Part 2a
Understanding Cycling

In this section we discuss the issues relevant to cyclists which are affected by a cycle network. This is included so that the lay person can appreciate why some existing schemes are deprecated and others are promoted vigorously.

The fundamental approach is to look at how cycling facilities can be used to

- Improve safe cycle journeys
- Encourage more journeys to be made by bike
- Integrate with other vulnerable users

1 Why provide cycling facilities?

Before describing what we would like to see in the WCN we ask the very simple but necessary question "What are we trying to achieve?". When we know this we can collect methods and apply them to achieve these objectives. When there is currently only a fraction of the money available that is really needed there is no place for wooly thinking.

1.1 Types of journey

1.1.1 Daily journeys

- The greatest pressure on the road network is due to commuting from work or school.

- The greatest potential in a town the size of Witham for increased cycle use is for 10 minute commuter rides to work, school or transport interchange.

- The greatest drawback is the lack of facilities at work for cyclists and the assumption that an umbrella is the only wet weather gear anyone will need. The attitudes of employers is beyond the scope of this document but it shows the importance of being able to avoid the spray from passing vehicles (particularly the diabolical spray from lorries) and hence the value of routes away from major roads.

- Most commuters find a 10 minute cycle acceptable and many are willing to cycle 15 minutes each way.

- Longer-distance commuters who have a lightly trafficked part of their journey find that this is a valuable and relaxing solitary interlude. Being able to cycle through the countryside and see the changes in the seasons is not just something for recreational cyclists. Hence the value of peaceful routes.

- Having a direct route is very important. While another mile to a car is just one of those things, an extra 15% added to journey times severely restricts the number of cyclists willing to make the journey.

- Cycling to school has many benefits:
  - reducing the traffic outside schools,
  - giving adults and children the flexibility to arrange independent journeys
  - being an introduction to developing good cycling habits
  - improving spatial awareness and coordination
  - improving health and fitness

- Children's peripheral awareness (being able to track things outside their vision such as the position of an overtaking vehicle from a glance behind) develops rapidly somewhere about 10 years old. Therefore we must carefully control younger children's exposure to situations where they may not be able to see everything that is going on. For example oblique crossings and crossing side roads with wide bell-mouthed junctions are hazards.

- A similar argument applies to the tendency for children to be easily distracted. In order to reduce the hazard of a distracted child cyclist we have to reduce the speed and increase the alertness of other traffic and/or provide separate routes.

- Everyone can tell the difference between a 11 year old and 15 year old cyclist yet these are only four years apart. 15 year olds are stronger and can be more deliberately reckless. Children of this age can sometimes be a nightmare when mixing with pedestrians and so, although (or, especially since) enforcing no-bikes on footpaths is virtually impossible, 15 year olds should be expected to be able to use the roads safely in all circumstances given the appropriate training and suitably safe roads. (We will return to shared-use issues later.)

- Daily journeys are made mostly in daylight although in the winter adult commuters have a dark journey and children may have a dusk journey while shift workers frequently have dark rides. Many cycle routes are not suitable for use at night due to the risk of encountering miscreants or obstacles.

1.1.2 Other non-leisure journeys

- Typically from home to one or more public places. For example shopping. Often one journey will involve visiting a number of places in the town. The provision of cycle parking depends on how people use the cluster of town centre facilities.

- Non-leisure journeys are mostly made in daylight.

1.1.3 In association with other sport or leisure activities

- In a family there will often be a single person who wants to take part in a particular activity. A bike is quite appropriate for this journey. Cycling is a self-contained activity which doesn't impact on the rest of the family's ability to go where they want. Suitable secure parking is required at every venue.

- Adult activities often happen in the evening and therefore typically involve a journey in the dark. Many people feel less at risk from undesirable encounters on a bike than on foot providing they can maintain a reasonable pace.

- If children can use their bikes to get to their evening activities this reduces the amount of ferrying required by parents. While not so obvious as the clogging of the roads in the rush hours the total number of ferrying miles for very short journeys must be enormous.

1.1.4 Leisure purposes

- Only 50% of days in a year are school days. Therefore we see there is a significant demand for children to be able to 'muck-about', go to some activity, or simply get out of the house and 'do their own thing'. And, of course, there is the potential for family groups to take trips together. Safety and lack of hassle are much more important in this context than for commuters. Therefore traffic-free roundabout routes are acceptable. For a family party the worst part of the route needs to be negotiable by the least able cyclist. This is why:
  - the network must be joined-up
  - road junctions and crossings need to be engineered for cycle safety with proper consideration for accompanied beginner cyclists.

  (Note: As far as possible the youngest accompanied cyclists should be able to use the facilities as an adult would so that they learn how to use them for when they are out on their own when they're older.)

- Most leisure journeys take place during daylight.

- Leisure journeys may, but often do not, involve trips to and from major centres. There are many local neighbourhood visits which follow no clearly defined travel corridor. Hence the need for cut-throughs. Housing estate design tends to minimise the number of access points. While there are good planning reasons for having a single car access point this is completely detrimental to the use of cycles. (This design philosophy is still being promulgated. For example a recent planning application for an estate in Witham proposed two road and one shared path access to the front of the estate but only one shared path at the back which would lead onto a larger area of housing.)

2 Cycle facilities

2.1 What makes a good route

Different people look for different things from a cycle route, but it

- has to feel safe enough to use
- has to go in the required direction
- has to be suitably constructed and maintained for bicycles

2.1.1 Directness

Commuter cyclists want to get where they're going quickly just like any other traveller. Being exposed to the elements makes this even more important.

It might seem unnecessary to state the obvious, but in fact we live in an age where indirect routes are still being designed by highway engineers who are thinking first and foremost about cars and lorries being diverted to manage town centre traffic. This is totally inappropriate thinking for cycling. Research in Colchester shows that as many as 1 in 4 cycling journeys along one-way streets are in the wrong direction! Until the reasons for this are understood and addressed this will continue to happen.

One major problem with some schemes seen elsewhere is the frequent need for cyclists to give way. For example one junction scheme being proposed in Colchester has 7 give-ways in 60 yards on the cycle route compared to only one for cars. This is yet more putting the car before the bike when the cyclists need efficient routes more than cars.

2.1.2 Continuity

Where cycle lanes have been introduced they often simply give up at junctions. This isn't acceptable. Junctions are the most hazardous part of the journey.

Where people are considering whether a route is safe they have to assess the worst segment. If that one link in the chain is thought to be dangerous, illegal or full of hassle then the whole route may be discarded. Where alternative routes are available, are they properly connected?

2.1.3 Safety

Fear

One of the main reasons given for not cycling or allowing children on the road is safety. The idea that you need to have a mountaineer's helmet and high visibility coat to cycle to the shops encourages people to think the roads are for reckless risk-loving athletes.

Experience

Cyclists who have not got experience, confidence or haven't acquired the assertiveness needed for dealing with road traffic often make a meal of manoeuvres on roads and at junctions putting themselves into positions of danger and increased risk. One major way, possibly the most important single initiative, to make roads safer for cyclists is to improve the training available for cyclists.

2.3.2.1 Traffic hazards

While it is acknowledged that cyclists can be a danger to themselves and pedestrians it is also the case that other road users through their lack of care or understanding are a considerable hazard to cyclists.

- Pedestrians step into the road in front of cyclists. This happens very frequently.
- Car drivers often show a deplorable standard of driving with no mitigating circumstances.
- 'White-van-man' - An ignorant oaf and bully of the road

- 26% percent of cycling fatalities are caused by HGVs that form only 7% percent of vehicles. While cyclists can easily put themselves into danger in many ways and therefore it is unfair to simply blame HGV drivers , it shows that where possible efforts should be made to keep HGVs and cyclists apart.

There are some special situations where negotiating traffic is more hazardous than normal. These are:

- Vehicles travelling at high speed or at a greatly different speed to the cyclist.

- Vehicles stop-starting in a queue. (Especially traffic lights.) The cyclist is overtaking for some of the time and being overtaken for the rest. Does the cyclist try getting through on the inside and risk being squashed against the side or the outside and face oncoming traffic and being overtaken on the inside?

- Wet weather when the cyclist will be positioned further out into the road to avoid the rain-filled gutters and overhanging foliage. Also it should be remembered that bicycle brakes are much less effective in the wet.
- Vehicles parked at the side of the road where there is a large amount of getting in and out of cars. The main hazard is from the offside doors being opened directly in front of a cyclist because the occupants of the car fail to look behind properly.

1.3.2.2 Road hazards

Almost every bike journey involves roads for some segment. Often it is the weak link in the chain of an otherwise 'safe' route.

1.3.2.2.1 Everyday roads and cycle routes

Junctions are much more hazardous than the ordinary road.

It can sometimes be quite difficult to distinguish parts of the road that cyclists have difficulty with. For example two seemingly identical junctions may be quite different to a cyclist for reasons that most cyclists would find difficult to describe. The 'best' technique for negotiating these two junctions may be different. These matters can only be discovered by experience. Furthermore, different types of cyclist may find their view of a particular junction are quite different - once again mainly down to technique.

- Potholes and uneven road surface. Not only can these cause a rider to lose control but may cause the rider to swerve excessively and come into conflict with other vehicles. These often fester and at present the standard of road watching and repair is quite poor and must be improved. Colchester road is an example.

- Foliage can be a direct hazard, can narrow the path so that pedestrians and cyclists come into unnecessary conflict and can cause riders to lose control through trying to take avoiding action. This hazard exists mainly on paths and country roads. The path beside the A12 to Hatfield Peverel is an example.

- Tricky spots - As discussed above these are subtle combinations of geometry and distractions which lead to problems. One example in Witham is travelling south through the S-bend in Mill lane where changing geometry, uncertainties about the width of the road (encouraging cars to pass when perhaps they should wait) lack of any pavement (as a last resort escape) and uncertain state of the road combine to make a big hazard out of many smaller ones.

- Not-quite-wide-enough roads (and traffic lanes) appear to be wide enough for vehicles to overtake but are really a foot or so too narrow to do this safely. The vehicle driver compromises the width between them and the cyclist as a result.

- Being blinded by headlights when cycling (correctly) on a designated path in the opposite direction to the traffic. ie the oncoming cars pass to the cyclist's left. Example: A12 path.

1.3.2.2.2 Turning right

This is one of the trickiest manoeuvres and depends on technique and bravery in the face of often hostile traffic. Volume and haste of the traffic are prime indicators but the tricky-spot factor is also significant. One example is turning right from Braintree road into Chalks road. There are three phases to this manoeuver:-

1 Moving to the right-hand side of the lane
2 Waiting in the centre of the road to turn right
3 Crossing in front of oncoming and dealing with any vehicles exiting from the side road.

All of these are affected by pressure (volume and haste) of traffic, highway geometry though affects the safety of phase 1 particularly and highway design in general affects the safety of phase 2.

- The literally right-hand signal is used to move out into the traffic lane and not while slowing down or turning (both hands on the bars and brakes). This signal can get abbreviated if time is short and from then on the motorist is expected to appreciate from the cyclist's road position what their intentions are. Very cluttered junctions with signs, parked cars, garages and queuing traffic (to name but some) are all distractions that can mean that a motorist fails to understand the situation.

- When turning from a main road into a side road there are the dangers of having to cross the traffic lane and stay in an exposed position.

- When at a T-junction the dangers mostly come from poor cyclist and driver skills. For example either or both parties could be to blame when a vehicle turns sharp <u>left</u> trapping the cyclist against the kerb.

- We recommend that every right-turn on major roads is assessed for hazard by experienced cyclists and if necessary re-designed. This is not something that can be left to highway engineers because the factors are so many and various.

1.3.2.2.3 Dual carriageways

- These are unpleasant for cyclists because of the increased speeds

(legal or otherwise) found on them.

- The major difficulty arises where a cyclist has to transit from the left lane to the right, often ending up holding up the fast lane.

- In many towns a fence is placed along the central reservation. This prevents cyclists who are joining from a side road turning right. The only legal option for them is to follow a diversion which typically involves high speed roundabouts. This is unsatisfactory. (Pedestrians are usually provided with a footpath in the 'upstream' direction.)

1.3.2.2.4 Roundabouts

- These are killing fields for bikes. What highway engineers term a "junction improvement" is often a nightmare for cyclists.

- High speeds and varying numbers of entry lanes are one factor to avoid. Having many lanes round the roundabout itself is another danger.

- A lot of research has been done into the design of roundabouts and the specific hazards faced by cyclists. One proposed solution is to have peripheral bike-only paths. However the real value of these is uncertain as all they do is define who has right of way and leave the cyclist to negotiate possibly half a dozen road crossings. (As compared with the single give-way at the entrance to the roundabout if the cyclist was travelling like ordinary traffic.)

1.3.2.2.5 Traffic calming

While it is a good idea to regulate the speed of traffic there are certain hazards introduced in the name of traffic calming that affect cyclists through poor implementation or the nature of the scheme.

- Chicanes and central islands cause conflict when drivers try to speed or squeeze past cyclists at these narrower sections. Spa Rd. has an example of an unmitigated chicane.

- Care must be taken when putting rumble strips into the road that the vibrations are not too severe. Legal limits have been known to be flagrantly ignored by highway authorities.

  The 'noisy red surface' just north of Sauls Bridge is now quieter than the surrounding road and not very red. This is cheap, second-rate, 'convenience' engineering and we have to question the value for money of this approach.

- The installation and maintenance of humps and tables needs to be done with care. One common method of construction is to edge the ramp with kerb stones but these are often vertically lifted above the road by half an inch or so. This practice should cease with the maximum vertical edge being limited to 6mm as used in rumble strips.

- Paviours across a lightly used side road can send misleading messages to pedestrians if there is still a highway across the paved

area. While motor vehicles may be barred, cyclists still have a right of way and the distinction of road and pavement needs to be defined.

1.3.2.2.6 Highway follies

Highway engineers have been designing in concrete for the car for decades. They obviously have great difficulty adapting to the world of cycling. Here are some Witham examples:

- The lights controlled crossing where the River Walk crosses Bridge Street. This has no left/right turn symbols for bikes in order to prevent them from conflicting with pedestrians similarly crossing. This illustrates a mentality that supposes cyclists are as vision impaired as motorists. There are plenty of 'Toucan' crossings that work without this restriction.

- The massive and pretty pointless over-engineering of the junction of Guithavon Valley/Street/Road and Mill Lane.

- The proposal to make Guithavon Street one-way throughout without considering the implications for cyclists.

1.3.2.3 Personal security

There are public roads in Witham that are best avoided on a Saturday night if you're on a bike, but at least these are in full public view. However the cyclist can be vulnerable at any time and place.

- Harassment of cyclists on country lanes is quite common.

- Many cycle paths are not overlooked by properties. For all new designs this should be the case as outlined in the Essex planning officers design guide. At busy times these routes may be acceptable but at night should definitely be avoided by cyclists.

- The risk of being mugged decreases with speed. It is easier to get away from trouble if there are no obstacles.

- The threat increases in confined spaces.

The planned Spinks lane to Allectus Way path combines the worst of two features: It isn't overlooked and it is confined.

2.2 Shared facilities

We will always have a variety of cases of sharing facilities between all travellers - which means all of us have to co-operate. The appropriateness of use, degree of formality and actual hazards posed need to be assessed carefully so that the benefits of being able to go where you like safely are not outweighed by the dangers you're exposed to by other users. Crucially, it is the duty of all users not to cause a hazard to others.

Finding the right compromise is down to the users in each situation. Dictatorial and rigid rules are a last resort.

1.4.1 Pedestrians

Formally shared footpaths seem to have worked well in Witham. There is the right degree of "now then - if the cyclists would *try* to keep to *this* side and the pedestrians *try* to keep to *that* side we can all get along." Solid white lines are ignored by children and dogs not to mention every other user and Mother Nature.

There is a small, thoughtless minority of cyclists who have no regard for other users. It is because of their behaviour that sharing facilities has to be treated very cautiously, and tolerating children cycling on the pavement has to be done very sensitively. One hopes that with time estate roads will become safer and cyclists more aware of their obligations and the threat they pose to other users. However there are footways which are the only practical cycling route due to an inheritance of poor planning and thoughtless highway engineering.

> It is a simple statement of fact, observable any day of the week, that cyclists won't get off and push any more than car drivers would.

Even 'responsible' cyclists often fail to recognise the threat they represent to pedestrians. Whilst the cyclist 'knows' they can go round with a clever swerve or that overtaking a pedestrian from behind at 20 mph is perfectly safe this can be a serious shock to the pedestrian. We are sure that a little education will solve this problem for all responsible cyclists.

There will always be friction, for example a couple recently complained about "having to take their lives in their hands" when walking along a dedicated cycle trail (Colchester to Wivenhoe) and would not accept that this was firstly a cycling facility and only secondly for pedestrians. The fact that after 4 years there had been no reported accidents didn't do anything to soothe their outrage.

Commuter cyclists expect to be able to ride at up to at least 20mph on a dedicated track (say 15mph on a trail) without bother. Doing this on a busy shared use route is difficult especially if the design of the route is sinuous or has poor sight lines. We would expect any facility that claimed to be for cyclists to be designed to a <u>minimum</u> of 15mph. We would expect trunk routes to be designed for higher speeds. At some point the speed of cyclists (who after all are just trying to get from A to B as quickly as possible like everyone else) makes shared use impractical. At this point split and dedicated routes are required so that the two types of traffic can be separated.

In a survey, carried out for the Ctcle Touring Club to look at what the experiences of all shared use routes was, the conclusions were:

- Overwhelmingly users said the routes were unsafe and unattractive.
- Completely unusable by blind people while mobility impaired found them completely unsafe.
- Many suggestions were made by users for improvements
- Where there was no practical alternative these paths were tolerated as a second-best and every effort should be made to make alternatives work.

(Paradoxically survey results showed some evidence of increased use despite these reservations.)

We suggest that it is a important (and pretty basic criterion) that every cycling facility has a design speed established for it at an early stage and that this speed is related to the primary purpose of the route. From this the detailed design can be developed with proper attention being paid to conflicts, hazards, sight lines and classes of traffic allowed to use the route. For example the currently proposed cycle route running from Short Ridge to Spinks Lane is a daytime school feeder rather than a trunk route and therefore the standards need not be as high as say the proposed trunk route through Maltings Lane which can't be treated as a footpath with lots of junctions, pretty curves and greenery cluttering up a high speed route for serious commuters.

Where tatty, un-lit, and overgrown footpaths are refurbished these improvements are then available to all. Similar arguments apply to kerbs and steps with pushchairs and electric scooters. Unchecked vegetation and rotten surfaces are a big deterrent to frail and wheelchair users.

Every day a lady trundles her shopping-bag-on-wheels past the author's house in the road because the kerbs are too much.

Parking will be dealt with later.

1.4.2 Cars

It is inevitable that bikes will share with cars. Only a small proportion of cycle journeys can be made 100% off-road. Therefore we need to ensure that

a The roads are maintained to a standard suitable for cycling
b Traffic is managed to reduce risk
c Risks hot-spots are identified and plans made to reduce the risk or provide alternatives.

Sloppy driving is the No 1 hazard. Careless in-a-hurry drivers not only forget to take into account other road users but also attempt dangerous manoeuvres knowing full well that it is at the risk of someone more vulnerable than themselves. This is epitomised by 'White Van Man' who parks wherever it suits him, pulls out without looking, doesn't indicate, squeezes through road narrowings at speed, swerves while reading the street map and intimidates lollipop ladies. This is the worst end of the spectrum, but even 'good' drivers have lapses and assume that cyclists should make way for them.

The 1997 plans for Witham showed a number of routes on estate roads. As discussed in Part 1, estate roads should be safe enough for all vulnerable users. The volume and speed of traffic should be kept low and junctions and shops need to be kept clear so that the inevitable coming and going is not compounded by badly parked vehicles.

A typical cause of accident at a 'corner shop' is caused by a driver pulling in then opening their door as a cyclist approaches from the rear. One-way streets have their own, more common, variant of this where the car pulls over to the right and the passenger, who may not be used to looking behind and doesn't have a mirror to appreciate the situation, opens their

door directly in front of an overtaking cyclist.

Most cycling accidents happen at junctions.

There is no science of junction design except for the tomes that have been written for highway engineers on how to design for motorised vehicles. What makes a junction dangerous can be very subtle. In the following parts 2b and 3 we have illustrated where we consider the major hazards to be and what is particular about these junctions.

It is very noticeable that when the existing cycle paths come to junctions they peter out. Quite clearly highway engineers find it difficult or too expensive to deal with the main hazard. The first step to dealing with this situation is to identify the hazard hot-spots and see what can be done in each case.

Roundabouts are killing-fields for cyclists. Multi-lane roundabouts with flared entrances are a particular nightmare. These are called "junction improvements" in highway plans but can easily be seriously retrograde steps from the cyclists point of view. Experienced cyclists have to be on maximum alert here. Others less experienced simply won't consider them.

Traffic lights have problems of their own. These stem from the ability of the cyclist to get past a queue of traffic on the inside or outside. (Illustrations in part 3 of Bridge street lights.) Both routes have their own hazards while the queue is stationary, but a queue at traffic lights is stop-start. The cyclist can find themselves being squashed by creeping traffic if they're going down the inside, or being overtaken on the inside if going down the outside. The most common solution to this major hazard is to provide a dedicated cycle lane on the inside which leads to a waiting area at the front of the queue (An Advanced Stop Line or ASL.) This can still be difficult for right-turners and cyclists need to be educated in the do's and don't's of cycling up to a junction on the inside but is better than nothing.

Wet weather makes cycling on roads more hazardous and unpleasant. In particular: Brakes are less effective, visibility for all users is poorer, standing water needs to be avoided where possible, spray from vehicles, particularly lorries can be drenching. Cycling on main roads in the wet is nothing but a mugs game.

Country lanes are often very pleasant to cycle along. There are some where the surface is poor or liable to be covered by slippery gravel washed from banks.

1.4.3 Goods vehicles

HGVs cause 26% of cycling fatalities but are only 7% of the traffic.

The spray, thundering fear and windage of large vehicles is a major deterrent to cycling on main roads (and all 40mph or above roads).

When large vehicles use 'B' roads a problem can easily arise where the lorry overtakes but doesn't do the job properly and squeezes the cyclist into the hedge or off the good surface into the rotten edge.

Where there are a lot of lorry movements, including temporary works such as building sites which are known black-spots, there should be a safety analysis and appropriate steps taken to reduce the risks. In Witham the Colchester Road is the major instance of this. The concentration of three industrial estates here might suggest that cycling facilities should be provided off-the road. Certainly the current provision here is haphazard, badly signposted and on poorly maintained roads.

The Cycle Touring Club and Road Haulage association have jointly published a report on this issue. Called Delivering Safer Roads, it highlights good practice, beneficial initiatives and suggests key elements of a lorry strategy that local authorities could adopt.

1.4.4 Through and neighbourhood cycle use

Using cars for short journeys is not sustainable. Popping out for a paper and fags, or taking the kids to Scouts should not involve the car.

Neighbourhoods need to be permeable to pedestrians (including the frail and assisted) and cyclists. There are many examples in Witham where estates are built in pockets with access on one edge only. This is not acceptable. If there is any reason for allowing access from all edges then these must be made available. The recent application by Countryside for a pocket estate at Jacksons Farm, Maltings Lane was drawn up on these lines with very poor access to what will become the main body of the development.

Where possible cycling in estates should be done on the roads and the roads should be safe and suitable. This has a number of benefits including:

- Giving children experience of how to use roads while in a sheltered environment.
- Keeping bikes off pavements.
- Allowing bikes to travel at speed without frequent give-ways
- The 'threat' of youngsters on bikes acts as a reason for residents to drive with more care and attention and obey the limits.

However, where estates meet through roads an obvious distinction needs to be made with careful junction design ensuring that the right-hand turns are safe or have convenient alternative crossing points.

Cut-throughs are typically short alleys. Insignificant though these may appear on plans, they are vitally important. Developers need to ensure that these are properly overlooked by adjacent properties to increase security and are of a decent width after allowing for summer's vegetation. Lighting is essential. Consideration should be given to the sight lines so that say a cyclist has some warning of a dog on a lead coming round the corner.

However cut-throughs are not intended for high speed commuters but for

very local journeys. If a commuter route passes through an estate then it should in an ideal world use the estate road which is lit and signposted. (Providing traffic calming is not too fierce for bikes. Example in Part 3.) The next alternative is for a direct, dedicated and designed for high speed cycle path. The sight lines and gradients need to be generous and the number of give-ways minimised. The distinction between local and commuter routes is important.

3 General issues

3.1 Various types of cyclist

- Older people don't like traffic - often no longer have the confidence to claim their share of the road and get squeezed off.
- Children have to learn somehow how to deal with roads and parents need to develop the confidence in their children's ability to deal with the everyday activities involving cycling .
- We have seen five year olds happily cycle 5 miles on a Sunday afternoon on an off-road trail.
- There is a perfectly legitimate form of cycling which involves loading bikes onto cars, parking, then having a circular tour of the country.

3.2 Illegal activities

- A survey of Colchester High street showed 1 in 4 cyclists were going the wrong way! This shows there is something seriously wrong with Colchester and a dis-regard for one-way systems where the alternatives are inappropriate.

- Traffic management schemes based on very poor quality research (Such as Guithavon St. one-way proposal) bring all signs into disrepute. The no-right turn into Albert Road at the station is a similar situation where no alternative has been given for cyclists.

- The distinctions between a pedestrians-only footpath and a general use path are blurred. This isn't helped by the Spa Rd. path which is partially completed, with cycle/pedestrian tactile blocks but no signs or indication.

3.3 Poor quality facilities

- There is a noticeable lack of signs encouraging cyclists to use existing facilities such as Motts Lane.

- The trouble of start and finish of cycle routes in Witham is often ducked by the designers. Typically the official route stops a few yards short of the road with no dropped kerb. Some examples are shown in Part 3.

- Often cycle paths join in an abrupt Tee. Cycles are not like prams or people they have a considerable turning circle which the designers have failed to appreciate.

- There is a legacy of stopping all cycling in certain places using railings to make passage very difficult. Unless there is a good reason these railings should be removed and replaced either with bollards or just one set of anti-rush-into-the-road barriers.

- Vegetation needs to be kept under control. Councils and the Highways agency have scheduled maintenance but are poor at dealing with issues when they arise. Being struck in the face by a bramble is not a joke; there have been many cases where attempting to avoiding vegetation has resulted in an accident. Overgrown vegetation is also an issue for all path users.

- Drawing lines on maps is a favourite pastime of planners briefed along the lines of "we must be seen to be doing something". We can see this going on in Witham. This may be good for image building but results in money being spent on prestige projects without prioritisation. This is a serious issue for Witham.

3.4 Parking

(We will deal with this subject in more depth in a later report.)

- Bikes on pavements can cause clutter and obstruct pedestrians.

- Cyclists expect to be able to park at their destination not away from it. As illustrated in Part 3, 10 yards is sometimes too far.

- Converting car parking bays into cycle parking bays should be considered. Obviously many more bikes can be fitted into the space occupied by a single car. This has the advantage of getting bikes off pavements.

- Parking at the railway station has still not been addressed after eight years of being BDC policy.

- Storing bikes conveniently at home is a known problem area and highlighted as such by planners but then ignored by developers.

- Long term parking facilities in the nature of bike boxes should be considered. Often about half of the bikes parked in Witham stay there for many hours at a stretch.

Note: We would suggest that where cycle paths join roads there is a no-parking zone to improve visibility for cyclist and motorist.

4 Traffic demand

Taking a felt tip pen to a map is something we have been critical of, so here we attempt to highlight the need in advance of drawing our own conclusions.

4.1 Difficulties

Unfortunately in most cases we cannot accurately measure the demand.

- Measuring existing cycling flows is notoriously difficult and prone to large errors

- We're planning alternatives to existing routes which may or may not be more attractive and may or may not be sufficiently attractive to generate new traffic.

- We're assuming that over time new cyclists will 'give it a go' and thus the route will start to fill up with people who never cycled before.

- The nature of demand (and deterrents) is not constant. New developments and change of working patterns are inevitable.

4.2 Method

Therefore we have taken a two-pronged qualitative approach

4.2.1 Attempt to remove obstacles

By making routes easier, safer, faster and generally more attractive to ride we hope to remove the disincentives to cycling. This should increase cycle traffic as a result even though we don't know where it is going to and from.

In general cyclists want to go anywhere and everywhere. (School in the morning, home for lunch, muck about after school and judo in the evening or child to nursery, shops, surgery, library, evening class.) so we think this is quite a reasonable approach.

4.2.2 Try to serve traffic generators

Despite the many uses for a bike, some distinct destinations can be identified.

Schools	• Tend to be built-in to the areas of housing they serve. There are though exceptions. • Most secondary school children should be able to cycle if they wished. Mostly daylight.	This is a major subject that needs addressing in conjunction with each individual school. Colchester has pioneered safe cycle routes to schools and it is not a trivial matter. The actual catchment area needs defining.

Railway station	All of Witham town is less than 10 minutes from the railway station so there must be a huge potential.	All the traffic arrangements around the Station need looking at in the whole. There are currently major dis-incentives.
Centres of employment	The industrial estates (Industrial workers have fewer problems with change of clothes than white collar workers.) to the East of the Rail trail.	• A neglected source of traffic. • Commuter routes need to service these estates at all hours of the day and night
Sports and social facilities	•Spinks Lane/Spa road •Town centre (These are heavily used at night.)	• Access to/from centre needed from Spa road estates. • Alternative to Maldon Rd./Bridge St. needed for South of town

5 Accident analysis

We have looked at the accidents reported to the police involving cyclists in the last three years. This data was kindly provided by Essex County Council.

In total there were 28 reports. We can't say what fraction of the total bumps and scrapes this represents as there is a recognised problem of under-reporting of both collisions involving two or more people and single person events. For example slipping on an icy patch or being forced into a hedge is unlikely to get reported unless there is serious injury or other people are hurt.

There is not really enough evidence to identify any one piece of road as a major blackspot. However there are many examples of situations described in previous sections. There are examples of 'classic' accidents such as problems with queues at junctions.

We can analyse these data by identifying which factors seem to be involved by reading the narrative reports.

Junctions 14	Mostly "car crosses path of cyclist". Two cases of "cyclist runs into rear of waiting car".
Bad Driving 13	Driver doesn't see cyclist. Driver doesn't allow enough room.
Night 6	All the accidents in the dark look like "driver failed to see cyclist". There is no mention of any cyclists not having lights. All but one were in areas of street lighting.
Bad cycling 6	
Door opening 2	
Wet road 2	This may be a contributory factor to "cyclist runs into rear of waiting car". Oil and water can be very slippery.
Restricted visibility 2	
Lorries 0	