# PROMOTING TRAVEL SMART IN REDHILL

An Interactive Qualifying Project Report completed in partial fulfillment of the Bachelor of Science degree at Worcester Polytechnic Institute, Worcester, MA

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## Abstract

Located just south of London, the town of Redhill is a popular transportation hub for commuters traveling to and from the city and is affected by heavy congestion, which negatively impacts the local area. This project, sponsored by Reigate and Banstead Borough Council, identified problems pertaining to local transportation and determined services a Travel SMART hub can provide to solve some of these problems. These services focused primarily on encouraging cycling between the two neighboring towns Reigate and Redhill.

## Acknowledgements

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## Authorship

Kelsi Callahan, Matthew Chareth, Rachel Lewis, and Matthew Sprague contributed equally to the writing of this report. The research topics and data were collected both individually and as a group. This report was edited by all team members.

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## Executive Summary

In recent years, a rapid growth in the number of vehicles in the UK has had negative impacts on the country's transportation system. From 1950 to 2010, the number of registered vehicles in England increased from approximately 4 million to 34 million, resulting in congested roadways. The UK has expressed concern regarding the impact of this traffic on local economies and on the environment. As such, preventative measures have been taken at both national and regional levels. One promising area many local governments are looking into is cycling and improving the cycle network.

Surrey County is a region located just south of London, and is one of the most important economic regions in the UK. However, certain areas of the county are subject to large amounts of traffic congestion, and Surrey County Council estimates that the congestion throughout the entire county costs them £550 million per year. Studies have been conducted that link an unreliable or a congested transportation network with stunted economic growth. The southeast region of England, where Surrey County is located, experienced a recent decrease in productivity according to the World Competitive Index.

At the same time, the UK passed the Climate Change Act of 2008, which set a carbon reduction timeline for the country. The transportation industry contributes 27% of all carbon emissions from the UK. Knowing that stationary traffic emits a significantly greater amount of pollutants than moving traffic, Surrey County Council is attempting to improve their transportation system to help meet the carbon emissions goals set by the UK.

In an attempt to reduce traffic congestion, Surrey County Council has developed the Travel SMART program, a program which focuses on encouraging alternative transportation, particularly cycling. This program has been implemented in specific towns that have experience higher levels of congestion than the rest of the county. Redhill is one of these towns, and is located in the borough of Reigate and Banstead in northern Surrey. Surrey County Council and Reigate and Banstead Borough Council intend to implement a Travel SMART hub in the Redhill town center to spread awareness and to encourage methods of transportation other than private vehicles.

The goal of our project was to assist the Reigate and Banstead Borough Council in determining what services the Travel SMART Hub could provide to the community. Identifying local transportation issues along with potential solutions to these issues was accomplished using

a variety of methods. Interviews with various members of the Surrey County Council, Reigate and Banstead Borough Council staff, and other involved individuals were set up in order to get a sense on how the local transportation problem was perceived and what approaches are currently being taken in order to address the problem of transportation. We also wanted to obtain information on the public's opinion about the current travel and congestion in Redhill and also collect data on commuter's travel habits. To accomplish this, we reviewed previous surveys conducted at East Surrey Hospital and East Surrey College, as well as conducted our own surveys at Redhill Rail Station, asking commuters on the platform a variety of questions on how they travelled to the rail station and what their opinions on cycling and public transportation were. From these surveys, we received feedback on specific problems in the area that many of the commuters claimed prevented them from choosing alternative forms of transportation such as cycling. We found that many commuters who currently use a car are within easy cycling distance to the rail station and therefore decided to focus our research on encouraging cycling and adding cycling facilities. Using feedback from the surveys, we also conducted street-level audits in order to examine the local transportation infrastructure and scope out specific problems that may discourage people from choosing cycling or walking as favorable modes of transportation.

After analyzing all of our interviews, surveys, and road audits, we formulated suggestions as to what the Travel SMART hub can do to encourage more people to cycle or walk in Reigate and Redhill and specifically to Redhill Rail Station. We found that many people who were within walking distance to the station already walked, but that many people who drove to the station traveled a distance of less than 2 miles, a distance that could easily be traveled using a bicycle. A key part to reducing congestion is to convince commuters to make these short trips by cycling rather than car. Keeping in mind that cyclists know best the cycling infrastructure in Redhill and Reigate, we used the results from our cyclist surveys to develop ideas as to how and improve it. Some of the concerns that were brought up by cyclists were poor road quality and poor cycle route signage. The cycle lanes are sometimes disjointed or even blocked by cars parked on the side of the road. If these concerns are addressed, more people may be encouraged to cycle. This possible increase in number of cyclists would require more cycle parking at the rail station and cyclists and other commuters at the rail station alike identified more secure covered bicycle racks as a priority. Overall, in order to encourage individuals to change their travel habits and support sustainable transportation behavior, the public needs to be both aware of the options available to

them as well as have the tools and information needed to support travel change. In this report we suggests improvements to the infrastructure as well as lay out specific information and tools a Travel SMART hub could provide for the community of Reigate and Redhill in order to reduce congestion and encourage sustainable travel.

# 1. Introduction

Traffic congestion has been a concern for the United Kingdom (UK) for many years due to the impact automobile transportation has on economic growth and climate change. High congestion on roads, especially around areas of business, is known to decrease economic growth in those areas. In addition, the increase of automobiles also adds to the increase in carbon emissions which harm the environment. Both are major areas of concern for the UK government. Operating under the principle that an efficient transportation network will spur economic growth, the Department for Transport (DfT) offered funding for local governments to implement programs to reduce traffic congestion. By promoting and funding alternative methods of transportation, the DfT is attempting to reduce carbon emissions to satisfy the goals of the Climate Change Act of 2008.

Surrey County is a political region located immediately south of London in southeast England. Due to the close proximity to the capital city as well as the Heathrow and Gatwick airports, the county has a high economic impact on the country. However, the potential for economic growth for Surrey is limited by the congestion on county roads and motorways. In addition, Surrey County Council (SCC) has been committed to reducing carbon emissions, and reducing the number of motor vehicles on the road assists in reducing these emissions.

Surrey's motorways carry 83% more traffic than the national average. This increased congestion results in an estimated economic loss of £550 million to the Surrey County each year. In an attempt to reduce congestion and promote economic growth, SCC has developed a program called Travel SMART. The goal of the Travel SMART program is to reduce traffic volume and congestion by promoting alternative transportation methods such as cycling and public transit. By decreasing the congestion on the roads, SCC hopes to improve the reliability of the transportation network, while promoting economic growth and decreasing carbon emissions. This program is concentrating on three Surrey towns that play a vital role in the county's economy: Guildford, Woking, and Redhill/Reigate.

The goal of this project was to identify solutions and services that Travel SMART hubs could provide for non-car transport within the community of Redhill. To achieve this goal, a series of surveys were issued to local stakeholders to provide key information on local travel habits along with the public opinion on the current state of transportation. These stakeholders consisted of commuters who travel to the Redhill rail station, both by car and non-car means of

transport.  With this information we then proposed possible solutions to the issues of traffic and congestion within the community of Redhill. In doing so, we anticipate that reducing congestion in and around Redhill will improve the quality of local residents' commute by improving flow of traffic during high peak hours and give residents better access to both healthier and less costly methods of travel such as cycling and walking. Long-term, we expect these solutions to also contribute to improving economic growth, particularly around high areas of travel such as the town center, and improve the overall quality of the environment.

## 2. Literature Review

Transportation strategies and plans are shaped by a variety of policies and programs. In this literature review, we examine a number of different policies and programs that have been developed at the national, county, and local levels in response to particular concerns pertaining to transportation and the environment.

### 2.1 National Context and Policies

From 1950 to 2010, the number of registered vehicles in England increased from approximately 4 million to 34 million (Figure 1). With a greater number of vehicles on the roads, government agencies and policy makers have become more concerned about the adverse impacts of congestion on economic growth, pollution (especially carbon emissions and other greenhouse gases), and the quality of life and public well-being. A study conducted by Rod Eddington discusses the importance of transport to the economy and the need to target areas of high congestion within the travel network (Eddington, 2006).

The Eddington study discusses the relation between congestion and economy, but exactly how these factors relate to one another is often unclear and difficult to determine. For example, congestion directly impacts the transportation system by causing time delays that hinder the users on the system. These delays can affect work opportunities or shopping journeys for travelers along with transportation of goods and services, both of which have an effect on economic growth, but it is often difficult to accurately isolate and measure these effects. It has been shown that in response to adverse traffic, travelers may often try and adjust their travel behavior in order to circumvent the congestion problem (Choo and Mokhtarian, 2008). In addition, congestion is found to impact business and residential locations, often redistributing economic activity based on the accessibility of these locations within the transportation network (Sweet, 2011). Despite the difficulties of quantitatively determining the relationship between employment growth and congestion levels, there is significant evidence suggesting that congestion impedes the growth of employment, particularly in areas of heavy congestion (Hymel, 2008). Overall, congestion is found to negatively affect economic growth and redistribute where growth occurs. This redistribution of growth occurs because new businesses do not want to start up in an area where congestion will affect their own growth. The government acknowledges this negative correlation between congestion and economic growth

and strives to improve and build upon existing infrastructure in order to safely reduce congestion and travel time (Kelly, 2007). National and local approaches to reducing congestion, pollution, and improving well-being have focused on encouraging the use of alternative means of transportation such as biking, walking, and public transportation.

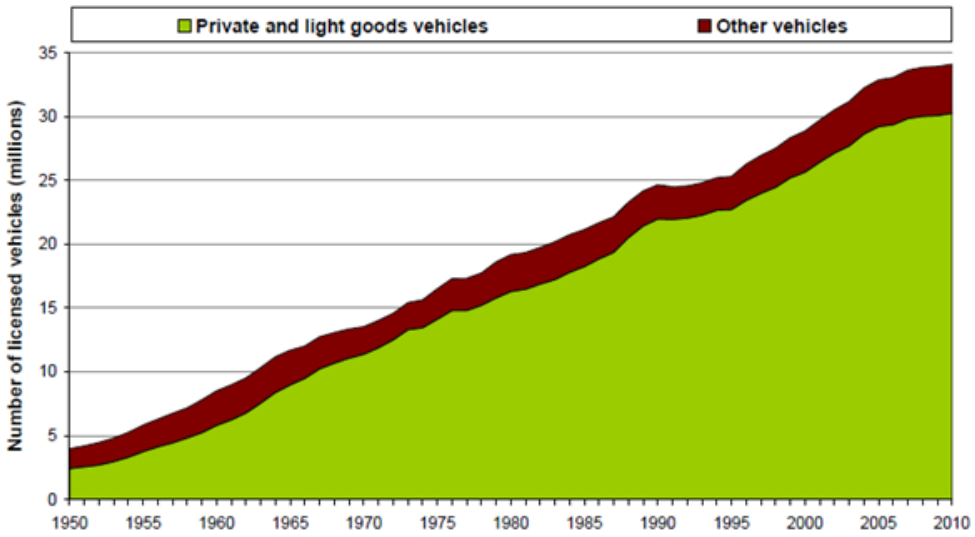


Figure 1: Number of licensed vehicles in Great Britain from 1950 to 2010 (Department for Transport, 2012d)

In 2009, the Department for Transport reported that transportation related carbon emissions created 27% of the country's total greenhouse gas output (Department for Transport, 2008). Statistics show that trips taken by car accounted for 79% of distance travelled in 2011 in Great Britain (Melbourne, 2012). Road transport makes up a significant portion of the total greenhouse gas emissions created by transportation (Figure 2), and the UK is committed to policies aimed at reducing the amount of carbon emissions released into the atmosphere. The 2008 Climate Change Act commits the UK to reduce greenhouse gas emissions by 80% by the year 2050 compared with 1990 emissions levels (Parliament, 2008). In a recently conducted public opinion survey, 40% of the citizens said that they would be willing to travel less by car in order to reduce carbon emissions, while an equal 40% said they were unwilling to reduce the distance traveled by car (Department for Transport, 2012a). Therefore in order to reduce these emissions, the Department for Transport is investing the promotion of new, 'green' technologies

(such as fuel efficient vehicles) as well as programs to encourage alternative means of transportation, such as walking and cycling.

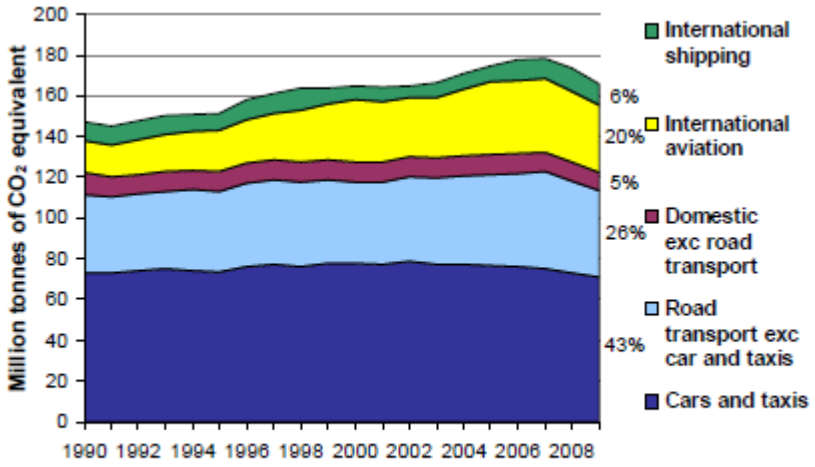


Figure 2: Total greenhouse gas emissions in the UK from 1990-2009 (Department for Transport, 2012d)

One of the key points in Eddington's study was that tailored plans designed to address specific transportation problems within *local* areas is one of the most effective ways to enhance travel networks (Eddington, 2006). These tailored programs can also support alternative methods of transportation and encourage behavioral changes to travel habits by addressing the specific concerns people may have about using alternative transportation. The Department for Transport also has provided funding for travel programs within local boroughs. The Local Sustainable Transport Fund was created to provide money and support for projects involved in promoting sustainable travel opportunities in local communities including Surrey County.

### 2.2 Surrey County: Context and Policies

Surrey County is a political region located just south of London that is composed of eleven boroughs. Surrey is one of the most important economic regions in England, accounting for £26.5 billion in revenues in 2007, largely a result of its proximity to London (Surrey County Council, 2011g). This proximity, however, has also put strain on the local area's transportation system. The SCC estimates that the congestion throughout the entire county costs them £550

million per year (Surrey County Council, 2011a). Nearly one-third of the Motorway 25 (M25) as well as major sections of the M3, M23, and A3, run through Surrey. In Surrey A-roads carry approximately 64% more traffic than the national average. With an estimated population increase of 11% in Surrey County by 2026, the traffic is likely to increase if nothing is done to combat it (Surrey County Council, 2011g). Surrey County is therefore attempting major transformations to improve the local transportation system that will reduce congestion and connect the county to surrounding areas as well as reduce costs to the community.

The Local Sustainable Transport Fund has allocated £3.93 million to Surrey for their new Travel SMART program (Department for Transport, 2012b) to aid the local areas lacking an efficient transportation network and to address other concerns expressed in the Surrey Transport Plan. The plan was mandated by the Transport Act of 2000 (Surrey County Council, 2011b), which required every county to produce a Local Transport Plan (LTP). The purpose of the Transport Plan is to outline the goals and objectives of the local transportation authority, and produce a procedure regarding the methods the county will use to solve important transportation issues (Department for Transport, 2000).

### 2.2.1 Surrey Transport Plan

Surrey County is currently operating under the third version of the Surrey Transport Plan. The objectives of this LTP reflect many of the same concerns that are discussed at the national level. The plan focuses on developing and maintaining a transportation network with a minimal environmental footprint, while still remaining reliable and safe to use. The Surrey Transport Plan was motivated by the Delivering a Sustainable Transport System (DaSTS) strategy drafted by the Department for Transport (Surrey County Council, 2011d). From the DaSTS, the Surrey Transport Plan borrowed the idea of designing a transportation network to promote efficient travel routes and economic development.

The DaSTS focuses primarily on goals aimed at reducing carbon emissions and improving the quality of life for the average citizen while continuing to encourage economic growth. A central idea of the report is that a “stop-start” traffic pattern is a poor transportation model and negatively impacts the three key areas of economy, environment, and quality of life. DaSTS encourages maximizing the potential of the current transportation system rather than constructing new connecting roads (Department for Transport, 2008). The Surrey Transport Plan

takes ideas, such as the desire to limit stop-start traffic patterns, and discusses methods to implement them within the county.

The Surrey Transport Plan also draws on the more recent White Paper from 2011, which focuses on reducing carbon emissions and developing sustainable transportation. The White Paper has inspired the Surrey Council to focus on discouraging vehicle use for short trips, designated as less than five kilometers in length. Thus, the Surrey Transport Plan focuses on encouraging non-automobile travel for short trips, while encouraging residents to use cars or trains for long distance travel (Surrey County Council, 2011d).

The overall goal of the Transport Plan is to create a system that encourages sustainable travel and promotes economic growth (Surrey County Council, 2011d). Travel time reliability is the ultimate goal in many transportation systems, and Surrey's network is no different. A nation-wide study indicated that a majority of citizens (59%) do not believe traffic congestion to be a serious problem, but between one-third and one-half of the population would willingly make trips shorter than two miles using alternative transportation. Additional data from the survey suggests that a major barrier preventing citizens from using cycling as a primary mode of transportation is that almost 70% of non-cyclists consider cycling too dangerous (Department for Transport, 2012a). These responses show why a detailed action plan is necessary. Although many people may consider alternative transportation, such as cycling, issues regarding safety must also be addressed. Plans like the Surrey Transport Plan bring forward a variety of solutions to help tackle the problem of congestion.

In addition to Surrey County Council, major local employers and/or business developers are required to develop transportation plans that describe how they will promote travel plans that match the transportation goals of the county. In Redhill, the East Surrey College and East Surrey Hospital have both developed comprehensive travel plans.

### 2.2.2 East Surrey College Travel Plan

The East Surrey College Travel Plan was first implemented in 2006, and then later updated in 2007 and 2010. Like most travel plans, the East Surrey College Plan has the goal to take cars off the roads, reduce road parking, widen travel choices to destination, promote non-car travel, and lastly, to ensure that everyone who visits the college is aware of this Travel Plan. There are currently 632 staff members and 3,026 part time students traveling to and from the

school throughout the day. In order to limit car traffic, many systems have been set in place to discourage car travel. One of these systems includes a 'minibus' service that provides both staff and students transport between the town center and the college. Combined with this system is a real time information display that provides the current bus schedule along with any potential delays. There is also a fund that reduces the price of public transit for students (East Surrey College, 2010).

Within the past few years, the college has doubled the number of CCTV monitored cycle parking spaces. The college also has built shower and locker facilities in order to encourage more students and staff to cycle to the college. Even with these infrastructure improvements, the college Travel Plan has identified a lack of cycle routes in the area as a limiting factor to the number of people willing to cycle to the college. However, improvements to the cycle routes depend on actions of Surrey County Council, and the college is therefore attempting to convince the county to improve these routes by claiming there is a high potential for cycling in the area.

### 2.2.3 East Surrey Hospital Travel Plan

In the travel plan for Surrey and Sussex Healthcare NHS Trust's East Surrey Hospital, parking and congestion are considered the two major issues of concern. The East Surrey Hospital is one of the largest employers in Surrey's Reigate and Banstead borough, with over 2,800 employees in 2008. The plan is designed to free up more parking spots for both employees and visitors of the hospital by raising awareness of alternative forms of transport available to the public and promoting these forms of travel. The travel plan has identified goals such as reducing the number of people driving to the hospital each day from 2,000 to 1,500 by encouraging people traveling short distances to share rides. The East Surrey Hospital has identified the underutilization of alternative transport as a problem for the hospital, and is currently taking steps to remedy the problem (Surrey and Sussex Healthcare NHS Trust, 2008).

The hospital itself is fairly well connected to other areas by cycle lanes, but their Travel Plan has identified the A23 as a route that is in need of improvement. As far as parking is concerned, Surrey County Council requires a certain number of cycle spaces per employee, and has estimated that the hospital should have 652 spaces. At the hospital, there are 96 bicycle parking spots, most of which are fairly well used. If the hospital wants to encourage more

cycling to the location and utilize the cycle lanes that reach it, more cycle parking needs to be provided (Surrey and Sussex Healthcare NHS Trust, 2008).

### 2.2.4 Similar Programs outside Surrey

Surrey is not the first area to establish and promote changes in travel behavior aimed to reduce road traffic and congestion. In 2004, the government provided £10 million in funding to three "Sustainable Travel Towns" (Darlington, Peterborough, and Worcester) for five-year projects aimed at reducing traffic congestion by improving transport infrastructure and providing alternative travel choices. These three towns created programs to improve infrastructural elements and promote alternative methods of transportation, such as biking and walking. After five years, a comprehensive assessment was conducted which found that all three towns had successfully altered travel behavior by reducing trips made by car and increasing transportation through other modes of travel such as biking and walking (Sloman et al, 2010). These are crucial findings as they indicate that travel programs tailored towards addressing the individual problems of a specific town/community can be highly effective in improving transportation within that local area by utilizing methods such as establishing and addressing the local knowledge and opinions of the community and fixing local infrastructure issues.

## 2.3 Redhill Context and Programs

Traffic congestion is a problem for Redhill, and SCC and Reigate and Banstead Borough Councils (RBBC) are particularly concerned about the impacts on the local economy. The town has historically been an attractive location for businesses and the site of many jobs; Reigate and Redhill, along with the boroughs of Guildford and Woking, provide jobs for 190,800 Surrey residents (Surrey County Council, 2011h). The economies of these three areas have an estimated value of £9.47 billion. Congestion is negatively impacting companies in Redhill, however, and is believed to be deterring new employers from moving to the area (Surrey County Council, 2011h). According to the World Knowledge Competitiveness Index, the southeast region of England has declined in rank, indicating that the region, including Surrey County and Redhill, has not been as productive in the last few years as other economic regions, partially due to the problems in transportation (World Knowledge Competitiveness Index, 2008). Inefficient transportation results in longer shipping times for goods, less predictable commuting times for

employees, and increased frustrations for shoppers and others conducting trips for business or pleasure in the area. With an expansion in housing development and likewise an expected growth in population in and around the Reigate and Redhill area, these issues are expected to grow worse unless preventative measures are taken.

Despite their close proximity, the economies of Redhill and neighboring Reigate are vastly different. The town of Reigate is home to a fairly successful town center as well as many large companies such as Cannon and Esure. Redhill, however, is home to a town center that has been in economic decline in the past few years. This decline may be due to the fact that the roads around the town center are often busy and highly congested, making traveling to the area less favorable. Even with this decline, the town still has potential for economic improvements due to its location on a direct rail line to London. Redhill is currently trying to improve the quality of its town center, as outlined in the Redhill Town Center Area Action Plan 2011 (Surrey County Council, 2011i). This action plan proposed new layouts for major intersections within the town center to better accommodate pedestrians and cyclists as well as drivers. Decreased automobile congestion along with increased cycling and walking options may encourage more people to travel to and utilize the town center.

### 2.3.1 Automobile Transportation

Surrey County has a 19% higher automobile ownership rate than the rest of the United Kingdom at 0.59 vehicles per person. At the same time, 43% of the Redhill workforce travels 5 kilometers or less for a work-related trip (Surrey County Council, 2011g). This implies that despite the goals outlined in the Surrey Transport Plan, significant numbers of short trips (less than five kilometers) are made using motor vehicles. The fact that these shorter trips are not made using public transportation or alternative means of transit is a key focus point to this project, as we are aiming to influence a change in travel behavior change for these types of shorter trips.

While the transportation system throughout the United Kingdom has been experiencing a consistent increase in the amount of traffic on its roads for the past two decades, the traffic levels in Surrey have been increasing at a slower rate than the rest of the nation during the past seven years. Nonetheless, there are still an increasing number of vehicles using the road network. Within the last decade, the growth rate in numbers of vehicles in Surrey has peaked at about 1%

per year (Surrey County Council, 2009). Decreasing the number of automobiles on the road by creating awareness of more preferable options will help to enhance both the speed and quality of the publics' commute and increase the appeal of the local area.

### 2.3.2 Carbon Emissions

Another problem that is a direct result from increased congestion is the increased carbon emissions created by the large number of idling vehicle engines on the roadway. Idling and slow moving motor vehicles produce extra greenhouse gas emissions and are an inefficient use of energy resources. A borough-wide study conducted by the Reigate and Banstead Borough Council suggests that the majority of commuters drive to work alone every day rather than use alternative methods such as public transit, cycling, or walking (Reigate & Banstead Borough Council, 2010). The reliance on motor vehicle travel is exacerbated by the geography of Redhill, as the train station is isolated from the town center and the bus station is located next to the busy A23, which discourages pedestrians and cyclists (Surrey County Council, 2011b).

### 2.3.3 Alternative Methods of Transportation

Research has been conducted to determine how to encourage travelers to use non-car methods of transportation. A study regarding social attitudes in 2011 found that on average, those surveyed reported taking four short journeys that were less than two miles in a typical week. Forty-two percent of these people agreed that they could have walked to those destinations as easily as they had driven. Also, 38% said they could have used a bicycle (assuming they had a bike) and one-third could have made the journey by taking a bus (Department for Transport, 2012a).

According to the 2001 United Kingdom Census data (Census Village Profile, 2001), almost 59% of Redhill residents complete the main portion of their commute by car, while only 2% cycle to work and 13% choose to walk. Almost 44% of the residents are between the ages of 18 and 44, and only 6.1% of the population has a health condition designated as "not good." These numbers indicate that just under half the population of the town is within an appropriate age range for cycling or walking, and that the residents are also healthy enough to engage in these alternative methods of travel. Redhill East is also the only ward within Reigate and Banstead to be politically affiliated with the Green Party on the Reigate and Banstead Borough

Council, suggesting that efforts to reduce carbon emissions should receive public support. In order to promote alternative methods of transportation, the focus should be on the members of the population that are physically capable and motivated to reduce the carbon emissions caused by traffic congestion.

One mode of transport with a potential for great returns is the local bus system. Key areas for improvement are bus punctuality and journey time reliability (Surrey County Council, 2011c). People are more likely to use a punctual and reliable bus system, thus taking cars off the road, reducing congestion, and improving overall efficiency. The problem remains, however, of encouraging people to use public transport, especially buses, which are viewed by many with suspicion if not disdain. Busses are generally seen as an undesirable mode of transportation due to poor routes and social stigma. Part of the challenge of rejuvenating the bus system is overcoming its unreliable and unpleasant reputation. Adding to its reputation, the current bus system can be confusing, as there are often no stop announcements made on the bus to assist travelers.

While a variety of methods, such as improving public transport and providing cycle lanes, can encourage people to use alternative modes of transit, it is often necessary to use other means as 'sticks' to force a shift in public behavior. Thus, in 2003, the Greater London Area (GLA) introduced a congestion charge in central London to reduce traffic congestion during peak times of the day and encourage people to use alternatives to driving cars. The system used cameras and ANPR (Automatic Number Plate Recognition) to identify vehicles entering a Congested Zone (CZ). Private cars entering the CZ are charged £10 per trip. The system has been very effective and the number of private cars, trucks, and vans in the heavily congested zones declined by 33% between 2002 and 2003. This percentage equates to a reduction of roughly 70,000 trips each year. A similar type of system could have profound impact on the center of Redhill, which is comprised mostly of busy one-way roads.

With the decline in motor-vehicle traffic as well as the large increase in other systems of transit, the overall traffic in central London fell drastically. A plan that consisted of a congestion charge for Redhill's center, combined with the launch of a bicycle hire system for the area, could be a swift and efficient way to tackle the area's traffic problem.

### 2.3.4 Other Programs and Incentives

There are many different initiatives that can be implemented to encourage an increased use of non-car transport. Many other locations throughout England have tried different methods, with varying degrees of success.

#### 2.3.4.1 Nottingham Parking Levy

A few cities in the UK have implemented parking levies as a method to reduce private vehicle use. A parking levy is a tax on private businesses based on the number of parking spaces the business provides. The goal of these levies is to encourage the company to remove parking spaces, which will reduce the number of visitors and employees that arrive to the business by private vehicle. A study was published in 2005 called "Levying Charges on Private Parking: Lessons from Existing Practice" by Loughborough University (Enoch, and Ison, 2005). The purpose of this study was to investigate the impact this type of legislation would have on local business. This study found that the most effective parking levies work very closely with the local businesses and ensure that the funding raised by the tax go directly to improving public transportation.

There is a major concern for this type of legislation as it creates the possibility of larger companies relocating in order to avoid paying the extra tax (Enoch, 2005). Nottingham is one of the first cities in England to implement a parking levy. All of the proceeds from this levy go towards improving travel options from the Nottingham Rail Station to local businesses, referred to as The Hub Project (Nottingham City Council, 2012b). Starting 1 April 2013, the parking levy will cost each business £334 per parking space for the year. Each business is allotted ten parking spaces before the tax is applied (Nottingham City Council, 2012a).

Nottingham City Council conducted research into the economic effect their levy will have on the income of local businesses. They found that at the current tax rates, on average, the tax took less than 1% of a company's revenue (Nottingham City Council, 2007). While the Nottingham City Council views this as an appropriate tax, there are some who disagree. Games Warehouse is a company that has recently moved from Nottingham, citing the parking levy as a primary reason for the relocation (BBC, 2012). The parking levy is still a controversial idea, but it may still serve as a base for new effective legislation.

#### 2.3.4.2 Barclays Cycle Hire

The Barclays Cycle Hire is a program that allows people to rent bicycles and was launched by Transport for London in July of 2010. There are over 350 docking stations where over 5,000 bicycles are available to the public. Anyone renting one of the bicycles is allowed to return the bicycle to any of the other docks in London, allowing one way trips to be made. Originally at these stations, only people who had registered for a membership in the program were allowed to use the bicycles. Interest in the program was high from the start, with over 12,000 people registering memberships before the programs launch. After a few months, however, the system changed, making membership not required to use a bicycle; only a credit or debit card was necessary to use a bike. This shift of membership requirements made the program more accessible to the casual user. There was an increase in Barclays Cycle Hire trips made after the mandatory registration was lifted. This spike in rentals shows that the easier it is to rent a bicycle, the more people chose that option for their journeys (Lathia, Ahmed, and Capra, 2012).

#### 2.3.4.3 Brompton Dock

Another initiative used to increase the number of people cycling in many areas is the idea of establishing more bicycle hire stations. The bicycle hire company Brompton Dock, although relatively new, has been expanding quickly throughout England. There are ten Brompton Docks all-together, with four locations within London. The great demand for more bicycle hire locations has pushed the company to plan to expand to 25 locations by the summer of 2013. Brompton Dock utilizes the new Brompton Bicycle, a bicycle that can be collapsed to a fraction of its original size, as shown in Figure 3. This collapsible feature allows commuters to travel on a train with the bicycle at any time, and avoid the restricted hours when full size bicycles are not allowed on the train. The smaller size of the bicycle also means that bicycles can be stored in a smaller area. A Brompton Dock with 40 bicycles only requires the space equivalent to one car parking space (Brompton Dock).

Figure 3: Brompton Bike both full sized, and collapsed

In order to use the bicycles at a Brompton Dock, one must first register on their website to become a member. Membership costs £45 a year, and to use a bicycle costs £2.50 a day. In order to take a bicycle out for the day, the member first sends a text to Brompton Dock with the dock they are going to, and when they want to take the bicycle out. Brompton Dock will then text them back with a locker number and access code to get their bicycle. This automated system allows the member to reserve a spot to ensure that a bicycle will be available for them when they need it. An increased number of Brompton Docks would make it easier for people to choose bicycling as their mode of transport in the surrounding area (Brompton Dock).

### 2.3.5 Travel SMART Program

In response to the problems identified in the Surrey Transport plan and highlighted above, the Surrey County Council has initiated the Travel SMART program. This program is concentrating in three Surrey towns that play a vital role in the county's economy, Guildford, Woking, and Redhill/Reigate, and has a proposed cost to benefit ratio of 1:3.45 (Surrey County Council, 2011h). The Travel SMART program has identified key issues that all three towns in the program face pertaining to local congestion and economic growth.

#### 2.3.5.1 Congestion Problems

The main focus of the Travel SMART program in Redhill and Reigate is to decrease congestion in the area. Each day, an estimated 33,200 residents leave the borough and 27,200 enter, with some key routes in Redhill having a traffic flow of 15,900 – 26,700 vehicles per day. Current estimates of the traffic situation show the problem worsening in years to come if nothing is done to counter it. This congestion puts a strain on the local economy, with 72% of local businesses identifying "unreliable journey times" as a major problem to their business. An increase in efficient alternatives to car travel could alleviate the congestion problems (Surrey County Council, 2011i).

Many of the specific issues that prevent widespread alternative transport in the Redhill/Reigate area come from breaks in the travel routes that prevent travel between certain areas. A major employer in the area has identified poor train and bus connections between Redhill and Reigate as a serious issue for his employees. The Travel SMART Program has identified connecting Redhill and Reigate, as well as connecting the Redhill train and bus stations as priorities (Surrey County Council, 2011i).

#### 2.3.5.2 Cycling and Walking Alternatives

The second issue that the Travel SMART program has identified in the three towns is the many barriers to economic growth. Not only are the roads in Guildford, Woking, and Redhill/Reigate extremely congested, but the towns are not suitable for walking and bicycling to many of the local destinations. This issue of inadequate walking and cycling infrastructure is addressed more specifically on a town by town basis (Surrey County Council, 2011h).

The Cycle Woking project was a cycling initiative focused on similar goals as the Travel SMART program. Woking worked to increase the number of people bicycling and walking as well as worked to connect people to places in the town. In order to accomplish these goals, 26.3 kilometers of new bike paths, as well as five new cycle crossings, and 1155 new bicycle parking spaces were constructed in the town. The result of this three year project, spanning from 2008 to 2011, was as increase cycling by between 75% and 213% and an increase in walking by an estimated 89%. Previous projects focusing on similar concerns show that by increasing awareness and infrastructure in a community, a dramatic increase in alternative transport can be achieved (Cycle Woking End of Programme Report, 2011).

The London Cycle Network Plus is another program that identified similar ways to promote cycling. Between 2009 and 2010, the program added 38 km of cycle paths to bring the total distance of paths in London to 683 km, as shown in Figure 4. With a budget of £14.5 million, a total of 273 individual cycle lanes, cycle crossings, as well as sign improvements were made. Very specific routes in each borough were identified as high priority, before the improvements were made. This project was an overall success, providing the people of London with a more cohesive and developed bicycle path network (London Cycle Network Plus, 2011).


Figure 4: Cycle paths in the greater London area (London Cycle Network Plus, 2011)

One of the primary goals of the Travel SMART program is to persuade citizens to use alternate methods of transportation for short trips. A short trip is defined in the Travel SMART Bid Proposal as two miles or less for walking, or five miles or less for cycling (Surrey County Council, 2011g). In order to encourage walking or cycling for these types of trips, Surrey plans to renovate existing bike and pedestrian pathways, as well as construct new connections within the town.

One of the key issues impacting pedestrian and cycle travel in Redhill is the geographic location of the train station with respect to the town center. While most train stations provide convenient access to the town center, the congested A23 has a two-lane roundabout that splits the town center of Redhill from the Redhill Train Station, limiting access to non-vehicles. This program intends to renovate and widen the existing pathway to allow for more convenient access for pedestrians and cyclists (Surrey County Council, 2011f).

Another issue limiting alternative transport in the area is the lack of an acceptable infrastructure in Redhill and Reigate. The lack of safe cycling routes in Reigate is a major factor considering that only 3% of work commutes, and only 5% of shopping or leisure trips are done via the bicycle. Lack of proper infrastructure can often times become a deterrent to using alternative transport, such as in the case of the Redhill train station where the bicycle railing is at its capacity, and discourages people from biking to the train station (Surrey County Council, 2011i).

The Travel SMART plan has listed the specific routes that need improvement, as shown in Figure 5 and listed below:

- Pedestrian crossing between the train station and the bus station
- Paths from the Redhill town center to:
    - The housing developments in Watercolour and Park 25
    - Merstham
    - East Surrey Hospital
    - Horley and Gatwick
    - Cromwell Road area

The Travel SMART program has also identified the following as priorities:

- Bicycle hire station at Redhill rail station
- Bus route improvements to important locations such as the town center, employment locations, and other important destinations in Redhill and Reigate
- Increased availability of information about travel planning
    - Interactive online mapping of journeys as seen in Figure 6
    - Cycle training

- Travel planning training
- Community hub

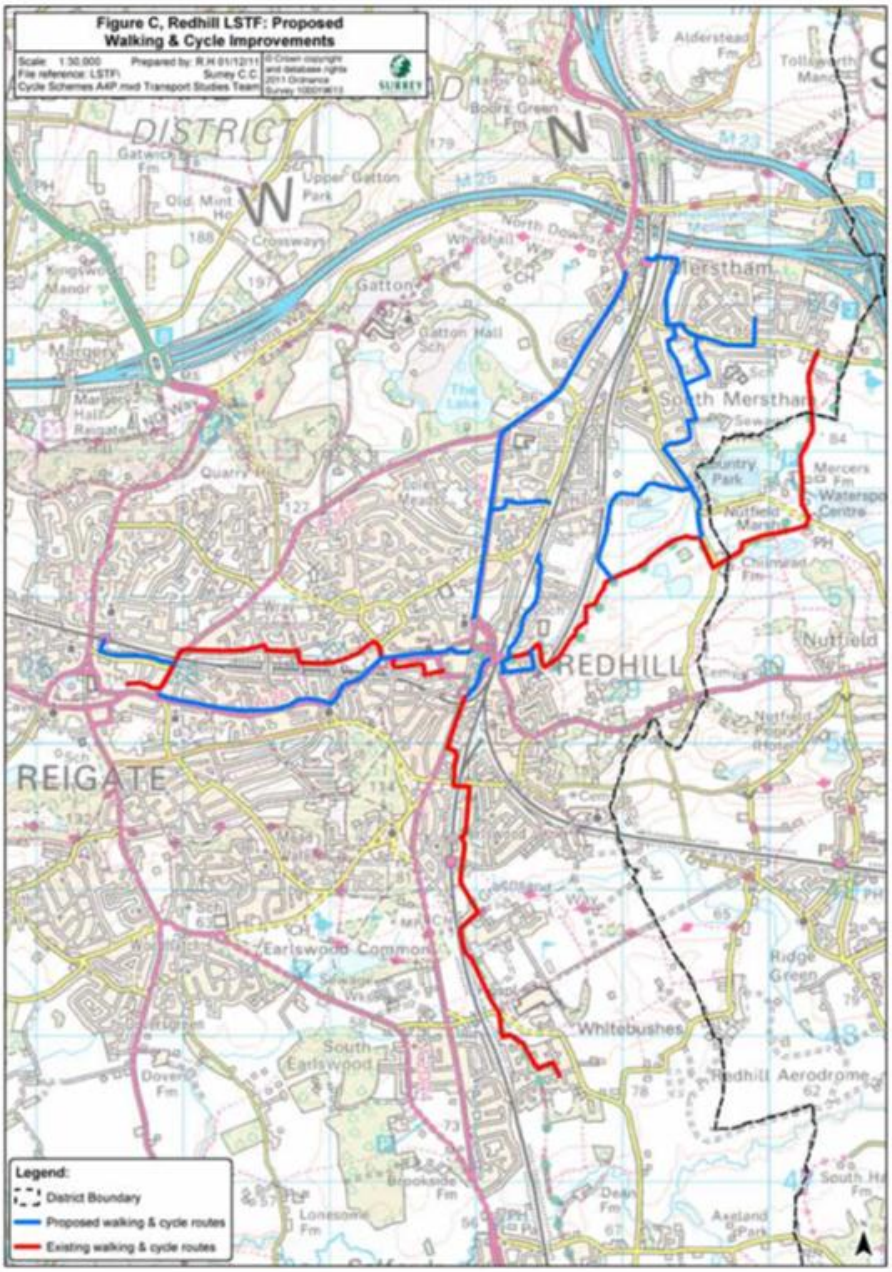


Figure 5: Proposed bike route improvements in Redhill and Reigate (Travel SMART Strategic Plan 2)

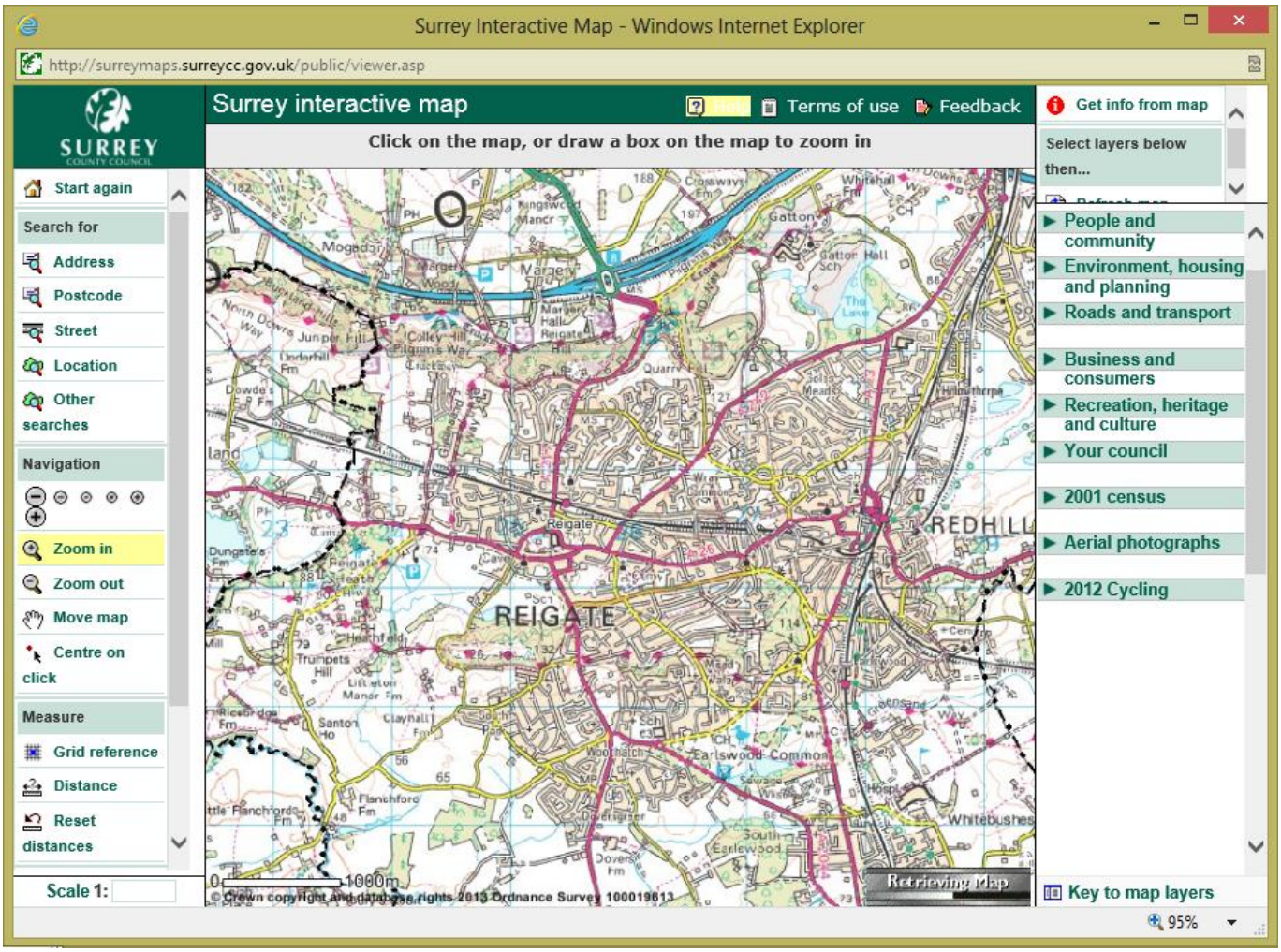


Figure 6: Interactive travel planning map available on the Surrey County Council website

A second major goal, as outlined in Table 1 for the Travel SMART program, is to improve the existing bus routes within the town to allow for more efficient and convenient travel. The intent is to invest in more physical bus stops and equipment (Surrey County Council, 2011e). The proposed equipment will bring technological improvements, as well as infrastructure improvements, such as a slightly raised boarding platform to allow wheelchair accessibility. Technological improvements include electronics that trigger traffic signals to green when a late bus is approaching, enabling it to maintain reliable travel times.

| Element | Solution | Outputs | Impact | Monetised Benefit (2011 prices) | Further Information |
|---|---|---|---|---|---|
| 3 – Redhill | Walking and cycling measures | Increased daily cycle trips | Increase of 18% or 72 cycle trips per day. | *£19,440 per annum. | Based on Cycle Woking results and observed cycle counters. Assumed 1 cyclist = 2 trips. Monetised benefit assumed £540 per cyclist based on research by SQW Consulting for Cycling England. |
| | | Reduced vehicle flow | Reduction of 1% equivalent to 164 vehicles per main road. | Fuel Vehicle Operating Costs (VOC) saving of £73,010 per annum per main road. | Based on Annual Average Daily Flow (AADT) recorded prior to and after Cycle Woking and the level of expenditure. Monetised benefit uses information in TAG unit 3.5.6 (draft). |
| | | Carbon savings | Reduction of 0.12 thousand tonnes of $CO_2$ per annum per main route. | Carbon saving of £6,476 per main route per annum. | Based on the above figures calculated using DfT carbon tool. |
| | | Absenteeism saving | Reduction of 47 days absent from the workplace. | Included in the benefit calculation *asterisked above. | Based on an increase of 72 cycle trips on main routes, using Bristol City Council essential evidence No. 13 "Cycling Reduces Absenteeism at the Workplace". |
| | | Health benefits | Physical activity reduces the risk of ill health and premature death. | Included in the benefit calculation *asterisked above. | NHS & Bristol City Council (2010) "Value for money: and economic assessment of investment in walking and cycling". |
| | Bus Corridor Improvements | Increased bus patronage | Increase of 76,950 bus passenger journeys per annum. | - | Existing patronage on affected bus routes, average Annual Average Daily Flow (AADT), together with Aecom (2009) "The role of soft measures in influencing patronage growth and modal split in the bus market in England: Final Report, DfT". Monetised benefit uses information in TAG unit 3.5.6 (draft). |
| | | Reduced vehicle flow | Reduction of 112 vehicle trips per day and per main road across all affected bus routes. | Fuel Vehicle Operating Costs (VOC) saving of £49,821 per annum per main route. | |
| | | Carbon savings | Reduction of 0.08 thousand tonnes of $CO_2$ per annum across all affected bus routes. | Carbon saving of £4,419 per annum per main route. | Based on the above figures calculated using DfT carbon tool. |

Table 1: Summary of Redhill's proposed solutions to their traffic problems. (SCC, 2011g)

## 2.4 Conclusion

The Travel SMART program obtained enough funding to begin making changes to the Redhill transportation network. However, it is important that the stakeholders, such as commuters using the transportation network in Redhill, are able to offer their perspective on the congestion problems. As everyday users of the transportation system, it is important that their concerns are properly received and considered. The goal of this project is to gather information from residents and businesses that are directly affected by local transportation. The feedback provided by these key stakeholders will offer valuable insight to provide the Travel SMART program with specific areas to focus its improvement efforts.

# 3. Methodology

The goal of our project is to identify solutions and services that Travel SMART hubs can provide for non-car transport within the community of Redhill. In order to achieve this goal, we laid out four main objectives. We (1) clarified the proposals for a Travel SMART hub in Redhill by conducting desk-based research as well as interviewed Surrey County Council (SCC) and Reigate and Banstead Borough Council (RBBC) staff members; (2) evaluated issues of concern regarding transportation by commuters and other stakeholders by conducting various surveys and interviews; (3) conducted safe-route studies and street audits in order to verify any concerns on existing routes that may have been raised during the stakeholder surveys, and (4) interviewed key informants who have worked on similar case studies in order to identify the successes and failures from these projects. In pinpointing both solutions for altering travel behavior and the potential challenges they may pose, we identified a range of services that the community of Redhill can benefit from, such as cycle hire and bike maintenance.

## 3.1 Objective 1: Clarified current plans and proposals for the Travel SMART hub in Redhill

In order to clarify our understanding of the nature of current transportation concerns, as well as to better understand the current proposals in Redhill, we built on the background research we presented in our literature review by conducting additional desk-based research supplemented by interviews with key staff members of the SCC and RBBC.

### 3.1.1 Desk-Based Research

We conducted desk-based research in order to further our background knowledge of Redhill's transportation situation by investigating case studies as well as research on local files and papers that were only available to us in the UK. To discover these documents, we requested information from our sponsor, and we discussed any potential documents with those we interviewed, as they provided insight to even more reports. By examining these documents describing government policies, travel plan reviews, and similar projects involving local transportation, we identified a range of possible solutions that could be implemented within the community and defined the benefits that these solutions may present. In researching how others are trying to solve similar problems, we analyzed how these projects succeeded, along with

problems that could be improved upon within these projects. This was done by determining the methods employed to influence travel behavior and whether or not these methods appeared to be successful both for short-term and long-term change.

### 3.1.2 Interviews with SCC and RBBC Staff

In addition to our sponsor liaison, we interviewed other pertinent staff in SCC and RBBC. Interviewing these individuals provided a perspective from people actively working on local transportation problems along with a better understanding of the approach the county and borough are considering to apply to this problem.

The interviews primarily focused on both the Borough's and SCC's current or proposed actions as well as the reasons they came to those conclusions. As we wanted to learn a variety of information from our interviews, the questions asked were open-ended. These questions were formulated based on concerns pertaining to congestion and current transportation habits and how the borough and county councils were attempting to address said concerns. By interviewing officials involved with this project, we attempted to gain a greater understanding of the intentions and goals of the government. There are many reasons why one might want to influence transportation and travel behavior whether it be for economic or environmental reasons. Therefore the aim of these interviews was to determine specific goals the government is trying to achieve and what the present motivation is for achieving these goals. As local government officials, the council officers provided extensive knowledge of the borough along with their own plans and ideas for addressing the problems of traffic and congestion. Some specific questions for SCC councilors included discussion on the Travel SMART program. The SCC officers provided key insight about transportation and congestion from their perspective as members of a larger organization in charge of the program. We identified potential interviewees in consultation with our sponsor liaison. Interviews were conducted either in person of through e-mail. Notes on interviewee's responses were recorded by hand and analyzed after the interview.

Some example questions included:

- What is the problem that the program hopes to address?
- What solutions have been proposed to address the problem?

- Are there any foreseen problems with the solution?
- Have there been similar programs implemented in the past?

### 3.2 Objective 2: Evaluate stakeholder perspectives

Identifying the concerns and needs of the citizens who utilize the transportation system is an integral step when promoting alternative methods of travel. The local residents and employees are the people who use this transportation network on a daily basis and can supply valuable insight about the congestion problems and potential solutions in Redhill. We drew on this local knowledge by performing surveys and interviews with specific groups or persons likely to be affected by the transportation system.

#### 3.2.1 Survey specific groups in Redhill

We identified three locations that would provide relevant feedback on the current transportation network. We originally planned to conduct surveys at the Redhill Rail Station, East Surrey College, and East Surrey Hospital. However, after speaking with our sponsor, the survey locations were limited to Redhill Rail Station, and previous survey results from the East Surrey College and East Surrey Hospital were consulted. It was brought to our attention by our sponsor that surveys similar to ours had been recently conducted at those locations. Because this data has already been recently collected, we decided that it would be more effective to use the results instead of attempting to re-collect the data ourselves.

These three main locations provide insight on travel behavior, as they are the destination of many local trips within Redhill. The Redhill Rail Station is the major point of departure for those commuting to London and elsewhere. The East Surrey Hospital is one of the largest employers in Redhill and many of its employees commute into Redhill using the local transportation network. East Surrey College enrolls thousands of part time students that commute to the school in Redhill at various times during the day. Commuters, employees, and students in Redhill frequently travel to these locations, often during peak hours of travel. Therefore, obtaining travel information through surveys and publications from these three locations will allow the project to focus on influencing travel behavior and reducing congestion in and around busy locations within Redhill.

#### 3.2.1.1 Redhill Train Station

Appendix B presents the survey distributed to commuters at the Redhill Rail Station. The goal of this survey was to gather the opinions of commuters who often contribute to the local congestion in Redhill. The final goal was to determine why a typical resident of Redhill or Reigate would choose to drive to their destination rather than walk, cycle, or use public transport. We conducted these surveys on the station platform with permission from Southern Rail. We decided that surveying the commuters on the platform would be the most effective location for obtaining information because that is where the commuters are in less rushed as they are simply waiting for the train to arrive. The commuters were approached randomly at the train station, and consent was obtained by introducing ourselves as college students from the United States conducting research with the aid of RBBC. We kept the survey concise to ensure that the entire survey could be completed before the next train arrived. The answers were predominantly written down by the person being surveyed and compiled later in Excel in order to analyze the data for any possible trends. The open-ended questions at the end of the survey were categorized based on common responses.

#### 3.2.1.2 Redhill Cycle Survey

A second survey was designed to capture the ideas and suggestions of those who already cycle in Redhill. This survey was conducted both online and in person at Redhill Station. The goal of the survey was to identify the needs and concerns of those who already use the current cycle network in Redhill. This included the routes each cyclist takes on their commute, how far they commute, and their comments on the quality of the route.

The online survey was created using the website SurveyMonkey, as seen in Appendix C. SurveyMonkey provides convenient analysis tools, allowing for large amounts of data to be easily interpreted. Tags were designed to attach to the bikes parked at the Redhill Station and contained the Travel SMART in Redhill logo, as well as a brief introduction asking the biker to complete our survey. The URL of the survey was displayed at the bottom of the tag in bold, as seen in Figure 7. After a low initial response rate, a second cycle tag (Figure 8) was distributed in the same way as the first tag.


Figure 7: Original cycle tag design.


Figure 8: Revised cycle tag design.

Figure 9 shows the back of these tags, which includes a link to our Travel SMART blog so that the cyclists could offer feedback. This blog, as seen in Figure 10, was created in an attempt to encourage an active, online discussion about travel in Redhill with interested members of the public. After the tags were designed, we went to the Redhill train station at the end of the morning rush hour to attach the tags to each bike stationed in the bike storage facilities.

Figure 9: Backside of revised cycle tag design.

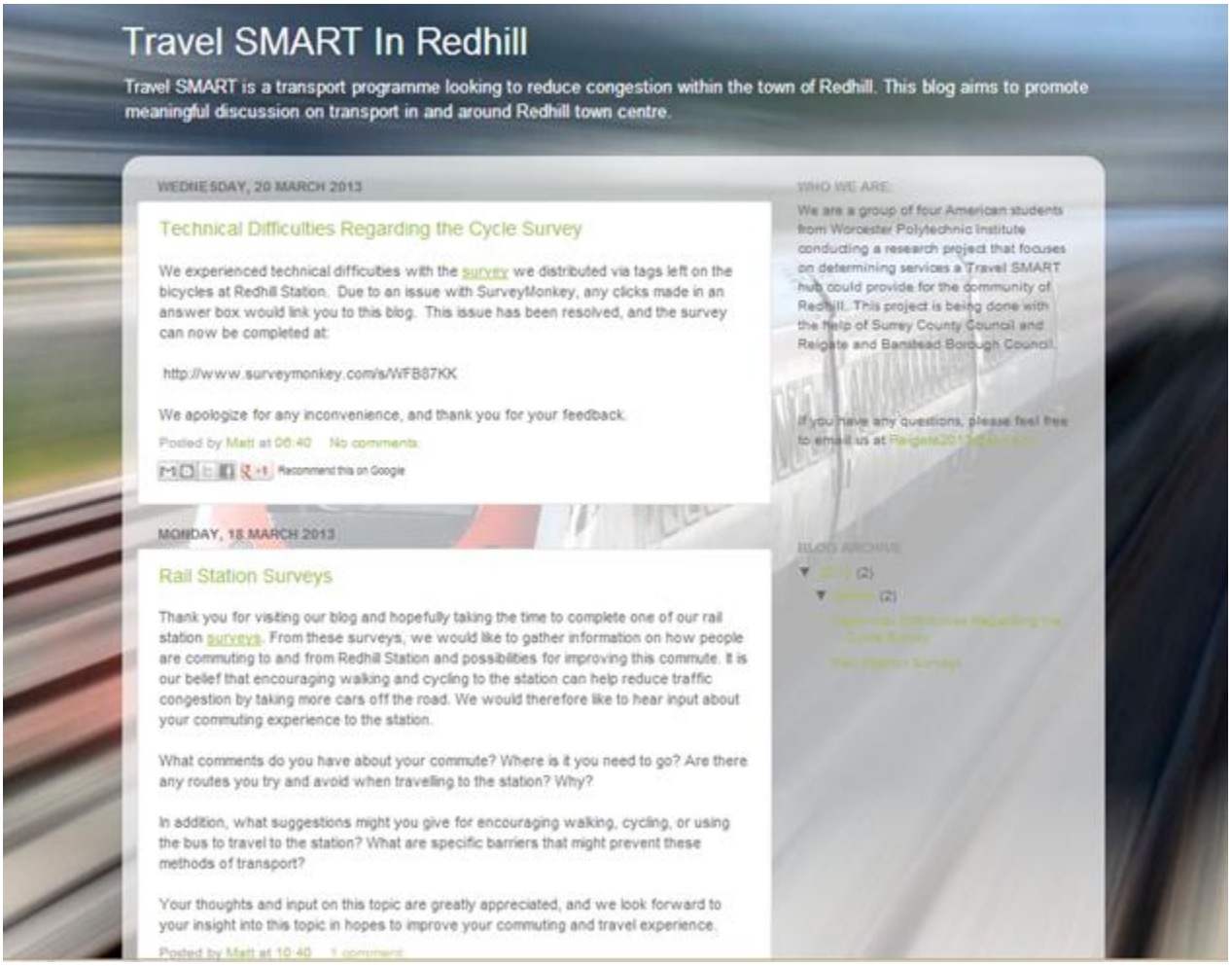

Figure 10: Redhill Transport blog

After the second round of survey tags were distributed, copies of the survey were printed and cyclists were surveyed in person at the cycle racks. These were conducted in a similar manner to the platform surveys outlined in section 3.2.1.1 above, except the surveys were administered at the cycle racks and not on the station platform. The goal of the in-person survey was to gather more data on the cyclists, as there was a low response rate for the online survey. The results for the in-person surveys were combined with the results of the online surveys, and analyzed the same way as the platform surveys.

#### 3.2.1.3 East Surrey Hospital and East Surrey College

We had originally developed two separate travel surveys for East Surrey Hospital and East Surrey College. However both locations have recently released travel plans that contain up to date information on the communities' travel habits. Therefore we analyzed this previously obtained information in order to determine how people are traveling to these locations and how a Travel SMART hub might influence travel behavior in these areas.

### 3.3 Objective 3: Perform a Safe-Routes Study

People continuing to travel by a personal vehicle rather than alternative modes may believe that there is a problem with the existing transportation infrastructure. Using the results from the survey, we performed a study on specific cycle routes connecting Redhill and Reigate. The study involved an audit of the existing infrastructure in order to identify any potential barriers to non-car use as well as proposing specific solutions to overcome these barriers.

### 3.3.1 Survey the Existing Infrastructure

To help us identify problems with the existing cycle network, we looked back at our surveys and used the responses from bike-commuters to see the problems that they felt were the most degrading to the route. Using the suggestions and a map, we examined the road network and infrastructure. We collected data on bike and walking paths and conducted an assessment of the quality of the realm. We looked for anything that was not aesthetically pleasing or that negatively impacted the quality or functionality of the path. For example, potholes, graffiti, encroaching vegetation, lack of benches, or excessive amounts of trash could all add to the

problem. We took pictures of anything obstructing the path, made notes on problems we noticed, and marked maps where these problem areas are.

In addition to the potential problems with the road network and infrastructure, we also used information from the bike-commuter surveys to discover what paths people are using to cycle to the rail station. Since the quality of the routes influence travel behavior, understanding what the commuters dislike about the current routes allows for more focused improvement efforts. The goal of the safe routes study was to allow us to experience the infrastructure first hand to make realistic recommendations.

### 3.4 Objective 4: Identify Lessons Learned from Case Studies

We also looked into similar projects outside of Redhill and studied how those addressed the problem of congestion. By looking into the success of a particular approach and the lasting impacts, we were able to see which methods were most successful by a given project's final results. If the given program successfully decreased the amount of private vehicles on the road, there is a possibility that a similar approach would be successful in Reigate and Redhill.

#### 3.4.1 Interview Officials Who Have Worked on Analogous Programs

We conducted interviews with people who have worked on projects that sought to increase alternative transport use in other areas of the county. Interviews were the best method of receiving information from these people because the open-ended questions of interviews allow us to get fully developed answers. These interviews were semi-structured with the purpose of obtaining information regarding what was done, what went well, and what could be improved. The first interviews were with SCC and RBBC members that are involved in the Travel SMART program, as identified by our sponsor. Based on the initial responses, we identified colleagues outside the local government to contact for more interviews.

The questions covered the following topics, although different questions were asked depending on who we were interviewing:

- What specifically was done for their project?
- What were the most useful/productive parts and ideas of their project?
- What were the final results?

- What could have been done to improve their project?

At the start of the interview, we introduced our project and its purpose. We asked for consent to record any responses to be used later in our report, and allowed anyone we directly quoted to read over the relevant sections before publishing.

# 4. Results

The goal of this project was to determine specific improvements that a Travel SMART hub could provide for the community of Redhill in order to reduce congestion and promote economic growth. To accomplish this, we decided to focus in on the Redhill Rail Station, due to its location within the town center and its being a frequent travel location for daily commuters. We collected information from commuters and bikers at Redhill station about transportation via various surveys, conducted safe-route audits in order to identify problems and solutions to Redhill's travel network infrastructure, and interviewed individuals knowledgeable in cycling and transportation.

## 4.1 Surveys at the Redhill Rail Station

From the platform surveys we gathered a variety of information related to how the individual got to the station and what infrastructural changes could be made to persuade them to bike to the station. Overall, we received 102 responses from the commuters. Some interesting trends became apparent from the surveys, with a surprisingly high number of people who walked to the station, and very few who cycled, as seen in Figure 11.

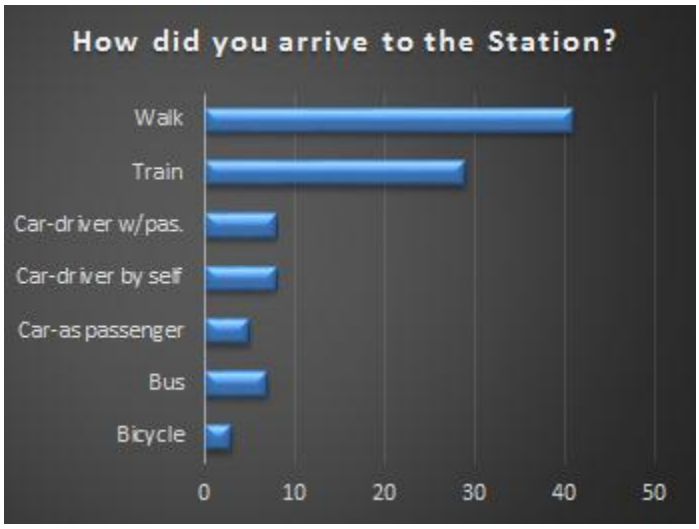


Figure 11: Graph of the means by which people traveled to the Redhill Station

This survey also gathered suggestions from the commuters regarding potential improvements to the current cycling network. Each respondent was allowed to tick three different boxes for these suggested improvements. "Improved cycle routes from where you live"

was the most popular suggestion, with over 53 percent of those who answered the question selected this choice as shown in Figure 12.


Figure 12: Graph showing the suggested improvements gathered from the platform survey

The results of the survey were then organized to identify which type of respondent selected certain suggestions. The results were categorized by cycle ownership as well as transportation method of choice. The goal was to isolate the suggestions to understand what improvements were chosen by those who commute via car. The four suggestions that were analyzed were Securable Cycle Lockers, Changing Facilities, Cycle Hire, and Cycle Training services. There were 17 total respondents who suggested Securable Cycle Lockers, seven of them cycle owners, and ten of them non-cycle owners. Of these 17, only one of them currently drives a car, and one uses a car as a passenger. The Changing Rooms option was selected by 12 respondents, six of which were cycle owners and six did not own a cycle. Of these 12, only two of them currently commute using a car. There were ten responses from non-cycle owners that suggested Cycle Hire services to be made available at Redhill Station. Of these ten responses, seven of them already walk to the station. Only four non-cycle owners indicated an interest in Cycle Training, all of which currently use public transportation to travel to the Rail Station. From all of the respondents who arrive to the station using a car, 33% of them either offered no suggestions for improvements or said that there was nothing that could be done to

convince them to cycle. The only consistent suggestion selected by drivers was Improved Cycle Lanes.

### 4.2 Cycle Survey

The cycle survey was conducted both in person and online following the procedure outlined in section 3.2.1.2 of the Methodology. These surveys returned a combined total of 25 responses. Of the cyclists who responded, 24 out of the 26 were male, 21 out of 26 were between the ages of 31 and 50, and 62.5% of surveyed cyclists identified exercise benefits as a main motivation for cycling. Other popular cycle motivations were to avoid car traffic (42%) and the low relative cost of cycling when compared with other modes of transportation (46%). The results are depicted graphically in Figure 13.

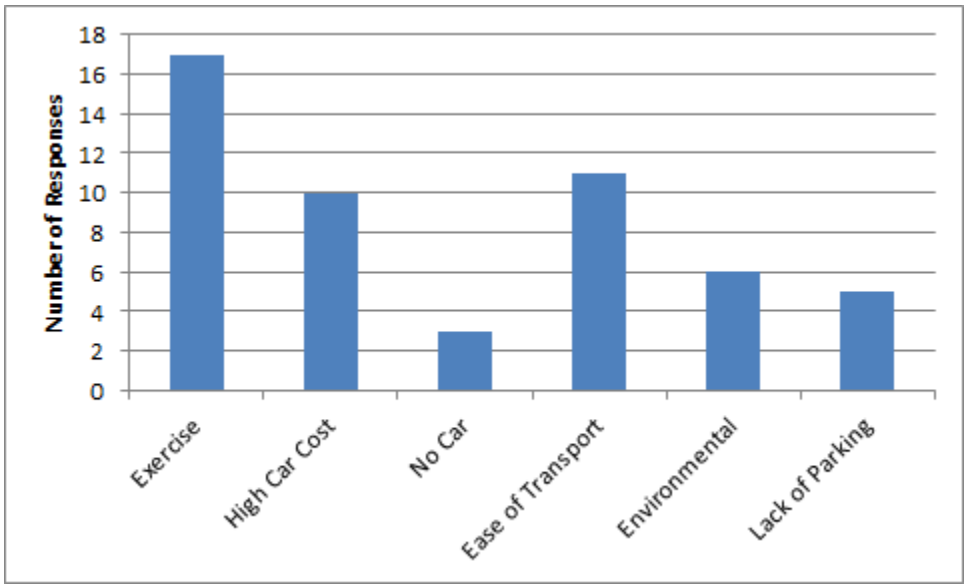


Figure 13: Graphical representation of responses to the question "What is your main motivation for cycling to the rail station?"

The survey also gathered opinions on possible ways to improve the current cycling network, and the results are displayed in Figure 14. Judging from the responses to this question, the most common concern for cyclists is improvements to the current cycling network. Nearly 73% of the cyclists surveyed indicated that an improved cycle route from where they live to the Redhill Rail Station is one of their top three concerns. The next most prominent concern was a

desire for more covered cycle parking at Redhill Station (46%). Another major request was for repair and maintenance services located at the Rail Station (19%).

Also important to note are the ideas in the survey that received very little support. Of all the respondents, only 4% (1 response) indicated that cycle hire, secured cycle lockers, shower facilities at the rail station, and cycle training were improvements that they would want to see added to the current cycle system. The lack of support for cycle hire was anticipated due to the fact that everybody cycling to the Rail Station already owns a personal bicycle and thus cycle hire services located at the station would be a useless addition for them. Cycle training is similarly unpopular among cyclists, possibly because residents who already cycle regularly do not need cycle training. These two services were marginally more popular in the Rail Station Survey, as seen in section 4.1.

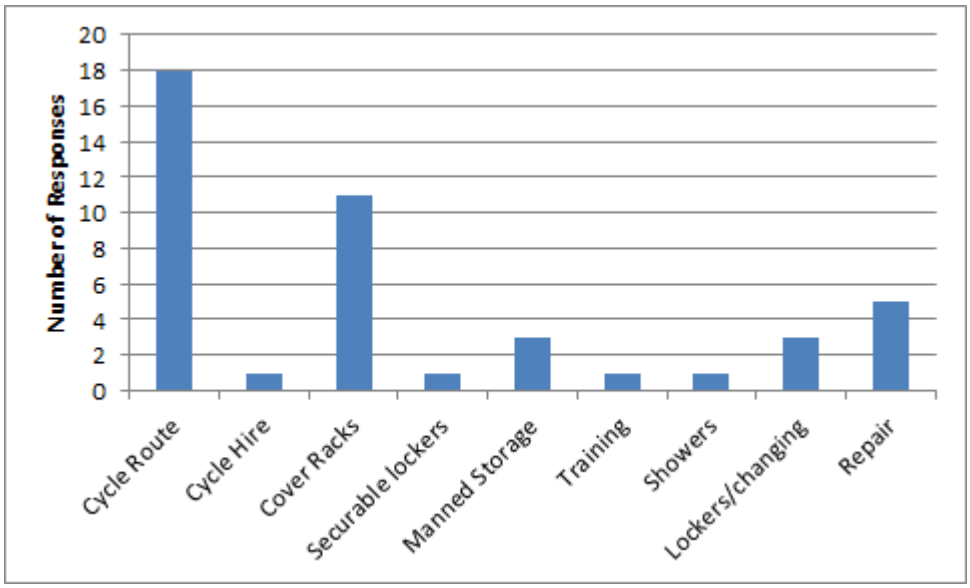


Figure 14: Responses to the survey question "Which of the following would you like to see more of?"

Those taking the cycle survey were then asked to elaborate on any specific concerns they had with the current cycle routes. A common concern amongst cyclists was road quality and potholes, as 11 of the 26 respondents indicated that the road surface is a major problem when cycling about Redhill. Some cyclists noted that poor lighting in certain areas adds to the pothole problem, resulting in dangerous nighttime conditions. Other desires from the cyclists included an implementation of dedicated cycle lanes to allow cyclists to avoid major roads and traffic,

which would result in safer routes. Cleanliness of the cycle facilities was also a concern, as was the inadequate signage along the cycle routes.

### 4.3 Combined Survey Results

Comparing the results of the two surveys highlights specific suggestions and problems that were identified by both cyclists and those who travel to the train station by other means. Figure 15 compares the percentage of cyclists who selected specific options with the percentage of responsive commuters from the platform surveys; only the responses that offered suggestions were considered. As depicted in Figure 15, the most common suggestion from both of the surveys was improved cycle routes to the station. This indicates that both cyclists and non-cyclists believe that the current cycle network is inadequate. The second most common suggestion was more cycle racks at the station. This suggests that the current amount of cycle parking is inadequate for the number of cyclists.

There are many topics on which the commuters on the platform disagree with the concerns of the cyclists. The idea of a cycle repair shop located at Redhill Station was the third most popular suggestion from the cyclists, but received little attention with the commuters on the platform. In addition, the idea of cycle hire being made available at the station was much more popular among the commuters on the platform and not at all popular with those who already cycle. The same trend holds true for cycle lockers.

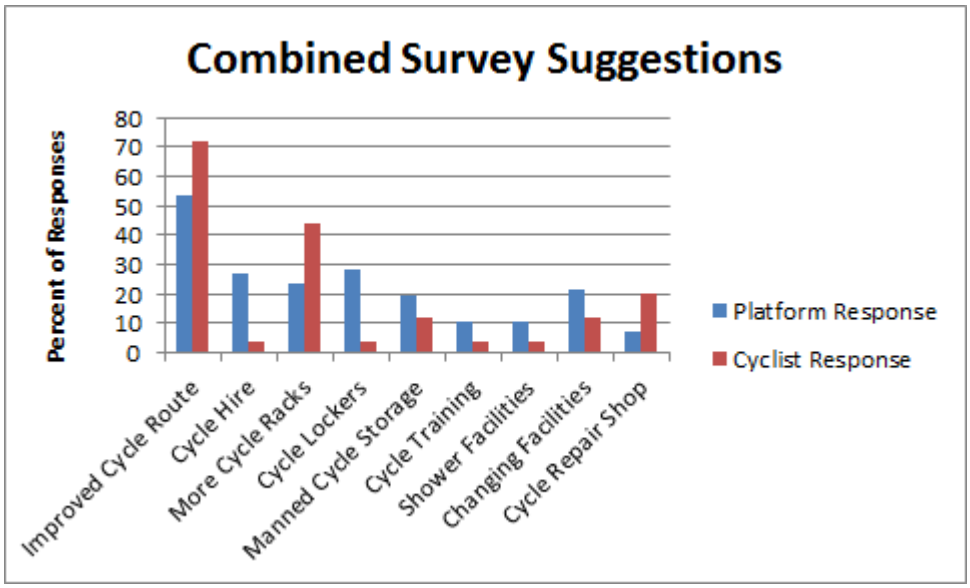


Figure 15: Comparative graph of suggestions identified by cyclists and commuters.

One of the questions in the survey asked the commuters for their home postcode. We compiled and mapped the locations of these postcodes to determine where the commuters traveled for their morning commute. The resulting map is displayed in Figure 16. The map is color coded to identify the commuter's method of travel, plotting those who drove, cycled, walked, or took the bus. Commuters who took the train to the Redhill Station were not included, as they typically travel from outside the range of the map (see the Platform Survey Results in Appendix D) and do not contribute to local road congestion.

On the map, the blue points represent the starting locations of those who walk to Redhill Station. The green points indicates cyclists, the red points are for drivers (alone, with a passenger, or as a passenger), and the yellow indicates those who took the bus. The train symbol is the location of Redhill Station.

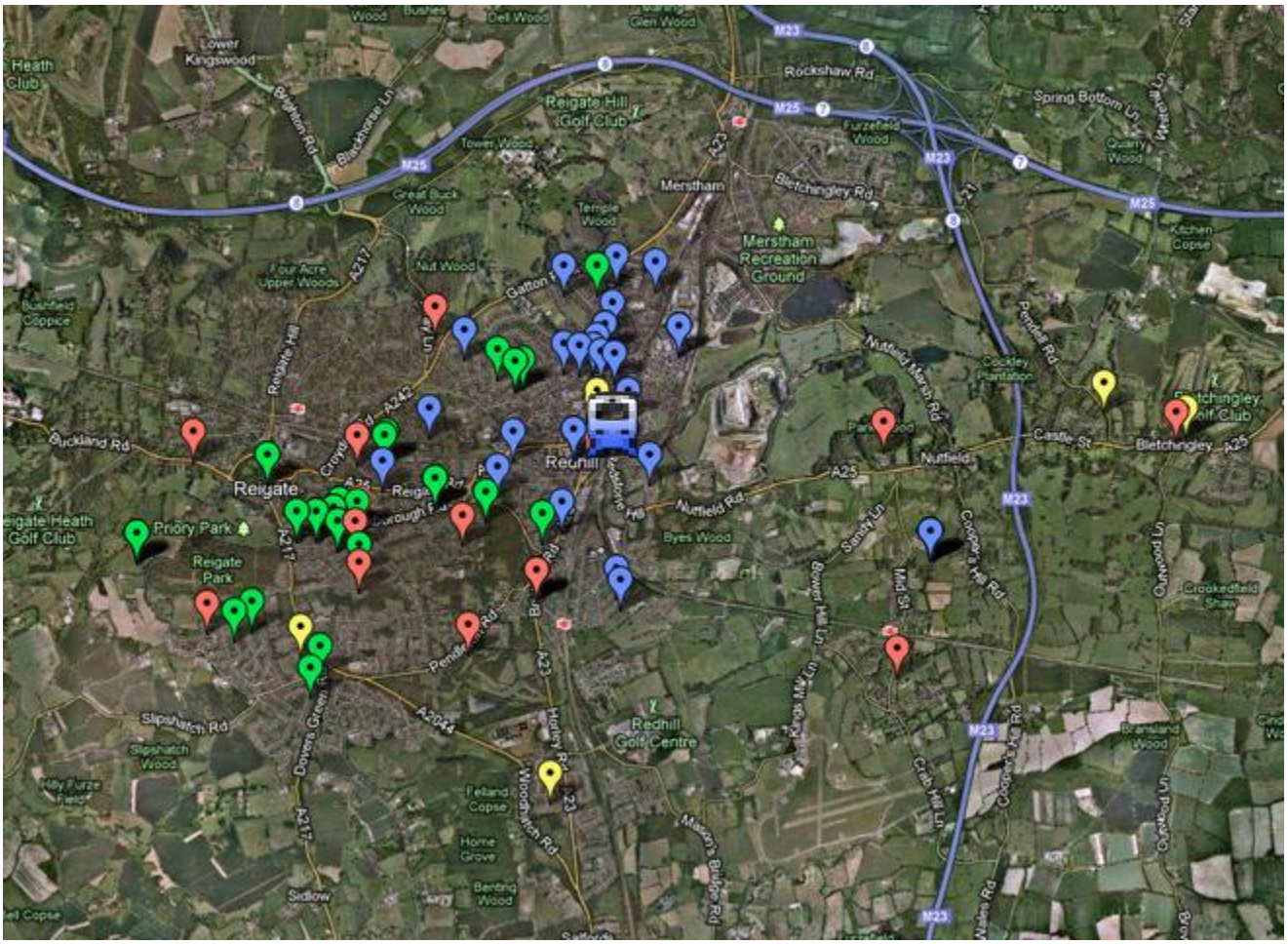

Figure 16: Map of trip origins based on survey results and postcode data

According to the map, a majority of commuters who walked to the rail station appeared to live in Redhill, and almost all of the cyclists who commuted to the rail station appeared to live in Reigate. A majority of drivers also commute from Reigate and very few take the bus. Every driver falls within the short trip range identified by Surrey County Council (and referenced in our Literature Review) to either Redhill Station or Reigate Station. Although many of these commuters live closer to Reigate Station, they continue to commute to Redhill Station instead.

### 4.4 Safe Routes Study

In order to gain a better understanding of how to improve the cycle infrastructure connecting Redhill and Reigate we traveled on multiple cycle routes identified by cyclists in our surveys. These routes were on-street and designated cycle lanes planned using the Surrey Interactive Map (see Figure 6). These routes showed us both what is done effectively and what can be improved upon on routes connecting the two boroughs.

Many of the cyclists surveyed at the rail station identified road quality as an area for improvement to potentially encourage more cycling in the Redhill and Reigate. One of the main suggestions to improve the road quality is the filling of potholes in the roads. Figure 17 shows a series of potholes on Doods Road, a suggested cycle route between Redhill and Reigate. The filling of potholes from these suggested cycle routes would not only improve the quality of travel for the cyclist, but the safety of travel as well, reducing the number of times a cyclist would have to swerve around a pothole into the lane of car traffic. These potholes are particularly dangerous at night, when they are hard to see because of poor lighting in certain areas.

Figure 17: Series of potholes on Doods Road

A major element that factors into cycle route quality is adequate signage and road markings of suggested cycle routes. For the most part, cycle routes were visibly marked on the roads, as seen in Figure 18. In some locations we traveled on our safe-routes study, however, there were inadequate or confusing signs and road markings. The area on Croydon Road between Rushworth Road and Doods Road was a particularly confusing area where the cycle lane appeared to end abruptly, as seen in Figure 19, then begin again on the other side of the road. At that location there are also contradictory signs, directing cyclists heading to Redhill in two different directions. Blackborough Road in particular, which our surveys identified as a road traveled often by cyclists, has very few signs indicating that it is a cycle route connecting Redhill and Reigate.

Figure 18: Designation of pedestrian and cycle lanes on Croydon Road


Figure 19: Abrupt ending of the cycle lane on Croydon Road

The problem of cars parking on narrow streets and blocking the cycle lane could be seen throughout our safe-routes study. Blackborough Road in particular had a lot of cars parked on either side of the road, as seen in Figure 20, obstructing the cycle route and discouraging cyclists from choosing that route to travel between Redhill and Reigate. The problem of cars parking on the road can also be seen in Figure 21, on Doods Road. The cars are legally allowed to park on the street and sidewalk because the cycle lane is not specifically marked on the road.

Figure 20: Cars parked on the side of Doods Road


Figure 21: Cars parked on either side of the road obstructing the cycle route

The cyclists we surveyed identified a few specific areas that are very dangerous. One of these dangerous areas was the intersection of Blackborough Road and The Chase, as seen in Figure 22. Drivers traveling westbound on The Chase are often traveling fast and do not look for cyclists traveling along Blackborough Road. Another area that is exceedingly dangerous is the series of roundabouts surrounding the Redhill town center. These roundabouts often have heavy car traffic and no designated lanes for cyclists. One cyclist surveyed stated that the roundabout in front of Redhill Station "is the most difficult part of the journey" (see Appendix H). The traffic flow and geometry of roundabouts, combined with the speed of travel, results in a dangerous intersection for vulnerable cyclists.

Figure 22: The intersection of Blackborough Road and The Chase

Although there are some dangerous sections of road for cyclists, there are also many very safe alternatives to these roads. One route in particular that was well lit and signed was Madiera Road, as seen in Figure 23. This off-road cycle lane runs parallel to the A25 and provides an alternative to traveling on the busy A-road. Cyclists traveling on this route do not have to worry about the dangers of traveling on the same roads as cars, and for this reason, it is a preferred cycle route in the area.

Figure 23: The Madiera Road cycle lane

### 4.5 Interviews

In order to obtain a better understanding of the context of the transportation problem in Redhill, we interviewed individuals with knowledge in various aspects of cycling and transportation in Redhill and Surrey County.

David Hilder is the former group coordinator of the Reigate and Banstead Cycle Forum. He gave us a summary of the cyclist community's opinions on the current cycling experience in Redhill and Reigate. Hilder stated that post-2012, functional cycling has increased among the public but that very few improvements have been done to the road infrastructure to increase the safety of cycling. He explains that dedicated, long-term support for funding is needed but that this is often difficult to achieve.

Gayle Amorowson works for Sustrans in the Reigate and Redhill area. Her work focuses on encouraging children to bike to school through a program called Bike It. Gayle discussed motivating children to cycle by increasing awareness of why cycling is beneficial along with the paths available for them to take to school. She discussed providing cycle training and group bike rides as motivational and confidence building tools. In addition, she explained how the most difficult aspect of the program was maintaining long-term enthusiasm for the program but overall has seen a successful and substantial increase in cycling. Maintaining the long-term enthusiasm is particularly difficult in a school setting due to the frequently changing faculty, and this in turn results in many new teachers who are not aware of the Bike It program.

David Sharpington is the Project Delivery Manager for Surrey County Council. He highlighted the safety concerns associated with potential cyclists as well as concerns of current cyclists regarding designated cycle lanes and road surface quality. Specifically, the potential cyclists may feel intimidated by busy roads, while the current cyclists are more worried about issues such as potholes in the current routes. David also described short-term incentive events and programs, such as Bike It, to encourage cycling, however these programs do not receive input from the users on road quality and infrastructure.

## 5. Discussion

The overall goal of this project was to determine what a Travel SMART hub can provide for the town of Redhill in order to promote cycling and walking as well as to reduce automobile congestion. In order to formulate our suggestions on how to increase alternative transport we not only interviewed people with local knowledge of cycling, we also surveyed commuters and cyclists, and performed a safe-routes study between Redhill and Reigate.

Based on the surveys conducted, it appeared as though many people traveling from within Redhill to the station walked, whereas people traveling from Reigate to the rail station drove. Furthermore, people who cycle to Redhill Station also appeared to be cycling from Reigate. According to our results and indicated on the map (Figure 16), a very high percentage of residents within walking distance to Redhill Station already walk, so the primary focus of the recommendations are on the cycle network. The distance between Reigate and Redhill is relatively short (approximately two miles), and a significant portion of automobile congestion stems from cars traveling down the main A25, which connects the two town centers. Therefore, it seems a logical to focus on taking more of these Reigate to Redhill car users off the road by encouraging cycling the short distance.

In order to encourage cycling, both increased awareness of and improvements to existing routes connecting Reigate and Redhill need to be made available to the public. From our safe route studies, we found that although there are cycle routes available, many are along roads in poor condition with abruptly ending cycle lanes and poor signage. Improving the conditions of these roads, increasing the number of clearly marked signs, creating more separate cycle lanes, and adding available cycle parking are aspects of road infrastructure found to encourage cycling. Therefore we examined these aspects within the context of Redhill and Reigate in order to determine solutions to encourage sustainable travel and reduce congestion within the local community.

### 5.1 Recommendations

From these conclusions, we have determined a number of specific suggestions and recommendations for services a Travel SMART hub can provide for the community of Redhill. Specific suggestions from safe route studies included not only more cycle racks at Redhill Rail

Station but also improvements to the cycle road infrastructure such as filling potholes, increase in clear cycle lane signage, and more separate cycle lanes.

By far the most common suggestion as found in our surveys and interviews was to improve the quality of the cycle lanes in the Redhill and Reigate region. Many cyclists travel from Reigate to Redhill station, and are unsatisfied with the current cycle lanes available. A combination of cyclist input and personal walkthroughs of cycle paths have identified specific areas that require attention. Road surface is critical for cyclists, and rough surfaces and potholes post a significant threat to a rider's safety. The A25 approaching the Redhill center has been identified by cyclists as full of potholes. Doods Road has also been observed to require resurfacing. Information gathered from the surveys shows that a large number of cyclists use Blackborough Road, which also suffers from a poor surface. Other roads identified as having an abundance of potholes are the A23, Pendleton Road, and Wray Common Road. The poor surface of these roads combined with poor lighting at night, as identified by one respondent on the A25, significantly increases the safety risks of the current cycling infrastructure.

A second major concern regarding the current transport network is the lack of dedicated cycle lanes to allow cyclists to avoid busy and dangerous intersections. Multiple cyclists surveyed indicated that they use minor roads such as Lebraun Road or "residential streets" to avoid the busy roads with no dedicated lanes. Another example identified as dangerous is the intersection of Blackborough Road and The Chase. A cyclist expressed a safety concern regarding the layout of the intersection, indicating that he had almost been hit by cars on multiple occasions. Crashes between cars and cyclists could be avoided if the intersection was redesigned or a designated cycle lane was created to avoid the intersection. It is difficult to propose design solutions without accurate traffic data, but an initial improvement may be to simply change the intersection from "yield controlled" to "stop controlled." An example of a dedicated cycle lane that was observed during the safe route study was the Madeira Walk. This roadway has a separate designated cycle and pedestrian path to move cyclists from the narrow roadway to their own separate space.

In areas where designated cycle lanes are not feasible, clearly painted cycle lanes on the edge of the road or pavement is a viable option. However, the existing painted cycle lanes are infrequent, inconvenient, and inconsistent. The existing painted lanes and signage can be difficult to follow, such as the area on Croydon Road between Rushworth Road and Doods

Road. Also along this stretch of roads are conflicting road signs that indicate the center of Redhill is in two different directions. These confusing and conflicting signs may prevent cyclists and non-cyclists from using the existing lanes.

Other issues with the painted cycle lanes are observable along the A25 between the Reigate and Redhill town centers. The main issues along this stretch of road are the inconsistency of the cycle lane and the on street parking that impedes the cyclists. There are areas along this road where the painted cycle lane abruptly ends, and then begins again further down the road. This may act as a significant deterrent to commuters attempting to cycle along the A25. Another problem with that stretch of road is the on street parking. Due to the narrow nature of the road, the cars that park on the side of the road have to park in the cycle lane to be out of the travel lane. One way to combat this is to create separate designated cycle lanes to remove cyclists from the crowded main road. Judging from the results of the surveys and interviews, an improved cycle infrastructure is the first step in convincing residents to cycle rather than drive a car.

Another way to encourage people to cycle to the station is to increase the number of bicycle racks. Currently, on a nice day the bike racks can be expected to reach around 90 percent of the 125 at full capacity. This could be seen as a deterrent because when the bike racks are almost full, it becomes difficult to adequately secure a bicycle, as stated by a few of those surveyed. Therefore, with this additional parking, those who commute after the typical rush hour will not have to deal with troublesome parking, thus increasing both the overall efficiency of bicycle storage as well as the attractiveness choosing cycling as one's mode of transport.

One of the main services the hub can provide is provide travel information to the public. This information can include maps of cycle and pedestrian paths in order to increase awareness of these routes. In addition to providing information and awareness of available cycle routes, the hub is also in a position to develop a community of cyclists that would help to create more awareness and presence of cycling within Reigate and Redhill.

## 6. Conclusion

The problem of traffic congestion Redhill affects the daily lives of every resident and commuter in the town. Before suggesting significant changes to the existing travel system, it is important to know how the key stakeholders in the area feel about the problem. Identifying specific issues suggested by the users of this transportation network aid transportation engineers in implementing effective changes that the travelers would prefer to use. Through the use of the surveys, interviews, and road audits, we determined the prominent concerns of the Redhill community to aid the Surrey County Council engineers to implement effective countermeasures to congestion that will result in a more efficient and reliable transportation network. From these concerns we have suggested services a Travel SMART hub can provide for the communities of Redhill and Reigate in order to promote awareness and encourage altering travel behavior in order to increase cycling and walking trips and decrease car and automobile usage. The Travel SMART hub has the unique ability to provide information and services designed specifically for the local area, thus making it an effective program to help alter travel behavior and improve the overall travel network in the surrounding area.

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## Appendix A: Mission and Organization

The Reigate and Banstead Council is a government organization separated into two groups called the Council and the Officers. The Council is made up of fifty one democratically elected councilors. The councilors are tasked with developing a budget for Reigate and Banstead, as well as appointing the leaders of the Officers, and developing a legal structure to implement legislation. The Officer body has 460 full time equivalent employees that act as advisors to the Council, as well as manage the decisions made by the Council. The planning and building of all structures and homes in Reigate and Banstead is overseen by the Council as well. With its funds the borough provides benefits to its citizens ranging from environmental services, such as keeping the borough clean as well as ensuring the streets are safe. Another large portion of the budget goes towards cultural services. Cultural services are benefits aimed to assist all forms of businesses, employers, and even the self-employed, and range from inspections of workplace environments to the investigation of accidents that may occur.

## Appendix B: Commuter Survey

**1** **Gender:** ☐ Male ☐ Female

**2** **Age:** ☐ <20 ☐ 20-30 ☐ 31-40 ☐ 41-50 ☐ 51-60 ☐ >60

**3** **Do you have access to a car?** ☐ Yes ☐ No

**4** **How do you usually get to this rail station?**

____ Bus ____ Train ____ Bicycle
____ Walk ____ Motorbike/scooter ____ Car, as driver, on your own
____ Car, as driver, with passenger(s) ____ Car, as a passenger
____ Other (specify)

**5** **What is your home post code (preferred response)?** ……..

**or neighbourhood (e.g. Earlswood)** ……..

**6** **How long does it take you to get to the rail station?** ……

**7** **Where is your final destination?** …… **What is the purpose of your journey?** .....

**8** **Do you own a bicycle?** ☐ Yes ☐ No

**9** **If you do not cycle to the station, which of the following would encourage you to? If you do cycle, which would you like to see improved? Please tick <u>no more than three.</u>**

☐ Improved cycle route from where you live
☐ Cycle Hire available at or near the station
☐ More under cover cycle racks
☐ More individually securable cycle lockers
☐ A secure manned cycle storage area
☐ Cycle training to improve confidence when cycling
☐ Showers available at, or near the station
☐ Lockers and changing facilities at, or near the station
☐ Repair and maintenance service at station
☐ Other (please specify) …….

**10** **What <u>specific</u> improvements would you most like to see to the options listed in the question above?**

……

……

**11** **Which of the following would encourage you to use public transport to get to the rail station? (If you already use public transport, which would you most like to see improved?) Please tick <u>no more than three.</u>**

☐ More direct bus routes
☐ More frequent bus service
☐ More frequent train service
☐ Real time bus information
☐ Provision of bus shelters
☐ Provision of seating at bus stops
☐ Provision of public transport information at work
☐ Cheaper fares
☐ Other (please specify) ……

**12** **If you are willing to take further part in this survey, or receive more information relating to travel initiatives in Redhill, please provide your contact information:**

Email ……..Other Contact Information: ……

# Appendix C: Online Cyclist Survey

**We are college students from the United States, doing research in collaboration with the Reigate & Banstead Borough Council. We are working to decrease traffic in the area, and improve your commute.**

**1. How long does it take you to get to the rail station?**

**2. Where is your final destination?**

**3. Please list the main roads you travel on, or landmarks you pass, to get to this rail station.**

1:

2:

3:

**4. What is your main motivation for cycling to the rail station?**

- [ ] Exercise benefits
- [ ] High cost or car or bus transport
- [ ] No access to a car
- [ ] Ease of transport (avoid car traffic)
- [ ] Environmental concerns (reduce carbon emissions)
- [ ] Lack of vehicle parking at the rail station

Other (please specify)

**5. Which of the following would you like to see more of? Please tick no more than three.**

- [ ] Improved cycle route from where you live
- [ ] Cycle Hire available at or near the station
- [ ] More covered cycle racks
- [ ] More individually securable cycle lockers
- [ ] A secure manned cycle storage area
- [ ] Cycle training to improve confidence when cycling
- [ ] Showers available at, or near the station
- [ ] Lockers and changing facilities at, or near the station
- [ ] Repair and maintenance service at station

Other (please specify)

**6. What specific improvements would you most like to see to cycle infrastructure?**

**7. What is your home post code (preferred response) or neighbourhood (e.g. Earlswood)?**

**8. What is your gender?**

- ○ Male
- ○ Female

**9. What is your age?**

- ○ <20
- ○ 20-30
- ○ 31-40
- ○ 41-50
- ○ 51-60
- ○ >60

**10. If you are willing to take further part in this survey, or receive further information relating to travel initiativesin Redhill, please provide contact information below:**

Done

**Appendix D: Rail Station Survey Data Part 1**

| Survey Number | Gender | Age | Car Access | Arrived at the Station | Postcode | Borough | Time to station | Final Destination | Purpose of Journey* |
|---|---|---|---|---|---|---|---|---|---|
| 1 | M | 51-60 | Y | Bus | RH15HR | South Earlswood | 15 | Woking | - |
| 2 | M | 20-30 | N | Walk | RH1 | | 8 | London Eustan | - |
| 3 | M | 41-50 | Y | Train/Walk | | Salfords | 15 | London | - |
| 4 | M | 31-40 | Y | Walk | RH11TE | | 10 | London | - |
| 5 | F | 31-40 | Y | Walk | RH11LN | | 7 | London Bridge | - |
| 6 | M | 20-30 | Y | Walk | RH12JP | | 10 | Kingston | - |
| 7 | M | 41-50 | Y | Car-driver w/pas. | RH27JN | | 10 | Victoria | - |
| 8 | M | 41-50 | Y | Car-driver w/pas. | RH55DN | | 20 | London Bridge | - |
| 9 | M | 20-30 | Y | Train | | Reigate | 10 | St. Pancras | - |
| 10 | M | 41-50 | N | Train/Walk | RH12JP | | 10 | Reigate | - |
| 11 | F | 20-30 | Y | Walk | RH11JD | | 13 | London | - |
| 12 | M | 31-40 | Y | Walk | | Reigate | 20 | London | - |
| 13 | | 31-40 | Y | Walk | S756JH | | 5 | Thorntan Melch | - |
| 14 | F | 41-50 | | Car-driver by self | RH27JN | | 15 | London Victoria | - |
| 15 | M | 20-30 | N | Train | SE13FF | | 45 | Reigate | - |
| 16 | F | 51-60 | Y | Car-as passenger | RH20PN | | 5 | London | - |
| 17 | M | 31-40 | Y | Train | RH29HN | | 10 | Victoria | - |
| 18 | F | 20-30 | Y | Train | RH106JS | | 15 | Guildford | - |
| 19 | M | 41-50 | Y | Train | RH15 | | 12 | Farnborough North | - |
| 20 | M | 51-60 | Y | Walk | RH1 | | 20 | London Bridge | - |
| 21 | M | 20-30 | Y | Car-driver w/pas. | GU6 | | 20 | London Bridge | - |
| 22 | F | 31-40 | Y | Car=as passenger | RH27JH | | 5 | Covent Garden | - |
| 23 | M | 41-50 | Y | Walk | RH12EQ | | 20 | Reading | - |
| 24 | F | 51-60 | Y | Train | IV125N2 | | 10 | Enverness | - |
| 25 | | 51-60 | Y | Car-driver by self | RH27DZ | | 12 | East Croydon | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 26 | M | 20-30 | Y | Walk | RH11JF | | 10 | Vouxhall | - |
| 27 | F | 20-30 | N | Walk | RH11LH | Redhill | 10 | Kentish town | - |
| 28 | M | 31-40 | Y | Car-driver by self | RH2 | | 10 | London Bridge | - |
| 29 | M | 41-50 | Y | Train | RH106TJ | | 20 | London | - |
| 30 | M | 20-30 | Y | Walk | RH27EP | | 15 | City Thameslinc | - |
| 31 | M | 31-40 | Y | Walk | RH20JB | | 20 | Victoria | - |
| 32 | M | <20 | Y | Walk | | | 10 | Twickenham | - |
| 33 | M | 31-40 | Y | Walk | RH1 | | 10 | London | - |
| 34 | | 51-60 | Y | Car-driver w/pas. | RH28LN | | 15 | London | - |
| 35 | F | 31-40 | N | Train | W6 | Hammer-smith | 90 | Reigate | - |
| 36 | M | 41-50 | Y | Train | BN27GJ | | 60 | Oxford | - |
| 37 | F | 41-50 | N | Car-as passenger | RH20QA | | 15 | London Victoria | - |
| 38 | M | 20-30 | N | Train | BN72TT | | 60 | Lewes | - |
| 39 | M | 31-40 | Y | Walk | RH11JN | | 10 | Westminster | - |
| 40 | F | <20 | Y | Walk | | Earlswood | 20 | Reigate | - |
| 41 | M | 31-40 | | Walk | RH12QB | | 13 | London | - |
| 42 | | 51-60 | N | Walk | | Redhill | 10 | East Croydon | - |
| 43 | M | <20 | Y | Walk | RH16EQ | | 10 | Guildford | - |
| 44 | F | <20 | Y | Bus/Train | CR51DH | | 20 | Reigate | - |
| 45 | M | 20-30 | | Train | RH101SH | | 13 | Reigate | - |
| 46 | M | 31-40 | N | Bus/Train | RH11LZ | | 10 | Kingswood | - |
| 47 | M | 31-40 | Y | Walk | RH12DL | | 15 | Richmond Surrey | - |
| 48 | M | 41-50 | Y | Bicycle | RH27HE | | 10 | Green Park | - |
| 49 | F | 41-50 | N | Walk | RH11AP | | 10 | London Victoria | - |
| 50 | M | >60 | Y | Walk | RH14AT | | 10 | London Bridge | - |
| 51 | M | 51-60 | Y | Car-as driver | RH29BZ | | 13 | London Victoria | - |
| 52 | M | 31-40 | N | Walk | | | 10 | Maidenhead | - |
| 53 | F | 31-40 | Y | Walk | | Earlswood | 12 | London, Piccadilly | - |
| 54 | F | 31-40 | Y | Bus/Walk | RH14LF | Blethingly | 11 | Redhill | - |
| 55 | M | 31-40 | | Walk | RH12JU | | 15 | London Victoria | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 56 | M | 31-40 | Y | Train | RH2 | | 6 | London Victoria | - |
| 57 | F | 41-50 | Y | Car-as driver | | Blethingly | 15 | Rochester | - |
| 58 | F | 51-60 | Y | Car-driver w/pas. | RH27HQ | | 7 | London | - |
| 59 | F | 51-60 | Y | Walk | RH16EN | | 20 | Guildford | - |
| 60 | F | 20-30 | N | Walk | | Reigate | 20 | Guildford | - |
| 61 | F | 20-30 | N | Walk | RH16QP | | 10 | Sunnigdale | - |
| 62 | M | 41-50 | Y | Walk | RH20JT | | 70 | London City | - |
| 63 | M | 31-40 | Y | Train | TN49PR | | 60 | Guildford | - |
| 64 | F | 20-30 | N | Bus/Walk | RH1 | Earlswood | 15 | Guildford | - |
| 65 | | 41-50 | Y | Train | RH4 | Dorking | 20 | London Bridge | work |
| 66 | F | 31-40 | Y | Walk | RH16AG | | 7 | Croydon | work |
| 67 | M | 41-50 | N | Train | RH107RX | | 20 | Dorking | work |
| 68 | M | 51-60 | Y | Car-as driver | RH2 | | 12 | London | meeting |
| 69 | F | 31-40 | Y | Walk | RH11JS | | 7 | Victoria Paddington | work |
| 70 | F | 41-50 | Y | Bus | RH28AS | | 10 | Walton | business |
| 71 | M | | N | Train | | | 5 | Reigate | work |
| 72 | F | 31-40 | Y | Walk | RH1 | | 10 | Blackfriar | work |
| 73 | M | 51-60 | Y | Car-as passenger | RH15RP | | 10 | London | business |
| 74 | | 51-60 | | Car-as driver/Train | | Earlswood | 20 | London Bridge | |
| 75 | M | 51-60 | Y | Other: first time here | DN2U | | | Reigate | |
| 76 | M | 20-30 | Y | Train | RH2 | | 30 | St. Pancras | |
| 77 | M | <20 | N | Bus/Car-as driver | RH14QG | Blethingly | 13 | Dorking | work |
| 78 | F | 41-50 | Y | Train | RH15JU | | 10 | Burmingham | work |
| 79 | M | 41-50 | Y | Bicycle | RH12DL | | 5 | London | work |
| 80 | M | 41-50 | Y | Bicycle | RH27JN | Reigate | 10 | Clapham | work |
| 81 | M | 31-40 | Y | Train | TN35SIH | | 90 | London Bridge | work |
| 82 | M | <20 | Y | Walk | RH101AH | | 10 | Reigate | work |
| 83 | M | <20 | N | Train | KT123LY | | 30 | Gatwick | work |
| 84 | M | 51-60 | Y | Walk | RH27DF | | 20 | Stevenege | work |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 85 | M | 41-50 | N | Train | RH4 | | 15 | London | work |
| 86 | | 51-60 | Y | Walk | RH2 | | 5 | London Bridge | work |
| 87 | M | 51-60 | Y | Car-as passenger | RH27ES | | 7 | London | work |
| 88 | F | 41-50 | Y | Walk | RH11TE | | 20 | Mitcham | work |
| 89 | M | 51-60 | Y | Car-driver w/pas. | KT206TT | | 20 | London Bridge | |
| 90 | M | 41-50 | Y | Walk | RH12JB | Redhill | 25 | London Bridge | work |
| 91 | M | 51-60 | | Train | RM20QF | | 5 | London | business |
| 92 | M | 20-30 | Y | Walk | | Croydon | 15 | Burgess Hill | |
| 93 | M | 41-50 | Y | Train | RH2 | | 10 | London Bridge | work |
| 94 | M | 51-60 | Y | Train | RH29LN | | 6 | London Bridge | work |
| 95 | F | 51-60 | Y | Car-driver w/pas. | RH20HT | | 10 | Cannon Street | work |
| 96 | F | 20-30 | N | Train | RH80SP | | 70 | Reigate | work |
| 97 | M | 31-40 | Y | Walk | RH1 | | 15 | Tothill Street, London | work |
| 98 | F | 51-60 | Y | Car-driver by self | RH14EW | | 8 | London | work |
| 99 | | 41-50 | Y | Car-driver w/pas. | | Redhill | 5 | London | work |
| 100 | M | 51-60 | Y | Train | RM15SB | | 5 | Dollis Hill | business |
| 101 | M | 41-50 | Y | Walk | | Redhill | 10 | London | work |
| 102 | M | 31-40 | Y | Train/Walk | RH27LG | | 30 | Merstham | work |

*The purpose of journey question on the survey was not available to the first 64 survey respondents.

**Appendix E: Rail Station Survey Data Part 2**

| Survey Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Other | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | injury | X | | X | | | | | X | |
| 2 | | | | X | | | | | | | | | | | | | | | close |
| 3 | X | | X | X | | | X | | | | | X | | X | | | | X | |
| 4 | | | | | | | | X | | | | | X | | | | | | |
| 5 | | | | | | | | | | n/a | | | | | | | | | n/a |
| 6 | X | | | | | | | | | | | | X | | | | | | |
| 7 | | | | | | | | | | unwilling to change into suit | | X | | | | | | | |
| 8 | | | | | | | | | | none, too dangerous | X | X | | | | | | | not feasible from home |
| 9 | | | | | | | X | | | | | | X | | | | | | |
| 10 | X | X | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | not required | | | | | | | | | too close to home |
| 12 | | | | | | | | | | | X | | | | | | | | |
| 13 | | | | | | | | | | I could not cycle, ever! | X | X | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | a bus to station |
| 15 | | | | | | X | | X | | | | | | X | | | | X | |
| 16 | | | | | | | | | | | | | | | | | | | |
| 17 | | | | X | | | X | | | | | | | | | | | | I do |
| 18 | | | | | | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | X | X | | | | | X | |
| 20 | | | | | | | | | | none | | | | | | | | | none/walking is healthier |
| 21 | X | | | | | | | | | | | X | | X | | | | | |
| 22 | X | | | | | | | | | | X | X | | | | | | | |
| 23 | | | | | | | | | | prefer to walk | | | | | | | | X | |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 24 | | | | | | | | | | n/a | | | | X | X | X | | | n/a |
| 25 | X | | | X | | | | | | better train facilities for bikes | | | | X | | | | | |
| 26 | | | | | | | | | | | | | | | | | | | |
| 27 | X | | | | | | | | | | | | | | | | | | n/a I live close |
| 28 | | | | | | | | | | | X | | | | | | | | |
| 29 | | | | | | | | | | | | | | | | | | | it is ok |
| 30 | | X | X | X | | | | | | | | X | | X | X | | | | |
| 31 | | | X | X | X | | | | | | | | | | | | | | |
| 32 | | X | | | | | | | | | | | | X | | | | | |
| 33 | | | X | | | | | | | | | | | X | X | | | | |
| 34 | X | | | | | | | | | | | X | | | | | | | |
| 35 | | | | | | | | | | live too far away | | | | | | | | | already using public transport |
| 36 | X | | X | | X | | | | | | | | X | X | | | | X | |
| 37 | X | | | | | | | | | | | | | X | | | | X | |
| 38 | X | | | X | X | | | | | | X | | | | | | | X | |
| 39 | | | | | | | | | | good already | | | | | | | | | |
| 40 | X | | X | X | | | | | | | X | | | | | | | | |
| 41 | X | X | X | | | | | X | | | X | X | X | | | | | X | |
| 42 | X | X | | | X | | | | | | X | | X | | | | | X | |
| 43 | | X | | | | | | | | | | | | | | | | | |
| 44 | X | | | | | X | | X | | | | | | | X | | X | X | |
| 45 | | | X | | | | | X | | | | | X | | | | | | |
| 46 | | X | | | X | X | | | | | X | | X | | | | | X | |
| 47 | | | X | X | X | | | | | | | | | | | | | | |
| 48 | | | | | | | | | | | | | | | | | | | |
| 49 | | | | | | | | | | | | | | | | | | | no need as I walk |
| 50 | | | | X | | | | | | I can’t cycle | X | X | | | | | | | |
| 51 | X | | X | | | | | X | | | | X | X | | | | | | |
| 52 | | X | | | | | | | | | X | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 53 | X | | | | | | | | | | X | | | | | | | | |
| 54 | | | X | X | X | | | X | X | | | X | | X | | | | X | |
| 55 | | | | | | | | | | cycle lanes to station | | | X | | | | | | |
| 56 | | | | | | | X | X | | | X | X | | | | | | | |
| 57 | X | | | | | | | | | | X | | | | | | | | |
| 58 | X | X | | | | | | | | | X | X | | | | | | | |
| 59 | | | | | | | | | | | | | | | | | | | |
| 60 | X | X | | | | | | | | | X | | X | | | | | X | |
| 61 | | X | | | | | | | X | | | X | | | | | | | |
| 62 | | | | | | | | | | | X | X | | | | | | | |
| 63 | | | | | | | | | | | | | X | | | | | | |
| 64 | | | | | | | | | | | | X | X | | | | | | |
| 65 | X | | | | | | | | | | | | X | | | | | | |
| 66 | X | | | | | | | X | X | | | | | | X | X | | X | |
| 67 | X | X | X | | | | | | | | X | | X | | | | | X | |
| 68 | | | | | | | | | | none, “never got on a bicycle” | X | | | | | | | | |
| 69 | | | | | | | | | | short distance-rather walk | | | | | | | | | |
| 70 | | | | X | | X | | | | | X | | | | | X | X | X | |
| 71 | | | | | | | | | | “doesn’t concern me” | | | | | | | | | |
| 72 | | | | | X | | | | | | | | | | | | | | |
| 73 | X | | X | | | | | | | | | X | | X | X | | | | |
| 74 | | | | | | | | | | too old | | | | | | | | X | |
| 75 | | | | | | | | | | | | | | | | | | | |
| 76 | | | | | | | | | | | | | | | | | | | better weather |
| 77 | | | | | X | X | | X | | | | | | | X | | | X | |
| 78 | X | | | | X | X | | | | | | X | | | X | | | X | |
| 79 | | | | | | | | | | | | X | X | | | | | X | |
| 80 | | | | | | | | | | | | | | | | | | | |
| 81 | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 82 | | | | X | | | | | | | | | | | | | | X | |
| 83 | | X | | | | | X | X | X | | | | X | X | | | | X | |
| 84 | | | | | | | | | | road safety | | X | | | | | | | |
| 85 | | | | | | | | | | | X | X | | X | | | | | |
| 86 | | | | | | | | | | | | | X | | | | | X | |
| 87 | | | | X | | | | | | | | | | | | | | | |
| 88 | | | | | | | | | | prefer walking | | X | | | | | | | |
| 89 | | | | | | | | | | | | | | | | | | | |
| 90 | X | | | | | | | | | | | | | | | | | X | |
| 91 | | X | | | | | | | | | X | | | | X | | | | |
| 92 | | | | | | | | | | "there's a big hill and he can't cycle over it" | | | | | | | | | |
| 93 | X | | | X | | | | | | | X | X | | | | | | X | |
| 94 | X | X | | X | | | X | X | | | | X | | | | X | | X | |
| 95 | | | | | | | | | | | X | | | | | | | | |
| 96 | | | | | | | | | | | | | | | | | | | |
| 97 | | | | | | | | | | | | | | | | | | | |
| 98 | X | | | | | | | | | | | X | | X | | | X | | |
| 99 | | | | | | | | | | none | | X | | | X | X | | X | |
| 100 | X | | | X | X | | | | | | X | X | X | | | | | X | |
| 101 | | | | | | | | | | | | | | | | | | X | |
| 102 | | | | | | | | | | | X | X | | | | | | X | |
| Totals (# of people) | 30 | 15 | 13 | 17 | 11 | 6 | 6 | 12 | 4 | | 28 | 30 | 21 | 15 | 10 | 5 | 3 | 31 | |
| Percent of respond-ents | 53 | 27 | 23 | 26 | 20 | 11 | 11 | 21 | 7 | | 40 | 43 | 30 | 21 | 14 | 7 | 4 | 44 | |

Numbers 1 through 9 were answers to the question: If you do not cycle to the station, which of the following would encourage you

to? If you do cycle, which would you like to see improved? Please tick no more than three.

1: Improved cycle route from where you live
2: Cycle Hire available at or near the station
3: More under cover cycle racks
4: More individually securable cycle lockers
5: A secure manned cycle storage area
6: Cycle training to improve confidence when cycling
7: Showers available at, or near the station
8: Lockers and changing facilities at, or near the station
9: Repair and maintenance service at station

Numbers 10 through 17 were answers to the question: Which of the following would encourage you to use public transport to get to the rail station? (If you already use public transport, which would you most like to see improved?) Please tick no more than three.

10: More direct bus routes
11: More frequent bus service
12: More frequent train service
13: Real time bus information
14: Provision of bus shelters
15: Provision of seating at bus stops
16: Provision of public transport information at work
17: Cheaper fares

**Appendix F: Cyclist Survey Data Part 1**

| Survey # | Cycle Time | Original Destination | Purpose | Post Code | Gender | Age | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10 | London | work | RH16PB | M | 20-30 | X | | | | | X |
| 2 | 15 | London | work | RH27FE | M | 31-40 | X | X | | | X | |
| 3 | 5 | Gulidford | work | | M | 31-40 | | | | X | | |
| 4 | 10 | Redhill | work | RH27JD | M | 31-40 | X | X | | X | X | |
| 5 | 30 | Horley | work | RH68OQ | M | 31-40 | X | | | | | |
| 6 | 5 | Victoria | | RH27DF | M | >60 | X | | | X | X | |
| 7 | 10 | | | RH27BP | M | 31-40 | | | | X | | |
| 8 | 5 | London | work | RH27JY | M | 31-40 | X | X | | | | X |
| 9 | 10 | Twickenham | work | RH27BP | M | 31-40 | | X | | X | | |
| 10 | 8 | Gatwick | work | RH27JX | M | 51-60 | X | X | X | X | X | X |
| 11 | 10 | London Bridge | work | RH12DQ | M | 31-40 | X | X | | | | |
| 12 | 20 | Reigate | work | RH28JB | M | 41-50 | X | X | | | | |
| 13 | 20 | | work | RH28HY | M | 51-60 | X | | | X | X | |
| 14 | 6 | Ludgate Circus, London | work | RH16BG | M | 31-40 | | X | | | | |
| 15 | 15 | Reigate | work | RH2 | F | 31-40 | X | | | X | | |
| 16 | 20 | Victoria | work | RH28BS | M | | X | X | X | | | |
| 17 | 10 | | work | RH27JH | M | 41-50 | | | | | | X |
| Online Survey # | | | | | | | | | | | | |
| 1 | 15 | Shepherd's Bush | | RH28DP | M | 41-50 | X | | | | | |
| 2 | 15 | London Bridge | | Reigate | M | 31-40 | | | | | | X |
| 3 | 10 | Belgrave Square, London | | RH20QA | M | 41-50 | X | X | | | | |
| 4 | 20 | London Victoria | | RH27JX | M | 31-40 | X | X | X | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 10 | London Victoria | | RH20PY | M | 31-40 | X | | | X | | |
| 6 | 10 | Farrington | | RH27JD | M | 31-40 | | | | X | | |
| 7 | 5 | Putney | | RH12HA | M | 41-50 | X | | | X | X | |
| 8 | 6 | London | | RH12DP | F | 41-50 | | | X | | | |
| 9 | 7 | London City Thameslink | | Waterlow Road Reigate | M | 51-60 | | X | | | | |
| Totals and Averages | 11.8 mins. | | | | | | 65% | 46% | 15% | 42% | 23% | 19% |

Numbers 1 through 6 are answers to the question: What is your main motivation for cycling to the rail station?

1: Exercise Benefits
2: High cost of car or bus transport
3: No access to a car
4: Ease of transport (avoid carbon emissions)
5: Environmental concerns
6: Lack of vehicle parking at the rail station

**Appendix G: Cyclist Survey Data Part 2**

| Survey # | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | X | | X | | | | | | | |
| 2 | X | | | | | | | | | |
| 3 | | | | | | | | | X | |
| 4 | X | | | | | | | | | |
| 5 | X | | | | | X | | | X | |
| 6 | X | | X | | | | | | | |
| 7 | X | | | | | | | X | | |
| 8 | X | | | | | | | | | |
| 9 | X | | | | | | | | X | |
| 10 | X | | X | | | | | X | | |
| 11 | X | | X | | | | | | | |
| 12 | | | | | | | | | | Want no cycles on trains |
| 13 | | | X | X | X | | | | | |
| 14 | X | X | | | | | | | | CCTV-locked bike outside station has been stolen |
| 15 | | | X | | | | | | | |
| 16 | | | X | | X | | | | | |
| 17 | X | | | | | | | | | |
| Online Survey # | | | | | | | | | | |
| 1 | X | | X | | X | | | | | |
| 2 | X | | X | | | | | | X | |
| 3 | X | | X | | | | | | | Police controls to increase safety to cyclists |
| 4 | | | | | | | | | | Cameras clearly directed at the covered cycle racks to deter thieves, but I've never had any problem in the last 20 months or so I've been cycling to Redhill |
| 5 | X | | | | | | X | X | X | |
| 6 | X | | | | | | | | | |
| 7 | | | X | | | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | X | | | | | | | | | Improved cycle racks and proper cycle route past Memorial Park |
| 9 | X | | X | | | | | | | |
| Total # of Responses | 19 | 1 | 12 | 1 | 3 | 1 | 1 | 3 | 5 | |
| % of respondents who chose answer | 73% | 4% | 46% | 4% | 12% | 4% | 4% | 12% | 19% | |

Numbers 1 through 9 were answers to the question: Which of the following would you like to see more of? Pease tick no more than three.

1: Improved cycle route from where you live
2: Cycle hire at or near the station
3: More covered cycle racks
4: More individually securable cycle lockers
5: A secure manned cycle storage area
6: Cycle training to improve confidence when cycling
7: Showers available at or near the station
8: Lockers and changing facilities at or near the station
9: Repair and maintenance service at station

**Appendix H: Cyclist Survey Data Part 3**

| Survey # | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 1 | A23 | | | n/a |
| 2 | A23 | Woodmasch Road | | Better quality of roads as having to potholes is too dangerous. Cycle lanes are no use if they stop and you have to rejoin traffic. |
| 3 | A23 | | | Recent improvements sufficient |
| 4 | Blackborough Road | | | Better maintained roads, more room for cyclists |
| 5 | A23 | East Surrey Hospital | | More cycle lanes dedicated to cyclists rather than fast point on the side of the road |
| 6 | A25 | | | Better road maintenance-potholes near verge make cycling hazardous, particularly at night. The section by Magistrates Court is particularly bad |
| 7 | Blackborough Road | Redhill High Street | | Better road surfaces |
| 8 | A25 | Blakborough Road | | Fill dangerous potholes (permanently) on A25 between Reigate and Redhill. |
| 9 | Blackborough Road | Station Road | A25 | n/a |
| 10 | Blackborough Road | A25 | | n/a |
| 11 | Green Lane | Linkfield Lane | Station Road | cycle lanes-better surfaces (potholes) |
| 12 | Cockshot Hill | Lesbraun Road | | Dedicated cycle lanes on main roads |
| 13 | Blackborough Road | | | n/a |
| 14 | Whitepost Hill | Elm Road | Grovehill Road | Remove potholes-they are dangerous especially in the rain at night when they are not visible. *also listed Brighton Road and A25 as roads traveled* |
| 15 | Residential Streets | | | Separate cycle lanes in London, keep cycle away from large vehicles and homes |
| 16 | Pendleton Road | Golf Course | Church | More cycle racks and coverage |
| 17 | McDonalds | The Hatch Pub | Donnyngs | less potholes |

| Online Survey # | | | | |
|---|---|---|---|---|
| 1 | Pendleton Road | St. Johns Church | A23 | Smoother road surfaces (fewer potholes, better standard of making good after roadworks); more 'cycle-friendly' road layout instead of cycle-paths that cease at junctions. |
| 2 | | | | |
| 3 | Wray Common Road | A25 Hatchlands Road | A25 Station Road | Proper bike lanes or at least removal of potholes |
| 4 | Blackborough Road | Hatchlands Road | Station Road | The eastern junction of the Chase and Blackborough Road is dangerous and I have come very close to being hit by a car joining Blackborough Road from the Chase a number of times-cars often do not slow down when driving East to West and join onto Blackborough Road dangerously. |
| 5 | Wray Common Road | Reigate Road A25 | | More dedicated cycle lanes, improved quality of roads (surfacing is terrible), ensuring taxi drivers are fully qualified and licesnsed (these are overwhelmingly the worst drivers on the road and the least cycle aware) |
| 6 | A217 | | | safer cycle routes to the station |
| 7 | Monson Road | A23 | | Better signing of cycle lanes. Fewer cycle lanes using main roads |
| 8 | Linkfield Lane | Gloucester Road | Memorial Park | Decent clean cycle racks (no more muddy puddle to stand in every morning!) plus sufficient space to get bikes in and out of racks properly. Cycle route that enables people to travel west or north-west properly. |
| 9 | A23 (south of station) | Main roundabout outside station | Redhill pedestrianised | I use cycle lane on A23 south every day – would like to see double yellow line parking |

| | | | | |
|---|---|---|---|---|
| | | | high street | restriction because currently the lane is blocked with parked cars on some evenings<br>Also roundabout by station is the most difficult part of the journey (getting across it safely from pedistrainised town center and into the station) |

Numbers 1 through 3 are the responses given to the question: Please list the main roads you travel on, or landmarks you pass, to get to the rail station.

Number 4 is the response to the question: What specific improvements would you most like to see to cycle infrastructure?