

The future of highways and street lighting

An e-publication compiled of papers written by members of the APSE national highways and street lighting advisory group.

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Contacts

General enquiries:

[Debbie Johns, APSE Principal Advisor \(Highways and Street Lighting\)](#)

Association for Public Service Excellence,
2nd Floor, Washbrook House, Lancastrian Office Centre,

Talbot Road, Old Trafford, Manchester, M32 0FP

Tel: 0161 772 1810

Email: djohns@apse.org.uk

Introduction

Roads and pavements are one of the largest and most visible assets held by National and Local Government. Whilst not belittling the importance of education, only 25% of the population use this service at any given point in time, whereas 100% of people experience the 'liveability' services every day of the week. By liveability what we are talking about are the very at the heart of communities. When you walk out the door in the morning are the streets clean and the roads well maintained? When you return home in the evening are the streets well lit? Every MORI poll on public services tells us that these are the issues that ordinary people really care about.



So what's the current picture around the UK? The 2006 Alarm Survey highlights a worsening situation, particularly for English roads - the shortfall doubling since 2005 to £1.6bn, the largest ever reported. The shortfall in Wales, £151m, sees a reverse of the improvements made in 2004/5. A report by Audit Scotland in September 2006 stated that the condition of the local authority road network is variable and around £1.5 billion may be needed to bring it up to standard.

The condition of roads and street lighting is vital to ensure the safety of the public and prevent third party claims. On highways and local roads, authorities are taking measures to cut deaths and serious injuries by 40% by 2010. Data from APSE Performance Networks for 2005/06 shows that 72% of authorities have shown a reduction in the number of third party claims. In addition, there is a correlation between the increase in the percentage of damaged roads and pavements made safe within target times and the reduction in third party claims; reflecting the proactive approach that Local Authorities are taking in making roads safer.

There are a number of methods being used by local authorities to tackle investment requirements; whether this is through allocated capital funding from government bodies, prudential borrowing or Private Finance Initiative. In addition, local authorities are developing asset management systems as a means of quantifying the gap between the backlog of repairs and funding.

There are further challenges facing local authorities with the efficiency agenda and associated targets. APSE would argue that the way forward is not tying local authorities into long-term partnering contracts. In an era when local authorities are being called upon to more responsive to the public, long-term rigid contracts cannot be the solution. Instead, effective asset management, robust performance management systems, peer review and the exchange of good practice, and efficiencies through collaboration are the way forwards.

APSE would encourage the further recognition of the important role played by the local authority highways and street lighting services to the public realm. For local authorities to be effective place shapers, the condition of public routes has to be a priority. This means creating a joined up policy framework to put councils at the heart of local services. Local government highways and street lighting services are uniquely placed to deliver on the liveability, community safety and regeneration agendas by co-ordinating strategy and provision with other departments and services such as street scene, waste management, parks and open spaces and transport provision and co-ordinating with other bodies such as the police. Partnership working can result in not only efficiencies but also providing responsive, personalised, seamless services to the public.

This publication contains research from members of the APSE Roads and Highways Advisory Group on some of the issues affecting local authorities in the next 2-5 years. The views expressed in this publication are not necessarily the views of APSE. APSE would like to thank those who have contributed to this publication.

Debbie Johns
Principal Advisor

Investment in highway infrastructure

Author: Keith Jones, Operational Manager Highway Maintenance, the Vale of Glamorgan Council

The highway infrastructure is a key asset for both Council's and Government bodies. Well-maintained highways are essential for ensuring the delivery of a wide range of services and strategies including transport itself, health, education, economic development, environmental improvement and safety.

Highways are increasingly being managed as an asset and the trend is increasing across the home countries. In Wales, there is a Welsh Assembly Government requirement for Highway Asset Management plans to be completed by 1st April 2006. In England, whilst there is no mandate yet for the plans to be in place it is seen as good practice and they are likely to be required as part of the LTP process. In Scotland, Asset Management Plans are similarly increasing in number.

Asset Management has highlighted the deteriorating condition of the highway infrastructure and the funding gap between the required funds needed to maintain the highways in a 'steady state' condition and the major backlog of works required.



The highway infrastructure is probably the greatest asset held by National and Local Government. The total highway network lengths are as follows:

" England	290 549 km
" Scotland	55 900 km
" Wales	34 408 km

Typically the values of the assets are (in decreasing order);

- " Carriageways
- " Footways
- " Structures
- " Street lighting
- " Drainage
- " Signs

However in some urban Councils, telematics / traffic movement infrastructure may also be increasingly important. The funding gaps and backlog of works also follows the same profile; with the largest funding gaps being on the highway pavement infrastructure - the carriageways themselves.

Whilst there is an Audit Office recommendation for the split between planned and reactive maintenance (70:30) the majority of local authority engineers are 'fire fighting' to meet immediate challenges and less long-term planned maintenance is being carried out.

It is also worthy of note that it is estimated that it may take 11-12 years to raise the quality of roads up to the required standard if there were enough funds available to carry out this work. The stark reality though is that without a major investment of funds for highway maintenance, most roads will not be resurfaced for up to 80-90 years.

With large gaps between the funds required to maintain the highway infrastructure in 'steady state' condition and the actual budgets available, the backlog of work can only continue to grow. Not only are the maintenance needs growing but in addition there is a steady increase in traffic growth. This is compounded by the increase in heavy goods vehicles

(HGVs). It is these HGVs that cause rapid deterioration of the network in most cases and there is a worrying trend for these HGVs themselves to have even heavier axle loads.

Highway liability claims continue to represent a significant if not major factor. Considerable resources are spent in dealing with these third party liability claim issues. This can include the claims investigation stages, case preparation together with the actual compensation payments. The total costs associated with claims can match the finance for highway structural maintenance. The numbers and costs of claims can increase significantly in areas with large populations or in urban conurbations. Bogus or excessive compensation claims against local Council's are proving to be a problem. This represents a further challenge for staff involved to address the claims culture.

In Wales, when a significant highway investment programme was carried out, funded by the Welsh Assembly Government directly, a marked reduction of third party claims was observed during the following year. This is, of course, not unexpected but it does prove the correlation between claims and highway investment.

There are a number of opportunities available to fund an increased highway investment programme. The strategy chosen must of course be developed by each Council to suit its own needs and particular circumstances. In England, some Councils use a combination of Private Finance Initiative (PFI) and Local Transport Plan (LTP) funding. There are opportunities in England as highway maintenance funding can be specifically targeted.

In Scotland, bids for additional funds are being made as part of an efficiency saving exercise. In order to determine the level of funding required, a rolling programme of surveys is being carried out across the highway network. In Wales, a programme of highway condition surveys is being carried out funded by the Welsh Assembly Government. These will be used to assist in determining the extent of the backlog to enable bids to be made as part of a comprehensive spending assessment.

Prudential borrowing is likely to be one option to be considered, dependant upon the particular circumstances. However, long-term impact on Local Authority revenue budgets to pay back the borrowing may become significant.

Not only are Council's faced with a lack of available money to carry out works, each year there are further challenges. These include meeting new efficiency (Gershon) targets of 2.5% per annum and steadily increasing inflation in the civil engineering sector e.g. fuel and bitumen - both of which are rising at levels way above the Retail Price Index (RPI).

In conclusion, whilst the exact level of backlog can be open to discussion, it is clear that this backlog is very significant. Large proportions of the highway network have fallen to below an acceptable standard. The current levels of investment are not sufficient to maintain the steady state condition, notwithstanding the need to improve on current levels of service. Unless action is taken soon to arrest the deterioration of the highway network the situation will continue to decline with consequential problems for the future.



Efficiency in local highway services

Author: Faizal Mamujee, B Sc (Eng), M Sc, CEng, MICE, ACGI, Manager, Highways Maintenance, Leeds City Council

Efficiency drive in public services has been with us for decades. This is not a new phenomenon. Over time this has developed into a sophisticated logical approach with clearly defined goals. It is natural to expect an efficient local authority service.

Nearly twenty years ago the emphasis was to make in-house local authority services more competitive with the private sector. At that time Compulsory Competitive Tendering did shake up the in-house front line service delivery units. However, the lowest price was not the right answer. Two significant reports came on the stream and this changed the way highway services are delivered at present; the Latham report, "Constructing the Team" and the Egan report, "Rethinking Construction" have had major impacts.

With the change in the political colour, came Best Value. This involved fundamental reviews of the services and Authorities had to focus on delivering an economic, efficient and effective service which is continuously improving. Performance management and benchmarking became the tools in satisfying the efficiency agenda. Comprehensive Performance Assessment with hundreds of Performance Indicators, some of them incomprehensible, became the tests.

Pressure was back on public services to be efficient and thus we had the "Public Service Efficiency Review" by Gershon and the Deputy Prime Minister Office produced a footprint called "Delivering Efficiency in Local Services". More recently, a White Paper has been produced to drive a major shift in Local Government through "Strong and Prosperous Communities".



Gershon Efficiency

The main thrust of Gershon review is not to cut services but achieve gains in efficiency by either it being cashable or non-cashable. Cashable saving is defined as "service provided at same level of quality but at reduced cost". Non-cashable saving is defined as "when service quality improves for the same cost or more service is provided proportionately for increased costs."

In order to achieve these savings local authorities are asked to examine the process of procuring these front line services. A number of proposals are in the paper and there is nothing new except a bigger focus. A number of organisations have produced some excellent papers and under the auspices of the Highways Agency (HA) the papers titled "Achieving Efficient Delivery of Highway Services" gives practical examples from a number of local authorities and the measurement toolkits produced by the HA Efficiency Liaison Group is very informative.

Back to Basic - Best Value

It is important not to move away from the Best Value ethos as these are the cornerstones of significant and measurable culture changes in the service delivery process.

Best Value expects an economic service, that is, the service is delivered at the lowest cost. In addition, it has to be naturally efficient, that is, achieve increased output for the same input. However, it is also fundamental that the service delivered is effective. This measures the outcome. Any service delivered has people as the recipients and it is their perception which measures the effectiveness. In the end, the whole process under best value should not be static and it should be continuously improved with innovations.

In highway services, the adversarial approach has no place. For some groups it is certainly unpalatable due to loss of power. Internally the client/contractor role has to be dismantled and a major shift has to take place to working together. This applies equally well with private contractors and in-house contractor. Nearly six years have elapsed since CCT became defunct but this acrimonious behaviour still continues.

A major area of shift relates to technical officers not believing that they "know the best" and must endeavour in translating complex issues in simple terms for lay person to understand and thus accept the design. We have to sell the service and this has to be done with clarity and honesty so a level of trust is developed for bigger things. The focus has to be on managing customer needs and expectations. Customer satisfaction must play a significant role. The service must be provided "for the benefit of the user and not the convenience of the provider".

For continuous improvement to take place it is essential to challenge processes so that some improvement can be implemented. In addition, have a wider spectrum and share with and learn from other highway professionals. Once a change has been implemented then do share this with all and celebrate.

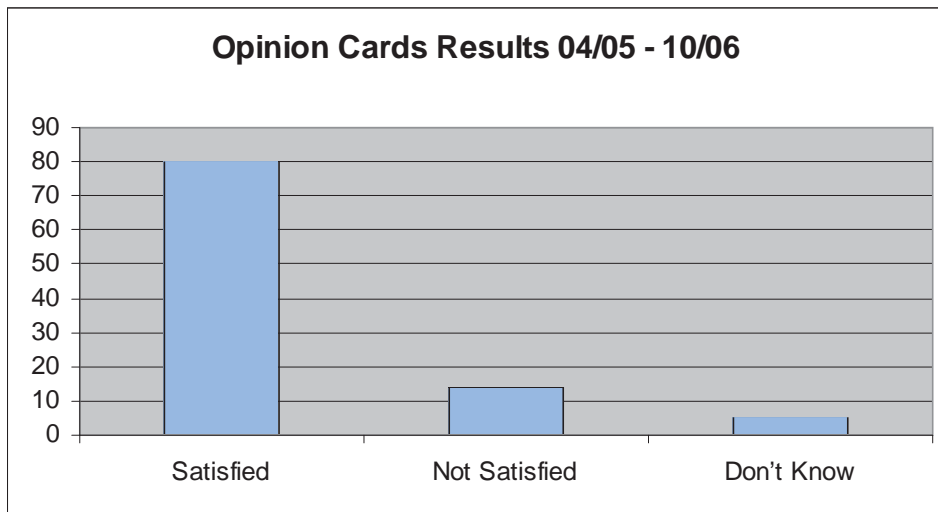
Leeds Example

The rest of this paper mainly deals with how the highway maintenance service is delivered. Based on the above ethos of Best Value together with the major shift in culture, the City Council implemented in 2003 a programme of "Closer Working Better Services". This brought about having no client and no contractor in delivering highway maintenance but a service delivery unit. The very large planned maintenance programme meant having on board an experienced private contractor as a "partner" to the in-house contractor in delivering the programme. The in-house contractor operates as a business unit and thus has to be competitive. The annual maintenance programme is nearly £25 million and private contractors who are experts in doing specialised treatments are on board to deliver this work.

Whether the work is done in-house or via a private contractor, they become a design and build unit working within a design brief. Schemes are handed over as soon as they are approved and so both parties have their workload well in advance. It is advance planning, programming and the organising of schemes which leads to an efficient and effective result.

This arrangement has meant a single point contact with empowerment. The ethos of "respect" is taken very seriously and this applies from the devolvement of budgets to operational managers to empowering staff on-site to make decisions in carrying out repairs most suited. We have established standards and two "killer" indicators, which are for dangerous highway defects, which we attend to within one day and the ones classified as urgent, which we attend to within 14 days. At present we are achieving attendance of about 99% reports. These standards give confidence to those who report defects to us; that we would make the highway safe within the allocated time frame. This also ensures the general public that once the Call Centre staff categorises the defects then the operational staff keep the promise. We receive nearly 15,000 reports annually. This arrangement also assists us in defending highway claims and we defend these vigorously.

It is essential to have the commitment to highway education. If all the disruption and nuisance, which any maintenance work brings, is to become reluctantly acceptable then the users and residents must be given all the necessary information. We publish our planned maintenance programme on the web with start and finish dates and details about the nature of the work. We also send out letters with detailed information on the nature of the work to all the frontagers before the start the work. Due to this we do get tremendous co-operation. Once the work is finished, we send out opinion cards and seek public views on our performance. The chart below shows the current results.



One of most disruptive highway maintenance operations is the refurbishment of footways. For the last six years we have used a Scandinavian system attachment at the back of a lorry to deliver macadam to footway sites, called Spreadmaster. This assists us in keeping the site clean, avoids tipping of hot bituminous materials on the road, avoids delivering to the footway via a front bucket of a machine causing traffic congestion, reduces manual handling as there is no shovelling of macadam and the material is laid at optimum temperatures.

Feedback on Treatments

The final surface treatment on the carriageway or footway is very crucial from the residents' point of view. The highway professionals have to manage expectations. The processes, such as surface dressing and slurry sealing, are very much unacceptable, though from an engineering perspective, they serve the purpose in sealing the surfaces from the damaging effect of water into the substructure.

There are a number of treatments which are marketed as the solutions to maintenance. A potholing process based on infrared heating is very popular nationwide but our experience shows that there is a high penalty to be paid for in terms of costs and the speed of repair. The technical specification and the end product in-situ are questionable. We have also done trials on insitu recycling of macadam surface in footways and once again the whole process creates more of a guess work in the final product. It is a disservice to the industry when there is such a poor awareness of material technology. Shallow depth recycling in carriageway also faces similar predicament as the process is not well researched and commercial considerations play a significant role than the search for technical performance. The industry is far too often being pushed into the use of certain materials without proper evaluations and no one wants to be left behind and thus we are on a roller coaster ride. There is certainly a place for innovations but be cautious.

Winter Service

This is another area where benefit to the customers has to be the prime focus rather than just legal duties and obligations. Last year in Leeds we started doing precautionary gritting of Prestige Walking Zone in the City Centre and this came about by joined up working with our colleagues in Street Cleansing. We utilise the footway mechanical sweeper to tow a small gritter and do the grits after the city centre is cleansed. This proved very successful and this winter we have extended this service to do primary footways during severe weather conditions.

There is a big market for winter service tracking units and before joining the club we did trials last winter using three systems. None of the systems could deliver what our objectives were and we were led to believe that all the three systems were "singing and dancing". It is highly questionable that the existing systems can be relied upon in defending winter service related claims. The input information is unreliable and it is dangerous to accept that the print out is factually true. Further trials are planned to develop a more reliable kit.

There are too many wild claims made on salting treatments and the savings on the reduction in the rate of spread of salt. Even the BS system of gritter calibration is not fool-proof, which we determined recently. Then there are additives which can miraculously reduce corrosion of concrete structures. Very rarely all the facts are backed up by research data and this is needed to make informed procurement decisions.

Lead rather than be led and give value for money

The Best Value regime does encourage rightly continuous improvement and bringing about innovations. Some of the examples above show that the benefits claimed are really not genuine. If there is a commitment to deliver efficiency gains then they have to be audited by examiners who understand the industry rather than filling the appropriate boxes in the survey schedule.

It is suggested that new processes must be trialled and vetted and an in-depth search made through users to establish the true worth, as the responsibility rests with the highway professionals to deliver value for money.

Asset management and technology - a marriage made in heaven?

Author: Christine Francis, Roads and Lighting Manager, Glasgow City Council

Asset management - two words that strike fear in the hearts of many an engineer around the country. We don't need this new fangled technique, do we? We've managed our roads networks for years on the basis of sound engineering principles. The problem is that we are competing with other more sympathetic services, such as education, for an ever-decreasing pot of money and at the moment we are unable to effectively communicate a good case for investment in roads to decision makers.

Asset management is going to give us the tools we need to present factual information about the effects of different funding levels to decision makers in a consistent and understandable format, but it's not going to be easy. For most authorities their road network is one of, if not the, biggest asset they own and it is the sheer size and complexity of it that makes it so difficult to put together a clear case for investment.

Accurate and up-to-date data about the asset you are maintaining is fundamental to any asset management system. Glasgow City Council looks after 1700km of roads, 3500km of footways, 70,000 lighting columns, 289 bridges, over 700 other structures; in an urban setting where signs, lines, traffic signals and other street furniture are numerous. Just the task of collecting and maintaining information about these assets is daunting, never mind using the data in a useful way, but to make asset management work that is exactly what we need to do. It is clear we need help to manage this avalanche of information and that is where technology is stepping in.

Before starting it is absolutely essential to decide what information you are going to collect, to what standard and how the information will be used and maintained. The updating of any data collected has proven in the past to be a weak link and so we decided very early on that data maintenance should as far as possible be integrated into normal work routines. We already had a computer-based work management system capable of being used in the field via web connection, which we wanted to develop and so we identified some key functions to initially concentrate on.

The functions we chose were:

- Road and Lighting Safety Inspections
- Pothole repairs
- Lighting repairs
- Gully cleaning

When we purchased our work management system 5 years ago we were thinking more about how we manage our work programmes and we therefore structured the database to suit functions. We have had to make some changes to the structure of the database to make it easier to manage asset data. Descriptions of work are now centred on asset groups.

For example:

Lighting - Emergency - Door off **is now** Lighting - Column - Door off

The advantage of this is that we can now link work done on an asset, in the above case a column, with the asset inventory both to inform the operative when doing the work and to keep the inventory up-to-date.

Safety Inspections

A team of dedicated full-time inspectors continuously monitor Glasgow's road network. Safety inspectors up until now have been recording defects on paper and those defects then had to be laboriously transferred manually to the Work Management System (WMS). All inspectors will now be using hand held Data Capture Devices (DCD's) to record information and download it directly into the WMS.

The DCD's are equipped with GPS and a camera allowing defects to be recorded spatially and if needed an image of the defect can be stored with the record. Once in the main WMS, the defects are processed in accordance with rules that we have set up; for example, a pothole on a traffic sensitive road would be passed straight to the contractor for repair within one working day. Records of minor defects not requiring immediate attention picked up on previous inspections can be displayed and ongoing monitoring undertaken. New assets not recorded on our database can be added giving us the facility to check the inventory for specific asset groups during inspection. Because defects are recorded spatially we can easily look for trends, for instance clusters of potholes, which might need further attention and the operative gets clear information about the location of a defect.

Condition of assets can also be recorded during inspection and a crude traffic light visual assessment of footways is included in the inspector's duties to allow engineers to carry out a more detailed inspection of red/amber areas and prepare work programmes.

Pothole repairs

Pothole repairs are initially dealt with by Glasgow's two jetpatcher machines. The machines are fitted with GPS enabled DCD's which are in constant communication with the main system using 3G technology. New faults are fed to the squads as soon as they come in, therefore maximising the opportunity to deal with them within the target time and repairs are immediately recorded in the system improving customer feedback. The position of each pothole was previously identified by text such as "outside no. 42 Station Rd" but the exact spatial position of each fault was not recorded. The DCD will now record spatial position allowing us to identify duplicates, map potholes, pick up trends and possibly use this information in our Pavement Management System. The improved reliability of information on position, time of repair and who carried out the repair is expected to further improve our ability to defend public liability claims related to potholes.



Lighting repairs

Each electrician will carry a DCD loaded with their work for the day. Work will be allocated for a geographic area but the supervisor retains the ability to override this when required, if for example an emergency incident is received. Work is presented to the electrician in chronological order to ensure that target response times are met. If the supervisor issues an emergency to the closest electrician, their workload is redistributed by the system.

Information about a column such as the position of the control pillar can be accessed by the electrician improving both efficiency and safety. Any new components used can be recorded on the DCD, updating the inventory continuously and involving no extra work for the electrician.

We are required by the code of practice to carry out a visual condition inspection of lighting columns each time they are visited and this system gives us the opportunity to do this via a function called Task Manager. The task of recording a visual inspection will be introduced which will require the electrician to record the result of a visual survey before the system will allow them to close off a fault.

The huge administrative task of manually entering the dates, times and details of repairs from paper records will be

completely removed allowing staff to concentrate on more productive activities and the real time exchange of repair information will give customers much better and faster feedback.

Gully Cleaning

Gully cleaning is a routine activity based on routes which are held within the WMS. Routes are maintained by technical staff as required when new roads are adopted or old ones are stopped and this is included in our quality assurance procedures for development control.

Routes can be issued to operatives in a number of different formats by geographical area or by road hierarchy for example to suit operational needs. The gully machine is fitted with a GPS enabled DCD which displays gully positions for the operative so that he/she can see what should be there. If they find any discrepancies they can add additional ones or mark gullies for removal after checking.

The operative records when the gully has been cleaned and whether it is running; what follow up is required (for example, jetting or hand clean); the condition of the frame and cover and the surrounding surface; if access is denied because of parked cars; the gully type; and finally any defect apparent which is then processed by the system in accordance with pre-determined rules (for instance a missing cover would be processed as an emergency). Parked cars are a particular issue in many parts of the city. Some of these areas have already been identified and form Special Drainage initiative Routes which are carried out by putting in a Temporary Traffic Order to restrict parking. Once the streets are cleared, we carry out gully cleaning, street light planned maintenance, street sweeping, weed killing and any minor repairs in the one closure. This has proved popular with local residents and it is hoped that we will be able to refine these routes using data about access difficulty fed back from the gully operators.

The process of introducing DCD's has been very useful. We have taken the opportunity to review functions against the maintenance code of practice, the needs of asset management and operational factors. Ease of use has been considered at every stage, as it is vital that the new technology is not viewed as an additional burden. The DCD's were introduced after consultation with operators and every effort has been made to ensure that they make their jobs easier. Initial feedback from operators has been positive and we have plans to extend their use to other areas of work such as road surfacing and emergency responses.

Third party claims

Author: Raymond Smith, Roads Manager, Falkirk Council

Third Party Claims for damage or injury on public roads and footpaths can be a major cost for many local authorities. Maintenance of the road network is carried out to ensure that the highway remains safe and that it is available to the public for use. The establishment of a robust system of inspection and repair which covers the entire network within the highway area is fundamental to the successful management of risk and the ability to successfully defend public liability claims.

The updated Code of Practice for Maintenance Management, "Well-Maintained Highways", was published in July 2005. The code provides guidance on highway maintenance good practice, standards and performance monitoring. The code also recognises that authorities can be different in nature with differing priorities, needs and resources and subsequently they may develop maintenance regimes which best suit their local community. The code is based on the assumption that the available funding will allow the authority flexibility to carry out an assessment of the network and assign priorities within a programme of works.

In Falkirk Council we have reported our inspection and repair regime to committee and published the frequency of inspections and actionable defects on the council web site. Our inspections are normally carried out from a moving vehicle manned by an inspector and driver at the frequencies based on recommendations in the code of practice. In addition these are augmented by walked surveys in pedestrian areas and footpaths with a high density of traffic. We report to Council, as part of our performance reporting, on the percentage of inspections carried out on time as well as the percentage of defects repaired on time.

Under the Highways Act 1980 and the Roads (Scotland) Act 1984, local authorities have a duty to maintain the public highway. Although this duty cannot be delegated some authorities do contract out their inspection and repair functions and it is only when a liability claim is instigated that potential conflict might arise. This contract therefore needs to clearly detail where responsibilities lie in the event of a claim in every circumstance and the authority needs to ensure that their contractor complies with their obligations.



The ability to successfully defend claims often depends on the quality of the available documentation. It is often the case that records and documentation are unclear on the sequence of events in a case, whether these are held in-house or by contractors, and such evidence will be unhelpful to the team defending the claim. Courts will look for the 'best evidence' in the event of a dispute and only clear unequivocal documentation will suffice against the eye witness testimony of claimants. The importance of a good system for recording documentation has increased in recent years with the Freedom of Information Act where claimants or their agents may seek additional information hoping to support their claim.

Good practice in the keeping of records and the presentation of evidence to the courts does not happen by chance. Officers involved in the inspection, maintenance and management of the highway network need to be trained in the principles of risk management in the context of highway maintenance. They need to have an understanding of the core implications of the Code of Practice and they need to be trained in developing methods to manage the cost of claims against the authority. It can also be beneficial to have training in practices to successfully defend claims which may include witness training.

The decision to defend a public liability claim can be difficult and costly but should be attempted when there is a strong case. It is important to choose the right cases to defend; however making this decision requires expert judgement and experience. The decision needs to be based on the following factors; established principles of law, available evidence, the authority's philosophy to defending claims, experience and local knowledge and fraud:

◆ **Established principles of law**

Guidelines can be obtained from case law but circumstances can vary considerably and often there is no precedent to give guidance. The decisions of courts can vary considerably depending on the location as can penalties awarded by sympathetic magistrates or juries.

◆ **Available evidence**

The most important element in successfully defending a claim is the presence of a reliable system of inspection and maintenance. The inspection regime needs to be in line with the principles of the Code of Practice and should be formally adopted by the council. Records should be kept of all defects with careful measurements and all subsequent actions noted. The integrity of the system will need to be able to be demonstrated to a court together with credible evidence from highway inspectors backed up by photographic evidence if possible. The presence of a rigorous system will in itself help prevent frivolous and potentially fraudulent claims.

◆ **Claims philosophy**

Different authorities may take a different approach to claims therefore it is important to discuss this approach with your claims handler to ensure there is a common approach. Falkirk Council and their claims handler try to defend every claim if there is evidence to support our case.

◆ **Experience**

What constitutes an 'actionable' defect varies from case-to-case depending on a variety of factors. The experience of officers and previous experience of claims handlers is important in deciding which cases are appropriate to defend and which should be settled. The location and previous experience of particular courts and their decisions may also need to be taken into consideration before proceeding to court.

◆ **Potential for Fraud**

There remains the question of whether the claim is genuine or fraudulent. It has been suggested that a high percentage of trip and fall claims are fraudulent or exaggerated and authorities should try to discover these claims. This will involve checking claims and analysis for serial claimants, relationships between claimants or incidents and atypical tripping incidents. This may also involve sharing information with other departments and neighbouring authorities.



The decision whether to settle or defend a case remains a matter of judgement. However, having a robust inspection and repair regime allied to trained inspectors will increase the chances of a successful defence. By working closely with your claims handlers and checking the fundamentals as well as the potential for fraud the chances of making a right decision will be increased. By having a robust system, local solicitors and 'no win no claim' organisations will become aware of their likelihood of success and the percentage of fraudulent and frivolous claims are likely to reduce.

Prudential Finance for Street Lighting Replacement Works in Dudley

Author: Melvyn Harwood, Team Manager, Dudley MBC

Background

Since the late 1980s, street lighting managers of local authorities have become only too aware of the problem of corrosion afflicting an increasing proportion of their lighting stocks. As most of the older residential lighting installations were erected in the post-war housing boom of roughly 1950 - 1965, they have now reached the point where they need to be replaced - and, indeed, have also worryingly shown signs of failure. Increasingly more commonplace are the sights of steel lighting columns perforated by corrosion, especially in the base area, as well as spalling of the concrete around the shaft/bracket joint of a concrete lighting column. Even more worrying are the stories that abound of column collapse with potentially fatal results.

As early as 1988 the Institution of Lighting Engineers identified that a policy needed to be established with regard to the planned replacement of street lighting columns: "... the Panel recommends the earliest possible action to undertake the planned replacement of existing equipment which has already passed or is now nearing end of life conditions".¹ Inertia or lack of prioritisation for funding of the solution, that is, wholesale column replacement, by authorities led to the comment by the UK Lighting Board in 2004: "the inevitable consequences of significant underinvestment over many years are an increasingly visible deterioration in the infrastructure and accompanying public concern".² As well as structural failure, there is an accompanying concern of electrical failure; as well as problems caused by insulation and other elements of electrical components failing owing to age. Compromised structures may also cause electrical hazards to passers-by owing to damaged base compartments allowing access for the unwary. This is in contravention of the Electricity at Work Regulations 1989: "all systems shall be maintained so as to prevent, so far as is reasonably practicable, such danger".³ A failure adequately to fund infrastructure works does not fall within the definition of 'reasonable practicability'. A method of affordable funding of street lighting replacement works needed to be found.



PFI

In recent years the preferred path to major lighting infrastructure replacement of both HM Government and many authorities is the Private Finance Initiative (PFI). This scheme will need little introduction to most but, in a nutshell, solves the problem by an authority effectively handing over its lighting installation to a contractor who, under the terms of a contract, replaces the installation within a given timescale; while ensuring the replacement installation, and its ongoing maintenance, complies with an output specification within the contract. While take-up of PFI has become widespread, there are a number of authorities that have resisted PFI for a variety of reasons; these are some of them:

- ◆The PFI contract is long term - typically 25 years. During such a long period there is no certainty that the economic conditions that suited PFI provision will continue; neither is it certain that the process will not in some way become discredited in the intervening period.
- ◆The output specification in a PFI contract is set for the life of the contract, and no changes to it can be made without the agreement of the contractor (and probably without extra funding). This means that changes to

standards and in technology cannot easily be accommodated.

- ◆Owing to the extent of the problem of deterioration of the existing installation, the timescales for the new installation are set early in the life of the contract (typically five years). If, following that period, standards change drastically then obsolescence is built into the installation.
- ◆As a knock-on effect of the early installation period, the residual life of the lighting installation after the PFI is completed is also short - again, typically five years. This may leave the authority with little choice than to embark upon another PFI, even if this procurement method is by then either discredited or economically disadvantageous.
- ◆Some authorities may have too small a problem to consider a free standing PFI, either because of their small size or a comparatively small number of deteriorated lighting columns.
- ◆There is a substantial financial risk to an authority if its PFI provider becomes insolvent during the contract period, potentially leaving the authority with no lighting contractor and a deteriorated installation.⁴
- ◆The cost of private sector borrowing is relatively high compared to that of public sector borrowing.⁵

Capital Funding and Prudential Borrowing

Until 2004, in addition to limited capital receipts or revenue budgets, local authorities were only able to fund infrastructure projects by using either capital grants for a specific purpose from central government or approved capital borrowing supported by government revenue grant. The former is now known as Supported Capital Expenditure - Capital Grant (SCE(C)); the latter as Supported Capital Expenditure - Revenue (SCE(R)), and both are limited by the amount of resources earmarked from national Government budgets for these purposes. Until 2004, no borrowing by a local authority other than by direct approval was permitted.



Since 2004, however, the Government has permitted local authorities to borrow money for capital expenditure, utilising revenue funding from their own sources (e.g. Council Tax) to fund the resultant debt charges, provided such borrowing is sustainable. The regulation of this new source of finance is achieved by requiring authorities to comply with the CIPFA Prudential Code. It is therefore known as Prudential Borrowing.

The effect of the Prudential Code is to regulate all such borrowing by 'affordability' and 'proper practice'. In accordance with the Code, each authority wishing to make use of Prudential Borrowing has to set estimates and limits on its own borrowing to demonstrate both prudence and sustainability. The cost of such borrowing is roughly 10% of the principal advanced, for example, £100,000 for every £1 million borrowed, made up roughly of 6% interest and 4% repayment of the principal.

Application of Prudential Borrowing

The big difference between borrowing using a PFI and using Prudential Finance is that the authority keeps control, both of the method of procurement and delivery and also ownership of the lighting installation. This means that the replacement service can be procured by traditional works contract, whether in partnership with another authority or not, Public Private Partnership or in-house provision, or any combination of these - as best suits the individual circumstances. From an engineering point of view, the authority also retains ownership of the equipment specification,

which can be changed from time-to-time according to length of contract, alterations in standards or advances in technology.

In Dudley, an allocation of £1.4m Prudential Borrowing has been made for street lighting infrastructure. Procured by traditional works contract, works commenced on site in late spring of 2006 and completion is expected in February 2007. The equipment being installed is more energy efficient than that it replaced, and requires less maintenance, which will have further benefits in revenue savings as well as giving the local communities a state of the art lighting installation to modern standards. A smaller Prudential Borrowing allocation for signs infrastructure replacement has also been made.

While not having the headline visibility of a PFI, we are convinced that the use of Prudential Borrowing is a significant step in supplying a method of major infrastructure renewal in a form that best fits the needs of the people of the Dudley borough. We look forward to extending its scope in future years and to giving the area a legacy of good, well maintained equipment at minimum cost for many years to come.

References

1. Technical Report TR18 'The Planned Replacement of Lighting Columns', Institution of Lighting Engineers, 1988, paragraph 9.4 p.27
2. 'Well Lit Highways', code of practice for highway lighting management, UK Lighting Board, 2004, p.9
3. Electricity at Work Regulations 1989, Regulation 4 (2)
4. This is given a more thorough treatment by Peter Cutler in the May 2003 issue of the PFI Journal, pp.6ff, available on the Internet at:
<http://www.publicservice.co.uk/pdf/pfi/summer2003/PJ41%20Peter%20Cutler%20ATL.pdf>
5. Also see Kelvin Hopkins MP in the PFI Journal, March 2006 issue, pp.10ff:
<http://www.publicservice.co.uk/pdf/pfi/issue52/PJ52%20KelvinHopkins%20ATL.pdf>



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INVESTOR IN PEOPLE

Association for Public Service Excellence

2nd Floor, Washbrook House,
Lancastrian Office Centre, Talbot Road,
Old Trafford, Manchester, M32 0FP

Tel: 0161 772 1810 **Fax:** 0161 772 1811

Email: enquiries@apse.org.uk **Web:** www.apse.org.uk