converted into a final strategy and delivery programme suitable for obtaining funding via the Single Local Growth Fund.

The proposed milestones (subject to consultation and availability of funding) for the development of the strategy and potential implementation are outlined below:

2015/16	*Study Phase 1 (Issues and Solutions) ***Complete***
2016/17	Study Phase 2 (Solution Coordination, stakeholder feedback)
2016/17	Study Phase 3 (Finalise Strategy and Prepare funding bid)
2017/18	Scheme consultation / Detailed design
2018/19	Begin Implementation and Delivery

**Covered by this report*

Based on the costings provided in section 5.4, it is anticipated that the draft recommended package of infrastructure and smarter choices measures could be designed and delivered in line with the delivery profile set out in **Table 23**.

Funding Source	Year 1	Year 2	Year 3	Year 4	Year 5	Total:
	2017/18 (£m)	**2018/19 (£m)**	**2019/20 (£m)**	**2020/21 (£m)**	**2021/22 (£m)**	**(£m)**
LLEP (unconfirmed)	£0.2	£4.3	£3.0	£3.0		£10.5
Private sector match (confirmed)			£0.3	£0.3		£0.6
Private sector match (unconfirmed)					£1.4	£1.4
Public sector (confirmed)						
Public sector (unconfirmed)						
Other funding (confirmed)						
Other funding (unconfirmed)		£0.8	£0.8	£0.8		£2.4
Total:	£0.2	£5.4	£ 4.1	£3.8	£1.4	**£14.9**

Table 23: Design and delivery profile

5.7 Overall risks

As with any major transport project, there are a number of potential risks to the delivery of the project such as:

- Some third party land is required in order to develop a number of schemes, this may require a Compulsory Purchase Order (CPO) process to acquire the land causing potential delay;
- Diversion of statutory undertaker apparatus; and
- Potential cost overruns.

These risks will be mitigated through the development of a risk management strategy, in accordance with the County Council's Project Management standards and informed through the delivery team's experience in the delivery of previous major schemes. Measures to reduce risk include:

- Early Contractor Involvement (ECI) process with the principal contractor to ensure a robust cost estimate as the programme is developed;
- Initial discussions with landowners have taken place with regard to land acquisition;
- Comprehensive consultation and communication with key stakeholders impacted by the works;
- Early engagement with statutory undertakers; and
- Use of the Midlands Highways Alliance Medium Schemes Framework to procure construction contract.