Professional Support Service

Essex County Council

Cycle Monitoring Best Practice Case Study

Final Report

November 2007

Contents

Acknowledgments:

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1. Introduction

This report was prepared on behalf of Cycling England by Mark Strong of Transport Initiatives LLP and checked by Adrian Lord of Arup. It reports the work on cycle monitoring carried out by Essex County Council (ECC) between 2006 and 2007. This followed a study in 2005 by into improvements to the cycle monitoring provision in the county.

1.1 Background

A study into improved cycle monitoring provision was carried out for Essex County Council in 2005 by Transport Initiatives, with a report entitled *"Monitoring of Cycling in Essex - Report on the current situation and proposals for improvement"*. The study reviewed the locations for cycle monitoring in five towns in the county: Basildon, Braintree, Chelmsford, Colchester and Harlow. These towns are the focus for ECC's proposals to increase cycling which are set out in its second LTP (2006-2011). In addition locations for improved cycle monitoring at Stansted Airport were investigated as part of ECC's partnership working with BAA to increase levels of cycling by staff at the airport.

Cycle monitoring techniques differ widely between local authorities, despite DfT guidance on the second LTP which directs authorities towards a more standardised form of monitoring. The study investigated the current provision of cycle monitoring in Essex and reviewed it against the DfT guidance and good practice elsewhere. It also included an overview of cycle monitoring research and techniques, including details of manual and automatic methods. It concluded that ECC's objectives could best be met by increased use of Automatic Cycle Counters (ACCs) calibrated by manual counts.

Site visits were made to the five towns and Stansted airport to inspect existing manual and automatic monitoring sites and survey potential new locations. Recommendations were made for new and improved ACC sites in line with good practice. The report also included general recommendations for the management of the monitoring programme.

Following the findings of the study ECC's Cabinet Member for Highways and Transportation approved expenditure of £125,000 on setting up an improved permanent cycle monitoring programme in Essex to monitor the LTP2 period and beyond. Work was carried out during the latter part of the 2005/06 financial year to install new counters across the county. These comprised both induction loop detectors (for monitoring off-road cycling) and radar detectors (for on-road cycling). Due to a variety of reasons a number of the radar counters were not installed until 2007.

Meetings were held to examine in detail the progress of the new monitoring programme with officers of ECC as well as with their term highway consultants Mouchel Parkman who are charged with collating and processing traffic data. Site visits were also made to the location of new counters and site visits carried out with the suppliers of the new radar detector counters, Applied Traffic.

2. Methodology for Essex Cycle Monitoring Study

The study process comprised a desktop review of existing practice in cycle monitoring both nationally and in Essex County Council. This was followed by site visits to the five main towns (Basildon, Braintree, Chelmsford, Colchester and Harlow) and Stansted Airport. Recommendations were made for new ACC sites and improvements to existing sites in line with good practice. There were also general policy recommendations for the management of the monitoring programme. This chapter is based on the review carried out for the study. A summary of the study's recommendations is set out in chapter 3.

2.1 Cycle monitoring background

The main reasons to carry out cycle monitoring are:

- Trends – to detect changes and trends in cycle usage over time
- Baseline – to establish a starting point for use in target setting and comparison with future surveys
- Information – to provide details on the levels and characteristics of cycling
- Scheme-related – to investigate the effect on cycling of new measures such as cycling schemes or changes in policy

There is a limited amount of research and guidance on cycle monitoring. Much general guidance on monitoring uses information based on research into motor traffic and it is important to be aware this may not be directly applicable to cycling. Monitoring techniques differ widely between local authorities, although the DfT's guidance on the second LTP recommends a more standardised form of monitoring. A key study was published in 1999 by TRL[1] setting out guidance on monitoring, including advice on the level needed for statistically robust findings. The study was summarised in the DfT's Traffic Advisory Leaflet 1/99 *"Monitoring Local Cycle Use".*

Good monitoring requires survey conditions to be controlled or reported to allow comparisons between surveys and sample sizes that are large enough to allow statistically robust comparisons. The TRL study reported that both these requirements have usually not been met for the majority of cycle monitoring in the UK, and there is little evidence that the situation has improved since 1999.

In general, manual surveys have been carried out without controlled conditions (e.g. repeating a count if the weather is markedly different from previous surveys) and survey reports rarely include any details on conditions. Counts have often taken place in locations or times of the year where there are very low cycle flows. In general findings from most manual surveys will be valuable more as a 'snapshot' of cycling than as way of monitoring long-term trends.

[1] ***TRL 395*** *"Guidance on monitoring local cycle use" D Davies, P Emmerson & A Pedlar, 1999*

In Essex, the combined LTP2 target for increasing cycling in the five main towns over five years is 160% (an annual increase of 11%). In this case the number of counts per annum which would be follow from the recommendations in the TRL report would range from 30 (sites with over 250 cyclists/day) to over 100 (sites with fewer than 100 cyclists/day).

There is no theoretical reason why this level of monitoring could not be carried out manually. However while such surveys are not individually expensive, achieving the required frequency (possibly two days a week!) will be beyond the resources of virtually all authorities. The TRL study recommends that *"manual counts are not undertaken for long-term monitoring because the costs would be high".* In addition as the funding for manual surveys comes from revenue rather than capital budgets it could not be met from LTP funding.

In practice therefore statistically robust cycle monitoring requires automatic monitoring techniques designed for measuring cycle flow, i.e. Automatic Cycle Counters (ACCs). Details on these are given below.

2.2 Good practice

There is no clear guidance on the number of counters required in any given geographic area in order to provide robust data. The TRL study recommends that local authorities should install *"at least one, and preferably several"* ACCs at control sites where cycle flows are high and not expected to change, plus at least two more ACCs at sites where measures to promote cycling are being introduced. However it does not define *"several"*, nor does it differentiate between different sizes and types of authorities or areas. It also does not give guidance on how large authorities such as shire counties can determine local cycling trends in towns or other discrete areas.

In practice, the level of ACC provision varies widely between local authorities. The table below shows the situation in 2006 in a range of local authorities.

Local Authority	Approx. population *(2001 census)*	Number of ACCs	Counters per million population
Nottingham City Council (unitary)	267,000	15	56
Gloucestershire County Council	565,000	25	44
Essex County Council	1,311,000	54 [2]	41
Lincolnshire County Council	647,000	26	40
Hampshire County Council	1,240,000	46	37
Portsmouth City Council (unitary)	187,000	7	37
Oxfordshire County Council	605,000	20	33
Surrey County Council	1,059,000	28	26
Norfolk County Council	796,000	20	25
Hertfordshire County Council	1,034,000	8	8

Levels of ACCs in sample of local authorities

[2] *Number following implementation of measures set out in 2006 Cabinet report – see Appendix A*

Most shire counties have a level of provision within the range of 30-40 counters per million people (i.e. 1 counter for every 25,000 to 35,000 people). This overall figure does not take into account any requirements for data on cycling levels in specific towns. This might be needed for monitoring local LTP targets and for other purposes such as determining the effect of local interventions.

To assess the effect of policy and planning measures, the information collected needs to be statistically valid at the settlement size, not just at the county-wide level. Effectively, to obtain a robust figure it is necessary to count a minimum number of cycles. Hence in practice a higher number of ACCs per head of population will be needed in a small settlement compared to a larger one.

The number of counters will also depend on other factors such as the pattern of cycle movements. In particular a fine meshed network needs more ACCs than one where cycle flows are channelled, such as at bridges. ACCs also need to be distributed between locations where cycle flows are expected to be high (above 250/day) and medium (between 100 and 250 a day). Ideally ACCs would also be sited where flows are currently low, to pick up longer term trends. In practice these might be hard to justify on the grounds of cost-effectiveness.

2.3 Bicycle monitoring techniques

As discussed above, the requirement for robustness in cycle monitoring can best be met by automatic counts. However ACCs give no details about the demographics of cyclists (e.g. age, gender, ethnic group) or journey details which might be useful for other purposes, and hence there will continue to be a place for manual counts.

i. Automatic bicycle monitoring

Over recent years the performance and reliability of Automatic Cycle Counters (ACCs) has improved. Combined with lower cost options this has meant that their use in long-term monitoring of cycling has become more viable. Effective use of ACCs depends on accurate calibration of the counter. This requires an initial manual count at installation, followed by regular and periodic comparison of the ACC output data with manual counts at the same site.

There are a number of sources of errors common to all ACCs:

- **Coincidence –** two or more cyclists passing a counting device simultaneously
- **Failure to cross the counting device –** e.g. a cyclist bypassing a counter on a cycle track, or using the footway when the counter covers the highway
- **False positives –** objects of a similar size, shape and/or weight to cycles passing the counting device and being counted as a cycle (e.g. wheelchairs, electric scooters, shopping trolleys)

However these level of these errors will generally remain constant over time and so they can usually be discounted when the main purpose of monitoring is to measure trends in cycling (rather than absolute levels).

The main types of automatic counters for measuring cycles are described below.

Inductive Loop

Inductive Loop detectors consist of a loop of conductive wire buried in a road or path which detects a metal object passing over the loop by changes in the electro-magnetic field.

The loop should be laid under the entire width of road/path used by cyclists (see photographs below). Thus on segregated shared-use paths the loop must be laid under **both** pedestrian and cycle sides, since cyclists often use the pedestrian side – if only to avoid obstructions on the cycle side.

Inductive detection loops (highlighted) not covering full width of path

Radar

Radar counters consist of emitter and receiver units counting movements of vehicles passing through a beam projected onto the surface of a road or path. Careful location and good calibration of the unit enables a high level of accuracy, taking advantage of the ability to detect a combination of length and speed.

Pneumatic Tube

Pneumatic Tube counters detect vehicles as they pass over a rubber tube and constrict it, sending an air pulse to the counter unit. They can be vulnerable to damage including vandalism.

Piezoelectric

Piezoelectric counters consist of a strip embedded under a road/path surface which converts the pressure from vehicle wheels into an electrical signal. Technology has been developed to detect cycles in mixed traffic, though this is still in its infancy.

Beam counters

These operate by detecting moving objects (including pedestrians) that break a beam (radio, infra-red or visible light) that is emitted across a path. All types may have difficulty in differentiating between cycles and other vehicles, and cannot detect two objects crossing the beam

simultaneously. They are however useful in certain locations, especially where there is a high flow through a constriction (e.g. a footbridge). Portable units are available which are useful for short-term counts.

ii. Manual bicycle monitoring

Manual counts are the traditional method for monitoring cycling levels. However, as discussed above, they are unsuitable for measuring long-term trends due to the need for a high frequency of counts and the consequent costs. Nevertheless they remain an accurate means of measuring cycle flow and are appropriate for a number of functions:

- Calibration of ACCs
- To provide more detailed demographic information e.g. cyclists' gender or age
- To provide counts at short notice
- To carry out counts at complex sites, including details of turning movements

If manual counts (or indeed any infrequent counts) are carried out it is important to record details of the weather conditions, the day of week and any local conditions that might affect the count (e.g. roadworks) should be recorded. Local events including school holidays should also be noted

The TRL study on cycle monitoring includes six points to be borne in mind if manual counts are to be carried out effectively.

1. Count when flows are high/highest
2. Count during good weather
3. Count during British Summer Time, preferably between May and October inclusive
4. Where cycle journeys are primarily for utility, count on weekdays and avoid public/school holidays
5. Where cycle journeys are primarily for leisure, weekends and holiday periods may be appropriate times to count
6. Comparison counts should be undertaken at the same time of year

TRL recommendations for manual counts

It is important to appreciate that there are considerable variations in cycle flow both between days of the week and between months of the year. These are much greater than the variations in motor traffic. The variation between cycling levels on weekdays and weekends is much larger than that between weekdays, while there are three 'neutral' months (May, June and October) where the average cycling level is similar to the annual average.

3. Cycle Monitoring in Essex

The following is a summary of the recommendations of the Essex Cycle Monitoring Study, followed by details of the subsequent action taken by Essex County Council.

3.1 Recommendations of study

The policy recommendations to ECC in the study were:

- The level of monitoring at existing and new ACC sites should be a minimum of two weeks in every month (at least 168 days' counts a year), and ideally should be continuous
- All sites should be visited every six months to ensure they are fully operational
- Any counters with very low, erratic or static patterns of usage should be investigated as soon as possible
- Developments affecting ACC sites must include provision of a replacement in planning conditions or S106 agreement
- The number of cycles parked at key stations and other destinations should be monitored regularly (ideally monthly)

There were also specific recommendations on the siting of counters in the areas covered by the study.

Basildon	▪ Minimum of **7** ACCs (increase of 6) ▪ Relocate existing ACC and integrate into Essex data collection process
Braintree	▪ Minimum of **4** ACCs (increase of 3) ▪ Integrate existing Flitch Way ACC into Essex data collection process
Chelmsford	▪ Minimum of **11** ACCs (increase of 4) ▪ Relocate existing ACC on University campus to a new location on the site
Colchester	▪ Minimum of **11** ACCs (increase of 7) ▪ Replace non-operational ACC on closed section of the Wivenhoe Trail
Harlow	▪ Minimum of **5** ACCs (increase of 4)
Stansted Airport	▪ **2** new ACCs

Non-operational counter on closed section of Wivenhoe Trail, Colchester

It was recommended that a programme should be carried out to install 32 new ACCs, with an additional 9 existing counters relocated. All new or relocated counters should use inductive loops or radar units. This would give a core network of 54 ACCs across the county as a whole, ensuring that the level of provision in Essex would then lie at the top of the range of good practice.

The study also recommended that the manual survey programme should be replaced by a more focused programme based on the twin objectives of supporting the ACC network and providing additional detail on cycling journey characteristics.

3.2 Report to Cabinet Member and subsequent action

In March 2006 Essex's Cabinet Member for Highways and Transportation approved a report (see Appendix A) recommending that £125,000 should be spent on:

a) 55 monitoring sites of which 32 are new
b) Relocating 9 of the existing sites
c) Abandoning1 existing site
d) Retaining 13 existing sites

Officers at ECC also investigated the financial aspects of monitoring methods and new technologies. Previously the monitored sites were visited to replace batteries and remove the data recorders. To ensure the data is collected and batteries replaced each proposed site would have to be visited at least once a month.

In financial terms this would be at equivalent to around £16,000 per annum revenue expenditure. By installing more intelligent equipment this expenditure would not be required. Using telemetry the data can automatically be sent electronically at regular intervals (or the counter "dialled-up" using its onboard modem), and hence can be collected and processed without any site visit required. This requires more power than can be supplied by standard batteries, which can be provided either by solar panels or connecting to a mains power source.

While this equipment was more expensive in the first instance by around £57,000 the cost compared to manual data collection over the 5 year LTP2 life would be recouped after 3.5 years. In addition the equipment will be in place and collecting data long after the LTP had been completed.

The report was approved by the Cabinet and work started to install the new counters in mid 2006. The loop detector counters were supplied and installed by Counters & Accessories in cabinets equipped with solar panels. The radar counters were supplied by Applied Traffic who were then contracted to install them on posts erected by ECC. Solar panels were fitted separately to the same posts.

4. Assessment of improved cycle monitoring

4.1 General

In order to gather information on the installation of the new and relocated counters, and their subsequent operation, a meeting was held with ECC's Cycling Officer. This revealed that while majority of sites recommended in the study were suitable for new or relocated counters. However a number of sites had problems with statutory undertakers or other equipment. This highlights the need for input from highway engineers at an early stage.

There were also problems with the management of the installation of the radar detectors. The erection of new posts for the radar counter equipment had to fit in with the programme of ECC's highway works team and a number of sites were significantly delayed. Alternatives (such as existing lamp columns) did not gain support. Lamp columns have been used in other authorities (e.g. Leicester, where they are also used as a power source which removes the need for solar panels).

Solar panels at radar detector sites (detector and counting equipment in box below panel)

There had also been some problems with damage to the solar panels at sites with loop detectors. Due to the integration of the panels into the low-level cabinets containing the equipment the panels are vulnerable to vandalism as well from debris thrown up during grass-cutting. This could be avoided by using separate solar panels, such as those used in the radar detector sites.

Counter cabinets and solar panels at loop detector sites

Even though the main type of vandalism was damage to the solar panels, or them being subject to graffiti or painting, they were still usually able to supply adequate power to the counting equipment. Only where the entire panel was painted over, or indeed stolen, was there insufficient power to record and send the data. In these cases the absence of data was soon apparent and new panels could be fitted.

Management systems also needed to be put in place to cover the ongoing operation of the monitoring provision. For a period of time there was some uncertainty as to whether this was the responsibility of ECC's term consultant Mouchel Parkman (who gathered and processed the data) or the council (as client and owner of the equipment). This has now been resolved with the consultant managing the maintenance of the equipment as part of its regular activities.

Following installation of the sites there were a number of problems with non-existent or inaccurate data (e.g. very high figures recorded in the middle of the night). A number of these were traced to faults with the equipment, such as modem failure. Other problems were caused by resurfacing work being carried out following installation which damaged the loop detector.

At the time of this review all sites were working satisfactorily.

4.2 Site visits

Site visits were held with staff from Mouchel Parkman and Applied Traffic to examine a selection of the new and improved counter sites. The following examples show the situation before and after the introduction of new or relocated counters.

Basildon – James Hornsby High School, St. Nicholas Lane, Laindon

Before *After*

The former site used a loop which only extended across the cycle side of a shared-use footway and so missed cyclists on the pedestrian side (likely given the location adjacent to a school). It was also located on the far side of a pelican crossing missing cyclists using the crossing to access the school from the large residential area to the north. The counter therefore underestimated the level of cycling.

The counter was relocated to lie between the crossing and the school entrance, with a loop across the full width of the footway.

Basildon – High Road, Laindon

Before

After

West of Laindon station a shared use footbridge crosses the railway line. At its northern end the pedestrian and cycle tracks are segregated with guardrail, with a barrier on the cycle side. Cyclists are therefore likely to prefer to use the pedestrian side which leads onto the footway.

The counter here therefore needed to pick up cyclists on both the footway and the road and so a radar detector was used.

Basildon – Southernhay, at crossing of gyratory

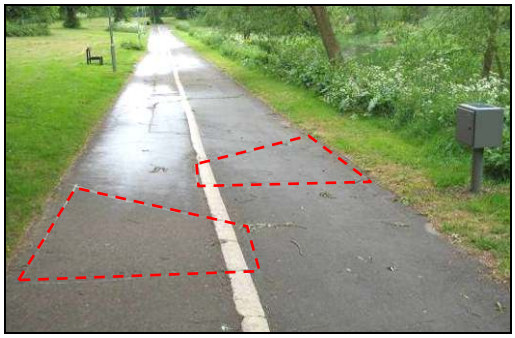
Before

After

North of the crossing there is a segregated shared use footway alongside a one-way gyratory. The counter here therefore needed to pick up cyclists on both the footway and the road and so a radar detector was used.

Chelmsford – shared path between Hill View Road and Victoria Road

Before (loop highlighted)



After (loops highlighted)

This is a well-sited counter picking up north/south movements along the attractive path beside the River Chelmer. However there was a problem with the original counter as the detection loop did not extend across the full width of the shared use path.

The counter site was moved slightly to the south and two new loops installed covering both sides of the path.

Chelmsford – shared path between Hill View Road and New Street

Former ACC location

Before

After

This site measures east/west flow, particularly between Springfield and the town centre. However its former location, just west of the path leading to the Anglia Ruskin University campus, means that it does not lie on the well-used route between Springfield and the university. The counter was therefore relocated a small distance to the east to lie between the link path and the bridge deck, with a loop extending over the full useable width of the shared use path.

Chelmsford – Marconi Road closure

Before

After (loop at location of cyclist)

This is a useful link on the cycle network to the north of the town centre. A new counter was installed with a loop detector sited to measure cyclists as they pass through the gap in the road closure.

Colchester – Cycle lanes, North Bridge

Before

After

This is a key route between the town centre and the main railway station. As there a limited number of bridges across the River Colne it is a good location for a counter. Cyclists are also channelled by the existing cycle lanes and splitter islands and hence the detector loop was sited at a point just south of the cycle bypass of one of the islands.

5. Data analysis

For the sites with loop detectors the raw data (continuous cycle flows, in 1 hour slots) is collected by ECC's term consultants Mouchel Parkman. The data from radar sites is passed initially to Applied Traffic who then carry out initial processing and forward it to the consultants.

Initially it was the intention that data processing and analysis would be carried out by ECC but this proved too time-consuming and hence this was devolved to Mouchel Parkman. ECC now receive monthly summaries of cycle flows at all the sites.

Initial analysis of the data revealed that overall there appears to be a much higher level of cycling than had previously been measured or expected. This was considered by ECC to justify the whole process.

However as a result of the increase in monitoring ECC decided to revise its LTP targets and baseline. This was done in mid 2007. The original LTP2 target was for a 30% increase countywide between 2005/06 & 2010/11. As the base year was changed to 2003/04 consideration was given to amending the target to take account of any changes in cycling between 2003/04 & 2005/06. Over this period there was a slight increase overall, with an increase of 2.5% in the main towns (>10% in Colchester & Harlow and a decrease of >10% in Braintree).

It was therefore proposed that the countywide target should be increased slightly from an increase of 30% to 31% to cover the recorded increase in cycling between 2003/04 & 2005/06, with the target for the 5 main towns increasing from 169% to 175%.

6. Conclusions and recommendations

6.1 Conclusions

In terms of the general issues the conclusions are as follows:

- There is little clear practical guidance on cycle monitoring that can be used to assist local authorities
- What guidance exists does not provide advice on the level of provision needed to monitor cycling in towns and other settlements
- Use of Automatic Cycle Counters (ACCs) provides much more robust data than can be obtained from manual counts
- The level of provision of ACCs varies widely between local authorities

With regard to the experience at Essex County Council, the conclusions are summarised below:

- The level of cycling was significantly greater than that indicated by the previous monitoring programme
- The level of counter sites needed to be sufficient to robustly monitor both the county-wide and local cycling indicators used in Essex's LTP2 targets
- A detailed study into possible ACC sites was needed to establish the most appropriate locations
- A combination of loop and radar detectors provided options for ACCs to detect cycling in most circumstances, including in mixed traffic
- Installation of ACCs requires early liaison with all relevant parties (e.g. works teams, term consultants) to establish where responsibilities lie
- A number of counters were made redundant or bypassed by development with no provision made for monitoring cycle flow on new route alignments

Counter at Anglia Ruskin University, Chelmsford made redundant by development, with route closed off

6.2 Recommendations

The following recommendations use the experience gained during the process of improving cycle monitoring at Essex County Council.

General/national

- Cycling England should develop clear and practical guidance for local authorities on cycle monitoring
- Cycling England should collect and publish current data on the level of ACC provision by local authorities

Local authorities

- If they do not already do so, local authorities should consider focusing their cycle monitoring programmes on ACCs
- Manual surveys should be focused on gathering detailed demographic and trip-related data
- The level of ACC sites needs to be sufficient to robustly monitor the cycling indicators used in an authority's LTP targets and other policies
- Early liaison with all relevant parties (e.g. works teams, term consultants) is needed to establish responsibilities

Site specific

- The level of monitoring at existing and new ACC sites should ideally should be continuous, with a minimum of two weeks per month (i.e. 168 days/ year)
- All sites should be visited every six months to ensure they are fully operational
- Any counters with very low, erratic or static patterns of usage should be investigated as soon as possible
- Developments affecting ACC sites must include provision of replacements in planning conditions or S106 agreements

New counter at Anglia Ruskin University, Chelmsford on new route through development (installed following 2005 report)

7. Contact details

The list below sets out some of the main suppliers of cycle monitoring equipment used by local authorities with contact details.

Note that inclusion or exclusion on the list does not imply endorsement or lack of it by Cycling England.

	Website	Email	Phone
Applied Traffic	www.appliedtraffic.co.uk	sales@appliedtraffic.co.uk	0118 946 1900
Golden River	www.goldenriver.com	sales@goldenriver.com	01869 362800
Counters & Accessories	www.c-a.co.uk	ca@c-a.co.uk	01908 511122
TDC Systems	www.tdcsystems.co.uk	sales@tdcsystems.co.uk	01934 644299
Traffic Technology	www.traffictechnology.co.uk	sales@traffictechnology.co.uk	01280 822638

Appendix A

Essex County Council Report to Cabinet Member

This report was approved by Cllr. Rodney Bass, ECC Cabinet Member for Highways and Transportation, on 9 March 2006.

ACTION AUTHORISED BY

The Cabinet Member for

HIGHWAYS AND TRANSPORTATION

Originating Officer: Rosemary Wilkins **Office Ref:**	**Tel:** (01245) 437253 **Internal Tel:** 51253

Highways & Transportation 2005/06 Cycle Monitoring Programme

PURPOSE

To seek approval for spending £125,000 on setting up permanent cycle monitoring in Essex to monitor the LTP² period and beyond.

AREA OF COUNTY AFFECTED

County wide initiative, but most intensely in Chelmsford, Colchester, Harlow, Basildon and Braintree

BACKGROUND

The Department of Transport (DfT) has issued guidelines on cycle monitoring for the forthcoming 5 year LTP² period for the mandatory indicator of annualised index of cycling trips. The monitoring will have to be both robust and representative of trends in cycling trips. Monitoring will have to be continuous between the months of May and October to build a robust trend line of cycling activity in Essex. We currently have 23 cycle counting sites which are monitored for two weeks rotationally every three years. These sites alone would not provide the necessary level of monitoring required by the DfT.

A survey was commissioned by H&T to determine whether :

a) The existing sites comply with best practice and guidance from the DfT
b) How many additional sites would be required

Cont...

I confirm that the guidance protocol has been adhered to.

Signature(s)	Designation	Date
By or on behalf of Service Director for Highways and Transportation		
By or on behalf of Service Director for Finance		
Cabinet Member for Highways and Transportation		

To comply with the guidance given by the DfT the following would be required:

e) 55 monitoring sites of which 32 are new
f) 9 of the existing sites will require relocating
g) 1 existing site will be abandoned
h) 13 existing sites will be retained

RESOURCE IMPLICATIONS

A FINANCE

A study was also undertaken into monitoring methods and new technologies. Currently the monitored sites are visited to replace batteries and remove the data recorders. To ensure the data is collected and batteries replaced each proposed site would have to be visited at least once a month.

In financial terms this would be at equivalent to £16,174 per annum revenue expenditure. (£80,870 plus annual percentage increase for the five year period).

By installing more intelligent equipment this cost will not be required. Using telemetry and solar or mains power, the data can be "dialled-up" and downloaded from the office.

However, this equipment is more expensive in the first instance by £57,244 but the cost compared to manual data collection over the 5 year LTP² life will be recouped after 3.5 years.
In addition the equipment will be in place and collecting data long after LTP² has been completed.

This expenditure will be supported by the main monitoring budget held by the Transportation Development Group.

B PROPERTY

Existing cycle counters will be abandoned, reused or relocated.

C PERSONNEL

Existing personnel will be required to implement monitoring in line with current policies and procedures. No additional staff will be required.

RECOMMENDATIONS

1. That authorisation is given for £125,000 to be spent on cycle monitoring to comply with DfT guidance on data collection.