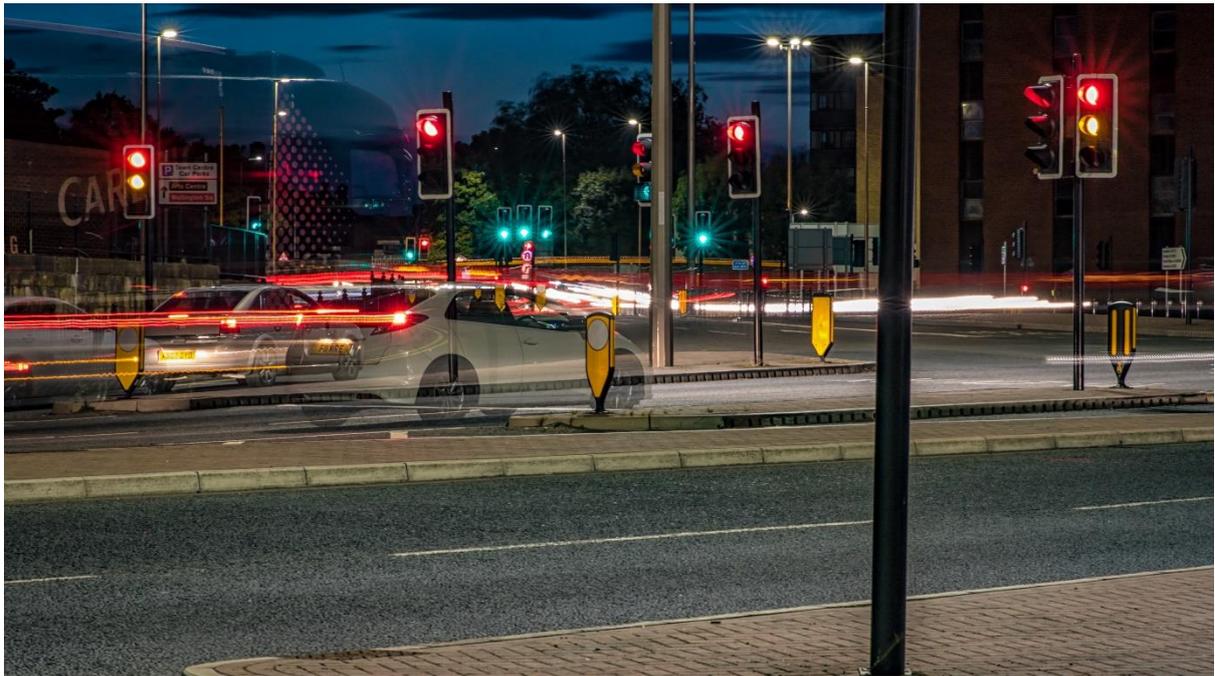


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Stockton-on-Tees Borough Council

Traffic Signals Policy



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Purpose and Aim of this Policy

This policy will detail how Stockton Borough Council (SBC), as a responsible local Highway Authority, will provide and maintain its traffic signal asset on the adopted highway, subject to available funding. The key objective is to drive the efficient day to day maintenance and long term management of traffic signals and controlled pedestrian crossings by the adoption of an asset management approach. The document will also detail how the Council take a pro-active approach in identifying safe places for pedestrians to cross the road and locations for new traffic signals to improve road safety, traffic management or facilitate new development, including how we consider requests for new controlled crossings or traffic signals.

The main local policy document in relation to this asset group is the Traffic Signals Maintenance Unit Agreement with Middlesbrough Borough Council (MBC), which is the legal document associated with MBC's role as Traffic Signals Lead Authority for the Tees Valley Area, whereby MBC discharge certain functions relating to traffic signals on behalf of the other authorities.

The asset is managed, via the Agency Agreement referred to above, through a number of measures based on the Traffic Management Act 2004, the Highways Act 1980, and the Road Traffic Regulation Act 1984.

Traffic Signals and Pedestrian Crossings also have to comply with the legal requirements of The Traffic Signs Regulations and General Directions 2016 and TD19/06 Requirement for Road Restraint Systems.

Under the Road Traffic Regulation Act 1984 SBC has a statutory duty to 'secure the expeditious, convenient and safe movement of vehicular and other traffic (including pedestrians)' and thereby appoint a Traffic Manager as a statutory post.

The following also summarises the Council's broad policies and objectives relating to the traffic signals and pedestrian crossing assets, as detailed in the current Local Transport Plan (LTP):

- To support national economic competitiveness and growth, by delivering reliable and efficient transport networks;
- To reduce transport's emissions of carbon dioxide and other greenhouse gases, with the desired outcome of tackling climate change;
- To contribute to better safety, security, health and longer life-expectancy by reducing the risk of death, injury or illness arising from transport and by promoting travel modes that are beneficial to health;
- To promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society;
- To improve quality of life for transport users and non-transport users, and to promote a healthy natural environment.

Agency Agreement

Middlesbrough Council is responsible for installing and maintaining traffic signals and signal-controlled pedestrian crossings across the five boroughs in the Tees Valley (Middlesbrough, Stockton, Darlington, Hartlepool, and Redcar & Cleveland). However, all traffic signal controlled junctions and crossings within the Borough are an asset of Stockton Council, with the exception of A19/A1046 Portrack interchange and A19/A689 Wolviston interchange, which are Highways England assets.

SBC and the other Tees Valley Authorities each make an annual contribution, paid on a quarterly basis, to Middlesbrough BC in order to carry out the traffic signal functions as defined in the Agency Agreement. This pays for general maintenance, the Urban Traffic Control (UTC) and Management System (UTMC), and an operational fee to cover staff resources and other overheads.

SBC is responsible for recommending provision of new traffic signals and new signal controlled pedestrian crossings, be this through new development funding associated with planning applications or LTP funding for transport strategy or road safety reasons.

At the time of writing the current Agency Agreement dates back to 2013 when Darlington Borough Council became part of the formal Agreement. In consultation with the other Tees Valley Authorities a review of the Agency Agreement has recently been undertaken. To summarise, the main changes contained within the new Agreement are as follows:-

- More information on call out response times
- Managing of UTC and UTMC equipment
- Collaborative working / funding streams
- Updated annual inspections and information sharing
- Definition of urgent / non-urgent faults and fault reporting
- Junction modelling / planning advice
- Lamp changes
- Update of office / out of hours contact details/protocols
- Switch off charges for authorities during normal office hours removed
- Agreement relating to police equipment housed on traffic signal street furniture

An annual survey is already undertaken by MBC to assess its performance. It is proposed that MBC will host a quarterly meeting with the other Tees Valley authorities to discuss any issues, ongoing schemes and so on. It is felt that there is currently close, collaborative working in relation to the areas covered by the Agency Agreement, as well as consideration of new facilities, detailed design, planning advice, liaison with contractors and provision of resources for events.

Resilience issues have been raised with MBC due to an ever increasing requirement for their services. Plans are now being progressed to alleviate this, which should increase resilience moving forwards.

Inventory

At the time of writing, there are 75 traffic signal controlled junctions and 91 traffic signal controlled crossings for which SBC is responsible.

Information on the inventory of SBC traffic signal infrastructure is held by MBC, this includes details of type of installation, street furniture, controller type, lamp details and power supply. This information is used as part of the power consumption data.

Intuitive Traffic Signal Techniques

Urban Traffic Control (UTC) is the method of coordinating traffic signals in a network by the use of timing plans loaded on a central computer. Timing plans that vary by time of day (for example to accommodate tidal flows associated with the AM and PM peaks) are automatically loaded by the computer and the timings on-street change accordingly.

SCOOT (Split Cycle Offset Optimisation Technique) takes information 'live' from on-street detectors and calculates the required timings for a series of closely associated junctions / crossings that will produce the least overall delay to traffic on the network covered.

Microprocessor Optimised Vehicle Actuation (MOVA) is a similar product used at an individual junction/crossing or signal controlled roundabout. Again, MOVA utilises additional traffic signal loops cut into the carriageway further away from the stop line linked to the signal controller. It continually adjusts the green time required for each approach by assessing the number of vehicles approaching the signals, whilst at the same time determining the impact that queuing vehicles would have on the overall operation of the junction.

The UTC inventory information is also held by MBC, this includes information on SCOOT and MOVA sites, BT and other communications information.

The Urban Traffic Management and Control System (UTMC) was introduced in 2012 in response to the Traffic Management Act, and includes assets such as Variable Message Signs (VMS), traffic management and CCTV enforcement cameras, car park spaces live information, communication equipment and the MOVA / SCOOT systems, covering all five Tees Valley Authority areas. UTMC systems are designed to allow the different applications used within modern traffic management systems to communicate and share information with each other. The idea behind UTMC is to maximise road network potential to create a more robust and intelligent system that can be used to meet current and future management requirements.

Future Upgrade

UTMC capabilities may change considerably in the short-medium term. Likely improvements include:-

- additional VMS
- journey time information
- air quality information
- reactive bus priority at signals

- real time bus information
- extended CCTV network including shared access
- extended live parking information.

In addition, communication and route planning with Highways England, particularly in the event of unplanned incidents, will also be much improved to benefit the strategic network. Information will be available to the public to provide journey time information on a particular corridor and influence modal choice.

Condition Assessment

All traffic signal installations are inspected annually, this includes an electrical testing inspection and general inspection. Maintenance and service records are held with MBC, with an electronic copy sent to SBC. The annual condition assessment checks everything on site is present and correct, and in full working order.

Current Condition

The maintenance of existing traffic signal equipment in the Borough is included in the Traffic Signals Maintenance Unit Agreement. However, the Agreement does not cover the replacement costs of refurbishment, it is recommended that traffic signal assets will generally need replacing after a life cycle of approximately 15-20 years.

The current condition of the traffic signal and pedestrian crossing infrastructure are assessed in terms of age, condition, risk and safety issues. This is done via the database in **Appendix 1** and a review of the annual inspection findings. The condition of some traffic signal equipment can deteriorate at a more rapid rate than others primarily due to location and the volume and traffic mix utilising the route. Similarly, the strategic importance of certain installations mean that priority to upgrade will be given to ensure resilience of the primary network.

Currently 97% of the signal stock are within an acceptable range of continued service, assuming a life cycle of 20 years. However, some of the stock is within the 15-20 year age range. Therefore a rolling three year asset management programme has been developed, based on the asset management spreadsheet, age of infrastructure, annual condition survey and risk and safety issues, and is funded from both revenue and LTP budgets.

Up-grades in recent years now include Extra Low Voltage (ELV) systems, LED bulbs and passive, aluminium signal poles, all of which help to improve safety, energy efficiency and high reliability, thereby reducing risk and maintenance liabilities.

Routine Maintenance / Bulb Maintenance Cleansing

Both LED and halogen bulb maintenance is undertaken by MBC on a reactive basis only, there is no bulk bulb change or cleansing arrangements undertaken. A rolling programme to convert all assets to LED will be considered as part of an ongoing energy reduction phase II study.

Prolonged Outages

Expected response times and actions associated with urgent and non-urgent faults are contained in the Agency Agreement, together with what constitutes urgent / non-urgent.

A protocol has also been developed for office hours and out of hours in the event of a prolonged failure at a traffic signal controlled junction. This includes contact details, lines of communication and a pre-determined temporary traffic management arrangement at key junctions. This will ensure that should an issue occur at one of the junctions, highway safety and traffic disruption is minimised. The protocol also involves collaborative working with external stakeholders including Northern Power Grid, Middlesbrough Signals and Premier Traffic Management.

Uninterrupted Power Supply (UPS)

SBC are also extending coverage of UPS battery back up at key junctions, which enables batteries to operate the traffic signal junction in the event of a power supply loss for a pre-determined time and a notification is sent to the in-station informing the traffic engineers. This ensures relevant parties have more time to react and arrange temporary traffic management should this be required. Only the newer ELV systems can take advantage of the battery backed system.

As part of the 3 year maintenance programme additional UPS systems will be implemented at key junctions within the Borough.

Additional Traffic Signals Infrastructure

Transport Assessments (TA) associated with proposed developments in the area are generally undertaken as part of the planning process. The TA considers the impact of the development on the surrounding highway network. Generally, if any particular TA identifies that improvements to an individual junction are needed, the costs of the necessary improvements are secured at the developers expense, via the planning process. New traffic signal asset maintenance responsibilities are usually therefore created by works to facilitate new developments via Section 106 or Section 278 developer funding. It is proposed to undertake a whole life costing exercise on a new traffic signal asset – this will be used when securing S106 funds from developers to install and maintain new traffic signal assets.

Alternatively improvements to the highway network including:

- Facilitate the safe and efficient movement of vehicular and pedestrian traffic
- Indicate access routes for vulnerable road users
- Selective vehicle detection to aid in prioritising non-car traffic flows
- Co-ordinated operation with other installations (UTC)

can be identified internally via the annual Road Safety Plan, Integrated Transport budget, Area Transport Strategy (ATS) process or Officers' Traffic Group, and funded via the LTP allocation.

Requests for New Facilities

Requests for new crossing facilities or traffic signal controlled junctions can be received from elected representatives or members of the public.

Such requests will be considered initially by the Road Safety team, and generally if the injury accident record is favourable, provision of a new installation would not be recommended. If not, or if the issue has been recommended for study via ATS stakeholders, the site will be surveyed / modelled and the results compared against Department for Transport documents, guidance and criteria to identify sites which would benefit from the installation of a traffic signal facility. The factors measured are usually traffic and pedestrian volumes (including vulnerable pedestrians), the road safety record and local community facilities such as schools, shops and hospitals. A report is then presented to the Director / Cabinet Member with an appropriate recommendation.