

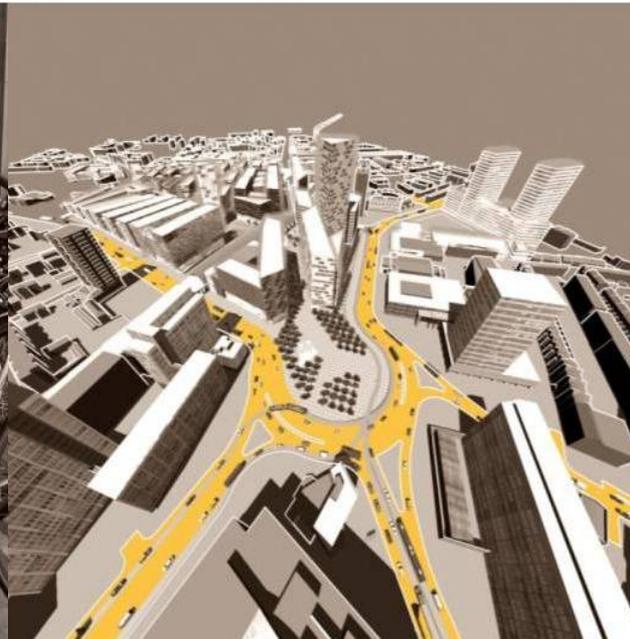
# Bedford Town Centre Strategy

# Bedford Benchmarking: Sustainable Transport

JMP

5 June 2015

JMP Consultants Ltd



# Contents

- Introduction
- Aspirations and Objectives
- Baseline - Bedford
- Comparative Criteria
- Sources and Gaps in Knowledge
- Comparable Towns
  - Norwich
  - Ipswich
  - York
  - Lancaster
  - Maidstone
  - Lincoln
  - Hitchin
  - Worcester
- Other Initiatives
- Comparisons and Conclusions



# Introduction



## Bedford Benchmarking

This report aims to assess whether Bedford has the potential to tackle its current and future transport problems through traffic demand management and a modal shift towards sustainable travel. In order to do so, it looks at other similar towns around the UK and how they have tackled their transport problems. Specific case studies are included for those towns that have received Local Sustainable Transport Funding (LSTF) or have undertaken other large sustainable transport initiatives.

The structure of the report is as follows:

- Aspirations and Objectives – Sets out the aims of the report
- Baseline – Outlines the physical & transport characteristics of Bedford (population, size, car ownership, mode split, etc.) and presents the challenges that must be addressed by the town's transport strategy;
- Comparative Criteria – Presents the criteria used to identify towns with similar characteristics to Bedford, which can provide inspiration or confidence for initiatives to manage traffic demand;
- Sources and Gaps in Knowledge – Presents the sources which were used to find comparable towns and discusses the gaps in knowledge or limitations identified;
- Comparable Towns – Identifies eight towns around the country that have similar characteristics to Bedford, and presents their modal split from the 2011 census data. It also discusses the initiatives that each town has implemented over the past ten years, the way the money was invested and how successful they were. In some cases, the town's future transport strategy is also presented;
- Other initiatives – Presents other notable initiatives that took place across the UK and succeeded in achieving a mode shift to sustainable transport modes; and
- Comparisons and Conclusions – Compares the key variables (population, density, modal split of walking and cycling and car ownership) of the various comparable towns, in order to assess how Bedford is doing and whether it has the potential to do better.

# Aspiration and Objectives



The benchmarking exercise was aimed at identifying towns across the UK that are comparable to Bedford in socio-economic, physical and infrastructure terms. The objective was to assess how the transport issues and constraints identified in Bedford are replicated in other areas and to determine the extent to which other towns have been able to overcome them and by what means.

The following comparable characteristics were identified:

- Census data: population, car ownership, distribution by age;
- Physical characteristics: size of built-up area, density, presence of historical city centre, presence of a river, size of retail area;
- Transport infrastructure: number of river crossings, number of arterial routes, presence / size of a ring road, good railway connections, kilometres of cycle route, number of formal cycle parking spaces; and
- Transport patterns: mode of travel to work, distance of commuting trips, congested roads, pinch points on the network, number of cars on the network, distribution of vehicle trips.

Alongside the collection of comparable characteristics, information was also sought for the same towns relating to previous and existing transport plans, initiatives and schemes. These would be used to analyse the relationship between each town's approach to transport planning and the town's travel patterns / problems / successes.

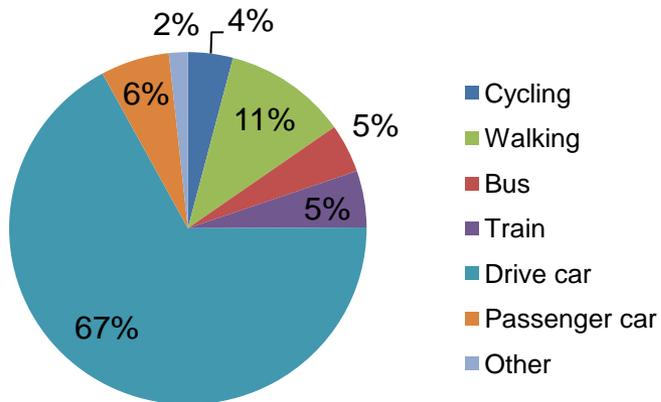
A further objective of the work was to identify stand-alone examples of travel demand management initiatives across the UK that have been successful in shifting travel patterns towards more sustainable transport (public transport, walking and cycling). For each initiative, we sought to identify the specific implemented measures, infrastructural improvements, funding streams and recorded outcomes. The aspiration was for these initiatives to provide ideas for Bedford but also to set achievable targets for Bedford's shift to sustainable travel.

In order to estimate a realistic modal shift towards sustainable travel, another aspiration was to identify examples of transport strategies that assumed proposed initiatives would result in modal shift from the private car. For Bedford town centre's transport strategy, quantifying the feasible modal shift at this early stage would enable more accurate modelling of the effects on the wider transport network.

# Baseline

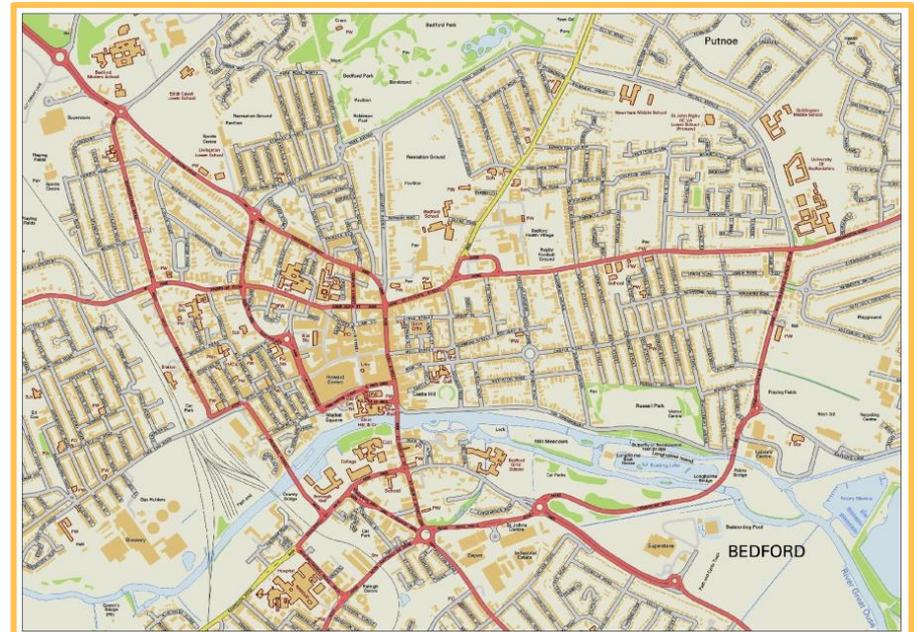


Method of Travel to Work (Local Authority Area)



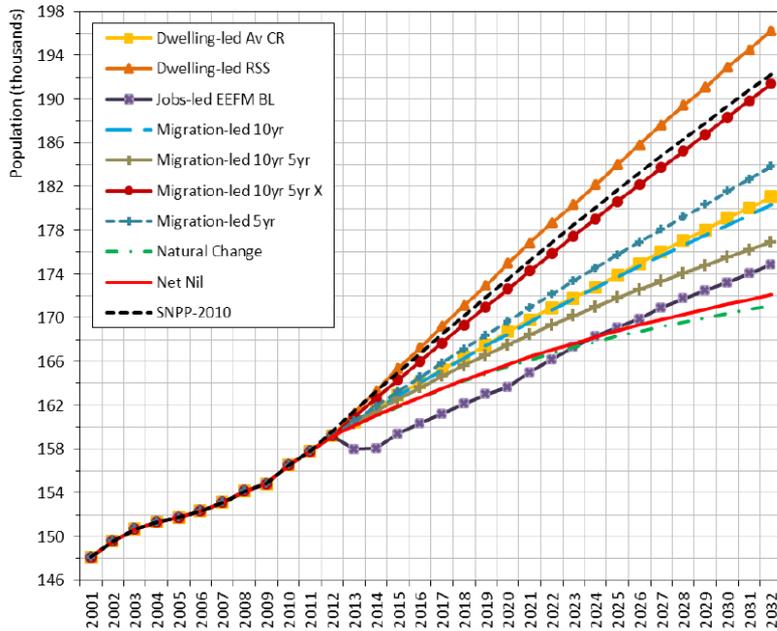
## Bedford

- Population of urban area 102,000
- Built up area 24.7sq km,
- Built up area density 4,309 ppl / sq km
- Historical city centre
- 3 river crossing
- Inner cordon (ring road), 2.5km in diameter
- Closest motorway 15km away (M1)
- Good railway connections to London
- 20.6% of households don't have a car
- 75 km of cycle routes

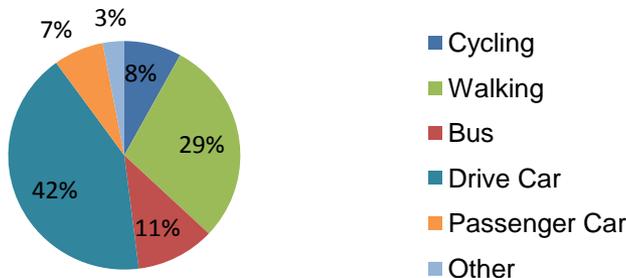


# Baseline

Bedford Borough Population Forecasts 2012-2032



Travel to work to Bedford Town Centre from urban areas only

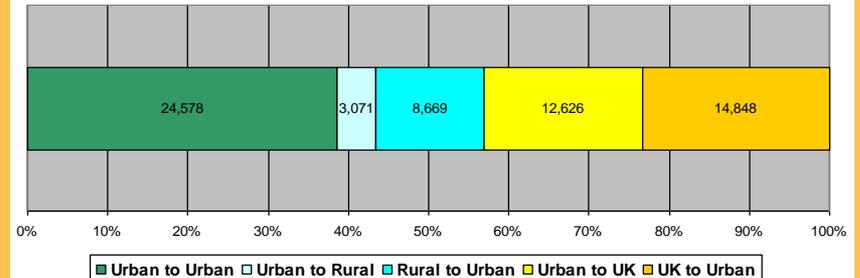


## Bedford

### Challenges

- Increasing population: 9% growth 2001-2013 has placed a strain on the highway network
- Increasing population: 8% growth 2013-2021, 23% growth 2013-2037
- Ageing population: 65+ population rising by 19% 2013-2021, 85+ population by 37%
- Congested highway network with high levels of through-traffic and many pinch points

Commuter traffic in urban area



- Low levels of walking and cycling

### Opportunities

- High potential for mode shift: 64% of commuter trips into town centre are <5km
- Sustainable travel initiatives tend to be successful with pensioners
- Relatively young urban population: only 46% aged 40+. A good target group to encourage active travel.
- Encouraging levels of sustainable travel in town centre (see chart opposite for travel to work to Bedford Town Centre from urban areas)
- Considerably lower levels of car ownership in urban areas: 29.6% of households don't have a car
- Increasing popularity of cycling across the country

# Comparative Criteria



## Methodology

In order to find towns that are comparable to Bedford, we have developed a series of criteria that best define the town. Given that culture and history play a big role in the travel behaviour of residents, we have excluded all towns outside of the UK which are often referenced to as best practice examples. We have also excluded Oxford and Cambridge, given they are exceptional cases in the country.

## Physical Characteristics

- Population approximately 100,000
- Historical city centre
- River town
- Relatively flat (small variation in altitude)

## Transport Characteristics

- Car ownership: approximately 20% of households don't have a car
- Presence of an inner ring road
- Proximity to a major highway
- Good railway connections
- Congestion problems
- High potential for mode shift to walking and cycling

## Sustainable Travel Initiatives

- If comparable towns have recently invested on sustainable transport initiatives, this report includes a summary of the measures that were introduced as part of the schemes, as well as measures of their success.

# Sources and Gaps in Knowledge

## Sources

The following sources were used to identify comparable towns and sustainable travel initiatives:

- JMP and common knowledge of English geography and sustainable transport initiatives;
- English towns by population (Census data);
- English towns by density (Census data);
- LSTF (Local Sustainable Transport Funding) funded initiatives;
- Other DfT-funded sustainable travel initiatives (Cycle Cities, Cycling Demonstration Towns);
- Local Council Websites;
- Bedford retail study (2015); and
- Bedford's "Travel to Work" report (2011 census data).

## Gaps in Knowledge and Limitations

In the research for comparable cities, the following gaps in knowledge or limitations were identified:

- Insufficient data is available to compare different towns by retail area;
- The number of river crossings is not always comparable, as it depends on the town boundary and a river's meanders (see Norwich);
- It was difficult to find a quantifiable measure of the road network to compare across towns. The number of arterial roads, proximity to a major highway, presence / size of a ring road and density of the finer grid of streets in the town centre were all taken into account but qualitatively rather than quantitatively;

## Gaps in Knowledge and Limitations (cont'd)

- The quality of the railway connections is difficult to compare across towns, especially for those located in different parts of the country;
- The cycling infrastructure provision is difficult to define and compare objectively. Local Transport Plans were scanned for quantifications of infrastructure provision, but little information was found. Some Councils quantify the kilometres of cycle route provided in the county of borough, but there is no indication of which routes are included in this count (on-street, off-street, segregated, non-segregated). Furthermore, many town centre streets can be cycle-friendly without the need for any ad-hoc infrastructure. Only York has quantified the number of public cycle parking spaces available;
- Given the time constraints, the mode split presented is at a Local Authority level. If required, a separate mode split can be calculated that only takes into account the urban wards;
- Very little data was found with regards to the length of commuting trips; and
- Most towns state that they have congestion issues and highway networks that are very close to capacity. However, no indications were found of exact numbers of vehicles and trips. We were unable to find detailed studies quantifying pinch points, describing the distribution of vehicle trips and assessing how close the network / junctions are to capacity.

In the research for sustainable travel initiatives, the following gaps in knowledge or limitations were identified:

- Very few towns quantified the infrastructural improvements that were made as part of the initiative; and
- In very few cases there was specific evidence of the initiatives' impact on modal split.

We were unable to find detailed studies in which a specific mode shift to sustainable travel was assumed and inputted into a modelling tool.

# Comparable Towns



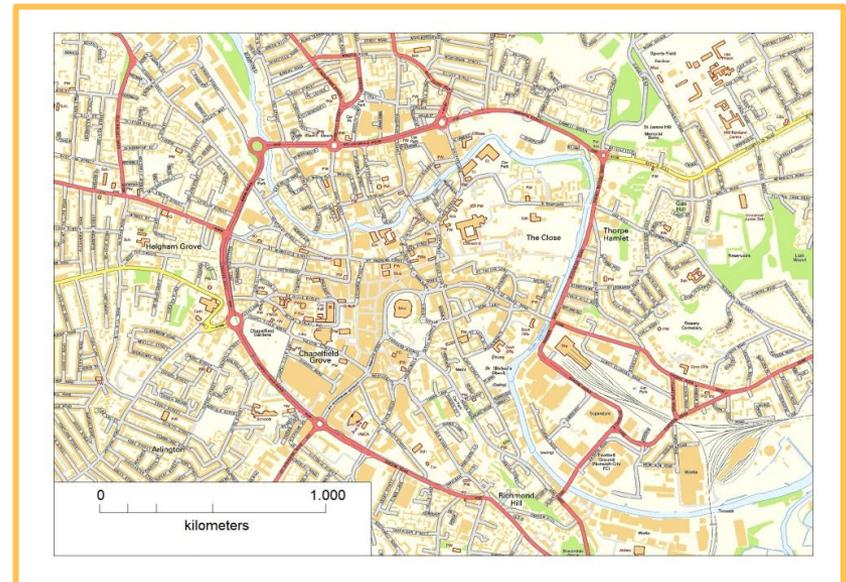
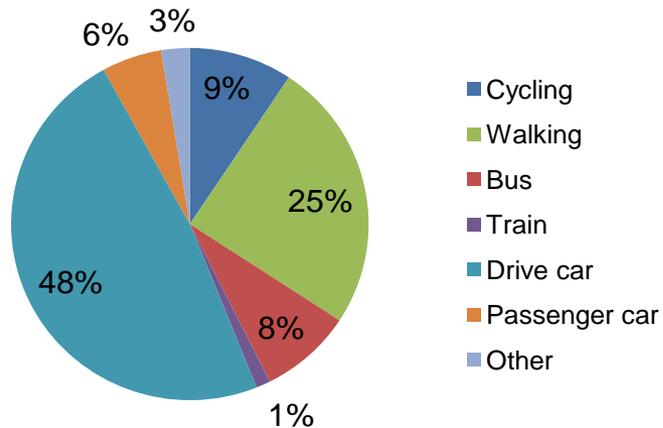
## Norwich

- Population of city 140,000
- Built up area 61.9sq km
- Built up density 3,444people / sq km
- Historical city centre
- 5 vehicle river crossings + 3 pedestrian ones
- 2 concentric ring roads: 2km and 4.5km in diameter
- 33% of households don't have a car

### Initiatives

- In July 2012 launched the new Norwich City Cycle Network and its associated innovative user map
- Awarded Better Bus Area bid (£2.58m) for bus priority measures, bus rapid transit corridor delivery, and smarter choices initiatives
- Walkit, online walking route planner

Method of Travel to Work (Local Authority Area)



# Comparable Towns



## Ipswich

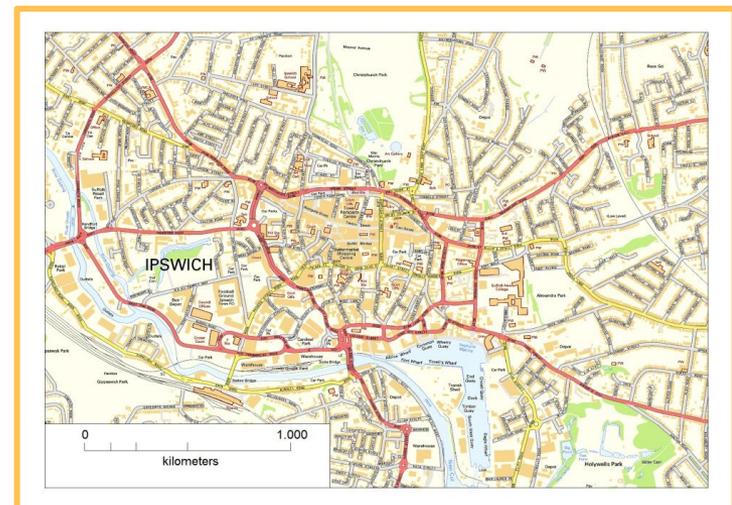
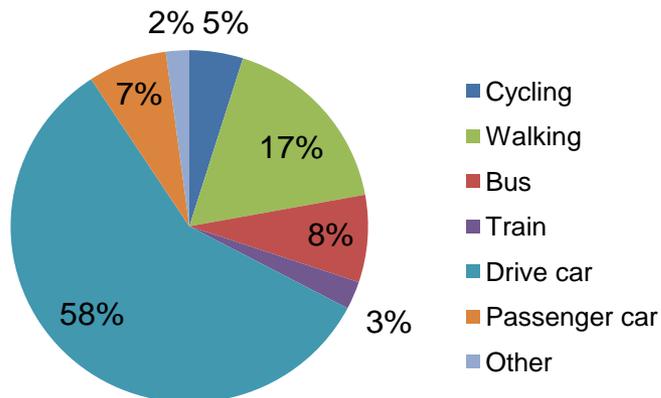
- Population of town 134,000
- Built up area 49.1sq km, density 3,639people / sq km
- Historical city centre
- 3 river crossings
- Good railway connections to London
- 28% of households don't have a car

### Initiatives

£22m package "Travel Ipswich" launched in 2012, to be completed in autumn 2015. Improvements included:

- Introduction of **wayfinding** maps and direction signs;
- **Pedestrian and cycle improvements** at five junctions, including pedestrian crossings, toucan crossings and advanced stop lines;
- Urban realm improvements to over 10 streets / roads / squares, including **cycle lanes**, removal of railings and new lighting.
- Modernisation of bus stations, including **real time information**

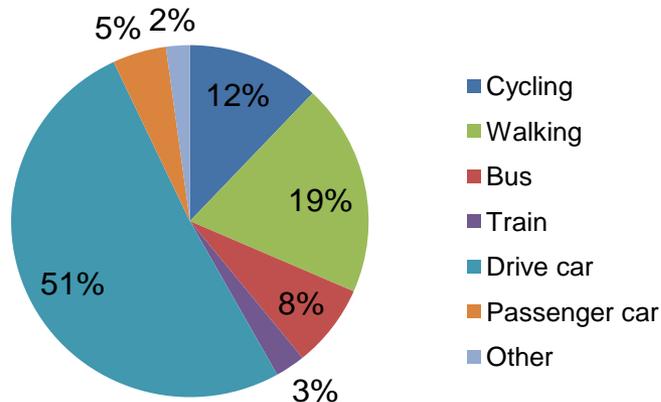
Method of Travel to Work (Local Authority Area)



# Comparable Towns



**Method of Travel to Work** (Local Authority Area)



## York

- Population of urban area 154,000
- Built up area 34.0sq km
- Built up density 4,518people / sq km
- Historical city centre
- 3 town centre river crossings for vehicles + 1 for pedestrians
- Local rail hub with connections to London, Liverpool, North
- 26% of households don't have a car
- 85km of off-road cycle paths and 60km of on-road lanes; 2500 formal cycle parking spaces

### Initiatives

#### 2008-2011 York Cycle City

York received DfT funding to

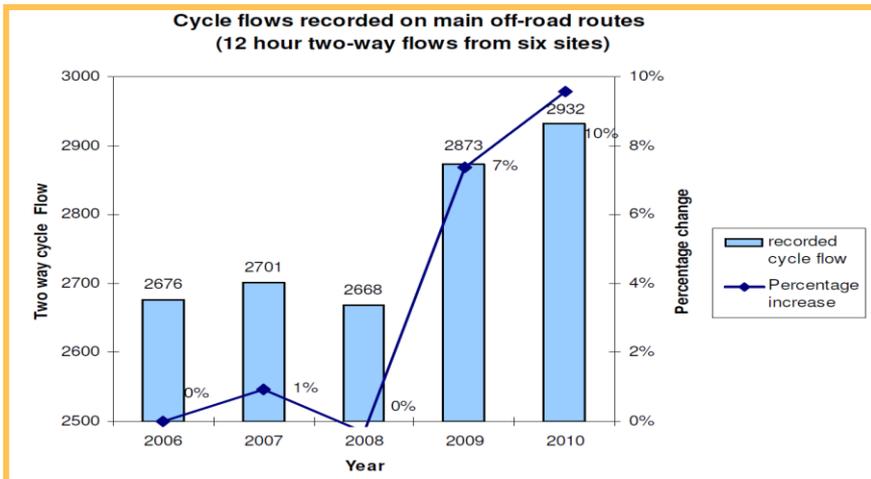
- Fill gaps in cycle route network and provide new routes
- Improve quality and availability of cycle parking
- Provide cycling information, training and support
- Raise awareness of the benefits of cycling, organise events, challenges etc for people to try cycling

Specific achievement of the program included

- Development of a **cycle orbital route** using on and off-road paths
- More **information** on cycle routes
- An advanced green light at main traffic lights, giving cyclists a give second start at the Queen Street / Blossom Street junction
- A **sweeping and gritting unit dedicated** to cycle lanes and tracks
- Making bikes more affordable
- Campaigns, initiatives and training courses
- Delivery of a secure cycle parking facility: the "Hub Station"

The programme **increased levels of cycling in York to around 15%**, with specific data shown on the following page.

# Comparable Towns



## Local Transport Plan 2 Infrastructure Achievements

During the five years of the LTP2 (2006-2010), the council implemented 250 schemes, including:

- Construction of a new roundabout, replacing three junctions that had been the scene of serious and fatal accidents;
- Multi-modal scheme the A19 into York (A19) to improve facilities for pedestrians, cyclists and public transport users;
- Construction of Phase 1 of the James Street Link Road, including over 800m of off-road cycle route;
- Improvements to the designer outlet park & ride site;
- Construction of new cycle routes (on and off-road), including the completion of the Orbital Cycle Route;
- Installation of the **UK's first advanced green light for cyclists**;
- Safe routes to schools, implementing 15 schemes for primary schools and three for secondary schools.

## York (cont'd)

### Initiatives

#### 2008-2011 York Cycle City (cont'd)

A study on the Malton Road cycle route scheme (£600k investment), indicated that 60 additional cyclists on the route would return a 1:1 cost benefit ratio. By 2007 there was an average of 439 cyclists, an increase of 68% over 10 years.

#### 2011-2015 iTravel York

York submitted a successful LSTF bid in 2011, which delivered:

- Integrated personal, business and school travel planning
- Infrastructure changes to the Northern Quadrant of the city;
- Delivery of iTravel York website, **helping people think about their travel options** before making a journey
- Integrating the infrastructure improvements delivered through the Local Transport Plan, Access York and the Better Bus Area Fund

#### Local Transport Plan 2011-2031

York's third local transport plan (LTP3) builds on the successes of the previous plans and outlines plans to accommodate the future growth in jobs and housing. The key approach outlined in this document focuses on

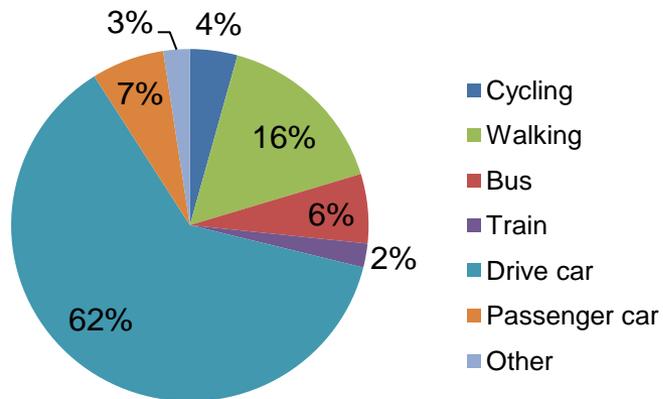
- Significantly **improving sustainable transport modes**, so that people choose an alternative to the car for local journeys;
- Expanding park & ride as a mass transit system;
- Providing good connections from residential to employment areas;
- Informing residents of the **wide transport choices** available to them;
- Promoting the use of less polluting modes of transport and limiting the entry of high emission vehicles into areas of poor air quality; and
- Improving safety, health, the city's appearance and the environment.

In 2015, York submitted a **new successful LSTF bid** to extend the iTravel York programme, receiving £1m from the DfT

# Comparable Towns



Method of Travel to Work (Local Authority Area)



## Lancaster

- Population of town 46,000
- Area 10.0sq km, density 4,789people / sq km
- Historical city centre
- 2 river crossings
- Good railway connections to Manchester
- 25% of households don't have a car

### Initiatives

#### 2005-2010 Cycling Demonstration Town

Lancaster (with Morecambe) was one of six cycling demonstration towns announced in 2005, receiving £1.5m from Cycling England to increase cycling levels in the town. The initiatives included

- Completion of missing links in the cycle network
- Implementation of a signage strategy
- Improvement of parking facilities
- Training in bike confidence and cycle maintenance skills
- Implementation of promotion and publicity measures to encourage cycling

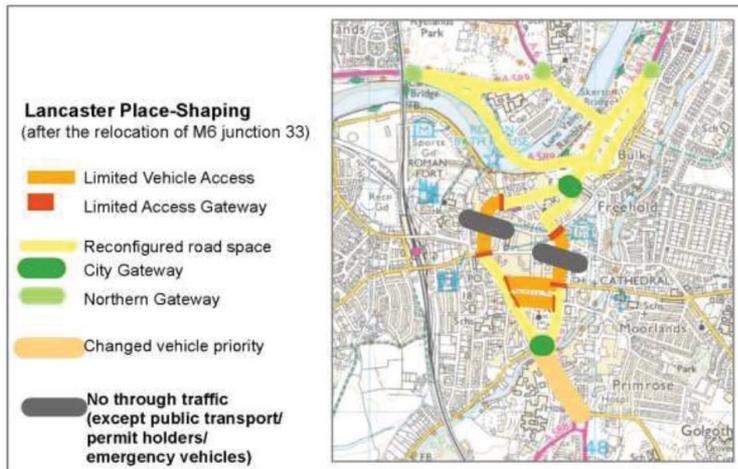
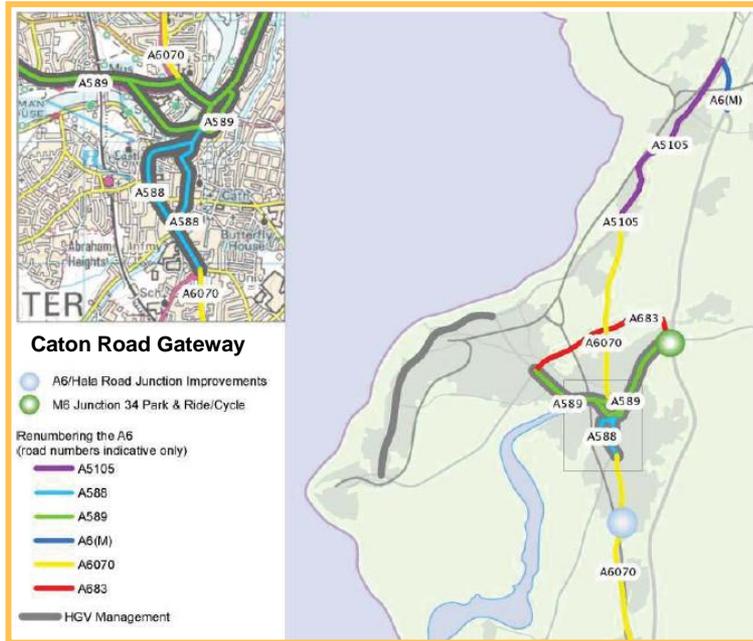
The automatic counts indicated an **increase in cycling of 25%** over the four years, whilst the manual counts indicated a **3% increase per year**.

The initiatives **reduced cycling accidents** from 173 between 2003-2005 to 129 between 2006-2008

The health benefits across all cycling demonstration towns were about £2.50 for every £1 spent. Taking into account decongestion, reduced absenteeism, the **benefit-cost ratio achieved was in the region of 2.6-3.5**

Lancaster remained on the programme's second phase (2008-2010), focusing on the journey to work and school through infrastructural improvements such as advance stop lines, cycle parking spaces and new links.

# Comparable Towns



## Lancaster (cont'd)

### Initiatives

#### Highways and Transport Masterplan 2015-2031

Lancaster has recently prepared a Highways and Transport Masterplan to build on the work done in the past on battling high levels of congestion, to allow the district to grow and flourish.

The upcoming opening of the Heysham to M6 link road in summer 2016 is identified as a key solution to many of the congestion issues, but also as an opportunity to better manage traffic flows into the city centre.

The masterplan proposes a Caton Road Gateway for traffic from /to the M6, with four main strands:

- Park and ride/cycle provision at M6 junction 34;
- HGV restrictions;
- Improvements for local journeys on the A6 south of the city; and
- Reprioritise the highway network.

Through this heavily managed approach, the council expects a reduction in traffic around the main city centre gyratory by 10%, which will enable the introduction of a city centre place-shaping strategy, reconfiguring the gyratory to provide a better environment for pedestrians and cyclists.

Other initiatives that are proposed in the plan are

- The Lancaster Reach rapid transit service, linking South Lancaster to Heysham;
- The Lancaster Links integrated multi-use cycling network, with strategic routes between the main centres of the district, as well as local links for short journeys in the local community; and
- the Ultra Low Lancaster strategy, encouraging use of ultra low emission vehicles in the city centre.

All of these initiatives are expected to be revenue funded.

# Comparable Towns



## Maidstone

- Population of urban area 113,000 (73% of borough)
- Built up area 25.4sq km,
- Built up density 4,229people / sq km
- Historical city centre
- 2 river crossing (combined into a single gyratory system) + 4 pedestrian crossings
- 16% of households don't have a car

### Initiatives

The Sustainable Community Strategy for Maidstone Borough 2009-2020 stated that Maidstone benefits from relatively good connectivity in terms of motorways and rail but suffers from high levels of traffic which causes congestion problems, particularly in the town centre. This impacts on the economy and also has a negative impact upon air quality which can be damaging to the health of local people.

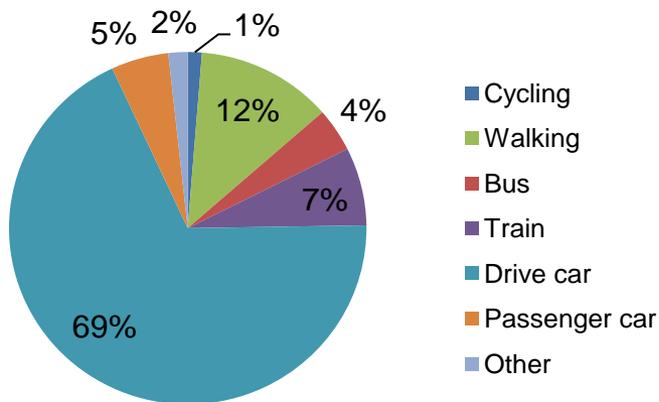
The key actions identified in this document were to develop a joint strategy with Kent County Council (KCC) to **reduce the need to travel**, give genuine transport choice including **sustainable transport modes**, and target investment into **traffic management systems**.

Maidstone Borough Council developed an Integrated Transport Strategy in 2012, but this was not approved by KCC. The negotiations between KCC and MBC are ongoing, with the hope of reaching an agreed strategy. The strategy incorporated significant new park & ride provision.

In 2014, Maidstone received a £15m grant from the DfT to ease traffic congestion. Specific initiatives include:

- Two additional northbound lanes along the A229, allowing northbound traffic to bypass the existing gyratory system; and
- A series of junction, public transport and highways improvements across the town.

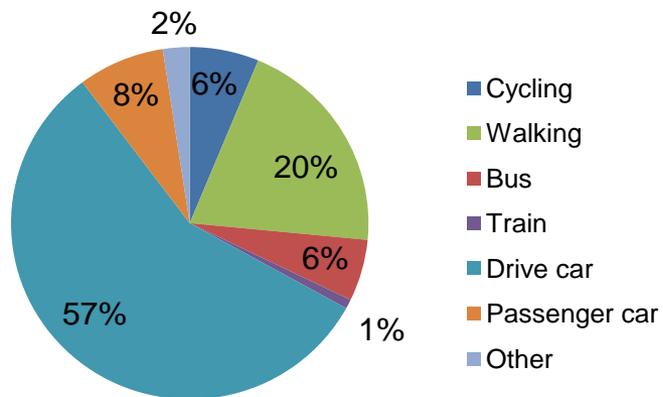
Method of Travel to Work (Local Authority Area)



# Comparable Towns



Method of Travel to Work (Local Authority Area)



## Lincoln

- Population of town 95,000
- Built up area 32.7sq km, density 3,518people / sq km
- Historical city centre
- 3 town centre river crossings + 2 pedestrian
- 30% of households don't have a car

### Initiatives

#### Access LN6, 2012-2015

Successful LSTF bid in May 2012, for £4.9m from DfT. Initiatives included:

- Three new footway and cycle paths;
- New bus shelters;
- Engagement of businesses (over 100) and schools;
- Launch of hirebike;
- Residential Personalised Travel Planning (PTP) to 10,000 households;
- Creation of multi-modal hub at Hykeham Station;
- Delivery of more than 200 events;
- Launch of LN6 Car Share website; and
- Introduction of two park and bike sites.

Key outcomes:

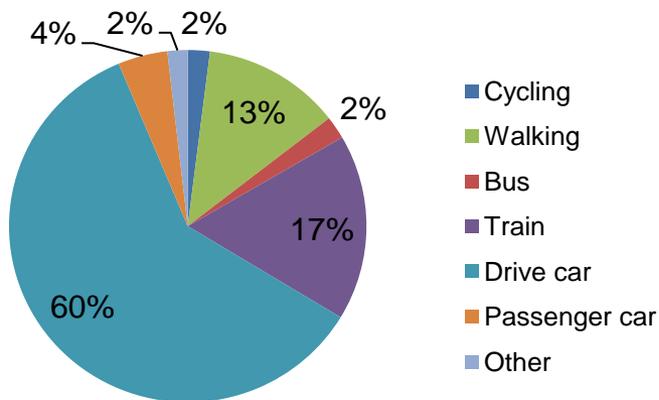
- Number of cyclists in Lincoln doubled from 2012-2014
- 72% increase in passengers on bus services supported by the scheme
- Doubling in Hykeham station patronage from 2012 to 2014.

In 2014 Lincolnshire County Council received an additional £350,000 from the DfT to expand the Access LN6 projects. Plans include an expansion of the hirebike scheme (more stations and bikes), upgrading bus shelters, improving cycling infrastructure with more signs and tidied cycle routes, and continue linking of LN6 businesses to those in the city centre.

# Comparable Towns



**Method of Travel to Work (Local Authority Area)**



## Hitchin

- Population of town 33,500
- Area 9.2sq km, density 3,924people / sq km
- Historical city centre
- Good railway connections to London
- 19% of households don't have a car

### Initiatives

#### Hitchin Urban Transport Plan (2011)

In 2011 Hertfordshire County Council (HCC) endorsed the Hitchin Urban Transport. This document identified the key transport characteristics of the town:

- Constrained highway network, significant proportion of through traffic;
- Historic core pedestrianised at certain times;
- A network of pedestrian footways following the highway network; and
- A recently upgraded rail station.

The transport plan set out the following strategies:

#### *Short term: strategies:*

- Increase town centre pedestrianisation;
- Upgrade crossing facilities at Cadwell Lane junction;
- Improve signing on the cycle network, and implement cycle route 2;
- Investigate demand for shared taxis from station to key destinations.

#### *Medium term strategies:*

- Improve pedestrian links to the employment area;
- Introduce real time information across the network, including real time information for car parks to show available spaces;and
- Implement junction improvements along the A505/A602 corridor.

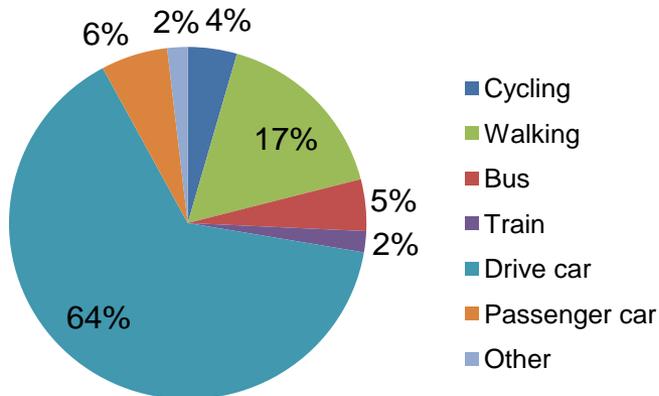
#### *Long term strategies:*

- Increase investment in public transport;
- Build a southern bypass; and
- Provide footbridge over the Cambridge Road railway bridge.

# Comparable Towns



**Method of Travel to Work (Local Authority Area)**



## Worcester

- Population of city 99,000
- Built up area 24.7sq km
- Built up density 4,121people / sq km
- Historical city centre
- 2 river crossings + 1 pedestrian
- Good railway connections to Birmingham
- 22% of households don't have a car

### Initiatives

#### Sustainable Travel Town 2005-2008, "Choose How You Move"

Worcester, Darlington and Peterborough were Sustainable Travel Towns, as part of the government's Smarter Choices programme.

The Worcester initiative was called "Choose How You Move", and included:

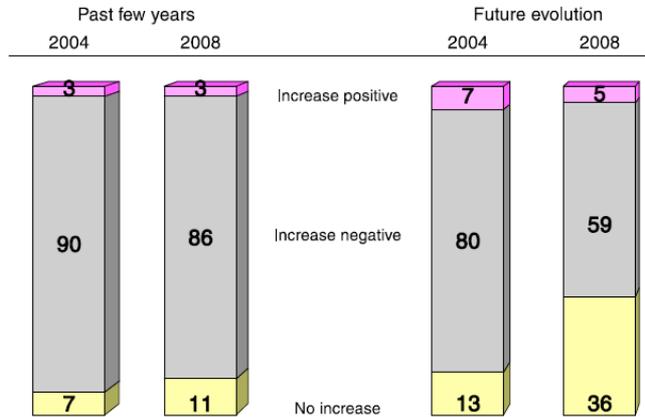
- Travel Information: new transport section on council website, new public transport maps and timetables;
- Marketing and promotions: individualised travel marketing, public transport, car sharing and cycling marketing campaigns;
- Travel planning: workplace and school travel plans;
- Public transport: service improvements, improved infrastructure and information at bus stops, park & ride introduction, new ticketing initiatives, one-month public transport test ticket;
- Cycling: cycle loan scheme, infrastructure improvements, cycling training, new maps and leisure route information, cycling events;
- Walking: infrastructure improvements, walk to school week, walking buses, walk to work events; and
- Other measures: car club, car sharing database for employers, gifts/rewards for using sustainable transport.

# Comparable Towns

## Public Perception

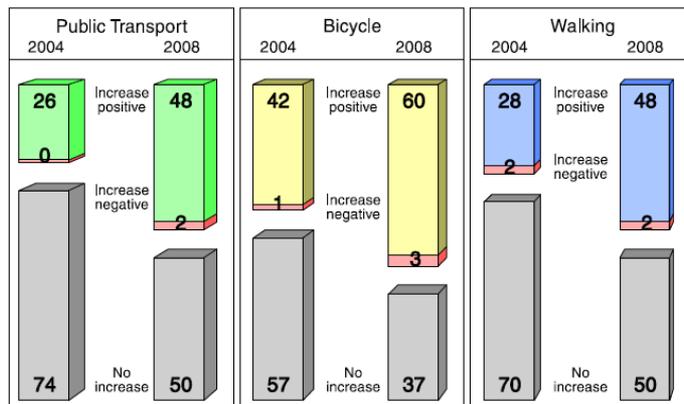
### EVOLUTION OF CAR TRAFFIC

- Worcester -



### FUTURE EVOLUTION

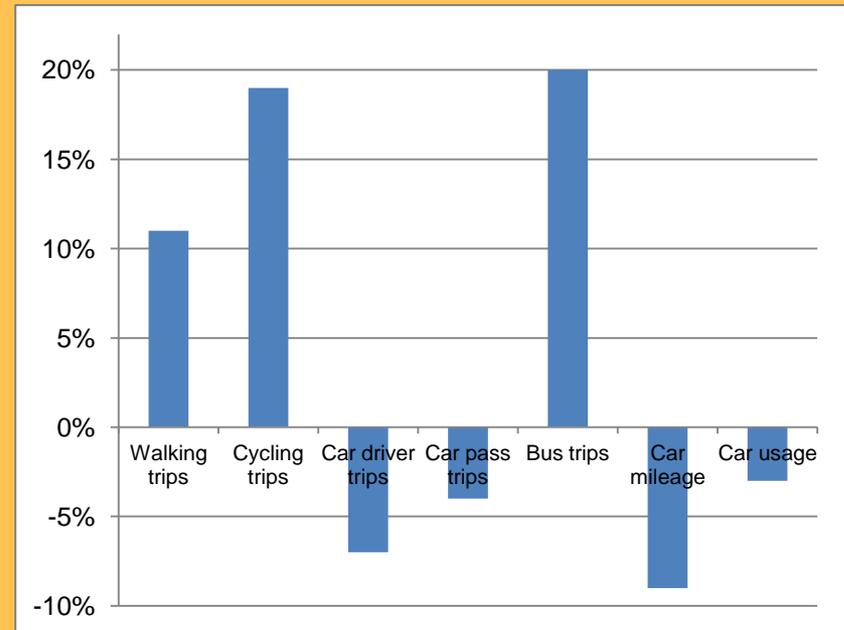
- Worcester -



## Worcester (cont'd)

### Sustainable Travel Town 2005-2008, "Choose How You Move"

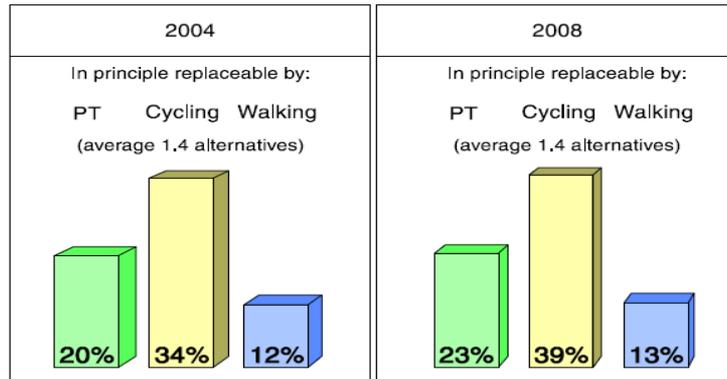
The take-up rate was very high, as 73% of contacted households took part in the initiative, which resulted in the following outcomes:



- Greatest impacts were noted in 20-59 females (+4% in sustainable travel mode, -4% in car driver trips) and in the 60+ (+5% sustainable travel mode) age bracket
- Reduction of 3,900 tonnes of CO2 emissions per year from cars
- 8h increase in active travel time per year
- Perceived risk of a traffic accident: -14% for pedestrians, -13% for cyclists

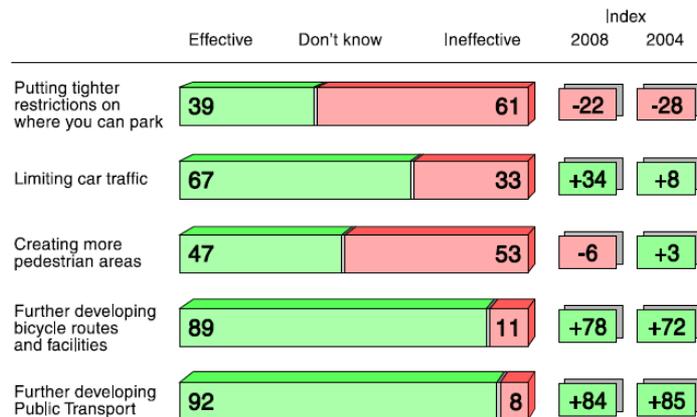
# Comparable Towns

## Impact of infrastructure Improvements Replaceable car trips per year



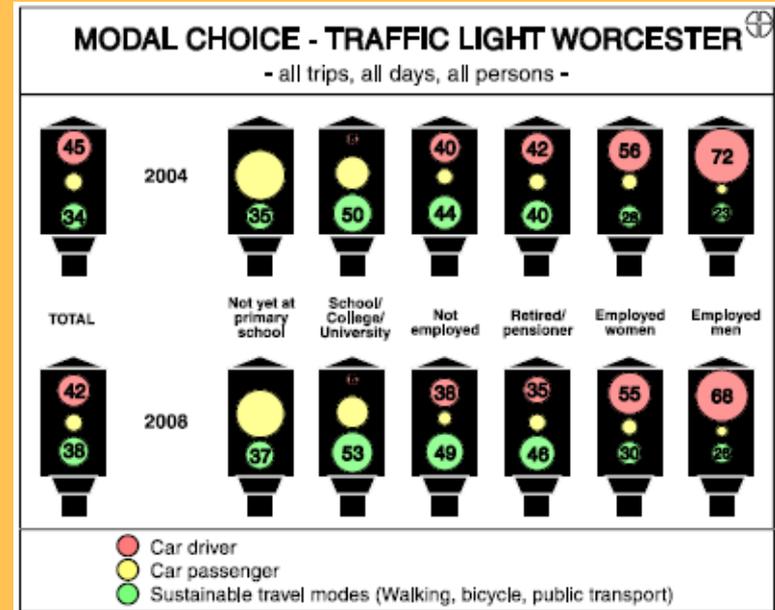
### SUGGESTIONS TO SOLVE TRAFFIC PROBLEMS

- Worcester 2008 -



## Worcester (cont'd)

Sustainable Travel Town 2005-2008, "Choose How You Move"

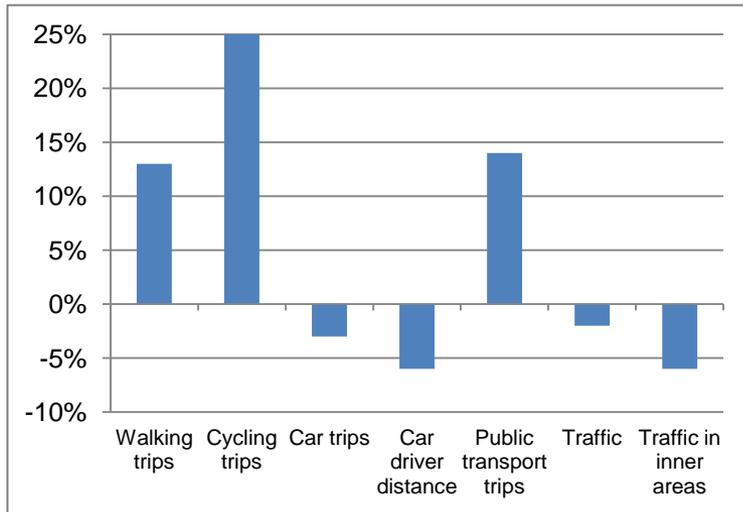


### Relative change in mode choice between 2004 and 2008

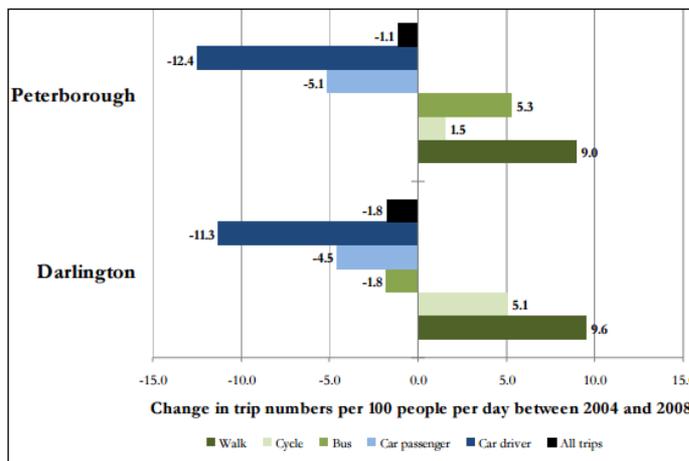
Mode	Total	ITM target population	Target area non-ITM	Control
	Relative change	Relative change	Relative change	Relative change
Walking	+ 12 %	+ 15 %	+ 7%	+ 7%
Bicycle	+ 19%	+ 19%	- 5%	+ 37%
Motorcycle	n/a	n/a	n/a	n/a
Car-as-driver	- 7%	- 10%	- 8%	- 2%
Car-as-passenger	- 4%	- 5%	+ 14%	- 14%
Bus	+ 20%	+ 30%	- 2%	+ 15%
Other PT	n/a	n/a	n/a	n/a

# Other initiatives

**Changes in % of trips across Worcester, Darlington and Peterborough, 2004-2008**



**Changes in numbers of trips by residents 2004-2008**



## Sustainable Travel Towns

Worcester, Darlington and Peterborough were Sustainable Travel Towns, as part of the government's Smarter Choices programme.

### Darlington

Darlington is the only town to have both Sustainable Travel Town and Cycling Demonstration Town status.

Darlington began with very little cycle route infrastructure, but developed a far more coherent cycle network during the course of the Sustainable Travel Town programme due to extra funding reflecting its status as a Cycling Demonstration Town. Darlington's town centre was also pedestrianised during the Sustainable Travel Town period.

The household survey showed a doubling of cycling levels amongst Darlington residents: cycle trips per person increased by 90-110%, and distance cycled increased by 80-110%. Automatic cycle counters showed an increased in cycle activity of 50-60%, while town centre cordon data shows growth of 85-115%

The number of walking on routes into town was declining before 2004. The Sustainable Travel Towns initiatives reverted this trend, with increases in walking of 43% on routes into the town centre between 2004-2009.

### Peterborough

Peterborough already had an extensive network of off-road cycle routes and saw relatively little change in cycling and walking provision during the course of the Sustainable Travel Town programme.

According to household surveys, cycle trips per person increased by 10-17% and distance cycled increased by 25-40%. The count data, on the other hand, shows stable levels of cycling following a previous decline of 20-30%. The counts showed increases of 11% in the town centre.

Household surveys and count data both indicate an increase of 15-20% in walking trips between 2004-2008.

# Other initiatives

## Leicester “Streets and Spaces” Town Centre Regeneration

In 2005, a public realm strategy was initiated in response to the redevelopment and expansion the Shires Shopping Centre (re-launched as the Highcross) in the centre of Leicester.

This three year programme of investment – the Streets and Spaces initiative – led to £19 million of improvements across the centre, almost completing the ‘retail circuit’, including Gallowtree Gate, High Street, Hotel Street and Market Street. Measures included:

- Changing bus routes;
- Pedestrianisation;
- De-cluttering;
- New street paving and street furniture;
- Tree planting; and
- Changes to street lighting.

The project opened streets up for pedestrians and was completed in time for the opening of Highcross in 2008.

A survey of business carried out during the project’s implementation found that

- 91% felt that the space surrounding their business location had recently improved
- 64% agreed that these improvements have been good for business
- 73% stated that the improvements had helped to attract visitors.

## Nottingham

Nottingham has been using LSTF funding on a number of initiatives, worth an overall benefit to cost ratio of 4.5. The net impact of the cycling initiatives was a 15% increase in cycling across the city from 2010-2013 and prevented an increase in congestion (journey times per mile).

### Job Seeker Kangaroo Card

In 2013, Nottingham introduced a job-seeker card which enables people who have been unemployed for more than 13 weeks to travel on all the local public transport systems for £2 per day. The card also entitles them to hire a bicycle worth £50 for a year (a saving of £100 on market price), and remains valid for four weeks after obtaining employment.

The sales of Kangaroo tickets averaged 32,000 per month, with an estimated 1.134 million public transport trips made by jobseekers over a year. Surveys indicated that 17% of Kangaroo card holders found employment, and that the scheme had allowed people to travel further and enlarged the areas where they were looking for jobs.

### Nottingham Ucycle

Nottingham’s ucycle aimed to increase cycling levels amongst university students and members of staff, and attracted funding from partners of £350,000. The project included infrastructure improvements, a cycle hire scheme, social media and marketing campaigns as well as cycle training and maintenance.

After the initiative, a travel survey at the University of Nottingham revealed that 44% of staff and students travel by non-motorised transport, 15% of staff and students cycle and 10% fewer people drove to campus with respect to the last survey.

### Community Smarter Travel Hubs and Mobile Travel Centre

In order to promote the initiatives, Nottingham established five smarter travel hubs to engage with residents. The longest established hub engaged with over 7,700 residents, provided 768 jobseekers with travel advice and assisted 94 new job starters with a month’s free travel or a free bike and accessories. The Mobile Travel Centre (a refurbished local bus) supported over 4,400 queries from the public.

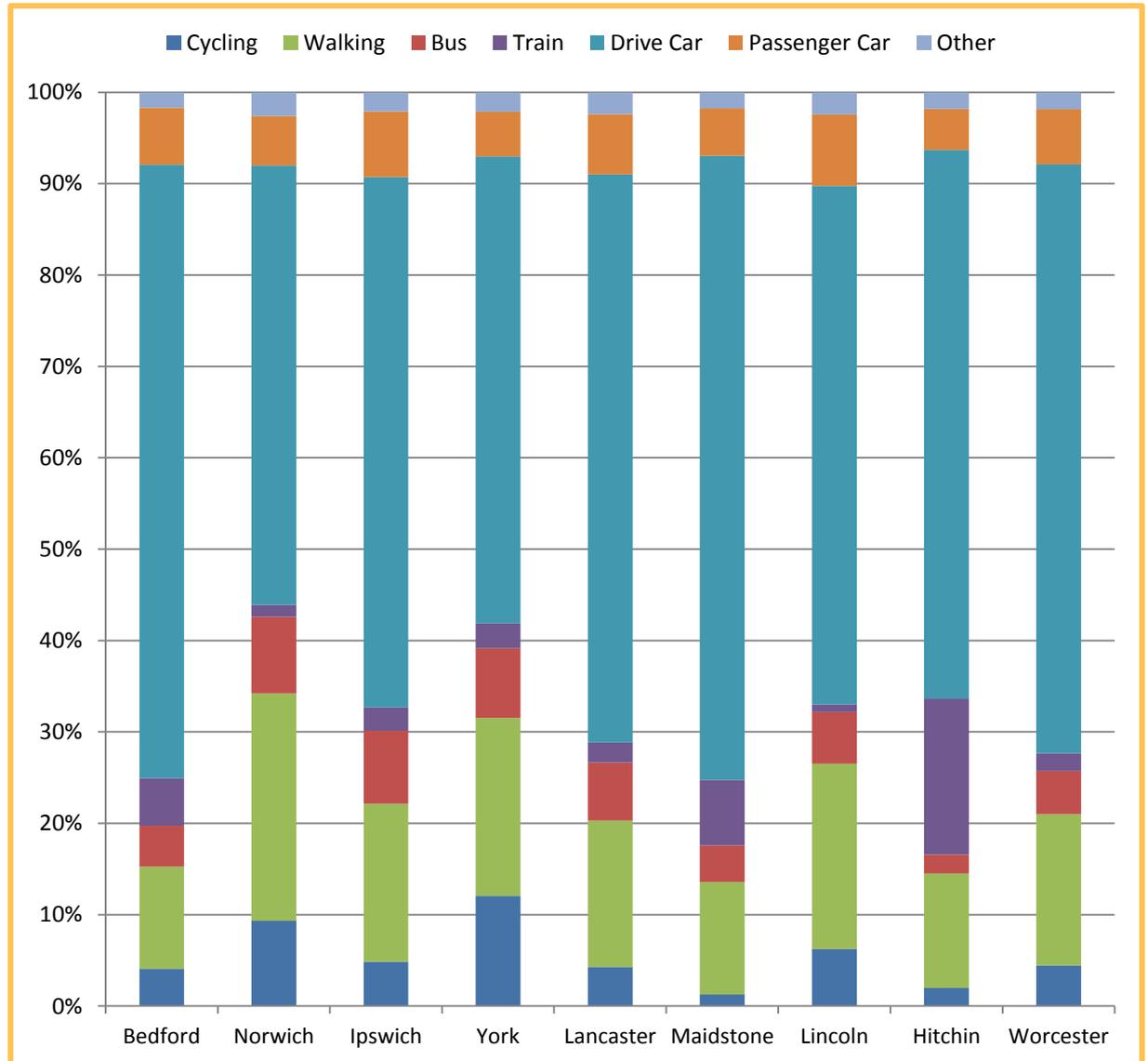
# Comparisons and Conclusions

## Mode Split

In order to assess the level of sustainable travel in Bedford, the column chart on this page presents the modal split of the nine comparable towns discussed in this report.

It can be seen that Bedford's has the lowest combined levels of sustainable transport (25% for walking, cycling and public transport):

- Bedford's 4% cycling mode share ranks seventh out of nine towns, with York's and Norwich's cycling modal splits being 2x and 3x greater respectively. Only Maidstone and Hitchin have lower levels of cycling.
- Bedford's 11% walking mode split is the lowest out of the nine towns; nearly half of York and Lincoln (20%). The average walking modal share is 17%.
- Bedford's 4% bus mode split is at the lower end in comparison to the other towns, with Norwich, Ipswich and York all having 8%. The average bus modal share is 6%.
- Bedford's 5% train mode share is second out of the nine towns. Hitchin, which has similar rail connections to London, is the only town with higher train usage (17%).
- Maidstone is the only one of the nine towns with a higher percentage of driver trips than Bedford.



# Comparisons and Conclusions

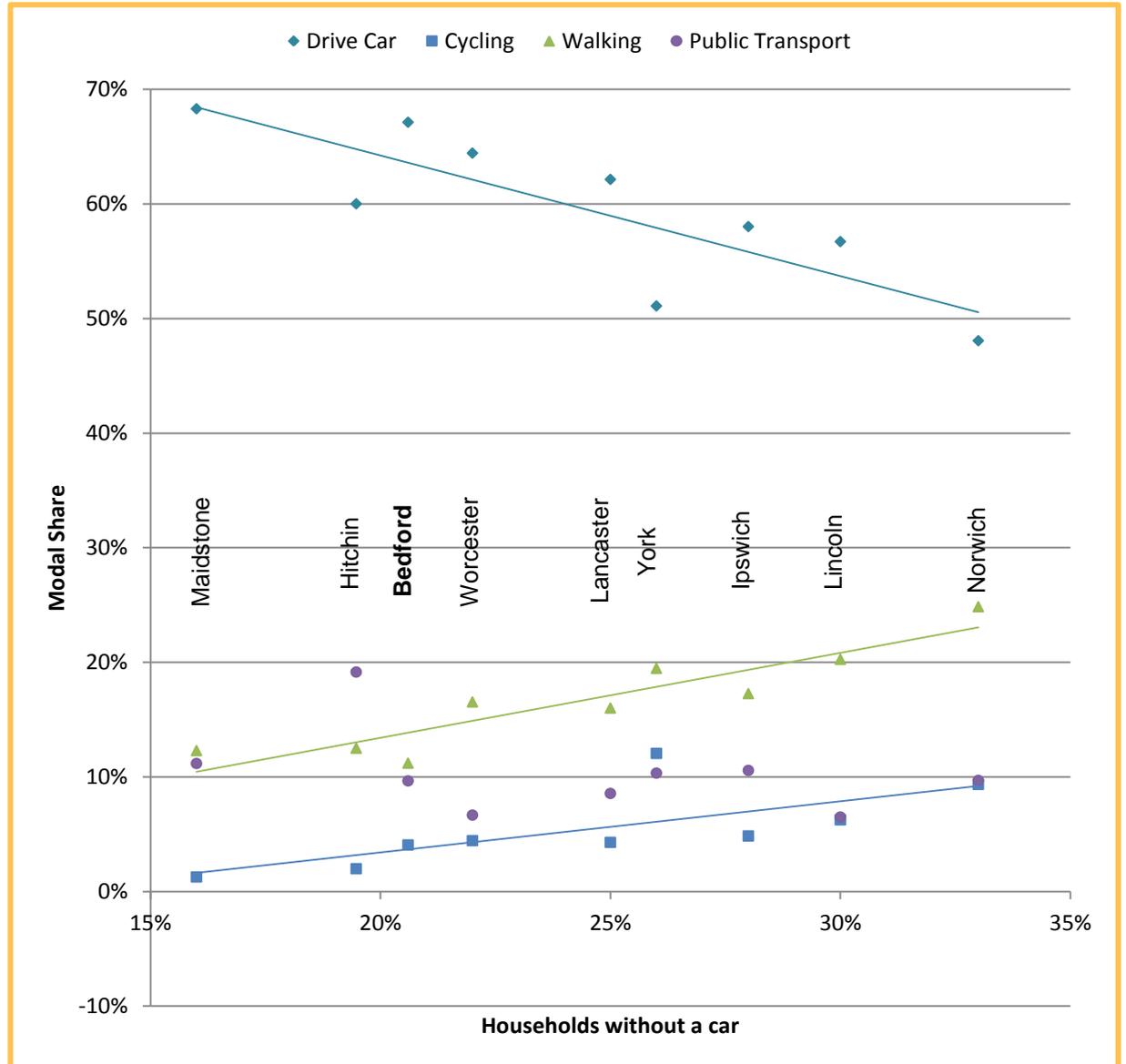
## Car Ownership

The scatter plot on this page shows the relationship between car ownership and the mode share of walking, cycling, public transport and driving.

- There is a clear trend suggesting that the lower the car ownership levels, the lower the mode shift of car drivers.
- A similarly clear trend emerges between car ownership and the levels of walking and cycling. In towns where more households do not own a car, the uptake of walking and cycling is considerably higher than in other towns.
- There appears to be no clear relationship between car ownership and the modal share of public transport

Bedford displays high levels of car ownership, yet towns with similar levels (Worcester and Hitchin) show less reliance on the car. In particular, it can be seen that Bedford's levels of walking and public transport use are well below the trend line.

For the clear trends identified above, it is difficult to assess the causality, i.e. whether people cannot afford a car and hence have to walk or cycle, or whether the sustainable travel provision is of a such a high standard that people do not buy a car. In light of this, on the page below we analyse some of the factors that might affect car ownership.



# Comparisons and Conclusions

## Car Ownership (cont'd)

### Economic Status

The first factor which could affect car ownership levels is economic status. The census data does not include income levels, so we have used the level of unemployment.

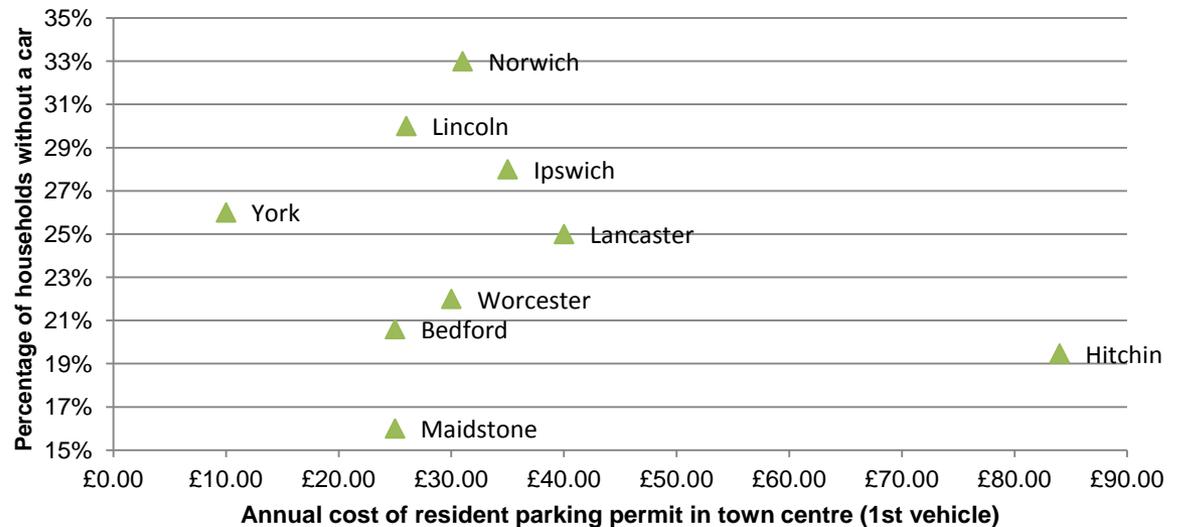
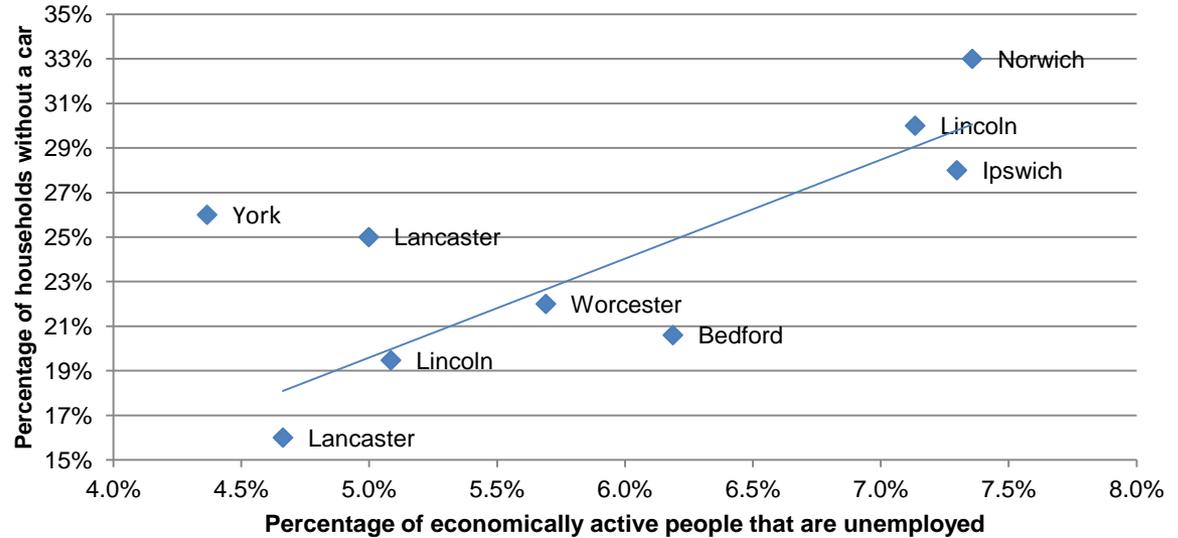
The scatter plot to the right suggests a clear relationship between unemployment and car ownership. This suggests that, in many towns, people might not own a car mostly because they cannot afford it.

It is noted that York is a clear outlier, with low levels of unemployment yet low levels of car ownership. In this case, it would appear that not owning a car (and using sustainable transport) is a choice.

It can be seen that Bedford falls significantly below the trend line, with significantly higher car ownership in comparison to other towns with similar unemployment levels. This suggests that owning a car is more important in Bedford than elsewhere.

### Cost of Residential Parking Permits

Another factor affecting car ownership could be the cost of residential parking permits. However, the graph on the right suggests that the two variables are not related. Bedford does, however, have one of the lowest residential parking permits across the towns.



# Comparisons and Conclusions

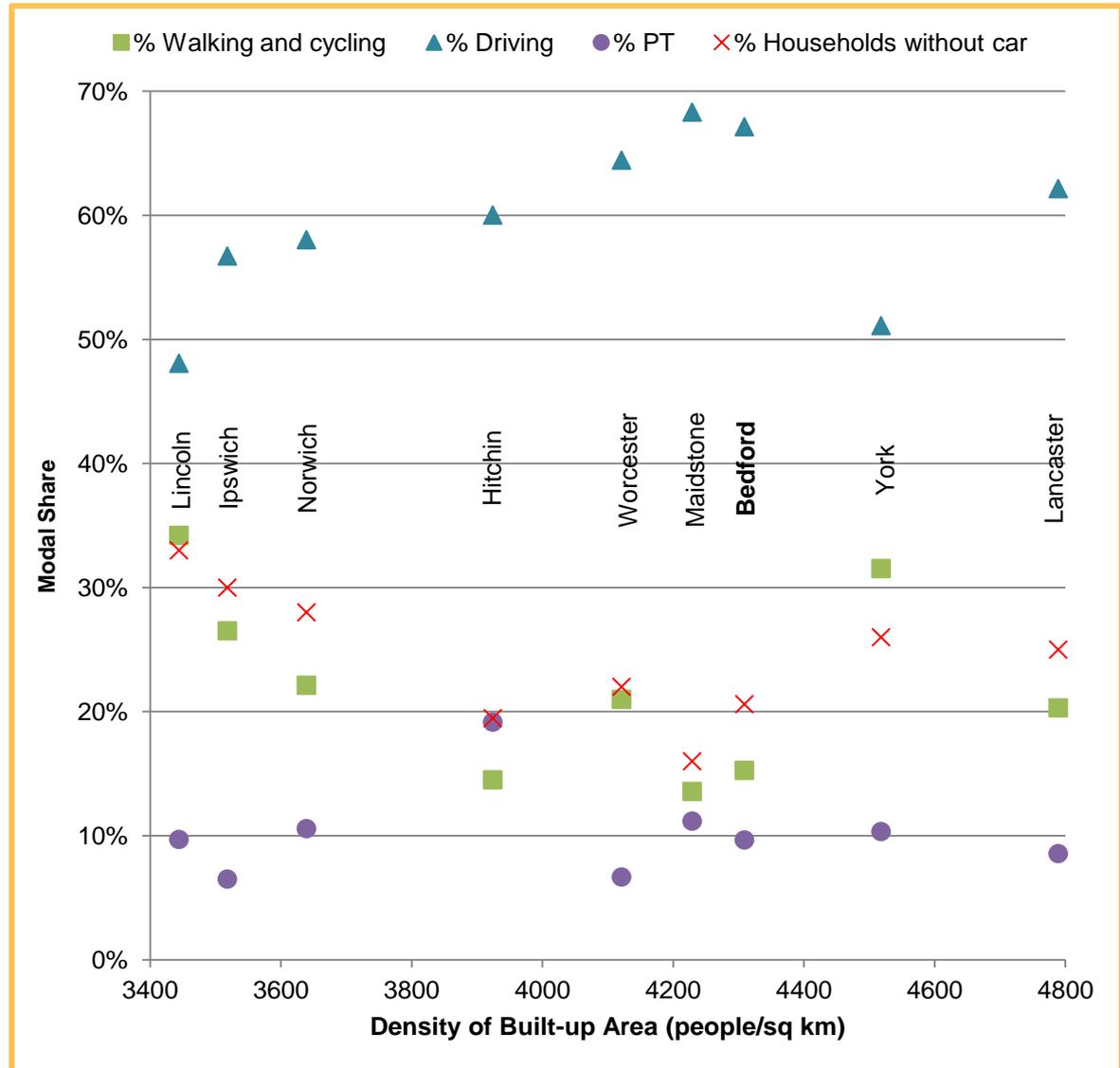
## The impact of physical characteristics

It is often argued that a town's ability to reach high mode shares for walking and cycling depends on its physical characteristics such as size and density. In order to assess if this is true, we have produced the scatter plots for mode split against these two variables.

The graph to the right suggests that, for the nine towns, there is no direct correlation between density of the built-up area and the residents' travel patterns. However, it is noted that:

- One might expect denser towns to be more walk- and cycle-friendly, and York is in line with this expectation;
- The three least dense towns have high levels of walking / cycling and low levels of drivers / vehicle ownership;
- Bedford is one of the denser towns, with similar density to Worcester, Maidstone (which have similar travel patterns to Bedford) and York.

The scatter plot also suggests that there is no relationship between the density of a town and the mode share of public transport or the density of a town and the levels of car ownership.



# Comparisons and Conclusions

## The impact of physical characteristics

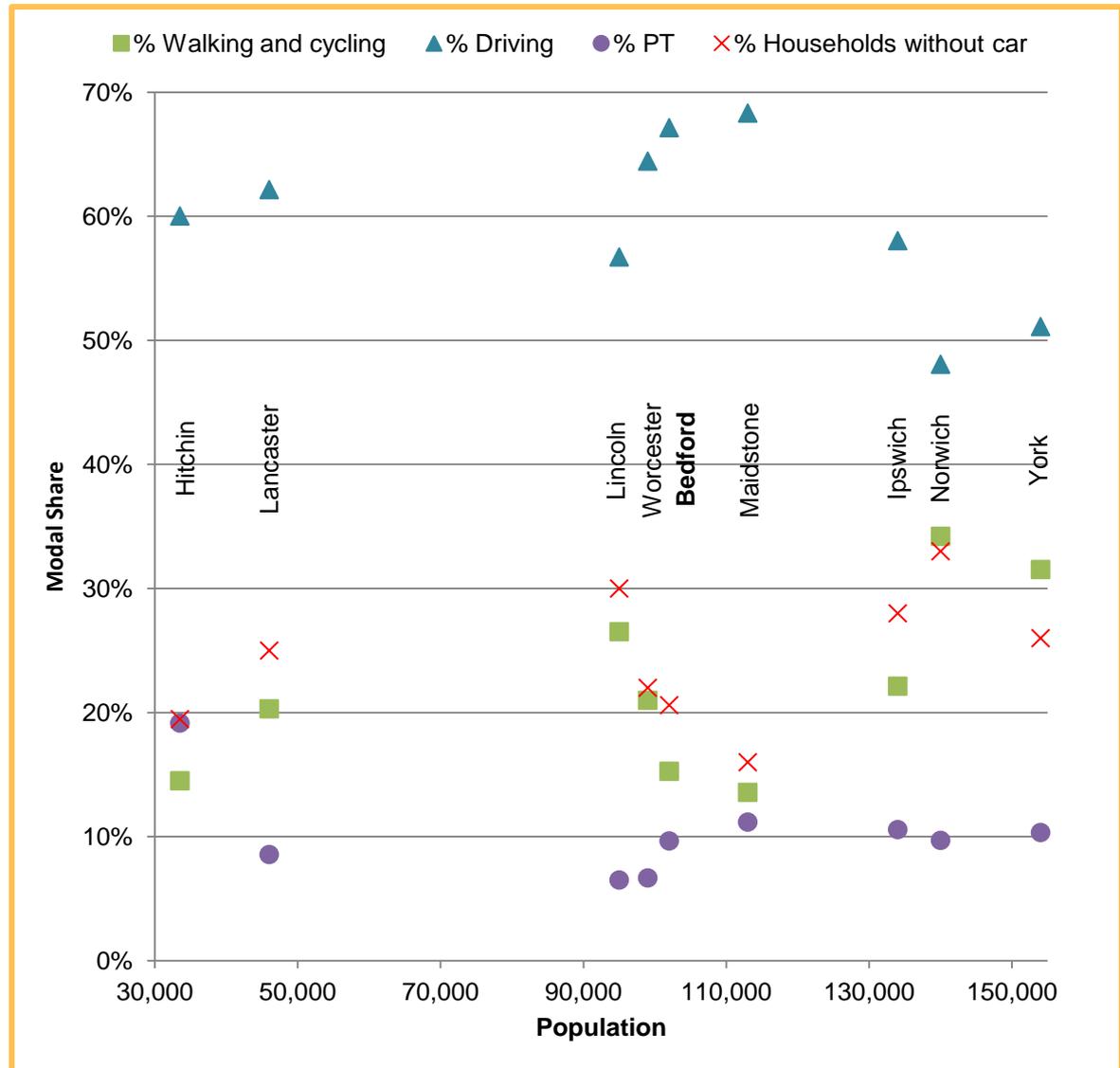
One might expect for smaller towns to display higher levels of walking and cycling, whilst in larger towns it might be easier to develop public transport systems that can cater to the residents' needs.

However, the scatter plot to the right indicates that there is no clear relationship between population size and the uptake of walking and cycling. In fact the two largest towns (York and Norwich) show high levels of walking and cycling.

Comparing Bedford to two towns of similar population (Lincoln and Worcester), it is clear that its uptake of walking and cycling lags far behind.

Similarly, the data does not suggest that public transport is more popular in larger towns. Hitchin is a unique case (commuter rail town into London), but even a small town like Lancaster has been able to achieve high levels of public transport use.

Bedford appears to have higher PT use than towns of similar size, but this is in large part due to the rail commuting (5%) into London as opposed to residents using buses (4%) to commute into town. If we only take into account bus use, Bedford is on par with Maidstone, whilst it falls behind Lincoln (6%) and Worcester (5%).



# Comparisons and Conclusions

## Summary and Conclusions

The benchmarking exercise indicates that the levels of sustainable transport in Bedford are lower than in other comparable towns. In particular, the levels of walking and bus rank lowest out of the nine towns identified.

Bedford relies heavily on the car in comparison to other towns of similar size and density. More people own cars in comparison to other towns with a similar economic profile, which might indicate a poor provision of alternatives.

This report indicates that there is no clear reason for which Bedford cannot achieve a significant modal shift to sustainable modes. In particular, it should be able to achieve significantly greater levels of walking and bus use, given its size and density.

There are many examples of successful sustainable transport initiatives that have reduced congestion, improved health and boosted the economy in similar towns across the country. Key achievements included:

- York (Cycle City) achieved an increase of 17% in flows on off-road cycle routes over four years;
- Lancaster (Cycle demonstration town) achieved +25% in cycling levels over four years, with a cost-benefit in the region of 2.6-3.5. The town plans to tackle congestion through park & ride / cycle, HGV restrictions, a rapid transit system and an integrated cycling network.
- Worcester (sustainable travel town) between 2004-2008 achieved +19% in cycling trips, +12% walking trips, +20% bus trips and -7% car trips. The public identified limiting car traffic, developing a cycling network and improving public transport as the three keys to solving traffic problems.

The most successful initiatives are those that combined soft measures (travel planning, marketing, improved maps and signage) and hard infrastructural improvements (cycle routes, parking facilities, junctions and crossing design, park & ride).

