

TRA 1365

TRAFFORD BOROUGH COUNCIL

AMEY LG LIMITED

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PARTNERSHIP AGREEMENT

VOLUME 4 OF 9

Containing:

Schedule 2 – Specification – Part 2 – Highways Services – Appendix 2

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Trafford Borough Council  
Amey LG Limited



7 May 2015

## **Appendix 2: Highways Policies**

- Highway Policy
- Pavement Management Policy
- Preventative Maintenance Policy
- Structural Maintenance Policy
- Conservation Area Policy
- Street Light Planned Maintenance Policy
- Design for Primary Distributor Roads
- S278 Agreement Procedure
- Highway Inspection Policy
- Transport Asset Management
- Street Lighting Policy
- Traffic Management Plans

*See enclosed document entitled 'Highway Services – Lot 2a – Appendix 2 – Highways Policies – Highway Policy'*

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**Lot 2a Highways Services Specification 73**

HIGHWAY SERVICES SPECIFICATION - AG DRAFT - 5 05 2015 [10-5183306-15/121116-266]

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# TRAFFORD COUNCIL

## HIGHWAYS POLICY

## CONTENTS

1. The Policy Statement
2. The Network
3. Policy Overview
4. List of Detailed Policies

1.0 POLICY STATEMENT

## 1.1 INTRODUCTION

### 1.1.1 The Policy

“To provide and maintain a highway infrastructure meeting the desire of residents, compliant with statutory obligations and in line with the asset management approach of preservation and enhancement of the network to meet the needs of current and future customers, all at minimum cost”.

### 1.1.2 The importance of highways maintenance is identified in:-

- The community strategy
- The corporate strategy
- The LTP (Local Transport Plan).

These documents are referenced in the Transport Asset Management Plan (TAMP).

- An attractive, clean, unpolluted environment is important to the quality life that Trafford communities enjoy. The quality of the highway infrastructure being one of the most important aspects. It not only improves the visual appearance and hence the feeling of well being, good quality infrastructure produces a safe environment and reduces harmful vehicle emissions (sustainable neighbourhoods).
- An integrated safe transport system is only possible if the highway infrastructure is suitably maintained, thus ensuring that people are given a real choice in how they travel. There is a need to maintain the highway infrastructure whether the mode of transport is either public or private transport.

- If the infrastructure is not maintained then both access to jobs and education and transport of freight will be jeopardised.
- The aim is to encourage the development of Trafford's economy for the benefit of local people and businesses. This is very dependent on a good, well maintained highway infrastructure. Development and industry will not be encouraged to invest in Trafford if the highway network is allowed to fall into disrepair. This would have knock on effects on employment opportunities and opportunity to learn and develop new skills.

## 1.2 CORPORATE/DIRECTORATE PRIORITIES

The Council's six corporate priorities developed follow public consultations are:-

- Fighting crime
- Lower council tax and value for money
- Better roads and pavements
- A cleaner greener borough
- Preserving and improving educational excellence
- Quality of care for adults

This policy document focuses on the corporate priority to improve the roads and pavements.

This policy is in line with the corporate principles:-

- Achieving the best possible value for money
- Focusing on continuous improvement and innovation
- Responding to the different needs and aspirations of the people we serve, especially the most vulnerable.



The policy contributes to the Directorate objectives to deliver the local Transport Plan which includes improvements to the Highway Network.

### 1.3 STATUTORY OBLIGATIONS/LEGAL FRAMEWORK

#### 1.3.1 Overview of the Highway Authority's Legal Network and Asset Responsibilities

- Highway authority's have a legal responsibility for the highway network in terms of keeping the routes available and safe for passage for the travelling public. Much of our highway network dates from the 18<sup>th</sup> and 19<sup>th</sup> century. Over time the network has been augmented through new routes either via new developments(housing, commercial, industrial) or through changes to the original network to facilitate traffic and economic growth.

Trafford MBC is the highway authority for all roads maintainable at public expense within the borough with the exceptions of M60 which is maintained for the Department of Transport by the Highways Agency.

As highway authority the borough has to fulfil a number of statutory duties imposed by the legal framework.

It is the duty of all Highway Authorities to reasonably maintain and repair the highway, and to keep the surface of the road free from that, which might otherwise obstruct it.

### 1.3.2 Statutory Obligations - Highways

#### Highways Act 1980

- The Highways Act 1980 sets out the duties of the LHA. Section 130 outlines the general duties of the local Highway Authority. It is the duty of the Highway Authority to assist and protect the rights of the public to use and enjoyment of the highway for which they are the Highway Authority, including roadside waste which forms part of it.
  
- Powers contained in the Highways Act 1980, relating specifically to highway maintenance, sit within a much broader legislative framework specifying powers, duties and standards for the wider network management function.

These include:

Road Traffic Regulation Act 1984, and the Traffic Signs and General Directions 1994.

Road Traffic Act 1988 which provides a duty for highway authorities to promote road safety, including a requirement to undertake accident studies and take such measures as appear appropriate to prevent such accidents occurring. It also requires authorities, in constructing new roads, to take such measures as appear appropriate to reduce the possibilities of such accidents when the roads come into use

Road Traffic Reduction Act 1997

The Local Authorities (Transport Charges) Regulations 1998, as applicable to RTRA 1984 and other legislation, provide a power for the traffic authority to impose a charge for a number of its functions.

The Transport Act 2000, under which a local traffic authority may designate any road as a quiet lane or a home zone. The Act also provides for the Secretary of State to review the operation of rural roads and consider whether (and if so how) the law should be amended to facilitate the introduction of rural road hierarchies. The Secretary of State must consult the Scottish Ministers and The National Assembly for Wales when carrying out the review.

The Transport Act 2000 also introduces a power for authorities to charge Utilities for the occupation of road space during works.

The functions of the highway, street and traffic authority are required to comply with an increased range of legislation regulating the environment affects of their operations, including:

Wildlife and Countryside Act 1981 provides a framework of legislation relating to environmental and Countryside issues with which highway maintenance operations must comply.

The Environmental Protection Act 1990 provides the statutory basis for other environmental issues, in particular waste management, with which highway maintenance operations must comply. It also deals with the requirement to keep the highway clear of litter and refuse which for local roads is not a duty for the highway authority.

The Noxious Weeds Act 1959 places a responsibility on the highway authority to take action to inhibit the growth and spread of injurious weeds growing within the highway. Weed spraying operations are also regulated by the Environment Agency and also by the Health and Safety Commission Code of Practice.

Rights of Way 1990

Countryside and Rights of Way Act 2000

Traffic Management Act 2004

Common Law still remains part of the legal framework for some aspects of highway management and maintenance, for example, the Highway Authority Discharging Water from the Highway into Adjacent Landowner's Ditch.

- Section 41 of the Highways Act imposes a duty to maintain highways at public expense, and almost all claims against authorities relating to highway functions arise from alleged breach of this section
  
- Section 58 of the Highways Act 1980 provides that, in the event of action against a highway authority for failure to maintain, it shall be a defence to show that the road was kept in reasonable repair having regard to the traffic using it, the standard of maintenance appropriate to its use, and public safety. This establishes the principle of maintaining roads according to their functional importance.
  
- Sections 139, 140, 169 and 172 relate to the regulation of street management (skips, scaffolds, permits, temporary road closures, street events, licensing).

- Section 36(6) requires a Highway Authority to keep a list of streets within their area, which are publicly maintainable.
- There are 345 Sections of the Act referring to many different provisions they may describe duties or powers. Duties are things we must do, powers are things we can choose to do or not.

### 1.3.3 Statutory Obligations as Part of the Planning/Development Process

- a) To provide Highway Authority comments on planning applications.
- b) To carry out the functions required under S38 and S37 of the Highways Act 1980. This is the statutory authority enabling the entering into an Agreement with the developer to subsequently adopt a road which the developer has constructed.
- c) To carry out the functions required under S278 of the Highways Act 1980. S278 states that a LHA may if they are satisfied that it will be of benefit to the public to enter into an agreement for the execution of highway works (generally associated with the requirements of a development to proceed).
- d) S36 Highways Act 1980 is the statutory requirement to keep records the highways maintainable at public expense.

### 1.3.4 Statutory Duty to Co-ordinate the Execution of All Works

- Under Section 59 of this Act the Highway Authority has a duty to use their best endeavours to co-ordinate the execution of all works in the streets for which they are responsible

### 1.3.5 Statutory Obligations – Street Lighting

Although there is no statutory duty on a highway authority to provide street lighting, responsibility for the installation and operation of street lighting systems on the highway was passed to Local Authorities via the Local Government Act 1960. Although Trafford Borough Council does not have a duty to provide lighting, it has a duty of care to maintain its lighting stock in a safe condition and to ensure that the equipment is fit for purpose.

The authority has legal obligations to maintain the electrical infrastructure in accordance with The Electricity at Work Regulations 1989 and the Health and Safety at Work Act 1974

A system for recording underground electrical apparatus as required by the New Road and Street Works Act 1991 and the Electricity Safety, Quality and Continuity Regulations 2002 is to be developed within the asset inventory.

### 1.3.6 Statutory Obligation for Winter Maintenance

- An amendment to Section 41 was made 2003, coming into force on 10<sup>th</sup> September 2003. The following sub-section was added.-

“(1A) in particular, a highway authority is under a duty to ensure, so far as is reasonably practicable, that safe passage along a highway is not endangered by snow and ice”

The duty is not however to simply clear snow and ice. The wording of the amendment puts a duty on the highway authority to ensure snow or ice does not endanger safe passage. Therefore, preventative gritting falls within this new duty.

This amendment reverses the decision in recent case law (Goodes-v-East Sussex County Council) where the House of Lords had determined that highway authorities are under no statutory duty to pre-salt icy roads.

### 1.3.7 Statutory Obligation Land Drainage

Trafford is invested with certain powers under various acts of legislation principally:-

- The Land Drainage Act 1991, permissive powers which generally relates to flood prevention and maintaining flows in watercourses. These powers are given in Sections 14, 15, 22, 25, 60, 64 and 66 of the Act.

Sections 14 & 14      Power to maintain and improve existing ordinary watercourses.

Section 22            Power to carry out works on behalf of any person at their own expense.

Section 25            Power to require persons to carry out necessary works to maintain ordinary watercourses.

Section 60            Power to make contribution to expenses of drainage works.

Section 64            Power of entry.

Section 66            Power to make bylaws to secure the efficient working of a drainage system.

- The Public Health Act 1936, Sections 259, 260, 262 & 264 which deal with nuisance and culverting works.

Public Health Act 1936 –

Section 259 Power to deal with watercourse, ditch or pond that is seen as prejudicial to health

Section 260 Power to cleans ditch or watercourse that gives rise to conditions prejudicial to health.

Section 262 &  
264 Power to require provision, repair of cleansing of a culvert

#### 1.4 CODES OF PRACTICE

- Well maintained highways  
Code of Practice for Highways Maintenance Management July 2003
- Well Lit Highways  
Code of Practice for Highway Lighting Management November 2004
- Management of Highway Structures  
Code of Practice September 2005
- Framework for Highway Asset Management  
CSS April 2004



## 1.5 ASSET MANAGEMENT

Attention has been focussed on the importance of asset management by proposed changes to local government finance, including new requirement for the recording and management of assets. This approach has been adopted by the Highways Agency and others for management of the strategic network, and similar principles will apply to the local network.

The key principles of Asset Management are:-

- Focus on life cycle costing
- Management strategies for the long term
- Establishing and monitoring levels of service
- Managing risk of failure or loss of use
- Sustainable use of physical resources
- Continuous improvement

The Traffic Asset Management Plan (TAMP) was published in December 2008.

The County Surveyors Society (CSS) adopt the following definition for asset management in the framework document.

“Asset Management is a strategic approach that identifies the optimal allocation of resources for the highway operation, preservation and enhancement of the highway infrastructure to meet the needs of the current and future customers”.  
Trafford has adopted CCS approach and framework.

The Asset Management Plan is a tool to assist the decision making process and the transparency of the process, particularly when available funding is not

adequate to fund all demands. The plan highlights both long term and short term effects of the decisions made.

The plan identifies the level of funding required for different levels of service.

The policies outlined in the document in relation to the materials used, the methods of construction, the use of preventative maintenance, cyclic maintenance are all the "building blocks" for this asset management approach and calculation for valuation and depreciation in the TAMP.

#### 1.6 DETAILED POLICIES

There are 3 types of detailed policy -

- (a) Network safety, serviceability and sustainability policies.
- (b) Safety issues (for example the use of street lighting columns for banners and hanging baskets)
- (c) Policies to ensure fair and equitable treatment to all residents across the borough for example "vibration to properties policy"

#### 1.7 SUMMARY OF OBJECTIVES

The Highway Policy has been developed to assist -

- Meeting the desire of residents for better roads and pavements both now and in the future
- Compliance with statutory obligations
- In defining the materials type of construction/maintenance for input into the Asset Management Plan (TAMP)

- To ensure fair and equitable treatment to all residents across the borough in line with the Council's Equal Opportunities Policy.
- To increase clarity and transparency
- To assist members and officers in providing information to residents in a rapid and consistent way
- To save members and officers time and costs by reducing the time to resolve issues (requests for service)
- To outline the design, materials and procedures possible appropriate to the anticipated funding levels of future maintenance
- To consider issues in a comprehensive and holistic way
- To ensure best value

2.0 THE NETWORK

## 2.1 INTRODUCTION

2.1.1 The highway network is the Council's largest asset valued at approximately £1 billion and consists of:-

- Highway Carriageways and Footways;

Footways

Carriageways

Street Lighting

Cycle-ways

Public Rights of Way (PROW)

Highway Drainage

Carriageway Markings and Traffic Management Measures

Signs/Name Plates

Barriers and Fences

- Highway Structure;

Bridges

Culverts

Retaining Walls

### 2.1.2 Highway Designation

The national road network is divided into four distinct classifications:

- Trunk (motorways and all purpose trunk roads)
- Principal 'A'
- Classified site 'B' 'C'
- Unclassified

A trunk road is a highway which constitutes part of the national system of routes of through traffic

A principal road is a non-trunk road, which is classified as such by the Secretary of State as being sufficiently important in the national highway system to justify principal status.

A classified road is a highway which is agreed by the Secretary of State and, where appropriate, the Local Authority as being of importance in the movement of traffic

A primary route is a route that is designated by the Secretary of State on the most satisfactory all purpose route for through traffic (a trunk road need not necessarily be a primary route).

### 2 1 3 In Trafford

- All motorways in Trafford are the responsibility of the Highways Agency.

- A Roads

A5081	Parkway to Trafford Road
A56	Manchester Road/Chester Road/Dunham Road
A5145	Edge Lane
A560	Shaftesbury Avenue
A5067	A56 Chester Road to Manchester Boundary
A5014	Chester Road Stretford to Chester Road Manchester
A538	Hale Road
A5144	Delaheys Road/Thorley Lane
A6114	Carrington Lane

A5181 Barton Road, Park Road, Mosley Road  
 A576 Parkway Circle to Trafford Park  
 A5063 Trafford Road

- Primary Routes

Four of the above are designated as primary routes

A5081 Parkway to Village Circle  
 A56 Manchester Road  
 A5145 Edge Lane  
 A560 Shaftesbury Avenue

## 2.2 The Asset

The highways and transportation related assets included:-

Asset Group	Number/length (km)
<b>Roads (all classifications):</b>	806
A roads	56
B & C roads	53 (B) 49 (C)
Unclassified roads	648
<b>Footways (all classifications):</b>	1560
Category 1 & 2	25
Category 3 & 4	1544

Asset Group	Number/length (km)
Table E1	
<b>Structures (total):</b>	
Road bridges	68
Subways	8
Footbridges	44
Culverts (>1 5m)	28
Retaining walls	9
Sign gantries	1
Streetlights	26,569
Lit signs	3,288
Traffic signals	
Intelligent Transport System (ITS)	
Solar panels (associated with traffic signals or ITS systems)	
<b>Public Rights of Way (all RoW):</b>	
Footpaths	94KM
Bridleway	2 KM
Byway	11 KM
Vehicle restraints (safety fences)	
Drainage systems	
Unlit signs	
<b>Cycleways (all cycleways).</b>	
Off road cycleways	
On road cycleways	
Pedestrian barriers	

Table E1



3.0 POLICY OVERVIEW

### 3.1 INTRODUCTION

- 3.1.1 The Highways Policy overview identifies in general terms how the objectives outlined in the policy statement will be achieved. Detailed operational policies and standards then address specific issues.
- 3.1.2 The main purpose of highway, street lighting and highway structures maintenance is to maintain the highway network for the safe and convenient movement of people, traffic and goods.
- 3.1.3 An effective transport network is crucial to the Borough's social, economic and environmental well being. The policies set out in the Local Transport Plan (LTP) embraces the principles contained within a hierarchy of road users which give priority to the more vulnerable, public transport and those living in and using an area.

The LTP includes the TAMP (Transport Asset Management Plan). This plan identifies how Trafford intends to match the network in a sustainable way.

- 3.1.4 The LTP and the TAMP are seen as primary documents with key policies influencing the way all the highway policies are produced and implemented.
- 3.1.5 In delivering its "duty of care" to users of the highway, the Council provides financial and operational resources. This allows operations to be carried out in both a planned and reactive manner in maintaining the highway in a safe condition both in the short term and in the longer term.

### 3.2 ROADS AND FOOTWAYS

- 3.2.1 The roads and footways policy overview outlines the framework which is in place to deliver the objective. Detailed operational policies and standards address

specific issues such as development of the planned structural maintenance programme, highway safety inspections and reactive repairs, and the type of construction.

3.2.2 Trafford's highway maintenance policy is based on "The Code of Practice Well Maintained Highways" July 2005. This identifies three key objectives.

- (a) Network safety
- (b) Network serviceability
- (c) Network sustainability

### 3.2.3 Network Safety

- The Highways Act 1980 sets out the duties of the LHA. Section 130 outlines the general duties. It is the duty of the Highway Authority to assist and protect the rights of the public to use and enjoyment of the highway for which they are the Highway Authority, including roadside waste which forms part of it.
- Section 41 imposes a duty to maintain highways at public expense, and almost all claims against authorities relating to highway functions arising from alleged breach of this section.
- The development of the highway safety policy which identifies the inspection regime and a method to demonstrate this policy has been adhered to provides the Council with a defence to claims made under Clause 41 of the Highways Act. This defence is pursuant to clause 58 of the Highways Act.

The Highway Policy (Code of Practice for Highways Safety Inspections) identifies what is considered to be an actionable defect. The repairs to actionable defects cannot be planned and are hence referred to as "reactive maintenance

Reactive maintenance consists of pot hole repairs patching and minor repairs to flagged areas and kerbs.

The Council has a team of highway inspectors who inspect the highway in accordance with the frequency outlined in the Highway Inspection Policy "Code of Practice for Highway Safety Inspectors" in line with the set criteria for actionable defects they initiate reactive maintenance repairs.

(A detailed policy for Highway Safety Inspections was approved in February 2008).

#### 3.2.4 Network Serviceability

In the context of this policy network serviceability is considered to be:-

- Ensuring availability of the network
- Achieving integrity of the network
- Maintaining reliability of the network

Procedures have been implemented in accordance with the Traffic Management Act (TMA) to co-ordinate control and monitor all maintenance and statutory undertakers works on the highway in order to minimise disruption to road users and pedestrians.

In addition, procedures are in place to control skips on the highway and scaffolding and other obstructions.

Also included in the category are cyclic maintenance operations such as:-

- Gully cleansing
- Verge cutting
- Clean and block change of street lighting

### 3.2.5 Network Sustainability

Network sustainability is concerned with:-

- Minimising costs over time
- Maximising value to the community
- Maximising environmental contribution

The Transport Asset Management Plan outlines how network sustainability is to be achieved.

The County Surveyors Society (CSS) adopted the following definition for asset management in the framework document.

“Asset management is a strategic approach that identifies the optimal allocation of resources for the management operation, preservation and enhancement of the highway infrastructure to meet the needs of current and future customers” and Trafford has adopted the CSS approach and framework.

It is a systematic approach that takes a long term view, the whole life/life cycle of an asset being considered.

- The asset management plan is a tool to assist the decision making process and the transparency of that process particularly when available funding is

not adequate to fund all the demands. The plan highlights both the long term and short term effects of the decisions made

The plan identifies the level of funding required to meet the current aspirations (levels of services required) outlined in -

The community strategy

The corporate strategy

The LTP targets

The GM Maintenance strategy aims

The Central Government 10 year plan

The BVPI targets

In addition it outlines the level of funding required to ensure that a high burden of maintenance costs is not passed onto future generations (i.e. a sustainable highway infrastructure)

Trafford has a number of key objectives for the adoption of a total asset management approach as follows:

- To adopt a life cycle approach, detailing the whole of life cost of the asset, which will contribute towards a long term forward plan, with predicted future demands, and future funding options for the asset.
- To develop cost effective management strategies for the long term which will enable detailed and accurate information relating to the asset to be obtained, ensuring that where strategies are decided, the risks and consequences resulting from decisions that are taken are fully understood prior to the strategy being put into action.

- To provide defined levels of service and monitoring of asset performance making it possible to explore options for differing levels of service for each asset group, and the effects this may have on the public, services and environment. Once the levels of service have clearly been defined, it will be possible to monitor the performance of the asset against the specific levels of service.
- To manage risks associated with potential asset failures and enable internal business risks, as well as risks to the public to be managed effectively.
- To ensure sustainable use of physical resources.
- To achieve continuous improvement in highway management practices.

#### Life Cycle Maintenance

The life cycle maintenance of a highway involves a number of different interventions:-

#### **Preventative Maintenance**

Preventative maintenance is carried out to delay the need for the more disruptive and costly major (planned structural maintenance) intervention. The usual methods employed are surface dressing, slurry seal and micro asphalt.

There is a detailed policy for "Preventative Maintenance of Highways".

### Planned Structural Maintenance of Highways

Roads which have deteriorated to a level at which preventative maintenance is no longer appropriate have to have more extensive treatment. This can consist of planning and resurfacing the surface course to a full reconstruction dependent on the point in the life cycle of the road.

There are detailed Policies for,

- Highway Structural Maintenance

### 3.2.6 Development Control

- **S38 Agreements (Construction to Adoptable Standard)**

In order to ensure that developers design and construction to adoptable standard a council policy document has been produced.

The developers designs are checked and detailed list of amendments issued where necessary to ensure adoptable standards are met.

The construction is supervised/inspected and no development is accepted for adoption unless it is to the appropriate standards.

There are currently a number of difficult issues which have to be addressed to ensure that the Council is protected in terms of its future maintenance revenue commitments, in particular SUDS (Sustainable Urban Drainage Systems) and Local Planning Directive LPG3.



- **S278 Agreement**

The 106 planning agreement outlines, where required, in order for the development to proceed a number of alterations to the highway infrastructure are required. The developers enter into a S278 Agreement with the Council in order to carry out these works.

Trafford's legal interpretation is that S278 works must be carried out by the Highway Authority and not the developer. This ensures the design and construction are carried out to suitable standards thus ensuring that there are no long term maintenance liability to the Council.

In order to improve protection to the Council and to reduce the time spent in preparation of S278 Agreements a Standard Contract Document has been agreed between Trafford Council Legal Services and Environment Strategy (Highways/ Civil Engineering).

3 3 STREET LIGHTING

- 3.3.1 The street lighting policy overview outlines the framework which is in place to deliver the objective. Detailed operational policies and standards address specific issues such as type of equipment, photocell settings.

Trafford's street lighting maintenance policy is based on The Code of Practice – "Well Lit Highways" November 2004.

The identifies the types of inspections and maintenance operations to ensure that the public lighting system is safe, operates correctly, continues to provide the designed performance and to maximise life

- 3 3 2 'Asset Maintenance' describes the planned preventative maintenance and reactive fault maintenance activities undertaken to maintain the Council's Illuminated Street Furniture

'Asset Maintenance' is divided into the following sub activities -

- (a) Reactive Maintenance
- (b) Cyclic Maintenance safety inspections and Bulk Lamp Replacements

- 3.3.3 Reactive Maintenance deals with the identification and rectification of faulty Illuminated Street Furniture

Night-time safety inspections are carried out on a 28 day all year round cycle basis on Principal and Classified roads to identify lighting outages and other defects on the lighting network

The results of these inspections are recorded and relayed back to the Council on the next day for repair using the SAP works management system.

Current Service Standards (Subject to review)

PERFORMANCE INDICATOR	STANDARD
L53/1 Average cost of a working street light as planned	£ 74.54
BVPI 215a Average response time to complete a street lighting repair	3.64 days
BVPI 215b Average response time for a DNO (Distribution Network Operator) to repair loss of supplies and defective fuse units	28 days
L53/2 Percentage of street lights not working at any one time	0.80 %

3.3.4 Cyclic Maintenance Safety Inspections and Bulk Lamp Replacement Policy

Some of the benefits of a planned bulk lamp replacement regime are as follows:

- Maintaining high standards of light output.
- Minimising the more expensive costs associated with random lamp failures.
- Localising maintenance work in pre-planned areas.
- Preventing the expensive replacement of control gear failure caused by burning the lamp to destruction.
- Coinciding electrical six year testing of the installation.
- Keeping energy usage to a minimum. (As a lamp ages beyond three years the energy increases but the light output falls).
- In at least 90% of cases, the failure is indeed only the lamp.

The following safety measures are carried out in conjunction with bulk lamp replacements: External cleaning of all lighting units and photoelectric cells, visual electrical inspection and the repair and rectification of minor faults

### 3.3 5 Safety of Columns

Coarse visual inspections of the structural condition of lighting columns are also carried out on a planned basis to coincide with bulk lamp replacement, as recommended by the Institute of Lighting Engineers document TR22. Managing a Vital Asset: Lighting Supports (2007).

The structural inspection of all lighting columns is a key activity. Many street lighting columns are past their expected design life of 30 years and are in poor condition.

The structural condition of the columns are "risk" ranked and are categorised as follows: 1 – good condition 2 – fair condition 3 – poor condition and 4 – requires urgent replacement.

This approach allows the 'worst condition' assets to be identified. However this method of inspection is subjective and is only applied to concrete lighting columns.

Steel and cast iron columns are ultrasound tested to measure the level of deterioration. As part of the ongoing development of the asset management system it is envisaged that a computerised risk management regime will be introduced to identify defects on both steel and concrete columns.

### 3.3.6 Production of the Planned Street Lighting Capital Programme

The data regarding the condition of the lighting columns is used in the compilation of the annual capital street lighting replacement programme which allows the 'worst condition' equipment to be prioritised for replacement.

3.3.7 To comply with the Electricity at Work Regulations Act 1989 (EAWR) a regular testing and inspection programme must be adhered to and test and inspection records must be maintained for each Illuminated Street Furniture asset.

Electrical testing is carried out on a six yearly rolling programme in accordance with EAWR and British Standard 7671 – I.E.E. Wiring regulations.

Cyclic Maintenance Safety Inspections and Bulk Lamp Replacement Regimes	
Bulk lamp replacement lighting columns including structural inspections	2 years
Interim safety inspections and cleaning of luminaires	2 years
Electrical test and inspection	6 years
Illuminated bollards Bulk lamp replacement	1 year
Illuminated bollards safety inspections and cleaning	1 year
Illuminated subways and underpasses Bulk lamp replacement	1 year
Illuminated traffic signs	Currently burn to extinction
Painting of columns	10 years
High Mast lighting safety inspections	3 years

4.0 LIST OF DETAILED POLICIES

- The Asset Management Plan
- Network Safety Policies
  - a) Code of Practice for Highway Safety Inspections
- Network Serviceability Policies
  - a) Winter maintenance
  - b) Street lighting reactive and cyclic maintenance
- Network Sustainability Policy
  - a) Planned structural maintenance
  - b) Pavement management
  - c) Treatment in conservation areas
  - d) Street lighting policy
  - e) Preventative maintenance policy
  - f) Treatment in conservation areas
- Community Policies
  - a) Vehicle crossings
  - b) Vibration to properties

- Other Policies
  - a) Construction to adoptable standards (S38)
  
- Associated Policies
  - a) Tree policy

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**Lot 2a Highways Services Specification 74**

HIGHWAY SERVICES SPECIFICATION - AG DRAFT - 5 05 2015 [10-5183306 15/121116-266]

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*See enclosed document entitled 'Highway Services – Lot 2a – Appendix 2 – Highways Policies – Pavement Management Policy'*

**DATED: 09 September 2014**

**CONTRACT(S) FOR THE PROVISION OF  
ENVIRONMENTAL & INFRASTRUCTURE SERVICES**

Document Reference:

015\_Lot3\_Doc3A\_Vol3-3\_Pavement Management Works  
Procedure



Trafford Council  
Trafford Town Hall  
Talbot Road  
Stretford  
M32 0TH



# TRAFFORD COUNCIL

## TRAFFORD COUNCIL

### PAVEMENT MANAGEMENT POLICY

- Highway Structural Condition Surveys Policy
- MARCH UK PMS
- Pavement Management Policy
- Production of Planned Maintenance Programme of Works Policy

CONTENTS

**KEY POLICIES**

1. Introduction
2. Resources and Budgets
3. Pavement Management Systems
4. Condition Surveys
5. Development of the Planned Structural Maintenance Programme

## KEY POLICIES

1. Bid for funding for planned and preventative maintenance to be based on the survey information and the life cycle plans in the asset management plan and the BVPI targets.
2. The objective is, subject to sufficient funding, to maintain the highway network at the optimum condition for the road classification.
3. Where funding provided is not adequate to maintain the network at the optimum condition, allocation of available funding to specific network elements is generally based on:-  
  
Available budget pro-rated in line with the steady state budget requirements for each of the different road categories but modified to ensure;
  - preventative maintenance is in balance (no backlog)
  - keep a minimum spend (where possible) on the classified A, B & C roads of 50% of the steady state requirements.
4. Pavement management system used by Trafford is MARCH UK PMS.
5. Surveys carried out as part of the process to develop the planned structural maintenance works programme:
  - Scanner surveys 'A', 'B' & 'C' (classified roads).
  - CVI survey U (unclassified roads) 50% of network per annum.
  - BVPI 187 carried out when budget greater than steady state
  - Footway (course) surveys to be introduced in 2010/11. Network to be covered in 2 years and repeated every 10 years or when budget greater than "steady state"
6. Surveys carried out for the production of the National Indicators (NI's). NI 168 'A' roads min requirement 100% in one direction per annum. NI 165 B, C roads min requirement 100% in one direction per annum.
7. The planned structural maintenance programme is based on the funding level. The prioritisation of schemes is based on the survey data, input MARCH UK PMS and verified by engineering inspection.
8. Other surveys which form part of the process to produce the planned structural maintenance programme are:-

- BVPI 187 – DVI survey of Cat I and II footways
- Footway (course) surveys to be introduced in 2010/11. Network to be covered in area max of 4 years when budget greater than steady state and the survey repeated every 10 years.

Roads identified by elected members or residents will be given engineering inspection and included in the programme if appropriate.

1. **INTRODUCTION**

1.1 The main purpose of highway maintenance is to maintain the highway network for the safe and convenient movement of people, traffic and goods. The purpose of highway surveys is, to identify the pavement management, where maintenance is required, and the current condition of the network.

1.2 An effective transport network is crucial to the Borough's social, economical and environmental well-being. The policies set out in the Local Transport Plan (LTP) embrace the principles contained within a hierarchy of road users which gives priority to the more vulnerable, public transport and to those living in and using an area.

1.3 The LTP is therefore seen as a primary document with key policies influencing the way in which the Highway Inspection Policy is produced and how the maintenance of the network is managed.

1.4 The objectives of highway maintenance within the network management context can be considered as the following:

- a) **Network Safety**
  - i) Complying with statutory obligations
  - ii) Meeting users' needs
- b) **Network Serviceability**
  - i) Ensuring availability
  - ii) Achieving integrity
  - iii) Maintaining reliability
  - iv) Enhancing quality
- c) **Network Sustainability**
  - i) Minimising cost over time
  - ii) Maximising value to the community
  - iii) Maximising environmental contribution

Ref: the Road Liaison Group's "Well-maintaining Highways – Code of Practice for Highway Maintenance Management".

1.5 The Road Liaison Groups "Well-maintained Highways – Code of Practice for Highway Maintenance Management" (the RLG Code), issued in 2005, is based on the assumption that available funding for highway maintenance will provide some flexibility for authorities to pursue a regime of inspection/assessment and rational planning of programmes and priorities. Where this is not the case, the statutory obligations for network safety will need to take preference.

16 The RLG code is the fourth generation of a "Code of Good Practice" first published in 1989, revised to meet changing legislation and management trends. The current Code builds on the key themes of the original Code, and gives greater prominence to asset management and risk management

17 The recommendations in the RLG Code are explicitly not mandatory on authorities. In circumstances, however, where the Authority elects in the light of local circumstances to adopt policies, procedures or standards differing from those suggested, these will be identified together with the reasoning for such differences.

18 The RLG Code recommends three categories for inspection:

- Safety Inspections

- These are designed to identify those defects likely to cause danger or serious inconvenience to the public and therefore require immediate or urgency action.

- Service Inspections

- Inspections designed primarily to establish the programme for routine minor maintenance tasks not requiring urgent execution. They are tailored to the needs of particular highway elements to ensure that they meet requirements for serviceability. These inspections will normally be carried out by the Highway Technician from either public/member complaints or from information passed to them by the Highway Safety Inspector.

- Structural Condition Surveys

- The structural condition of the highway is determined either by mechanical survey machines or by visual condition assessment in order to.
  - BVPI 187 carried out when budget greater than steady state
  - Footway (course) surveys to be introduced in 2010/11 network to be covered in 2 years and repeated every 10 years or when budget greater than "steady state"

19.

- BVPI 187 carried out when budget greater than steady state
- Footway (course) surveys to be introduced in 2010/11 network to be covered in 2 years and repeated every 10 years or when budget greater than "steady state"



- Feed into the asset management process including current valuation of the asset.
- To provide information for the national BVPI indicator for CAA assessment.
- To provide information for local BVPI indicators
- To formulate or help formulate the planned structural maintenance programme.

1.10 A separate policy has been produced for safety inspections this policy concentrates on Structural Condition Surveys.

## 2:0 RESOURCES AND BUDGETS

2.1 In delivering its 'duty of care' to users of the highway, the Council provides financial and operational resources. This allows operations to be carried out in both a planned and reactive manner in maintaining the highway in a safe condition.

The capital budget bid is made each year for the following 3 years. The bid is based on the funding identified as being required in the Asset Management Plan, to achieve "steady state" i.e. no improvement or deterioration in the network and the BVPI targets.

The approved budget is based on the prioritisation by members of maintaining the highway network against the other conflicting requirements for finance within the Council and the limited funds available.

## 3.0 PAVEMENT MANAGEMENT SYSTEMS

UK PMS (United Kingdom Pavement Management System), is a standard for computer systems that support the management of programmed maintenance of hard paved areas within the highway. It covers:-

- Software
- Survey techniques
- Rules and parameters to allow the systems to be operated in a constant standard way.

These are several commercial highway management systems. Trafford uses MARCH UK PMS (Maintenance Assessment Rating and Costing of Highways).

4 0 CONDITION SURVEYS

4 1 Scanner Surveys (Classified Roads)

Traffic Speed Condition Surveys (TRACS) were introduced in 2003 to provide a consistent method of measuring the condition of Local Authority Principal Roads in England for reporting BVPI BV (96). These surveys were referred to as TRACS Type Surveys or TTS.

SCANNER Surveys (Surface Condition Assessment for the Network of Roads) was introduced in 2005 to replace TTS and to provide data for reporting BV (223) BV (224), the condition of other classified roads in England. (NI 168 replaced BV223 and NI 169 and replaced 224 (a) in 2008/9.

SCANNER Surveys are carried out by commercial companies using specialised, adapted vehicles, equipment and software that have passed an accreditation process. The condition of the carriageway is determined by processing the survey information through software conforming to UK PMS and is reported as-

**Green**, being carriageways which are generally in a good state of repair.

**Amber**, some deterioration is apparent requiring investigation to determine the optimum time for planned maintenance to take place

**Red**, poor overall condition which is likely to require planned maintenance within a year or so.

Defects identified by SCANNER are:-

- Wheeltrack rutting
- 3m longitudinal profile variance
- 10m longitudinal profile variance
- Whole carriageway crack intensity
- Wheeltrack cracking intensity
- Texture

These are 'weighted' and combined to give a single condition indices

Banding of Condition Indicator values

Green	0-20	Acceptable condition
Amber	20-100	Investigate soon
Red	100-370	Maintenance required/engineering assessment required

Amber lengths may identify areas where preventative maintenance may be appropriate.

Classified 'A' Roads –

The requirements for the national indicator is either:-

- (a) 100% of the network surveyed in one direction.
- (b) 50% of the network surveyed in both directions (roads not surveyed in the previous year must be surveyed in the present year).

Trafford carry out 100% in one direction as a minimum requirement each year.

When (a) and (b) apply:-

- (a) The highway budget is at a "steady state" or greater
- (b) At 5 year intervals

100% of the carriageway is carried out in both directions.

'Classified' B and C roads –

The requirement for the national indicator is:-

- (a) 100% of the B network in one direction  
50% of the C network in one direction

Roads not surveyed in the previous year must be surveyed in the current year.

Trafford carry out 100% in one direction as a minimum requirement each year.

When (a) and (b) apply:-

- (a) The highway budget is at a "steady state" or greater
- (b) At 5 year intervals

100% of the B and C network is carried out in both directions.

4.2 CVI Surveys (Unclassified Roads)

CVI (Course Visual Inspection) is carried out using a vehicle and two operatives, one driving and the other recording defects on hand held electronic recording equipment. Operatives have to be accredited.

There is no national indicator for urban unclassified roads, however they do form majority of the network and are the roads over which residents have most concerns

A survey of the Unclassified roads is required -

- As part of the process to identify roads which require planned structural maintenance schemes on further engineering assessment, in order to produce the planned structural maintenance programme
- To determine the deterioration for asset management valuation and which of governments accounts.
- To verify the accuracy of the asset management plan and the validity of the bid for future funding.

Defects identified by CVI are.-

Major cracking  
Which track rutting  
Minor fretting  
Surface deterioration  
Edge deterioration

BVPI requirements for major intervention is based on one of 3 condition indices.

Structural Condition Indices	> 85
Wearing Cause Condition Indices	> 60
Edge deterioration	> 50

(Edge deterioration not applicable on urban kerbed roads)

Banding of condition values

Green -	Acceptable condition
Red -	Maintenance required//engineering assessment required

CVI surveys are carried out on the carriageway only they do not include the footways.

#### 4.3 DVI Surveys for Cat I and Cat II Footway

DVI (Detailed Visual Inspections) are carried out on foot (walked surveys) with defects being recorded on a hand held electronic device. Operatives had to be accredited when this was a national indicator (since 2008/9 this has not been a national indicator).

DVI's pick up very similar defects to a CVI survey but level of the defects are split down to a greater degree.

Footway (Course) Surveys

These surveys are currently being designed (2009/10). They are intended as an asset management tool, to fill the gap in information on the condition of the asset left by all the other surveys.

The surveys are the equivalent of the CVI (Course Visual Survey) but a walked survey for the footway.

## Development of the Planned Structural Maintenance Programme

### (a) List of Schemes

Process – (see Fig. 1)

- (i) Produce prioritised scheme using MARCH UK PMS based on the survey input

Prioritisation based on,

- (a) Section length scored 1-n based on length of red
- (b) Section length scored 1-n based on % length of red
- (c) Score from (a) + (b) combined and lowest score is the highest priority

- (ii) List schemes identified by members.

- (iii) List schemes identified by residents.

- (iv) List schemes identified by AEI (Annual Engineering Inspections) these are possible schemes identified by the highway inspectors during their safety inspections.

Footway and carriageways are considered separately and categorised as follows.-

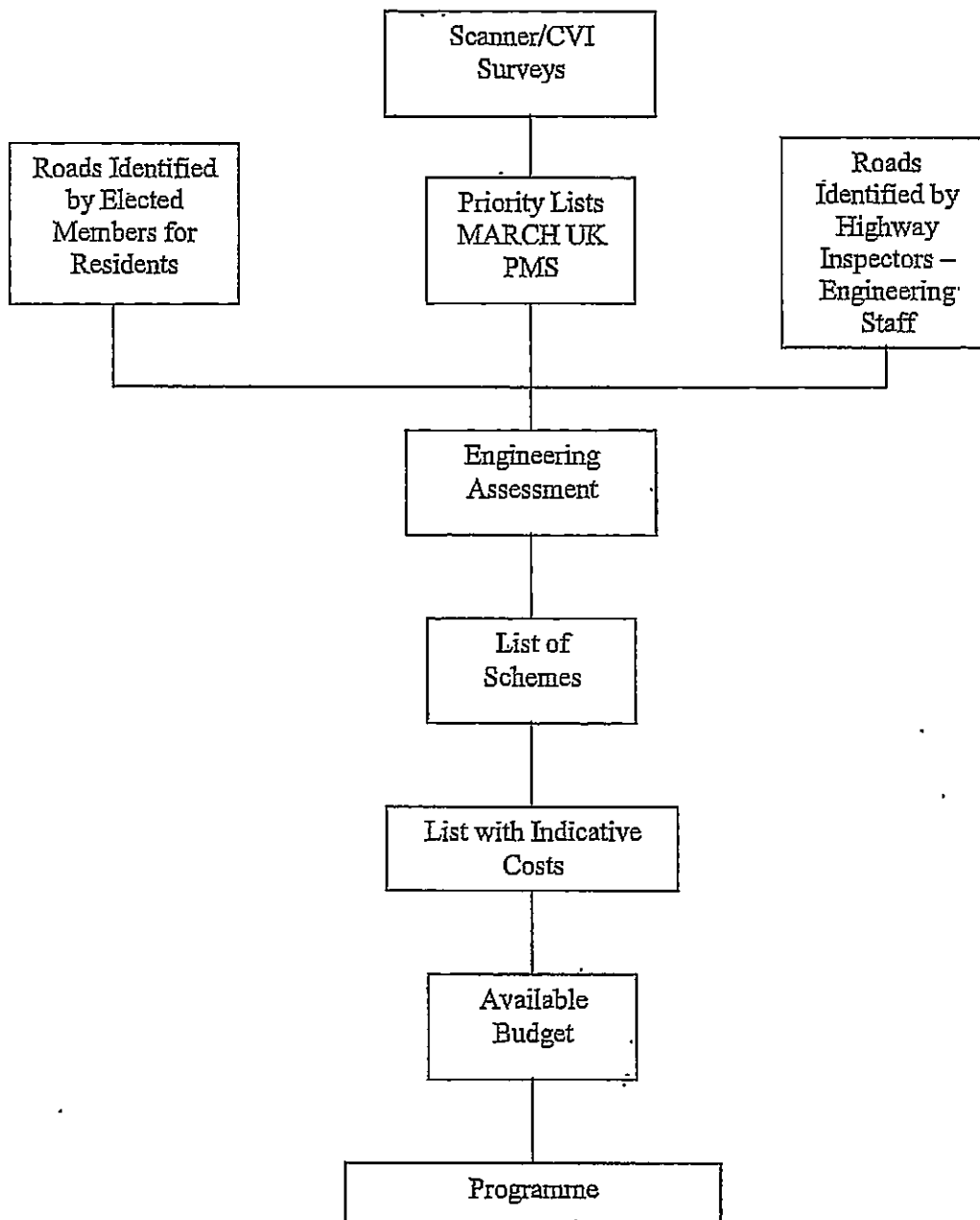
- (a) Very poor condition – consider for planned maintenance
- (b) Poor condition certain lengths could be treated as small schemes
- (c) Suitable for surface dressing – minor crazing, loss of chippings patching up to 10%
- (d) Minor non actionable defects
- (e) New surface – no defects.

- (v) Carry out engineering assessment on the schemes identified in (2), (3) and (4) and the priority list produced from the condition surveys

**Fig 1**

**Developments of the Planned Structural Maintenance Works Programme**

**Flow Chart**



(b) Available Budget

Optimum Condition of the Highway Network

The budget requirement is identified in the "asset management plan".

This includes:-

The budget required to maintain the network at optimum condition.

The budget requirement to improve the network.

Classified roads (A, B & C)

The optimum condition is considered to be 5-6% based on:-

- Approx. 2% of roads "require major works each year"
- Minor issues can produce a 'red' on Scanner (manhole covers etc.) approx 1%
- Alignment issues, summit and walking "when combined with other defects can produce red ½% of the network"
- Areas awaiting traffic schemes say 1% of the network.
- Allow for survey errors in the expected ratings  $\pm 3\%$  therefore allow 1%
- To ensure that there is adequate reactive maintenance to keep 2 reactive maintenance gangs fully employed.

Unclassified Roads

The optimum condition is considered to be 8% based on:-

- Similar reasons to set out for the classified roads (excluding alignment issues)
- Acceptable to allow a lower standard for low speed/low traffic volume roads
- In the past the DTp have recommended 8% as an optimum value.
- The allocation between planned/preventative depends on the current level of maintenance of network and if preventative maintenance has been carried out over the previous years so that there is no backlog of preventative.

Assuming existing funding level is at steady state and there is no backlog of preventative maintenance and the condition of the network is approx. ?????  
Priorities if funding is reduced below steady state:-



- Level of preventative budget to be maintained for 7 years at a minimum of 85% of the steady state requirement following the reduction in the overall budget (when possible) based on the condition of the network (pro rata the steady state preventative required budget).
- Planned structural maintenance budget split between A, B & C and U to be based on :-

Steady state budgets for the road carriageway  $\times \frac{\text{actual budget}}{\text{steady state budget}}$

(c) Allocation of Available Budget

Budget has to be allocated between:-

- Classified A
- Classified B & C
- Urban unclassified U roads
- Cat I and II footways

and between

- Planned structural maintenance
- Preventative maintenance
- Reactive maintenance

The budget allocation depends on:-

- The importance put on different elements of the network.

Whilst the A, B & C roads carry the majority of the traffic and good maintenance is important for business linkage and to reduce the number of accidents, vast majority of residents and members complaints refer to the urban unclassified network.

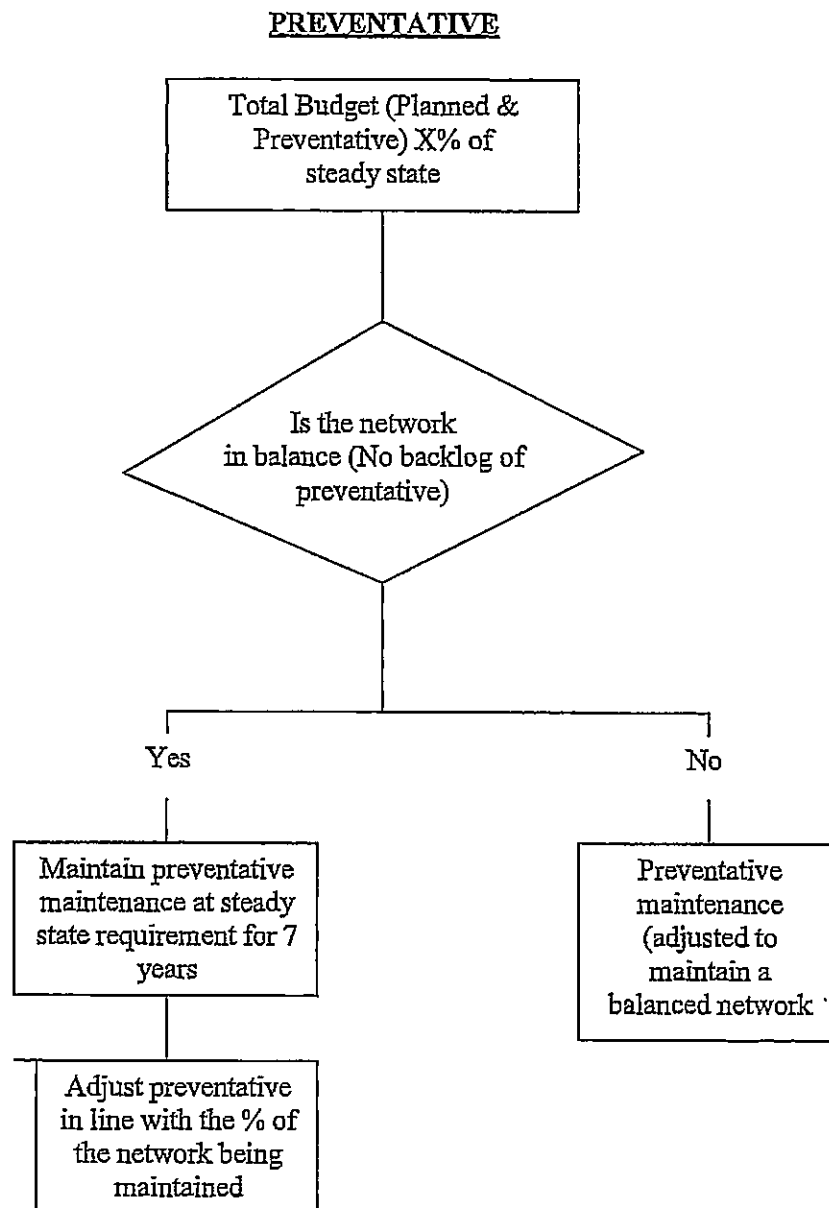
However, this is modified such that where possible the minimum spend on A, B and C roads is a minimum 50% steady state budget. The remaining budget being allocated to the Urban Unclassified roads (see Fig. 2 and 3).

- If the reactive budget based on "steady state" is 'x' at the optimum condition this will increase if the condition of highway decreases to X  $\times \frac{\text{optimum condition \%}}{\text{Actual condition \%}}$

(If the reactive maintenance revenue budget is not increased, then it would have to be consistent if monies have to be taken from the capital budget in order to comply with the statutory duty is to keep the network safe and avoid excessive insurance claims).

The requirement for an increase in revenue funding would have to be identified and members made aware

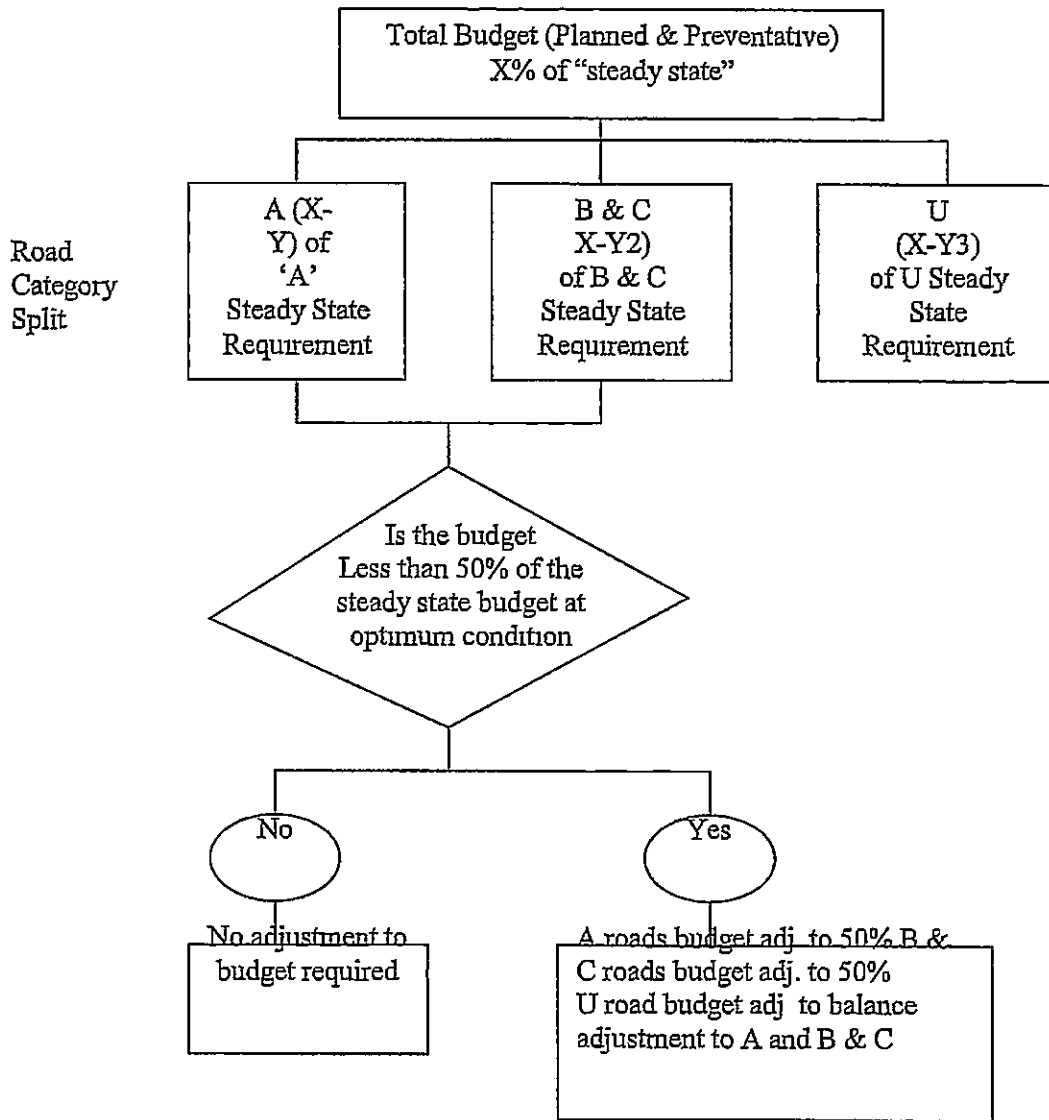
FIG 2



Note - Assumes (1)  $X < \text{steady state}$   
(2) Network at optimum or near optimum condition

FIG 3

PLANNED STRUCTURAL



Notes. Y1 = preventative maintenance  
 Y2 = preventative maintenance  
 Y3 = preventative maintenance

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**Lot 2a Highways Services Specification 76**

HIGHWAY SERVICES SPECIFICATION - AG DRAFT - 5 05 2015 [10-5183306-15/121116-266]

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*See enclosed document entitled 'Highway Services – Lot 2a – Appendix 2 – Highways Policies – Preventative Maintenance Policy'*

**DATED: 09 September 2014**

**CONTRACT(S) FOR THE PROVISION OF  
ENVIRONMENTAL & INFRASTRUCTURE SERVICES**

Document Reference:

015\_Lot3\_Doc3A\_Vol3-4\_Preventative Maintenance  
Works Procedure



**TRAFFORD  
COUNCIL**

Trafford Council  
Trafford Town Hall  
Talbot Road  
Stretford  
M32 0TH



# TRAFFORD COUNCIL

## PREVENTATIVE MAINTENANCE POLICY



## CONTENTS

### KEY POLICIES

1. Introduction
2. Resources and Budgets
3. Inspections and Surveys
4. Methodology for Development of the Preventative Maintenance Programme
5. Asset Management
6. Specification Materials and Constructions
7. Conservation Areas

Appendix 'A' Ward Rotation

Appendix 'B' Information Leaflet to Residents

## KEY POLICIES

- Preventative treatments will be carried out as part of the whole life cycle maintenance of the highway to achieve best value. Preventative treatments are only carried out when they are cost effective in accordance with whole life costing.
- An annual works programme will be produced as follows:-
  - 3 wards are addressed each financial year
  - Each ward is addressed every seven years
  - Roads are identified by
    - The highway inspectors
    - Surveys (CVI/Scanner)
    - Elected members
    - Members of the public
    - During formation of the planned structural programme
    - As part of a "wall to wall" planned structural maintenance schemes
    - Traffic calmed streets
    - Conservation areas
- The budget required for preventative treatments is outlined in the asset management plan.
- Prior to works commencing on site
  - Stakeholders are provided with a comprehensive information including a leaflet explaining the purpose the limitations of the treatment and the inconvenience likely to be caused during the works. (see Appendix B)
  - Issue of Electronic Transfer Notice through Mayrise System.
  - Traffic regulation orders
  - Preparation of formal order with framework partner for execution of works
- Design
  - Based on
    - TRL road note 39
    - RSDA (road surface dressing association) Code of practice
  - ECI (early contractor involvement) to agree suitable treatments
  - Preventative treatments will not be used on roads where greater than 10% pre-patching is required.

- Surface dressing and slurry seal will be used in combination in some locations for example slurry seal is the turning head of a cul de sac or at the approach to road junctions surface dressing on the approach road .
- Slurry seal and surface dressing will be used in certain areas to maintain the character of a road for example; retain stone kerbs and setts, retain barrel chamber of the road.
- The appropriate treatment micro asphalt, slurry seal or surface dressing is based on a number of factors and the most appropriate treatment from an engineering design criteria will be utilised

- Supervision

Due to the nature of the works, supervision is important and will be carried out to ensure:-

- Liaison with the public
- Sweeping is carried out
- Masking of walls, kerbs etc. is carried out
- To agree the extent of the pre-surface dressing patches.
- To ensure surfaces are clean and suitable prior to application
- To record weather conditions at time of application
- To measure regulating material used

## 1.0 INTRODUCTION

1.1 Surface dressing and slurry seal and micro asphalt are preventative treatments which introduced at the correct intervals in the life of the highway ensure that the life of the highway is increased and the whole life maintenance costs are kept to a minimum.

### 1.2 Purpose of Preventative Treatment

- Stops water ingress into the carriageway
- Arrests oxidation of the surface course (wearing course)
- Provides texture
- Provides skid resistance
- Reduces spray
- Improves the appearance of the carriageway

## 2.0 RESOURCES AND BUDGETS

2.1 When the budget available is at "steady state" then the budget spent on preventative treatments is as calculated in the Asset Management Plan for "steady state". However, when the budget is less than "steady state" then the amount which should be allocated to preventative treatments is addressed in the policy for "Highway Surveys Pavement Management".

## 3.0 INSPECTIONS AND SURVEYS

3.1 The identification of areas to be surface dressed is not as easily defined as those requiring planned structural maintenance. Roads requiring planned structural maintenance have general zero residual life and clearly require maintenance.

3.2 In order to ensure that all the roads in the Borough are considered for preventative treatment and that areas can be addressed rather than individual roads or streets. 3 wards will be addressed each financial year.

The historical surfacing dressing records were examined in order to identify wards within the Borough where surface dressing and slurry seal is particularly appropriate and least appropriate. The wards were then grouped to ensure there is the same level of requirement for these types of treatment every year.

Each ward forms part of the surface dressing programme every 7 years. This ensures a systematic approach. Specific roads which fall outside the general ward rotation and/or form part of co-ordination with planned maintenance schemes for example will be included in the programme.

The area rotation is identified in Appendix A.

3.3 A list of roads for analysis to determine if surface dressing would be appropriate will be obtained via:-

- Safety inspections by the highway inspections
- MARCH CVI surveys
- Elected members/members of the public
- During identification of planned schemes

#### 4. METHODOLOGY FOR DEVELOPING THE PROGRAMME

4.1 The list from inspectors etc. will be analysed (for suitability) based on,

- The % of pre-surfacing dressing patching which would be required
- The oxidation of the existing carriageway
- The profile of the existing carriageway

Based on the above, a draft programme will be produced.

4.2 The type of treatment will depend on a number of factors

- Nature of the existing surface
- Topography
- Volume and speed of traffic
- Type of traffic (HGV's etc)
- Highway alignment (bends and junctions)
- Overhead trees

4.3 Early Contractor Involvement (ECI) will verify the proposed programme and proposed type of treatments and the patching required. In addition, this will allow the input of specialist knowledge

#### 5 ASSET MANAGEMENT

Preventative maintenance forms part of the life cycle maintenance of the highway ensuring that the network is maintained at minimum cost.

The concept is very much based on a "stitch in time services nine".

The life cycle plan indicates outlines the theoretical frequency of the preventative maintenance treatments and is outlined in the Asset Management Plan

6. **SPECIFICATION, MATERIALS AND CONSTRUCTION**

6.1 **Footways**

**Surface Dressing**

Use when top surface loose (oxidised)

Embedment does not occur on footways, the binder has to provide the bond between chippings and surface. Rolling is usually carried out with a steel-wheeled roller not exceeding 1.5 tonnes.

- Binders - Emulsions preferred
- Polymodified if there is a large number of vehicle crossings
- Chippings - PSV not critical

**Slurry Seal**

Use where top surface loose (oxidised) and the surface deformation due to statutory undertakers reinstatements (slurry seal covers this type of deformation so long as it is not excessive)..

6.2 **Carriageways**

**Surface Dressing**

14/6 racked in	main/link road	}	i.e. used for heavier trafficked roads
10/6 racked in	feeder road		
10 mm	lower traffic roads		
6mm	lower traffic roads		

Surface dressing is inappropriate on roads with HGV movements or on heavily trafficked junctions, the chippings will strip off.

**Slurry**

Use on heavily parked cul-de-sac where the chippings would not get trafficked in and road cannot be swept.

**Micro Asphalt**

Micro asphalt consists of a bitumen emulsion and aggregate slurry laid cold.

Microasphalt is laid to a thickness of approx. 10mm and can therefore be used where minor profile issues mean slurry seal would be inappropriate for example to rectify drainage issues. Micro asphalt is also useful on heavily tree lined roads where surface dressing would be inappropriate.

7. CONSERVATION AREAS

In conservation areas and other areas of the borough which have roads with stone kerbs, channels etc it may be appropriate to use surface dressing and slurry seal in order to retain these features.

However, the alignment and ride quality of the road will not be improved and inevitably there will be standing water in the channel after heavy rainfall.

8. TRAFFIC CALMED ROADS

Preventative measures, in particular microasphalt, are used on roads with traffic calming features speed humps or tables

The process prevents the need to remove and replace the traffic calming features saving cost and inconvenience. The "preventative treatment" is effectively used as an alternative to major intervention in these situations.

APPENDIX A

YEAR

AREAS TO BE TREATED

1.	19 Alt	2 Sale	10 Urm
2.	21 Alt	16 Sale	11 Stret
3.	3 Alt	15 Sale	20 Urm
4.	1 Alt	6 Urm	18 Stret
5.	4 Alt	9 Urm	14 Stret
6.	12 Alt	5 Sale	8 Urm
7.	13 Alt	17 Sale	7 Stret

Wards

- 1 Altrincham
- 2 Ashton on Mersey
- 3 Bowdon
- 4 Broadheath
- 5 Brooklands
- 6 Bucklow-St. Martins
- 7 Clifford
- 8 Davyhulme East
- 9 Davyhulme West
- 10 Flixton
- 11 Gorse Hill
- 12 Hale Barns
- 13 Hale Central
- 14 Longford
- 15 Priory
- 16 St. Mary's
- 17 Sale Moor
- 18 Stretford
- 19 Timperley
- 20 Urmston
- 21 Village



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**Lot 2a Highways Services Specification 78**

HIGHWAY SERVICES SPECIFICATION - AG DRAFT - 5 05 2015 [10-51#3306-15/121116-265]

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*See enclosed document entitled 'Highway Services – Lot 2a – Appendix 2 –  
Highways Policies – Structural Maintenance Policy'*

**DATED: 09 September 2014**

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Procedure



**TRAFFORD  
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# **TRAFFORD COUNCIL**

## **HIGHWAY STRUCTURAL MAINTENANCE WORKS PROCEDURE**

ES/PT/SMB/Structural Maintenance Works Procedure – 07 01 2010

# HIGHWAY STRUCTURAL MAINTENANCE SCHEMES

## CONTENTS

Key Policies	1
1. Introduction	2
2. Preparation of Annual Programme of works	2
3. Annual Pre-Commencement Partners Meeting	3
4. Electronic Notification of Schemes	3
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6. Preparation of Scheme Design	5
7. Early Contractor Involvement	8
8. Temporary Traffic Regulation Orders & Notices	8
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10. Electronic Ordering from Framework Partners (EBP System)	10
11. Supervision of Works	10
12. Completion and Settlement of Accounts	11

## KEY POLICIES

- An Annual Works Programme will be produced based on:
  - The agreed list of Structural Maintenance Schemes
  - Co-ordination meeting with key framework partners
  - Assessment of working constraints (School Holidays, Sporting Events, Concerts, Utility replacement programmes)
- Actions to be addressed prior to commencement on site will be:
  - Issue of Electronic Transfer of Notices to Utility Companies through the Mayrise System via ETON5
  - Site survey and scheme design
  - Implementation of Temporary Traffic Regulation Orders
  - Notification of Stake Holders based on anticipated scale and disruption of works
  - Preparation of formal Order with Framework Partner for execution of works
- Control of Site Works will be carried out to ensure:
  - Quality of Workmanship
  - Mitigation of disruption
  - Rapid response to unexpected problems
- Schemes will be designed within funding restraints to allow for:
  - Wall to Wall treatments (A whole road approach)
  - Co-ordination with Traffic schemes
  - Co-ordination with Tree Unif schemes
  - Co-ordination with preventative maintenance schemes
- Schemes will be designed where existing constraints allow:
  - In accordance with current design standards & good practice
  - To ensure positive drainage of the highway
- Flagged footway paving will be retained wherever possible in such situations as:
  - Town Centres
  - Wide footways where existing materials can be re-laid and will not suffer damage from over-riding
- Materials used for future maintenance shall be:
  - Pre-cast concrete kerbs
  - Pre-cast concrete channels
  - Bitmac footways
  - Bitmac / Stone Mastic Asphalt / Polymer Modified Binder carriageways
  - ACO Kerbs
  - Beenev Blocks
- Natural Stone Kerbs and Sett Channels shall be:
  - Retained in none conservation areas where design constraints allow and materials are in good order and will not delaminate when disturbed
  - Re-used as above or replaced from store where available within conservation areas

## Highway Structural Maintenance Schemes

### 1. Introduction

It is the responsibility of Trafford Council Environment Strategy to programme and execute all Highway Structural Maintenance schemes within the borough. The Highway Network is the council's single largest asset.

The life of roads can be considerably extended if cost effective treatments are applied before serious deterioration occurs. Therefore the Council's ambition must be to arrest serious deterioration over the network as a whole, so that future repairs can be programmed to take place before roads become irreparably damaged.

For the time being, however we must continue to target repairs to the areas of greatest need; as our important routes will continue to deteriorate rapidly if left untreated. However if additional substantial funds are consistently invested as they have over the past two years in the structural repair of our roads, over time there will be fewer critical repairs to consider. This will lead to far greater scope in the programme and phasing of works and will result in improved co-ordination, less conflicts and a more versatile approach to community issues.

### 2. Preparation of Annual Programme of Works

Once the annual list of proposed schemes has been approved by Executive Members a programme of works is then developed.

An assessment is made as to the extent of the proposed works and an estimate made of the likely duration of the works, based on works of a similar nature carried out during previous years. Schemes having a direct impact on local schools and works on major routes are then added to the programme during holiday periods wherever possible to reduce disruption and risk to vulnerable road users. It is appreciated however that not all works can be programmed as such and on occasion it is necessary to work in the vicinity of schools during term time.

Trafford is the home to both Manchester United Football Club and Lancashire cricket club. As well as the sporting fixtures staged at the respective stadiums these venues are also used for major concerts and events throughout the year. This puts increased pressure on the highway network in the borough and has to be allowed for when preparing the



annual programme. These events have a particular bearing on when works can be undertaken on the A56 corridor.

Once all the traffic sensitive schemes have been identified and programmed the remaining schemes are inserted. These are added in a way to provide a rolling programme of works for the framework partners avoiding peaks and troughs in work load wherever possible.

### **3. Annual Pre-Commencement Partners Meeting**

Once a draft programme is developed it is circulated to the framework partners for consultation. A pre-commencement meeting is arranged to finalise the programme ensuring that the framework partners can achieve the programme of works and offer any amendments to the programme as appropriate.

### **4. Electronic Notification of Schemes**

It is a requirement of the Traffic Management Act (TMA) and New Roads and Street Works Act (NRASWA) that all works on the Highway are registered and notified. By giving notifications to the Statutory Undertakers of the Highway Authorities intention to undertake works significant protection periods are enforceable preventing any excavations by utilities for up to three years.

The majority of Structural Maintenance Schemes will by their nature be categorised as Major schemes. In accordance with the TMA requirements all major schemes require a minimum 3 month notification period. Once the programme of works has been developed "Advance Notifications" for each scheme with a proposed start date and duration is added to the Mayrise system. This generates Electronic Notification of proposed works to all the Statutory Undertakers that have interests within the borough. Currently this Electronic Transfer is via ETON5. Advance Notification of this nature allows Utility Companies to arrange any potential works they may have on affected roads to be completed prior to any Structural Maintenance Schemes. Alternatively, where it is not practical for the Utilities to undertake works in the Advance Notification period, adjustments can be made to the programme to allow for co-ordination of works.

During the course of the year once the proposed start dates can be confirmed, a Confirmation Notice is issued again via ETON5. The confirmation notice is required a minimum of 10 days prior to start on site. This notice serves as a reminder that the Highway Authority intends to

commence work imminently and any known emergency works on the road need to be addressed immediately. It also serves as a reminder that a section of road is to be treated and other works in the vicinity may potentially be affected by diversion routes or road closures which can have an adverse effect on the network as a whole.

Once works have started an Actual Start Date Notice is served. This notice highlights to the Authority which Contractor is working in the area should any major disruption be occurring that was not envisaged. The Highway Authority will then have the contact details of the relevant Contractors from the electronic notice and may intervene to attempt to reduce disruption where appropriate.

On completion of works a Works Stop notice issued which in accordance with section 58 of NRASWA restricts excavation by Utility Companies for a period of 36 months. Not only does this protect the network from potential damage it also restricts the amount of disruption experienced by network users.

In order for such an Electronic Notification system to work effectively a programme of co-ordination meetings are arranged throughout the year with representatives of all the Utility Companies having an interest in the borough attending.

#### **5. Site and Topographical Surveys**

The nature and extent of the proposed scheme will determine what information will be required from the site survey. Schemes requiring complex junction improvements and electronic ground modelling may require a full topographical survey undertaken by a framework partner. Less complex kerbing and carriageway resurfacing schemes will generally require a chain and level survey which can be undertaken by Environment Strategy Officers. Small straight forward footway resurfacing and minor kerbing schemes may require no advance survey works with levels being agreed with framework partners as the works progress.

Should a full topographic survey be required the framework partner will be issued with Trafford Councils standard survey specification, which outlines what level of detail is required along with string notation and file output types.

Where a level survey is required for a scheme this work is undertaken directly by Environment Strategy operatives. A base line is set up in order to reference site levels and relevant details. Generally this is set as a centre line chainage with 10m reference marks, however the complexity of

some sites and volume of traffic may require alternative base lines to be established. The levels of the existing carriageway are taken at each 10m section from threshold to threshold as required. The positions and levels of all gullies, tangent points on radii and centre lines of side road junctions are also collected

Whilst undertaking level surveys Environment Strategy operatives note any particular issues with overhanging vegetation and illegal vehicular crossings over the length of a proposed scheme This information is passed to Environment Operations who assess the whole of the site issuing enforcement notices to occupiers as necessary.

## 6. Preparation of Scheme Design

Once the survey data has been collected work can commence on the detailed scheme design. One of the noticeable features of Trafford is the very flat topography With the exception of a ridge of land running from Hale to Altrincham the majority of the borough is practically flat Historically this is a feature that has been put to good use, with the development of Trafford Park as a major industrial area. Such industrial sites needed areas of flat land on which to create their production line technology. However a draw back to such flat land is the difficulties encountered draining paved areas As such the fundamental design criterion within Trafford is producing a carriageway or footway profile with adequate surface water drainage properties

### Drainage

There are several alternatives for removing surface water from relatively flat areas A significant amount of research has been undertaken on the subject any many proprietary products have been developed as a result of this The most common approach developed has been the use of a combined kerb and drainage unit such as that provided by Beeny Blocks and ACO Kerbs Both these systems use a perforated kerb profile to allow water to drain from the carriageway along the entire length of the channel. Both systems have there uses and also there limitations. The original Beeny Units have a cross sectional area with significant hydraulic properties however this section can be prohibitive of their use in maintenance schemes due to footway widths and utility service locations. More recently mini Beeny Blocks have been developed to address these issues

The ACO combined kerb and drainage has a very similar profile to a standard 125mm half battered kerb As such they are more adapted to fitting in with urban maintenance schemes. The reduce section does limit

the flow that the unit can accommodate, however this is generally not an issue where there are adequate take off points.

One of the issues with both systems is the potential for increased maintenance requirements. Both systems require the same periodic cleaning of silt traps as a standard road gully, however due to the relatively slack gradients these units are laid to in the borough there may also be a requirement to jet the line of the units on a cyclic basis. The cost of providing both systems is also significantly more expensive than traditional road gullies and as such should only be considered where appropriate and other traditional drainage designs can not be achieved.

Where road gullies are adequately spaced along a section of road it is often possible to provide a false fall within the channel by adopting a summit and valley profile.

When a summit and valley profile is to be adopted the following should be observed whenever possible;

- o Desirable minimum gradient of channel without channel blocks 1:120
- o Absolute minimum gradient of channel without channel blocks 1:180
- o Absolute minimum gradient of channel with channel blocks 1:200
- o Desirable maximum kerb face at gully 150mm
- o Absolute maximum kerb face at gully 165mm
- o Desirable minimum kerb face at summit 75mm
- o Desirable minimum carriageway camber at summit 1:60
- o Absolute maximum carriageway camber at gully 1:20

The advantages of summit and valley are the reduced construction costs and maintenance costs providing there is an adequate system of existing road gullies and these are of good order. The only potential disadvantage can be a rolling affect experienced by vehicles particularly on higher speed roads.

In extreme cases where it is not possible to achieve the minimum channel gradients an increase in the carriageway cross fall will encourage surface water to gather close to the channel where the hydraulic head of the run off will tend to push it towards the gully positions. This should again only be used as a last resort as standing water within the channel will be inevitable. An assessment would need to be made to ensure any potential standing water would not become a problem for highway users.

#### Carriageway Construction

Many of the residential and local distributor roads in the north of the borough are constructed from in-situ concrete bays with either no surface

course or a thin Mastic overlay. Wherever possible it is the councils policy to overlay the existing concrete bays with a close graded material Ideally this should be a minimum of 100mm thick and comprise a binder and surface course. However due to threshold restrictions it is not always possible to increase the levels to this degree and in such instances a reduced thickness single layer surface course may only be provided When such a detail is provided it must be anticipated that reflective cracking from the under lying concrete will occur limiting the life expectancy of the surface Any roads that do receive such treatment should be routinely inspected and added to the preventative maintenance programme as required to seal any surface cracking

#### Setting out Information

Once the design has been finalised setting out information is produced to enable the framework partner to construct the works As a minimum the setting out information should contain,

- o Existing and proposed levels at each 10m section with cross section levels taken at back of footway both sides of carriageway, kerb / channel both sides of carriageway and centre line
- o Existing and proposed levels at gullies (including kerb level)
- o Proposed kerb and channel level at summits
- o Proposed kerb and channel levels at tangent points (with running chainages on radii as required)
- o Centre lines of side road junctions
- o Temporary bench mark positions and values

#### Highway Trees

Throughout the Borough there are a significant number of mature trees within the highway Inevitably the growth of the trees will cause disturbance to the footway and also the adjoining carriageway. It is appreciated that mature trees are part of the character of the borough and all efforts are made to ensure healthy trees are retained as part of structural maintenance schemes wherever possible. Discussions with the council's tree unit have highlighted a particular problem when working in the vicinity of mature lime trees. Any disturbance to the root systems of lime trees can have a detrimental effect on the stability of the tree and must be avoided Where it is not possible to install a replacement kerb line past any mature tree without root damage occurring the kerb line is terminated with a taper kerb and continued again once the obstruction is passed Bitmac footway surfacing is continued to the trunk of the tree and cut back on completion of works to allow the root system of the tree to breath Edgings are not provided around tree pits as these become

displaced over a relatively short period of time and can become tripping hazards within the footway.

The Highway Structural Maintenance Programme is circulated annually to the council's tree unit. This allows any known tree replacement schemes that are proposed by the tree unit to be promoted to commence before structural maintenance works start. This system of working allows for the complete removal of old root systems during the maintenance works and a co-ordinated approach to the provision of new pits for replacement trees.

#### Conservation Areas

There are also specific key policies which relate to the design of works within conservation areas. These policies are stated in the separate policy document covering Highway Maintenance and Street Lighting in Conservation areas.

#### **7. Early Contractor Involvement**

Once a scheme profile has been achieved the framework partners are invited to review the design and visit site with a view to providing suggestions to alternative construction materials to overcome site specific issues or to provide alternative whole life savings by adopting alternative material technology. As a relatively small borough authority Trafford does not have the backup of a materials testing and research laboratory. Any issues requiring testing previously have been submitted to Lancashire County Council. By developing a long term framework partnership with major Contractors Trafford now have the back up of significant research and development agencies at our disposal. Obviously the council does not want to be put a risk by adopting new un-proven materials on the highway and as such all new developments need to be independently tested and approved by national bodies (BBA / HAPAS) before being used on the network. Material technology has moved on enormously over the past decade with the development of polymer modified binders in surfacing materials and the use of recycled materials in sub bases. By introducing early contractor involvement the Council is in the position to capitalise on such developments fulfilling its environmental obligations whilst maintaining the integrity of the network.

#### **8. Temporary Traffic Regulation Orders & Notices**

Some schemes will be able to be undertaken with minimal traffic management requirements. However due to the complex nature of the majority of works a significant amount of planning needs to be afforded to traffic management requirements.

Where it is not practical or safe to carryout the works within the working area whilst maintaining the required safety zone and adequate running lanes for passing traffic a temporary traffic regulation order or notice will be required.

There are three mechanisms that can be used to implement temporary road closures or one-way restrictions

- o 5 Day Notice
- o Temporary Traffic Regulation Order
- o 21 Day Emergency Notice

Where it is anticipated that works can be completed within a five day period it is possible to apply for a 5 Day Notice. This Notice can be used to implement a full road closure or a system of one way working. A minimum notice period of 5 days needs to Highway Operations to implement the Notice. Such a Notice can be appropriate for undertaking minor structural maintenance schemes or more significant carriageway resurfacing schemes that will take no more than 5 consecutive days to complete. It is generally not appropriate to use the 5 Day notice for works on major routes as the consultation times for emergency service and public transport operators is usually insufficient for them to plan alternative routes and services.

For major structural maintenance and carriageway resurfacing schemes, where closures in excess of five days are anticipated a Temporary Traffic Regulation Order (TTRO) will be required. The minimum lead in time for the preparation of the Order is six weeks. It is a legal requirement for a Temporary Order to be advertised in the press and for notices to be posted on site. As with a Notice an Order can be used to implement a full closure or one way working. The wording of the order can also stipulate which hours of the day the road will be closed or restricted and for which dates. Works carried out under an Order need not be carried out over consecutive days, however this needs to be stated in the Order. TTRO's are circulated to the emergency services and public transport providers ensuring they have sufficient lead in time to plan alternative routes.

Any road closure whether it be an Order or a Notice may be required when sufficient working space is available to expedite site works and so reducing the overall disruption to Stake Holders.

Where works are planned on major commuter routes consideration will be given to off peak and night time working. Any schemes involving night time working will inevitably have environmental impact issues on local residents. Where night time working is to be undertaken all works which

generate significant noise disruption such as carriageway planning and use of pneumatic breakers for cutting joints and manhole adjustment will be carried either during the day wherever possible or during the early part of the night time shift. The only operation that does generate significant noise levels that will be permitted during a night shift will be carriageway sweeping where this forms part of the safety regime required prior to re-opening the carriageway to traffic.

All road closures will require a suitable alternative diversion route to be clearly signed. Once a Notice or Order is requested consultation with Trafford Council Traffic and Transportation will be undertaken to identify suitable diversion routes. Depending on the complexity of the diversion or works signing for contra-flow schemes and lane closures, the Framework Partner will be invited to submit appropriate traffic management plans for approval prior to commencement on site.

**9. Stake Holder Consultations**

The magnitude of the proposed scheme will determine what level of Stake Holder consultation will be required.

For relatively small schemes on residential roads it will be sufficient to inform frontage properties in writing of the extent of the scheme. The framework partner will also be required to liaise with residents regarding times when access to properties will be restricted. Local Ward Councillors will also be copied circulatory letters ensuring they are aware of all works that will potentially affect their constituents.

On more major schemes and assessment will need to be made of what impact the works will have on the local area. An area wide letter drop may be required or alternatively a leaflet produced that can be distributed via mail or retail and leisure outlets. Schemes having significant impact on local and regional areas should be advertised locally on scheme sign boards at the extent of the works a minimum of two weeks prior to commencement. Websites, local press and radio should also be informed of major programmed works. Trafford has a publicity department that should be involved as early as possible with the publication and dissemination of information for major schemes.

**10. Electronic Ordering from Framework Partners (EBP System)**

Trafford Council has a Procurement Policy which stipulates how orders are to be raised and approved to Framework Partners (Vendors). The



Procurement Policy covers all works undertaken by the Authority. The Procurement Policy can be found on the Councils Intranet site

**11 Supervision of Works**

Adequate levels of site supervision are essential. This is particularly important where major works take place at sensitive locations, and there is considerable vehicle or pedestrian movements, and many dwellings or business premises in the vicinity of the site. This site supervision will be undertaken by the framework partner responsible for the site.

Site supervisors represent the interests of the Highway Authority and the local community and should ensure that site operations are carried out to plan. They should also respond rapidly when unexpected problems arise.

**12 Completion and Settlement of Accounts**

Once works are completed and the final account agreed, payment is made to the Framework Partner in accordance with the Councils Procurement Policy. Details of the Policy can be found on the Councils Intranet site.

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**Lot 2a Highways Services Specification 80**

HIGHWAY SERVICES SPECIFICATION - AG DRAFT - 5 05 2015 [10-5183306-15/121118 266]

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*See enclosed document entitled 'Highway Services – Lot 2a – Appendix 2 – Highways Policies – Conservation Area Policy'*

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**Lot 2a Highways Services Specification 81**

HIGHWAY SERVICES SPECIFICATION - AG DRAFT - 5 05 2015 [10-5183305-15/121116-265]

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**DATED: 09 September 2014**

**CONTRACT(S) FOR THE PROVISION OF ENVIRONMENTAL &  
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Document Reference:

015\_Lot3\_Doc3A\_Vol3-6\_Conservation Area Works Procedure



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# TRAFFORD COUNCIL

## HIGHWAY AND STREET LIGHTING WORKS POLICY FOR CONSERVATION AREAS

ES/PT/SMB/Cons Area Policy – 07.01.2010  
Revised 09.12.2010

CONTENTS

KEY POLICIES

1. Introduction
2. Resource and Budgets
3. Specification and Materials

## HIGHWAY AND STREET LIGHTING POLICY

### IN CONSERVATION AREAS

#### KEY POLICIES

- **Pedestrian Areas (Pedestrianisation)**
  - A wall to wall carpet of hard artificial materials will be avoided.
  - Distinction between footway and carriageway retained.
  - Colour of hard materials to be similar to adjacent historic surfaces
  - Scale of paving modules will be consistent with historic surfaces in the area
  - If budget available natural materials will be used if appropriate in conservation terms (stone for example)
  - Natural stone and artificial materials (i.e. concrete and reconstituted stone) will not be used in direct conjunction on the adopted highway
  - The conservation office will be consulted and comment within the above policies.
  
- **Planned Maintenance**
  - All kerbs, setts and other store products will be retained wherever possible.
  - If relaying of kerbs is required and stone products delaminate and stone is not available from other schemes then standard artificial products will be utilised.
  - To avoid having to replace stone kerbs and channels with artificial material, where practicable a "do minimum" approach will be taken in order to retain the character of the road. This will inevitably mean the ride quality (level) of the road will not be improved and water ponding in the channel may occur after heavy rain.
  
- **Street Lighting**
  - Lighting levels will be designed in accordance with current standards. BS 5489. EN 13201
  - Column locations
    - back of footway
    - on property boundaries
    - at gable ends
    - opposite junctions

- Luminaires with curved tempered glass will be utilised (with a colour rendering index of 20 or greater)
- Columns generally will be tubular steel  
Trafford style" columns painted black
- However in specific areas where the properties have little frontage and narrow footways, Victoria "look a like" columns may be considered (subject to funding availability) (Conservation Officer to be consulted)
- Within the constraints above, (i.e lighting to current standards) height/number of columns will be discussed with the Conservation Officer
- Existing cast iron columns cannot be refurbished and will be replaced when the bracket arms become dangerous



## PLANNED STRUCTURAL MAINTENANCE IN CONSERVATION AREAS

### 1.0 INTRODUCTION

- 1.1 The first conservation areas were designated in England under the Civic Amenities Act in 1967.
- 1.2 Trafford has 21 Conservation Areas (Schedule of Designated Conservation Areas attached – Appendix ‘A’).
- 1.3 Supplementary Planning Guidance, PG07 was approved for majority of the Conservation Areas in June 1992. In accordance with best practice at that time, the aims of the document were to define important elements of the character and appearance of the areas and to provide guidance for new developments. It did not, however, include an audit, appraisal or management proposals for the public realm as now advised in natural guidance.

Hence this policy is designed as guidance until new appraisals and management plans for the conservation areas are available.

PPS5 (Planning Policy Statement 5) replaced PPG15 in March 2010.

Under PPS5 paragraph 5 states “Those parts of the historic environment that have significance because of their historic, archaeological, architectural or artistic interest are called heritage assets. Some heritage assets possess a level of interest that justifies designation and particular procedures apply to decisions that involve them.

The term designated heritage asset now refers to conservation areas and listed buildings.

Whilst PPG15 has been withdrawn it should be noted as general guidance.

PPG15 (para 4.10) notes that “the character and appearance of many conservation areas is heavily dependent on the treatment of roads, pavements, and other public spaces”. It also notes (para. 5.17) the importance of “the selection and positioning of street lighting equipment appropriate to the age and character of the surrounding area” and states that “off-the-peg” “period” columns and lanterns are not universally appropriate in historic areas” and that “special designs reflecting established local styles or motifs, or simple modern designs, may be more preferable.

“Streets for all: North West” provides some simple guidelines for street lighting including the need to consider day time appearance. It also includes advice (page

40) that fixtures should be "appropriate to their context in material, scale, design and illumination, and that light should be effective but unobtrusive.

- 1.4 Trafford is and has been in the past a very diverse Borough and the conservation areas reflect the need to address this cultural heritage.
- (a) In the Altrincham and Bowdon areas the conservation area covers areas of the old market towns
  - (b) In Dunham Massey the conservation area covers the area of the villages created for workers on the Dunham Massey Estate
  - (c) In the north of the Borough the conservation areas reflect more Trafford's industrial past, or specific buildings or park areas.
- 1.5 This report addresses the planned structural maintenance. These areas vary dramatically from narrow terraced street to tree-lined roads with wide grass verges and low density housing, and hence any maintenance policy needs to reflect this diversity.
- 1.6 Transportation issues and their effect on its historic public realm are not addressed in this report.
- 1.7 There are a number of conservation groups which have been set up by residents wishing to have an input into the development issues and the maintenance of the conservation areas and the appropriate group will be informed of schemes/consultation regarding tree issues etc at the same time as the residents of the affected road.

Altrincham & Bowdon Civic Society  
Bowdon Conservation Group  
Friends of Longford Park  
Hale Civic Society  
National Trust in relation to the Dunham Estate  
Sale Civic Society

Trafford's Conservation Officer's comments are included in this report to comment on this report

## 2.0 BUDGETS AND RESOURCES

In all cases there has to be a balance between the desired treatment in conservation areas and the available finance.

### 3.0 SPECIFICATION AND MATERIALS

#### 3.1 In line with the English Heritage Conservation Area Practice:-

- (a) There are areas where enhancement activity may not be appropriate.
- (b) When carrying out pedestrianisation schemes "a wall to wall carpet" of hard artificial materials will be avoided. The distinction between footway and carriageway will be retained and the hard materials will be of an appropriate colour. Every attempt will be made to retain historic, or reintroduce traditional surfaces. (However, budget consideration will also be considered).
- (c) Street furniture will aim to minimise physical obstruction and visual clutter. Historic street furniture will be retained in their original locations wherever possible.

#### 3.2 In line with English Heritage "Street Improvements in Historic Areas"

- (a) The correct scale of paving module will be used. For example block paving is appropriate in areas of setts but not in areas where the tradition is large rectangular flags.
- (b) Bond – The bond of flags and blocks will reflect the existing historical bonding.
- (c) Type – Where possible natural stone materials will be used (however, this will depend on available budgets).
- (d) Natural stone and artificial materials will not be used in direct conjunction.
- (e) Where artificial materials are used they will match as closely as possible in respect of size, colour, texture and finish.

#### 3.3 Where it is possible to retain stone kerb setts and other natural products in non-conservation areas this will be carried out.

However, due to damage and distortion to the existing channel and kerb line and the need to realign in order to ensure adequate drainage of the carriageway, it is usually required to excavate and relay. In almost all cases the stone delaminates and a high percentage of the products cannot be reused and this leaves inadequate natural products to complete the works.

In line with English Heritage recommendations the mixture of natural and artificial products should be avoided for aesthetic reasons.

Hence in non-conservation areas generally natural products will generally be replaced by artificial materials. Any natural materials which can be salvaged will then be utilised in the conservation area to replace damaged kerbs, channels, etc.

It may be more appropriate to use bull nosed kerbs rather than half battered kerbs where natural stone products have been removed in non-conservation areas. However, this will depend on how it ties in to adjacent streets

- 3.4 All kerb setts and other natural stone products will be retained in conservation areas wherever possible

However, the same problems occur during the planned maintenance scheme in conservation areas as described in 2.3 i.e. delamination. Where schemes can be worked together stone products from other areas will be used to address the shortfall in the conservation areas.

The cost of storage, loading and unloading and a suitable depot with security prohibits the storage of stone kerbs in anticipation of future requirements in the conservation area. However, all attempts are made to co-ordinate scheme such that kerbs from non-conservation areas can be used to make up the shortfall on schemes in the conservation area

- 3.5 The use of artificial materials such as concrete conservation kerbs will not generally be used, if natural products cannot be obtained then standard artificial/manufacture products will be used

- 3.6 It is proposed to adopt where possible a "do minimum approach" to structural maintenance schemes in conservation areas. This will include minor repairs to kerbs and sett channels, leaving kerb line often with little or no kerb face and a variable alignment both horizontally and vertically. Depend on the shape and the existing construction of existing carriageway, this would be planed and resurfaced or patched and surface dressed. Often the carriageway has a barrelled camber with minimal bound construction and hence without carrying out total reconstruction of the carriageway the only option is to surface dress

Inevitably works of this nature will both produce a scheme which has the appearance of newly constructed carriageway, and the undulating nature of the sett channel and the carriageway will mean that areas will 'pond' after heavy rainfall. However, the stone sett and channel will be retained and the character of the area maintained. The technique will be particularly appropriate when it is obvious that excavation of the kerbs or channels will cause a large percentage of the stone to delaminate and hence the only alternative would be to replace with artificial products

- 3.7 In line with non-conservation areas there are other dangerous cracked flagged footways caused by overrun/parking on the footway and by tree roots.

The solution (principles)

- (a) To comply with Local Agenda 21 (use of existing materials).
- (b) Provides a cost-effective solution to the overrun of vehicles.
- (c) To provide a cost-effective solution to the movement of the footway caused by tree roots.
- (d) To retain the aesthetically pleasing street scene by limiting the amount of black topped footway.
- (e) To ensure there is not a mixture of types of material specifically in conservation areas a mixture of natural and artificial products.

The scheme:

- (a) Take up existing flags
- (b) Broken flags take to tip
- (c) All remaining flags to be used
- (d) Black top strip to allow for overrun/parking
- (e) Black top vehicle crossing access
- (f) Black top in the vicinity of tree roots (this will allow for continuous cheap maintenance which will inevitably be required).

### 3.8 Street Lighting in Conservation Areas

In most conservation areas there is no need to utilise Victorian replica columns and standard columns will be used if a relighting scheme is carried out. In general the width of footway and/or verge and the density of housing means that street lighting columns are neither a visual obstruction of a visual intrusion. However, in specific areas for example terraced housing with little or no frontage and narrow footways then the street furniture including the street lighting columns may be significant in enhancing the character of the conservation area. In these instances then Victoria replica columns should be used.

Where there are existing cast iron columns in areas where they are considered they have a significant impact then they will only be removed if they are structurally dangerous. Poor lighting levels will not be considered a criteria for replacement.

In all areas other than conservation areas standard columns will be used.

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**Lot 2a Highways Services Specification 82**

HIGHWAY SERVICES SPECIFICATION - AG DRAFT - 5 05 2015 [10-5183306-15/121116-266]

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*See enclosed document entitled 'Highway Services – Lot 2a – Appendix 2 – Highways Policies – Street Lighting Planned Maintenance Policy (DRAFT)'*


**DATED: 09 September  
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**CONTRACT(S) FOR THE PROVISION OF  
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Document Reference:

015\_Lot2b\_Street Lighting Planned Maintenance Works

Procedure  
**DRAFT**



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**TRAFFORD**  
**HIGHWAYS SERVICE**

**Street Lighting Planned Maintenance Works  
Procedure**

Revision Date 10<sup>th</sup> April 2014

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- 1 Introduction
- 2 Resources and Budgets
- 3 Inspections/Surveys
- 4 Methodology for Development of the Planned Maintenance Programme
- 5 Specification/Materials
- 6 Attachments to Street Lighting Columns
- 7 Associated Policies
8. Summary of key policies  
Appendix A

DRAFT

## 1.0 INTRODUCTION:

1.1 The main purpose of street lighting is to allow:-

- The safe and convenient movement of people, traffic and goods.
- Reduce the fear of crime

1.2 Although there is no statutory duty on a highway authority to provide street lighting, responsibility for the installation and operation of street lighting systems on the highway was passed to Local Authorities via the Local Government Act 1966.

Although Trafford Council does not have a duty to provide lighting, it has a duty of care to maintain its lighting stock in a safe condition and to ensure that the equipment is fit for purpose.

The authority has legal obligations to maintain the electrical infrastructure in accordance with The Electricity at Work Regulations 1989 and the Health and Safety at Work Act 1974.

A system for recording underground electrical apparatus as required by the New Road and Street Works Act 1991 and the Electricity Safety, Quality and Continuity Regulations 2002 is to be developed within the asset inventory.

1.3 In this Statement of Operational Policies and Standards, Trafford Council adopts the policies, procedures and standards outlined in the document "Well – lit Highways Code of Practice for Road Lighting Management" November 2004 as produced by the UK Lighting Board.

### Review of the Document

This document is subject to regular review at an operational level in accordance with the Council's commitment to a process of continuous improvement.

### Service Objectives

The street lighting section provides highway lighting with the aim of providing a safe and secure environment.

1.4 'Asset Maintenance' describes the planned preventative maintenance and reactive fault maintenance activities undertaken to maintain the Council's Illuminated Street Furniture.

'Asset Maintenance' is divided into the following sub activities:-

- (a) Planned Maintenance

- (b) Preventative Maintenance
- (c) Cyclic Maintenance Safety Inspections and Bulk Lamp Replacements
- (d) Reactive Maintenance

Planned maintenance deals with the upgrading of the network and activities designed to prolong the life of the asset

Preventative, cyclic, and reactive maintenance is addressed in the "Street Lighting Preventative, Cyclic & Reactive Maintenance Works Procedure"

**2.0 RESOURCES AND BUDGETS:**

2.1 Budgets are required to replace.-

- Structurally unsound street lighting columns and illuminated signs
- To maintain Trafford's street lighting cable network (areas where direct connection to ENWL cable is not possible)

**3.0 INSPECTIONS/SURVEYS**

**3.1 Safety of Columns**

Coarse visual inspections of the structural condition of lighting columns are carried out on a planned basis to coincide with bulk lamp replacement, as recommended by the Institute of Lighting Professionals document. TR22. Managing a Vital Asset: Lighting Supports (2007).

The structural inspection of all lighting columns is a key activity. Many street lighting columns are past their expected design life of 30 years and are thus continuing to deteriorate.

The structural condition of the columns is "risk" ranked and are categorised as follows,

Classification	Action
----------------	--------

1	Re-inspect at scheduled interval (5 years)
2	Re-inspect after 3 years
3	Replace / Repair within 2 years
4A	Repair as soon as practicable
4B	Replace as soon as practicable
5	Immediate removal or making safe

This approach allows the 'worst condition' assets to be identified. However, this method of inspection is purely subjective when applied to concrete lighting columns. In addition the data collection is electronic based and is recorded along with the steel and cast columns to give a bigger overview of the priority of the future capital programme.

Steel columns are ultrasound tested to measure the level of deterioration. As part of the ongoing development of the asset management system it is envisaged that a computerised risk management regime will be introduced to identify defects on both steel and concrete columns.

The data regarding the condition of the lighting columns is used in the compilation of the annual capital street lighting replacement programme which allows the 'worse condition' equipment to be prioritised for replacement.

### 3.2 Electrical Testing

To comply with the Electricity at Work Regulations 1989 (EAWR) a regular testing and inspection programme must be adhered to and test and inspection records must be maintained for each illuminated street furniture asset.

Electrical testing is carried out on a six yearly rolling programme in accordance with EAWR and British Standard 7671 - I.E.E. wiring regulations.

## 4.0 **METHODOLOGY FOR DEVELOPMENT OF THE PLANNED MAINTENANCE PROGRAMME:**

4.1 The street lighting stock within the Borough varies in age from recently installed lighting columns to cast iron 'gas conversion' columns on residential roads which can be fifty plus years old.

4.2 The life expectancy of lighting columns is generally thirty to thirty five years, dependant upon the type of maintenance regime which is implemented to protect them i.e. periodic painting at pre-determined frequencies.

- 4.3 The annual street lighting capital programme is intended to be used to replace the columns which have reached the end of their useful life, where for example they may be coming dangerous, such as concrete columns with bracket arms cracking, or cast iron column with failing bracket arms, or the older stock of steel lighting columns with excessive metal loss at ground level.
- 4.4 There are also problems with older existing street lighting underground cabling systems which are failing or have failed completely.
- 4.5 The annual capital funding is therefore used in the areas where the above mentioned problems have been identified, the priority being to replace the stock which provides the greatest risk to the residents of Trafford.
- 4.6 The prioritising of the annual capital replacement programme is compiled by scoring each column in the Borough with a number from 1 to 5, 1 being a relatively young column with a number of years life expectancy remaining, to a column marked with a score of 5 which identifies that the column requires immediate removal or making safe.
- 4.7 This identification process is carried out by specialist engineers who carry out ultra sound testing on the steel columns bases at ground level to identify and quantify the ratio of metal loss.

This identification process is also carried out by maintenance operatives who through annual or two yearly routine maintenance visits, assess the condition of the column being visited and score it as previously described.

This process is also supported by day to day ongoing maintenance where operatives may be called to equipment which has failed, i.e. a bracket arm has collapsed and requires emergency attention. This would for example identify a particular road on which all the columns are of the same age, style and material and therefore can be considered as being of the same condition, thus requiring that particular road should be considered for relighting.

- 4.8 On roads where planned structural maintenance is to be carried out the columns are replaced if they have less than 5 years life before they will become category 4 condition. This is to avoid the excavation of newly surfaced footways and to provide a holistic approach to maintenance. Where columns are not replaced, they will be painted.

## 5.0 SPECIFICATION/MATERIALS:

### 5.1 Street Lighting Columns

- 5.1.1 Street lighting columns shall be constructed from galvanised tubular, hexagonal or octagonal section mild steel, compliant with Trafford specification complete with post top or side entry brackets.

Column mounting heights shall depend upon the highway hierarchy and the lighting criteria required and shall be chosen from 5.0, 6.0, 8.0, 10.0 and 12.0 metre mounting heights columns. High mast lighting columns in the order of up to 30.0 metres in height may be used, but they would be used only for highly complex road layouts or grade separated junctions.

Columns and brackets shall be certified to BS EN 40 and BSI document PD6547:2004 + A1:2009

They shall have a protective treatment in accordance with Department for Transport specification G2A with a further applied coat of 'black gloss' paint to BS4800.

They shall generally consist of planted root base style columns or in special cases, such as mounted on structures, bridge parapets or in poor ground conditions shall be flange plate type base type mounted on a suitably constructed flange plate base.

Columns which are required or expected to carry additional equipment over and above the intended luminaire, such as traffic signs, advertising banners, festive lighting, hanging flower baskets, CCTV, etc. shall be constructed as 'heavy duty' lighting columns and shall be designed, constructed and supplied to the manufacturers specification and recommendations.

Non standard columns may be required in areas such as conservation areas, town or district centres or areas of special interest or locations.

Identification marking numbers shall self adhesive 75 mm high reflective gold characters on a black background for 8.0 metre mounting height columns or above, and 40 mm high characters on 6.0 metre mounting height columns or below in accordance with Trafford standard drawing No. SD/13/03 (see Appendix A)

All columns shall also have two reflective gold bands, one mounted below and one mounted above door level, and also the Trafford 'Armorial Bearing' mounted on the lighting column door, in accordance with Trafford standard drawing No. SD/13/02 (see Appendix A)

## 5.2 Luminaires

### 5.2.1 Residential Roads

With due consideration to The Clean Neighbourhood and Environment Act 2005 and the Institution of Professionals Guidance Notes for the Reduction of Obtrusive Light 2005, and being mindful of the potential of 'light pollution' towards domestic properties from street lighting installations on residential roads, the use of LED luminaires should be standard practice within Trafford when providing new highway lighting or relighting existing residential roads

The LED optic reduces the wasteful upwards light spillage above the horizontal dramatically and also reduces illumination from the street lighting luminaire which can extend to adjacent properties, the most common reason for complaints from residents regarding light intrusion

The BS 5489-1 2013 'Code of practice for the design of road lighting', utilised nationally for implementing design criteria states that the use of a 'white light' source on residential roads, with an Ra of 60 or greater, allows the lighting class for that particular road to be lowered to the levels quoted in Table A7 'Variation of maintained lighting level with S/P ratio of light source', due to the perception of improved lighting from white light This would lead to a reduction in the number of new lighting columns hence a reduction in electrical energy consumption and thus a reduction in carbon emissions.

Therefore the use of LED (cool/neutral) white light sources with Ra's between 60 and 80 will be used for residential roads

The use of luminaires on residential roads which are totally recyclable, and are therefore compliant with the WEEE Regulations should be considered as standard policy and therefore a positive contribution to protecting the environment.

### 5 2 3 General Traffic Routes

The choice of luminaires for Traffic Routes such as Classified 'A' Roads – Main Distributor, and Classified 'B and C' Roads – Secondary Distributor, should be made using luminaires which are LED (cool) white light source with a glare indices of a minimum of G3 (ranges from G3 to G6)

The glare indices limits the luminous intensity which is emitted from the luminaire from the downward vertical at three angles, namely - 70, 80 and 90 degrees

This policy will assist in the reduction of light pollution and would provide a positive contribution to environmental issues.



#### 5.2.4 Town or District Centres

The use of LED (warm/neutral) white light source luminaires with a colour rendition index of 60 or greater, should be used for town and district centres because of the intensity of use and is suitable for CCTV coverage providing good facial recognition on CCTV.

#### 5.3 Photo Electric Cells (P e c u's )

5.3.1 The use of electronic photo electric cells with the following specification will be the standard choice for all street lighting luminaires in Trafford:-

- i) Shall be fully solid state with a switching level of 55 lux, having a switching differential ratio of 1:0.5 negative.
- ii) The power consumption shall be 0.25 watt, with a uniform operating temperature range of -20 degrees C to +70 degrees C.
- iii) Load handling shall be a maximum of 3x400 watt high pressure sodium lamps.
- iv) Shall be dated and have a manufacturer's guarantee of at least 6 years.
- v) Shall be compliant to the WEEE Regulations.

5.3.2 Because of their relatively low cost and reliability, photo electric cells have become the accepted means of controlling modern street lighting systems resulting in almost universal all night operation.

#### 5.4 . Underground Cable and Cable Duct:

##### 5.4.1 Underground Cable

Road lighting service cable shall consist of B.A.S.E.C. approved XLPE/PVC/SWA/XLPE cable with copper conductors, the outer sheath being black in colour.

The cable will consist of 2, 3 or 4 cores, and the conductors shall be identified by the appropriate colours specified in BS7671 'Requirements for Electrical Installations'.

##### 5.4.2 Underground Cable Duct

Road lighting service ducts shall be thick walled high density polythene with smooth bore of 50/100/150mm in diameter, orange in colour and printed with "STREET LIGHTING" lettering at intervals of not more than one metre throughout its length.

Ducts shall be impervious to water, capable of being laid in temperatures down to -10 degrees Celsius and sufficiently flexible to follow any undulations in a trench bottom.

Supplied in 3 or 6 metre lengths, each length shall be supplied with a welded collar.

Cable duct laid in verges and footways shall have a minimum cover of 450mm and shall have a covering of acceptable material

Cable laid under driveways shall have a minimum cover of 450mm and shall be protected by a concrete surround of mix ST2 concrete or similar as directed by the Authority

Cable duct laid under carriageways shall be 100mm in diameter and have a minimum cover of 750mm and shall be protected by a concrete surround of mix ST2 or similar as directed by the Authority

At least 75mm minimum clearance shall be given between the cable duct and the sides of the trench and between ducts sharing the same trench.

At least 150mm minimum clearance shall be given between the cable ducts and service pipes belonging to other Statutory Undertakers.

#### 5 5 Street Lighting Cut Outs

5 5 1 Cut outs shall be complete with an integral 32 amp double pole isolator and dependant upon the number of outgoing circuits, 1,2 or 3 HBC fuses complying with the requirements of BS88 category of duty 230v AC 16 rating Class Q1 Fuse ratings shall be in accordance with the manufacturer's recommendations

5 5 2 Interlocking shall insure that the fuse carrier cannot be inserted or withdrawn under load conditions

5 5 3 A clear "OFF" indication shall be provided when the unit has been isolated and a locking off facility shall be provided in the OFF position only

5 5 4 The design of the cut-out shall be such that it is possible to incorporate facilities, integral within the unit, for the termination of an additional Local Authority outgoing fused circuit.

5 5 5 A gland plate shall form an integral part of the unit that shall be capable of terminating up to 3 cables with cross sectional areas (CSA) of up to 10 0 sq mm

5 5 6 Terminals shall be sufficient to allow the termination of conductors with a CSA of up to 25 0 sq mm

5 5 7 The design of the cut-out shall be such that there is no possibility of contact with live parts during electrical testing

## 5.6 Siting of Street Lighting Columns

Replacement lighting schemes where possible shall incorporate columns being positioned in original column locations, but to the rear of footpath. This will provide a cost-effective solution regarding electrical service connections requested from the DNO (Distribution Network Operator)

BS 5489 'Code of practice for the design of road lighting' recommends a minimum setback of 0.8 metre, from kerb edge, for roads with a speed limit of 30 mph, to a minimum setback of 1.5 metres, from kerb edge, for roads with a speed limit of 70 mph.

Where, due to design requirements, the columns may require siting in new positions i.e. not in the existing lighting column locations, the new column positions shall preferably be located on the dividing line between household properties or business premises, or level with the gable-end of properties.

Care should be taken to avoid siting columns directly outside property windows with the consideration to avoid potential light pollution towards adjacent properties.

They should not be sited in drop crossings or immediately adjacent to telegraph poles.

They should not be sited close to privately owned trees or trees within the adopted highway, which, due to foliage may cause obstruction of the light emitted from the particular column mounted luminaire.

The positioning of columns adjacent to existing trees is particularly relevant with regard to the installation of new columns which, in the act of installation, may cause damage to existing tree roots and must be avoided.

There have been occasions previously when the position of a luminaire sited outside a residential property has caused reason for the resident to complain about apparent light pollution affecting them, particularly newly installed columns and/or luminaires, and particularly if they are locations where no columns were originally positioned.

These complaints would often include the resident requesting a shield, baffle or louvre be fitted to the offending luminaire. Historically the fitting of such shields has taken place on the odd occasion, but generally it was resisted due to the fact that it was not routine procedure, there is a cost involvement and the shields were somewhat unsightly, also there was an uncertainty regarding the number of such requests which would result from a particular highway relighting scheme taking place.

With the introduction of The Clean Neighbourhood and Environment Act 2005 and due consideration of the Institution of Lighting Professionals Guidance Notes for the Reduction of Obtrusive Light 2005, the policy of luminaire choice has been reviewed and the introduction of LED white light source luminaires on residential roads and the use of LED white light source luminaires on traffic routes with a Glare Indices of G3 or greater should negate the requirement to consider the use of shields, baffles or louvres fitted to luminaires in the Borough

No baffles, louvres or shields will be fitted to existing lighting stock

On new street lighting installations the illumination falling on a property frontage shall not exceed the limits shown in Table 1 in the 'ILP Guidance Notes for the reduction of Obtrusive Light 2005'

## 5.7 Lighting Level Criteria

### 5.7.1 Lighting of Subsidiary Roads

Lighting levels for subsidiary roads (S class) shall be arrived at using the recommended criteria in BS 5489-1 2013 'Code of practice for the design of road lighting' as shown in Table A7 'Variation of maintained lighting level with S/P ratio of light source' – 'Lighting classes for subsidiary roads' and shall use such information as crime rate, traffic flow and environmental zoning.

### 5.7.2 Lighting of Traffic Routes

Lighting levels for traffic routes (ME class) i.e principal 'A' roads, classified 'B& C' roads, shall be arrived at using the recommended criteria in BS 5489-1 2013 'Code of practice for the design of road lighting' as shown in Tables A 2 and A 3 – 'Lighting classes for motorways and traffic routes' and shall use such information as detailed description (i.e dual or single carriageway), average daily traffic flow(ADT), speed limit restrictions and junction and pedestrian crossing frequencies

### 5.7.3 Lighting of Conflict Areas

Conflict areas are traffic route junctions where ME class roads (traffic routes) of the same classification, or differing classifications, converge

Lighting levels for conflict areas (CE class) shall be arrived at using the recommended criteria in BS 5489 'Code of practice for the design of road lighting' as shown in 'Part 1 Lighting of roads and public amenity areas' Table B 3 – 'Lighting classes for conflict areas' where the illumination criteria CE class shall be associated with, and designed to, the highest ME classified road of the merging traffic routes

## 5.8 Fifth Core and Trafford Cable Networks

5.8.1 Within Trafford Borough there are street lighting columns which are presently electrically supplied through underground cable systems which as they grow older are becoming maintenance liabilities. These cable systems, generally electrically feeding older lighting columns, mainly consist of two differing types of cable configuration, namely:-

### 5.8.2 Fifth Core Cabling System

This system consists of a fifth cable core within the existing ENWL underground low voltage mains cable, generally on older residential housing estates. This core, solely for street lighting, is additional to the three phase and neutral four cores supplying electrical mains to the adjacent household properties.

The ENWL mains cable originates from electrical sub-stations and the fifth core is electrically energised via a time clock within the sub-station, operating dusk till dawn. It is jointed underground at each lighting column to provide an electrical feed to that column.

This existing fifth core system can electrically supply any number of lighting columns, from three to forty columns typically on residential estates.

This fifth core system is becoming more and more problematic regarding maintenance, and as faults develop ENWL will only carry out a permanent disconnection off the fifth core and new connection onto the 'main cable' cores, at a cost rechargeable to Trafford.

This system is only controllable by ENWL and obviously does not allow Trafford maintenance staff to carry out remedial work on it.

### 5.8.3 Private Network Cabling System

This cabling system, again generally in established older residential housing estates, consists of old underground cable of varying configurations, but fundamentally belonging to and being the responsibility of Trafford Council.

This cable system electrically supplies generally older columns which have reached the end of their useful life.

As this type of cabling system ages it becomes a maintenance liability and is costly to maintain, at Trafford Council's cost.

This existing cable can be jointed underground or can be looped direct from column to column.

Private cable networks belonging to Trafford Council are controlled and maintainable by Council street lighting staff, but are becoming more problematic and costly to maintain as they get older.

- 5 8 4 Generally these cabling systems electrically supply lighting columns consisting of equipment that has reached the end of its useful life and is due for replacement.
- 5 8 5 When unscheduled 'failure of supply', or individual 'dead services' occur on these types of cable systems supplying older lighting column installations, it becomes cost effective to design and install a new street lighting scheme which would be jointed direct onto the ENWL mains underground cable within the footpath of the highway being relit
- 5 8 6 This kind of underground cable fault development creates differing priorities for street lighting budgetary management in that the fault may require immediate revenue funding to relight a particular highway, or if the fault can be temporarily repaired may allow the relighting of that particular highway to be incorporated into the annual rolling programme of street lighting capital schemes to be carried out within a given time period, subject to availability of funds.
- 5 8 7 The nature of underground cable faults, not being predictable, requires that occasionally the relighting of various highways have to be incorporated into the rolling programme and may require immediate prioritisation over other schemes on the list which may only consist of 'low lighting levels' i.e. old low pressure sodium lighting installations (yellow light)

## 6. ATTACHMENTS TO STREET LIGHTING COLUMNS:

- 6.1 Standard street lighting columns are not designed to take any additional loading from banners, hanging baskets etc even when new. Any additional loading on corroded columns could cause the column to fail instantly.

Trafford has however installed a number of heavy duty columns. These are 12m columns on major routes which are capable of taking the load exerted by banners (when in 'good' condition Category 1)

No attachments must be made to columns of a kind unless it has been confirmed by the street lighting engineer/street lighting network manager that it is safe to do so

- 6 2 Christmas decorations are acceptable on -

- Columns in Cat 1 condition (see 6.1)
- No ties between columns
- No over road displays
- Individual units
- All mounting frames constructed of aluminium
- All displays skeleton, "vented displays"

6.3 Hanging baskets are acceptable on:-

- Columns in Cat 1 condition (see 6.1)
- Circular baskets which wrap around the column
- Max size 600mm dia and 275mm deep
- Not left up during winter months

6.4 Banners

- Banners are only acceptable on columns specifically designed for this purpose.

6.5 Mobile phone antennae/broadband.

The Council will not allow the use of street lighting columns for these purposes unless the following issues are considered/addressed:-

- Road Traffic Collision (RTC)
- Routine and emergency repairs to the column
- Segregation of supply
- Would not interfere with a street lighting remote monitoring system
- Tilt suntech to automatically cut off the supply to the antennae if the column is damaged
- 24 hours call out details of operator using the street lighting column to be provided
- The column is not to be used for advertising banners or any other income generating purpose
- Radiation must be below the ICNIRP guidelines.

6.6 Help Points

- It is not acceptable for the energy supply to be from the column and hence there is no advantage in mounting to a column, hence the Council policy is not to allow them to be attached to columns.

6.7 CCTV Cameras

The Council will not allow the use of street lighting columns for the above purpose unless:-

- Column confirmed to be structurally adequate (see 6.1)
- No drilling of the column
- No damage to the luminaire
- Energy costs declared by the Police

## **7.0 ASSOCIATED POLICIES:**

1. Street Lighting Preventative, Cyclic, & Reactive Maintenance Works Procedure

## **8.0 SUMMARY OF KEY POLICIES:**

- 1 Course visual inspections are carried out on all lighting columns. Steel columns are ultrasound tested.
- 2 Electrical testing is carried out on a six year rolling programme
- 3 Street lighting replacement programme is based on-
  - o Replace / repair of columns risk ranked at 3 in accordance with the surveys
  - o Repair of columns risk ranked at 4A in accordance with the surveys
  - o Replacement of columns risk ranked at 4B/5 in accordance with the surveys
  - o Replacement of cast iron (converted columns)
  - o Replacement of columns in conjunction with planned structural maintenance schemes when it is anticipated they will become a category 4B/5 column in less than 5 years.
  - o Areas with constant fault on the 5<sup>th</sup> core network
- 4 Only when the above criteria have been satisfied would lighting levels be considered
5. Co-ordination with planned structural maintenance schemes columns either replaced or if not replaced painted



6. Column mounting height/siting.
  - Where possible new columns sited in a similar location to the old column.
  - Located at the rear of the footway
  - Dividing line between household properties or level with the gable end.
7. Specification.
  - Columns to Trafford specification
  - Luminaires - LED
  - Photo electric cells
    - Switch ratio 1:0.5 negative @ 55 lux
8. Fold down columns utilised wherever access for a street lighting platform is not possible.
9. Painting
  - Protective treatments to Department of Transport G2A
  - All columns have additional coat of black gloss
  - All columns to have a Trafford armorial bearing and gold bands attached.
10. Light Pollution
  - No baffles, louvres or shields will be fitted to existing lighting stock.
  - On new street lighting installations the illumination falling on a property frontage shall not exceed the limits shown in Table 1 in the 'ILP Guidance Notes for the reduction of Obtrusive Light 2005'.
11. Lighting Levels
  - In accordance with BS5489-1:2013 EN13201
  - Traffic Routes Tables A2 and A3
  - Subsidiary Roads Tables A5 and A6
12. Attachment to Lighting Columns
  - Specified Christmas decorations
  - Hanging baskets.

## APPENDIX A



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TRAFFORD METROPOLITAN BOROUGH

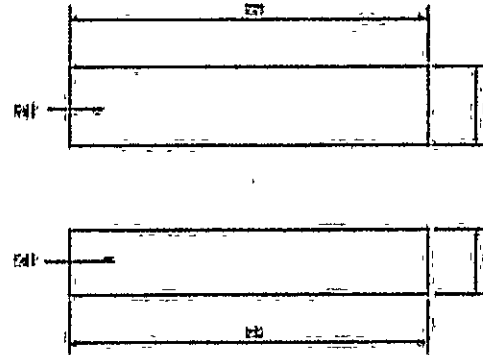


TRAFFORD METROPOLITAN BOROUGH

STANDARD METAL LIGHTING COLUMN

TRAFFORD METROPOLITAN BOROUGH

TRAFFORD METROPOLITAN BOROUGH



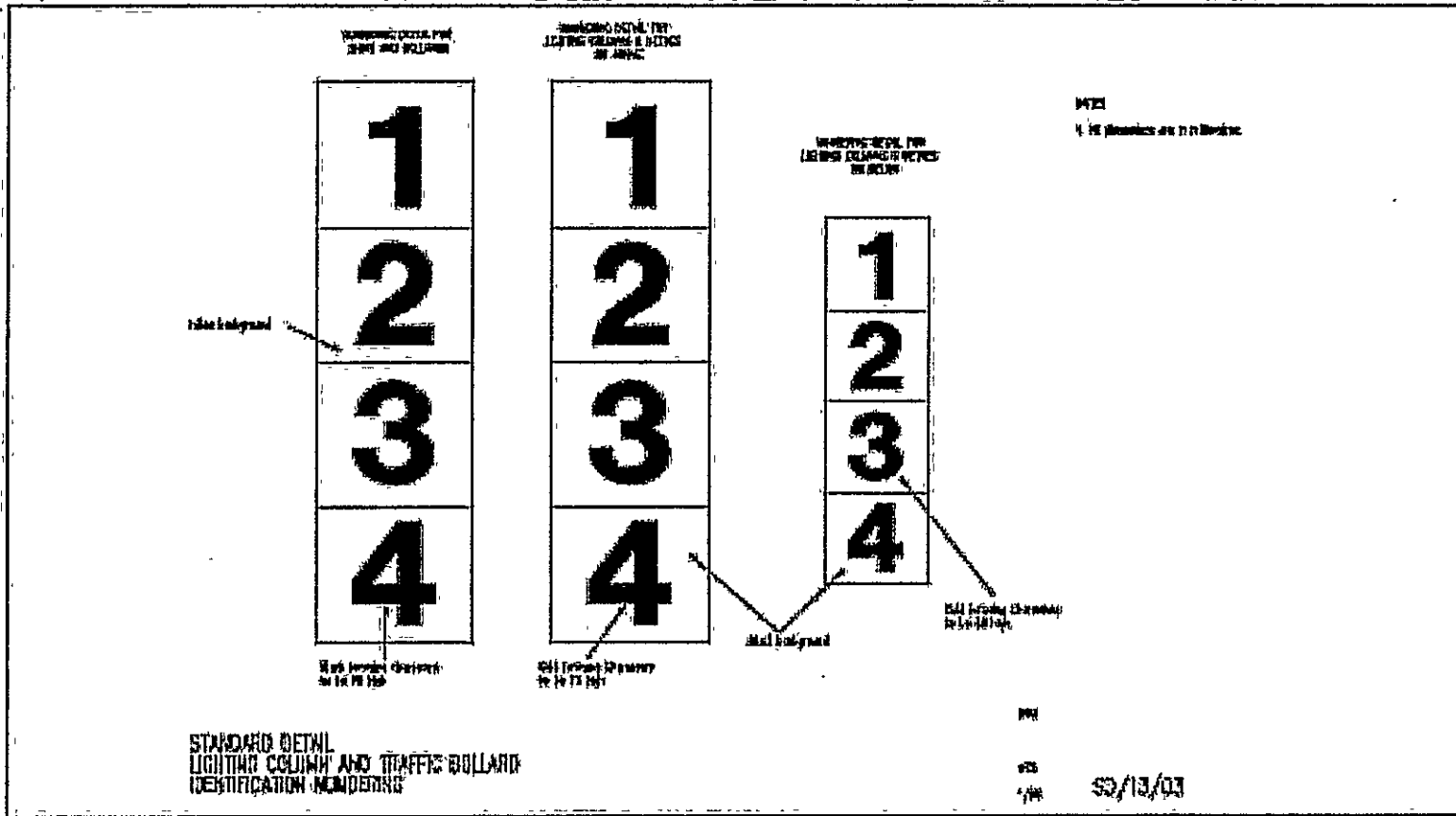
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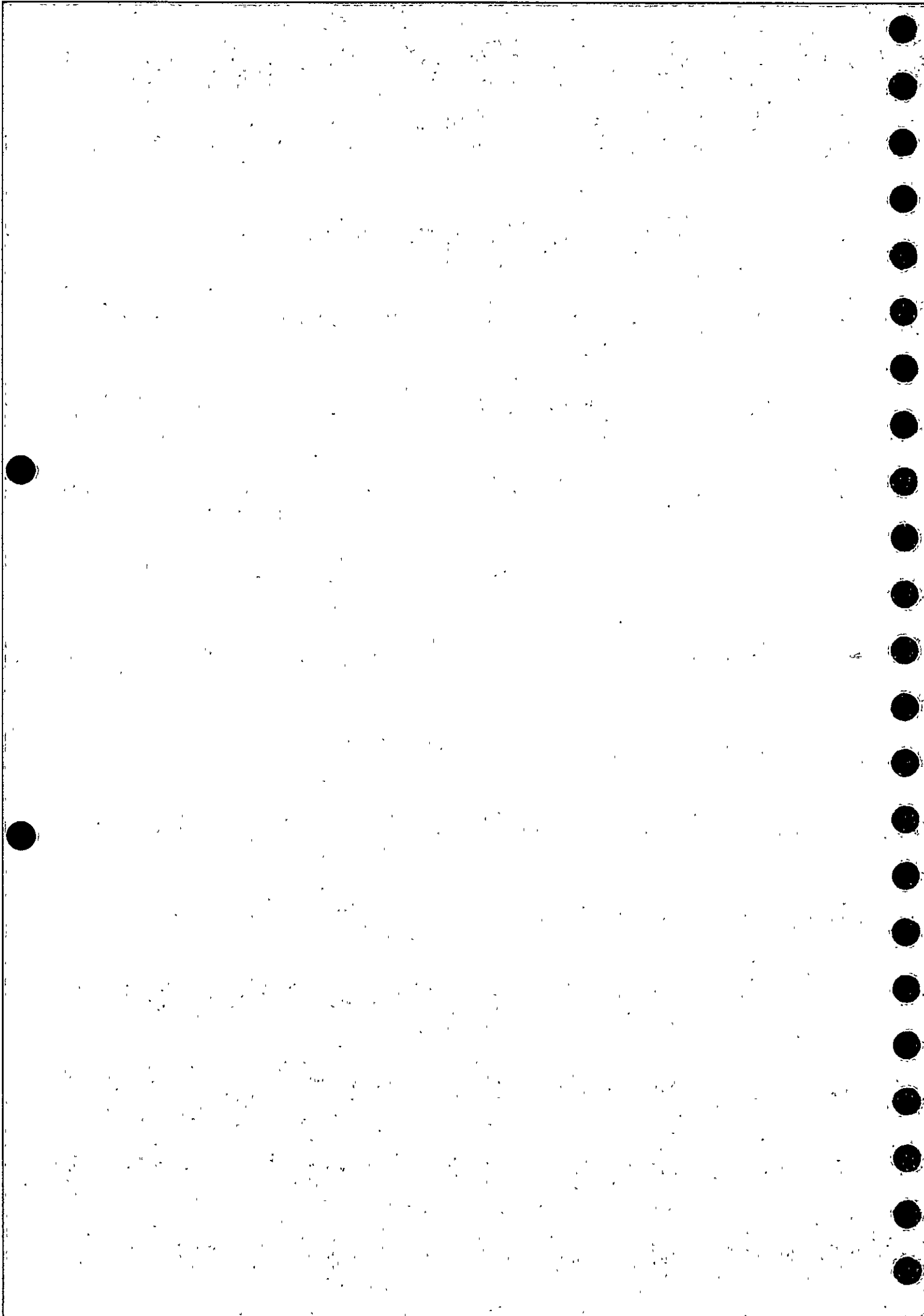
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**Lot 2a Highways Services Specification 84**

HIGHWAY SERVICES SPECIFICATION - AG DRAFT - 5 05 2015 [10-5183306-15/121116-266]

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*See enclosed document entitled 'Highway Services – Lot 2a – Appendix 2 – Highways Policies – Design for Primary Distributor Roads'*

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**Lot 2a Highways Services Specification 85**

HIGHWAY SERVICES SPECIFICATION – AG DRAFT – 5 05 2015 [10-5183906-15/121116 266]

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**DATED: 09 September 2014**

**CONTRACT(S) FOR THE PROVISION OF  
ENVIRONMENTAL & INFRASTRUCTURE SERVICES**

Document Reference:

015\_Lot3\_Doc3A\_Vol3-8\_Design Standards Distributor  
Roads



**TRAFFORD  
COUNCIL**

Trafford Council  
Trafford Town Hall  
Talbot Road  
Stretford  
M32 0TH



**HIGHWAY DESIGN STANDARDS  
FOR**

**Primary Distributor Roads**

**District Distributor Roads**

**Local Distributor Roads**

**“DRAFT”**

**August 2012**

PT/SMB/Section 38 hway design part 1

**Contents:**

**Introduction**

**Section A – Guidance for Developers (S38)**

**Section B – Review Procedure**

**Section C – Design Standards**

**Section D – Trafford Highway Construction Details**

## **1.0 INTRODUCTION**

### **1.1 General**

These design standards are for Primary Distributors, District distributors and local distributor roads and complement "Highway Design Standards for Adoption" which deal with housing industrial and commercial estate roads (lightly trafficked roads).

The standards have been produced for 3 purposes;

1. For use by developers when distributor roads are to be adopted.
2. As a design guide for new highways and junction improvements.
3. Outline the review procedures when design is carried out by external design consultants on behalf of the Council.

### **1.2 Hierarchy of Roads**

#### **Category 1**

Primary Distributor, Trunk and Principal Roads, Town Centre and main shopping streets, typically carrying over 1000 commercial vehicles per day in each direction.

#### **Category 2**

Primary Distributor, other trunk and Principal Roads and main Urban Routes, typically carrying 750-1000 commercial vehicles per day in each direction.

#### **Category 3**

District Distributors, important non-principal roads, typically carrying 250-750 commercial vehicles per day in each direction.

#### **Category 4**

Local Distributors, other non-principal roads. Roads carrying 75-250 commercial vehicles per day in each direction.

#### **Category 5**

Lightly trafficked roads. Roads carrying up to 75 commercial vehicles per day in each direction.

#### **\*Note**

- (1) A commercial vehicle is defined as a goods vehicle or public service vehicle of unladen weight exceeding 1500 kg.
- (2) In general, categories 1, 2 and 3 are classified roads. Category 4 could be classified or unclassified. Category 5 unclassified.
- (3) Typical relationships between the differing categories of road are shown on Drawing Nos. RR/1.



**SECTION A GUIDANCE TO  
DEVELOPERS (S38)**

## 1.0 INTRODUCTION

Generally the procedure is the same as outlined in "Highway Design Standards for Adoption" which deals with the minor road network.

### **Introduction**

Trafford Council enters into agreements with developers to secure the adoption of roads and footways once they have been completed to the satisfaction of the local Highways Authority. The agreements are made under Section 38 of the Highways Act, 1980. Developers are required to complete "Form A" – Certificate of intention, and return to the Head of Highways and Bridges following receipt of Building Regulations approval.

### **Planning Approval**

Whilst the Highway Authority comments on planning applications, planning consent cannot be deemed to be acceptance of suitability for adoption. If it is intended that the Highway be subsequently adopted by the Council, the developer is responsible for compliance with the design criteria for adoption of the roads and footways.

### **Relationship with section 104 agreements (1991 Water Industry Act).**

Most developments will need to include for adoption of sewers under the 1991 Water Industry Act S.104, in conjunction with the adoption of the roads and footways under the 1980 Highways Act S.38.

Agreement of the S.104 works is often required prior to finalisation of the highway drainage layout.

### **SUDS**

Developers must ensure they comply with all the S.U.D.S. requirements.

## 2.0 GENERAL PROCEDURE

### 2.1 **Developers First Submission**

Developers first submission should include one set of documents as below:-

- (1) Drawings to show: (scale 1:500) included on the layout plan where possible and only standard details appropriate to the particular development included.

- (a) Proposed layout, including gully positions
  - (b) Area proposed for adoption shaded pink
  - (c) Road widths, footway widths, radii
  - (d) Traffic calming measures (if necessary).
  - (e) Street lighting columns labelled L P
  - (f) Typical cross sections showing highway construction details.
  - (g) Proposed drainage to be adopted under S104, and or highway drainage.
  - (h) Longitudinal road sections indicating centre line (and channel gradients of summit and valley) vertical curves (sag and hog).
  - (i) Drainage long sections.
- (2) A statement saying the design is in accordance with this guide
  - (3) Construction details – for road/footway/drainage/gulley/kerbing etc
  - (4) Calculations.

To verify the highway drainage based on HD33/06 or Road Note 35

To verify gully spacing based on HA102/00 or Road Note 35

To verify linear drainage design where used.

To verify street lighting column spacing

Note also Section 3.0.

- No work shall be carried out in or for the purpose of erecting a building unless a Bond has been secured. The Bond will be released upon the completion of a Section 38 Agreement.
- The Section 38 Agreement should be in place **BEFORE** works commence on site. In exceptional circumstances, works may commence on site if the Council's costs (non-returnable) are paid in advance, or a surety provided by a cash deposit paid

Trafford Council will provide a check list indicating items that either does not comply with adoptable standards or which require checking by the developer. It should be noted that it is the developer's responsibility to ensure the works are designed in accordance with this document.

The Council is not responsible for ensuring all none conforming design elements are identified on the check list. The developer must rectify any other items not identified once they become apparent.

**SECTION 38 DESIGN CHECK LIST**

		To be checked	Acceptance	
			Yes	No
1.0	<b><u>HIGHWAY ALIGNMENT</u></b>			
1.1	Width of roads			
1.2	Max length of cul-de-sac			
1.3	Width and location of footways			
1.4	Horizontal alignment			
1.5	Vertical alignment			
1.6	Sight lines/visibility splays			
1.7	Turning heads			
1.8	Design and radii at junctions			
1.9	Junction spacing			



	To be checked	Acceptance	
		Yes	No
1.10	Carriageway/footway construction		
	(a) Carriageway (construction and camber/superelevation)		
	(b) Footway (construction and falls)		
	(c) Back edgings		
	(d) Kerbs		
2.0	<b><u>DRAINAGE</u></b>		
2.1	Private drainage/highway drainage interface.		
2.2	Not used.		
2.3	Has a S.104 been entered into? (Highway drains clearly identified?).		
2.4	Contouring to prove gully locations.		
2.5	Water flowing from the development into the highway.		
2.6	Copies of calculations for kerb/channel drainage blocks and gulley adequacy.		
2.7	Channel levels 1/150 min gradient Cross fall 1/40.		
2.8	Construction details.		
2.9	Line of sewer/MH not in wheel tracks for maintenance purposes.		
3.0	<b><u>STREET LIGHTING</u></b>		
3.1	To comply with specification.		
3.2	Column spacing clearly identified.		
3.3	Column height and bracket arm stated.		
3.4	Column to be on outside of bends.		

- 3 5 Column adjusted spacing on approach to junction and opposite junctions
- 3 6 Marked on drawing L P
- 4 0 **REQUIRED DRAWINGS/DOC ETC.**
- 4.1 Adoptable area
- 4 2 Drawings etc.

**Colouring and Numbering of Plans**

- (1) Satisfactory drawing showing all roads, footways and properties, complete with vehicular driveways
  - (a) Area for adoption          Pink
  - (b) Extent of site ownership edged in red
- 2) All drainage on site including
  - (a) Foul sewers                      Brown
  - (b) Surface water sewers          Blue
  - (c) Combined sewers                Red
  - (d) Highway drainage, inclusive of gullies and connections          Green
- (3) Lighting columns                Labelled L P
- 1 paper copy of the drawings to be provided

To be checked	Acceptance	
	Yes	No

## 2.4 Developers Secondary Submission

All amendments made following comments from the initial drawings must be clearly identified in the revisions box on the drawing and the drawing number must reflect this set of drawings as a revision to the first submission stage.

No other revisions must be made to the drawings other than those previously agreed and identified in the revision box. If this procedure is not carried out, the Council will seek additional checking fees.

### Drawings

The final set of drawings to show:-

- (1) Area of adoption to be shown pink.
- (2) All drainage on the site to be shown as:-

Foul sewers	- brown
Surface water sewers	- blue
Combined sewers	- red
Highway drainage inclusive of gullies and connections	- green
- (3) Lighting columns to be labelled - LP
- (4) Outfalls from 'kerb/channel drainage system etc. to be clearly identified and coloured up as gully connections.

6 copies of the drawings are required for the agreement.

In addition, the following information is required:-

- (1) The name and address of developer's Solicitor.
- (2) The registered name and address of the developer's surety.
- (3) The registered name and address of the developer.
- (4) The planning application reference and date of approval.

## 3.0 PROCEDURE SPECIFIC TO DISTRIBUTOR ROADS

The following information must also be included by the developers in his 1<sup>st</sup> submission.

- The traffic information input data used for input into the geometric design (for example number and width of approach lanes to junction etc.).
- Stage 1 safety audit

- Provision of horizontal and vertical alignments (MX format preferred) departures and relaxation report (based on the HA Design Manual for roads and bridges)
- Where drainage is difficult for example roundabouts, a contour plan to identify the drainage flow
- Stage 2 safety audit

Following the completion of the scheme but prior to agreement to adopt

Stage 3 safety audit

#### 4.0 RECOVERY OF COUNCIL COSTS

The Council incurs costs for -

[REDACTED]

#### DEVELOPERS NOTE:-

Additional fees will be payable for-

- (1) [REDACTED]
- (2) [REDACTED]
- (3) [REDACTED]
- (4) [REDACTED]
- (5) [REDACTED]
- (6) [REDACTED]

4.0 SURETY (i.e. Bond required in support of Agreement)

- [REDACTED]
- [REDACTED]
- [REDACTED]

5.0 MAINTENANCE PERIOD

Prior to the end of the maintenance.

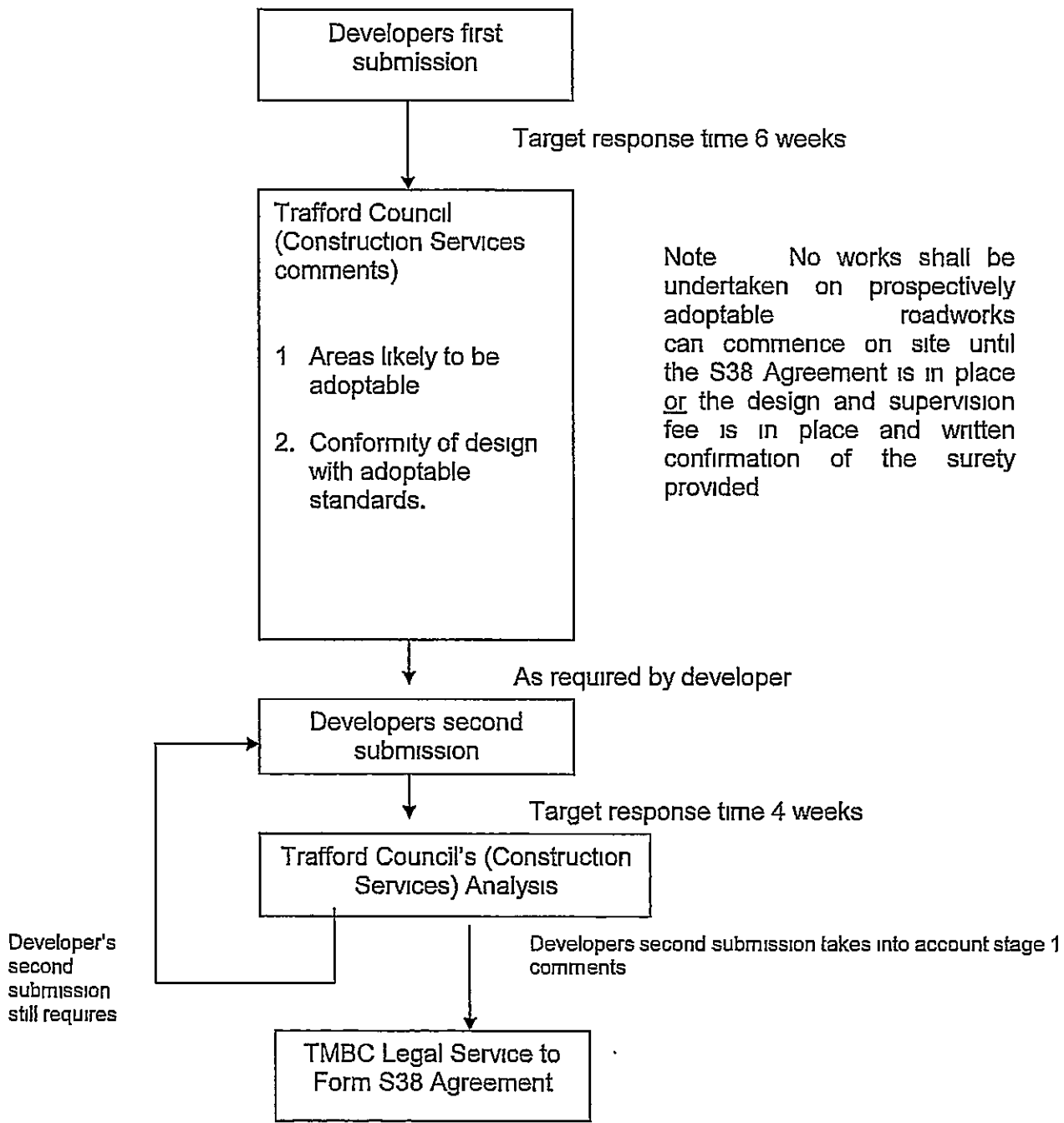
As built drawings should:

- Show required levels relate Ordnance Survey datum
- be accurate and to an appropriate scale
- include all ducting/cabling works, drainage runs, house numbers, street names etc.

**NOTE:** If the works are not acceptable by the end of the maintenance period, the developer must request an extension to the agreement dates for which an additional fee will be charged.

**NOTE:** Drainage systems under S104 Agreement may need to be adopted before the highway adoption under S38 can take place.

## SECTION 38 AGREEMENT – FLOW CHART



## 6.0 WORKS ON SITE

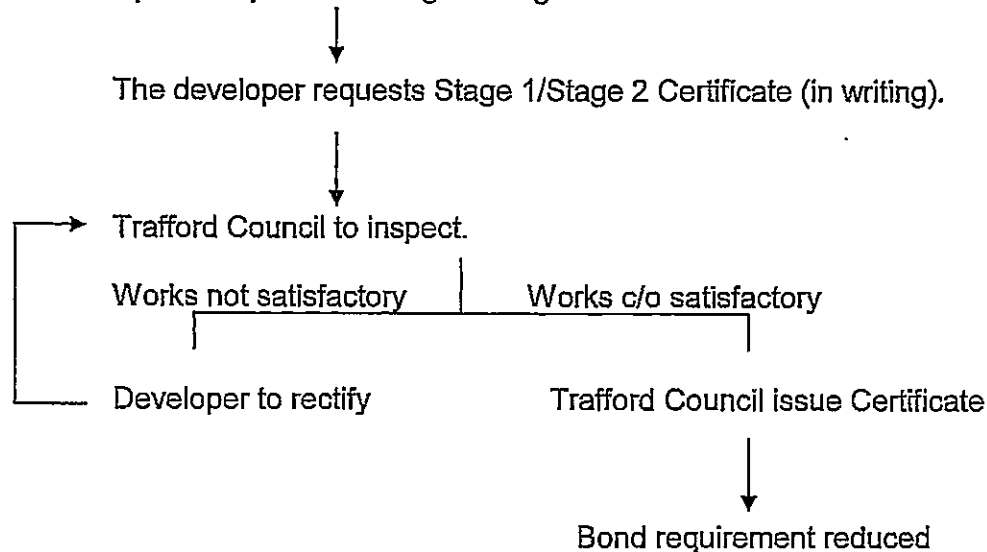
During Construction of the Works Traffic Council representatives will carry out inspections to check compliance with the Agreement. Substandard workmanship or materials must be corrected prior to adoption.

### It is The Developers Responsibility to Notify Trafford Council

1. To inspect the formation at least 2 days prior to excavation being completed. No sub-base should be placed prior to an inspection of the formation or sub-formation.
2. To inspect the sub-base prior to the laying of subsequent material layers.

## 7.0 SECTION 38 WORK STAGES

Upon completion of Stage 1/Stage 2 works.



### **Stage 1 Completion to Base Course Level**

To include completion of:-

- all highway + S104 drainage
- all kerbing (either temporary or permanent) including lowering of vehicle and pedestrian crossings
- carriageway and footway construction to base course
- demarcation of sight lines and visibility splays
- traffic calming features

(It is recommended that street lighting and nameplates are erected prior to occupation of any dwelling).

**Stage 2      Completion of Final Surfacing**

To include completion of:

- any outstanding kerbs not completed in Stage 1
- pedestrian ways completed, including spays and verges
- street lighting erected and operational
- traffic signs and road markings, including street nameplates
- all other works deemed necessary for satisfactory completion

**Stage 3      End of 12 Months Period of Maintenance**

Approximately two months prior to the 12 month period of maintenance, the developer is required to submit 2 copies of the 'As Constructed' drawings

**8.0      DOCUMENTATION**

**THE SECTION 38 AGREEMENT**

The form of agreement is based on -

"Roads for Adoption"

A model Section 38 Agreement (Highways Act 1980). Second Edition

- including supplementary commentary - 1990

**9.0      CDM**

The Developer's Health and Safety file prepared in accordance with the Construction (Design and Management) Regulations 2007 should be submitted to the Council not later than two months before the end of the maintenance period



**SECTION B**  
**BRIEF TO CONSULTANTS**

1 0 **INTRODUCTION**

A details job specific brief will be provided for each project. The general procedure will however be the same for all projects.

2 0 **PROCEDURE**

Design must be carried out in accordance with this design guide

At specific points in the design process reviews are required as outlined below

The review to be carried out with the Council's in house engineer

- 1 Review (1) of brief prior to commencement of the design
- 2 Review (2) of the traffic data used for input into the design (For example number and width of approved lanes to junction etc.)
3. Review of the "options appraisal report" including cost benefit analysis
4. Review of design response to the stage 1 safety audit
5. Review of the design departures and relaxation report.
6. Review of the designer's response to the Stage 2 safety audit

**SECTION C**  
**DESIGN STANDARDS**

## 1 0 INTRODUCTION

1 1 The design of distributor roads should be in accordance with the following,

- The HA design manual for Roads and Bridges
- The HA design manual highway construction details
- Trafford design standards for improvements to the highway (See 2.0)
- Trafford standard highway construction details (See Section D)
- The institution of highway and transportation "(Guidelines for the Safety Audit of Highway"
- The layout for the major/minor junctions TD42/95 (The diagrams in the superseded TD20/84 are acceptable except where they do not comply with TD42/95)
- HD33/06 Road Note 35 "A guide for engineers to the design of the storm sewer systems
- TRL report "The drainage and capacity of BS road gullies and a procedure for estimating their spacing" and HA102/00
- Road note 29 (A guide to the structural design of pavements for new roads" – to be used if the traffic flows are below those applicable for the HA design for pavements

Note – Where there are differences in design standard between the HA standards and Trafford standards, Trafford's standards take precedent

1.2 Traffic signal design – Traffic signals throughout Greater Manchester fall under the remit of Transport for Greater Manchester TFGM and they need to be consulted regarding design, if traffic signals are required

1 3 When new connections to the public sewage systems are required, permission is required from United Utilities (UU) under S106 of the Water Industry Act 1991 It is recommended that Consultations are carried out at a very early stage, as discharge is likely to be limited to "Agricultural run-off rates".

1.4 SUDS (Substantial Urban Drainage Systems) there is currently a requirement in the planning permission to provide a sustainable drainage proposed, where the impervious surface and run off is likely to be increased This applies for all new road schemes

In the future a "Sustainable Drainage approval body" will be in place which will be responsible for approval of SUDS and it is anticipated that will run parallel with the planning process.

## 2.0 **TRAFFORD DESIGN STANDARDS FOR IMPROVEMENTS TO THE EXISTING HIGHWAY OR CONSTRUCTION OF NEW HIGHWAYS.**

### Footway Cross – Fall Gradient 1 in 35

The gradient will vary depending upon location, but a gradient less than 1 in 60 or more than 1 in 20 should be avoided.

### Carriageway Cross – Fall Gradient 1 in 40

The gradient will vary depending on location, but a gradient less than 1 in 60 or more than 1 in 25 should be avoided wherever possible. The above reflects gradients in association with 'summit and valley'.

### Carriageway Long – Fall Minimum Channel Gradients

1. Close graded surfacing – 1 in 120: absolute minimum 1 in 150.
2. HRA & SMA surfacing – 1 in 150: absolute minimum 1 in 180.
3. Concrete Channel – 1 in 180: Absolute minimum 1 in 200.
4. ACO/Bean etc. 1 in 400: absolute minimum level (short lengths only).

### Gulley Spacing

Spacing of gulleys will be such to ensure a maximum "catchment" area of 200m<sup>2</sup>. Where a scheme is modifying an existing junction/road or tying into an existing road it may be necessary to install additional gulleys. Connection can be made to an existing gully lead where appropriate.

### Footway Construction (Full)

100mm granular sub base type 1.  
50mm 0/20 close graded binder course.  
20mm 0/6 close graded surface course.

### Vehicular Crossing Construction

200mm granular sub base type 1.  
50mm 0/20 close graded binder course.  
20mm 0/6 close graded surface course.

### Carriageway Resurfacing of Existing Carriageways (Tying into Existing Roads and Narrow Widening)

Primary Local and District Distributor Roads (Options dependent on the conditions of the existing carriageway)

- 1 Plane 40mm  
Lay 40mm SMA/HRA surfacing course
2. Plane 100mm  
Lay 60mm 0/20 HD binder course  
Lay 40mm SMA/HRA surfacing course
- 3 Plane at specified depth (to match existing construction)  
Lay regulating 0/20 HD or 0/20 close graded binder course  
Lay 40mm SMA/HRA surfacing course

The choice of SMA or HRA

SMA should only be used when either a full 100mm HD binder course is also layed or the existing construction is known to have been constructed in accordance with current design standards.

Note – The narrow widening and tie in standard detail.

SD-07-01  
SD-07-02  
SD-07-04

Kerbing – generally 125mm x 250mm

- 1 Optimum kerb face 100mm – 125mm
- 2 Desirable summit and valley profile – 150mm at gully minimum  
75mm at summit

However it is possible that existing gully spacing will dictate that it is not possible to achieve a desirable kerb face on a summit and valley profile and compromise is necessary Any departures must be agreed with the council.

**SECTION D**  
**TRAFFORD STANDARD HIGHWAY CONSTRUCTION DETAILS**

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**Lot 2a Highways Services Specification 86**

HIGHWAY SERVICES SPECIFICATION - AG DRAFT - 5 OF 2015 [10-5183306-15/121116-266]

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*See enclosed document entitled 'Highway Services – Lot 2a – Appendix 2 – Highways Policies – S278 Agreement Procedure'*

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**Lot 2a Highways Services Specification 87**

HIGHWAY SERVICES SPECIFICATION - AG DRAFT - 5 05 2015 [10-5163306-15/121116-26]

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**DATED: 09 September 2014**

**CONTRACT(S) FOR THE PROVISION OF  
ENVIRONMENTAL & INFRASTRUCTURE SERVICES**

Document Reference:

015\_Lot3\_Doc3A\_Vol3-10\_S278 Agreement Works  
Procedure



**TRAFFORD  
COUNCIL**

Trafford Council  
Trafford Town Hall  
Talbot Road  
Stretford  
M32 0TH

**S278 AGREEMENT PROCEDURE**  
**(NOTE FOR DEVELOPERS)**

- This note applies where the S278 works are highway junction modifications to enable the highway network to be fit for purpose following the opening of the development.
- The Council will normally undertake the design of the works, however alternatively on approval by the Council, the developers' consultant may be employed and paid for, directly by the developer. In this case the developers' consultant must submit the preliminary design for checking, and liaise at all stages with the Council Engineers responsible for the project. The consultant will be responsible for procuring an independent safety audit at the appropriate stages in the design. In addition, the consultant would be expected to sign an ACE agreement for the design of the works with the Council, Agreement A(1) 2002 Civil/Structural, Lead Consultant.
- The works will be executed by the Council (in accordance with the Highways Act 1980) as a Council Contract and will be supervised by the Council on site.
- The works will be carried out by the Council's term minor civil works contractor or the term "Highways and Structures" contractor as appropriate. Only in exceptional circumstance where the S278 works are very small in nature and/or can not be isolated from the on-site works would the Council consider the use of its developer's on-site contractor to carry out the highway works.
- Any checking works or preliminary enquiries or work of any nature prior to the signing of the S278 Agreement carried out by the Council will require an advance payment from the Developer (this would normally be in the region £5k but will depend on the specific project, further advance payments may be required if there is a delay in the signing of the agreement).
- The S278 agreement must be completed prior to the award of the works contract.
- Land and commuted sums may also be required as part of the S278 agreement. No works can commence on site until any land required to construct the works is transferred to the Council and payment of the commuted sums has been made.

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**Lot 2a Highways Services Specification 88**

HIGHWAY SERVICES SPECIFICATION - AG DRAFT - 5 05 2015 [10-5183306-15/121116-266]

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*See enclosed document entitled 'Highway Services – Lot 2a – Appendix 2 – Highways Policies – Highway Inspection Policy'*

**DATED: 09 September  
2014**

**CONTRACT(S) FOR THE PROVISION OF ENVIRONMENTAL & INFRASTRUCTURE  
SERVICES**

Document Reference:

015\_Lot2a\_Doc2a\_Vol3-1\_Highway Inspection Policy 2012



**TRAFFORD  
COUNCIL**

Trafford Council  
Trafford Town Hall  
Talbot Road Stretford  
M32 0TH



# **TRAFFORD COUNCIL**

## **Highway Inspection Policy**

### **Code of Practice for Highway Safety Inspections**

**Highway Management  
ENVIRONMENT OPERATIONS**

**Policy Approved 29 October 2012**

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## 1. Introduction

- 1.1 The main purpose of highway maintenance is to maintain the highway network for the safe and convenient movement of people, traffic and goods.
- 1.2 An effective transport network is crucial to the Borough's social, economical and environmental well-being. The policies set out in the Local Transport Plan (LTP) embrace the principles contained within a hierarchy of road users which gives priority to the more vulnerable, public transport and to those living in and using an area.
- 1.3 The LTP is therefore seen as a primary document with key policies influencing the way in which the Highway Inspection Policy is produced and implemented
- 1.4 The objectives of highway maintenance within the network management context can be considered as the following:
  - a) **Network Safety**
    - i) Complying with statutory obligations
    - ii) Meeting users' needs
  - b) **Network Serviceability**
    - i) Ensuring availability
    - ii) Achieving integrity
    - iii) Maintaining reliability
    - iv) Enhancing quality
  - c) **Network Sustainability**
    - i) Minimising cost over time
    - ii) Maximising value to the community
    - iii) Maximising environmental contribution

Ref: The Road Liaison Group's "Well-maintained Highways – Code of Practice for Highway Maintenance Management"

1.5 Section 41 of the Highways Act 1980 imparts a duty on the Council, as Highway Authority, to maintain the highway. The same Act however, in Section 58, grants a 'special defence in action against a highway authority for damages for non-repair of the highway'.

1.6 The defence in essence is 'to prove that the authority has taken such care as in all circumstances was reasonably required to secure that the part of the highway to which the action relates was not dangerous to traffic' having regard for such matters as:

- i) the character of the highway, and the traffic which was reasonably to be expected to use it
- ii) the standard of maintenance appropriate for a highway of that character and used by such traffic
- iii) the state of repair in which a reasonable person would have expected to find the highway
- iv) whether the highway authority knew, or could reasonably have been expected to know, that the condition of the part of the highway to which the action relates was likely to cause danger to users of the highway
- v) where the highway authority could not reasonably have been expected to repair that part of the highway before the cause of action arose, what warning notices of its condition had been displayed

1.7 This Code of Practice has been developed to meet the demands of both sections of the Act and addresses the specific matters above:

- i) by carrying out regular inspections to meet the character of the highway
- ii) by applying intervention criteria to the severity of a defect i.e. what constitutes 'dangerous'
- iii) by carrying out general repairs to the highway
- iv) by taking action to minimise the potential of a defect developing further
- v) by taking such action to make a dangerous defect safe, either by barriers or immediate repair to remove the danger

1.8 The Road Liaison Group's "Well-maintained Highways – Code of Practice for Highway Maintenance Management" (the RLG Code), issued in 2005, is based on the assumption that available funding for highway maintenance will provide some flexibility for authorities to pursue a regime of inspection/assessment and rational planning of programmes and priorities. Where this is not the case, the statutory obligations for network safety will need to take preference.

1.9 The RLG Code is the fourth generation of a "Code of Good Practice" first published in 1989, revised to meet changing legislation and management trends. The current Code builds on the key themes of the original Code, and gives greater prominence to asset management and risk management.

1.10 The recommendations in the RLG Code are explicitly not mandatory on authorities. In circumstances, however, where the Authority elects in the light of local circumstances to adopt policies, procedures or standards differing from those suggested, these will be identified together with the reasoning for such differences.

1.11 The RLG Code recommends three categories for inspection:

- Safety Inspections
  - These are designed to identify those defects likely to cause danger or serious inconvenience to the public and therefore require immediate or urgent action
- Service Inspections
  - Inspections designed primarily to establish the programme for routine minor maintenance tasks not requiring urgent execution. They are tailored to the needs of particular highway elements to ensure that they meet requirements for serviceability. These inspections will normally be carried out by the Highway Technician from either public/member complaints or from information passed to them by the Highway Safety Inspector.
- Structural Condition Surveys
  - The structural condition of the highway is determined either by mechanical survey machines or by visual condition assessment in order to formulate a planned structural maintenance programme. The surveys are currently carried out by the Civil Engineering Division of The Built Environment Department.

1.12 This Code deals more specifically with Safety Inspections, although Service Inspections fall within the context of the overall routine inspection of the highway and are primarily carried out as a result of general rather than specific complaints.

1.13 Safety inspections are planned cyclic inspections that are specifically conducted to pro-actively identify potential dangers and are carried out to specific frequencies, dependent upon the status (category) of each highway.

1.14 During the inspection defects which are at or exceed or have the potential to exceed the minimum intervention level as outlined within this code, are identified and processed for repair

- 1.15 Service inspections are mostly re-active and are mainly carried out following complaints/service requests from members of the public or Councillors or from information provided by the Safety Inspectors. They may also be carried out on a totally ad-hoc basis after a Safety Inspection as part of our routine performance management checks on the Safety Inspectors and the safety inspection process in general.
- 1.16 Records of both cyclic safety inspections and service inspections are maintained on a purpose designed computer database.
- 1.17 This code sets out intervention levels and operational processes that are considered appropriate and reasonable, taking into account the safety of the highway and the constraints placed upon the Council to manage public funds responsibly within defined budgets.
- 1.18 The code also sets out the processes required to meet the requirements of the Pre-Action Protocol for Personal Injury Claims under the Civil Procedure Rules in respect of claims under Section 58 of the Highways Act 1980.

## **2 Resources and Budgets**

- 2.1 In delivering its 'duty of care' to users of the highway, the Council provides financial and operational resources. This allows operations to be carried out in both a planned and reactive manner in maintaining the highway in a safe condition.
- 2.2 **Budgets:**  
Each year the Council determines the allocation of its financial resources with due consideration of its strategic aims and priorities. The Highway Maintenance Budget is one area of allocation which is split into a number of service delivery areas, each with dedicated budgets. A high regard to the safety of the users of the highway means that the Council sets aside an allocation specifically for undertaking repairs identified during safety and service inspections.
- 2.3 **Safety Inspectors.**  
To undertake its cyclic safety inspections the Council has engaged a team of officers specifically trained in this activity. The inspectors are supported by an Area Highway Technician to monitor progress and to provide advice and supervision. Complaints are dealt with by the Area Highway Technicians.
- 2.4 **Emergency repairs**

The Safety Inspectors and Area Technicians are supported operationally by supervisory staff who arrange for the works identified during the inspection to be undertaken to strict deadlines. Performance is closely monitored and the monitoring forms one of the service's local performance indicators. Emergency repairs are undertaken by readily available teams, either through scheduling or breaking off from their normal routine maintenance activities.

### **3 Training**

3.1 All Safety Inspectors and Highway Technicians are trained in a nationally recognised qualification relating to highway inspections. The essential competencies address:

1. Highway Maintenance Policies
2. Safety at Street Works
3. Highways Act Enforcement
4. Defect Recognition
5. Measurement and Estimation
6. Materials Recognition
7. Personal Safety

3.2 The IMTAC (Inspector Modular Training and Assessment Course) devised by Birmingham City Council will provide such a recognised qualification.

3.3 Tameside MBC provides this training on behalf of the Greater Manchester Authorities. However, some of the "Highway Maintenance Policies" element is Authority specific and therefore needs to be, and has been, addressed separately.

3.4 In addition, each of the Highway Technicians and Safety Inspectors will be accredited as a 'supervisor' under the requirements of Section 126 New Roads and Street Works Act 1991

#### 4 Frequencies of Inspection

4.1 All highways are categorised in line with the RLG Code, and are inspected in accordance with the recommendations as follows

##### Carriageway Hierarchy:

Category RLG Code- (TIMBC)	Hierarchy Description	General Description	Detailed Description
1 – (No category)	Motorway		
2 - (1)	Primary Route	Principal roads between primary destinations	Designated Primary Route Network (PRN)
2 – (2)	Strategic Route	Remainder of principal road network	
3a –(3)	Main Distributor	Major urban network and inter-primary links	Routes between strategic routes and linking town centres
3b – (4)	Secondary Distributor	Remainder of classified network and major bus routes	Rural link roads between communities
4a –(5)	Link Road	Links between distributor roads with frontage access and frequent junctions	Residential and industrial inter-connecting roads
4b – (6)	Local access road	Roads serving limited number of properties and short lightly trafficked links between distributor roads	Residential loop roads and culs de sac

##### Footway Hierarchy:

Category	Hierarchy/Description	General Description
1	Primary walking route	Busy urban shopping areas, transport interchanges
2	Secondary walking route	Medium usage routes feeding to primary routes, local shopping centres, large schools
3	Link footway	Linking local access footways through urban areas
4	Local access footway	Footways associated with low usage, short estate roads to main routes and culs de sac

### Inspection Frequencies

Feature	Hierarchy	Category (TBC)	Frequency (TBC)	Frequency (The RLG Code)
<b>Roads</b>	Primary Route	1	monthly	monthly
	Strategic Route	2	monthly	monthly
	Main Distributor	3	monthly	monthly
	Secondary Distributor	4	monthly	monthly
	Link Road	5	3 monthly	3 monthly
	Local access road	6	annually	annually
<b>Footways</b>	Primary walking route	1	monthly	monthly
	Secondary walking route	2	3 monthly	3 monthly
	Link footway	3	6 monthly	6 monthly
	Local access footway	4	annually	annually

## **5 Methodology for Inspections**

- 5.1 With the exception of certain rural link roads and the Carrington Spur, all safety inspections are undertaken on foot. Each road/street or section of a road/street will be walked in both directions on either side of the road/street.

5.2 A monthly list of inspections for each highway safety inspector will be generated from the inspection database within the Council's business IT system (SAP), and a notification created for each road within that list.

5.3 The items for inspection shall include:

- Debris, spillage or contamination on running surfaces
- Displaced road studs lying in the carriageway
- Overhead wires in a dangerous condition
- Vandalism, particularly if there are electrical consequences (e.g. Lighting columns)
- Abrupt level differences in the running surface
- Potholes, cracks and gaps in the running surface
- Edge deterioration of the running surface
- Loss of skidding resistance
- Missing or broken ironwork (gully lids, manholes etc.)
- Standing water, water discharging onto or overflowing across the highway
- Blocked drains or grips
- Damaged, defective, displaced missing or misleading traffic signs, signals or lighting columns
- Missing or badly worn road markings
- Dirty or otherwise obscured traffic signals and signs
- Damaged safety fencing, parapet fencing, handrail, and other barriers
- Sight-lines obscured by trees, unauthorised signs and other features

5.4 The defects to be recorded (Appendix 1) have been rationalised to make data entry consistent, related to the method of repair and enable ordering of materials. The defects are defined in two categories, and the intervention criteria determined from case law.

5.5 Whether any of these deficiencies should be dealt with as Category 1 will depend upon:

- The depth, surface area, or other extent of the defect
- The location of the defect relative to highway features such as junctions and bends
- The location of the defect relative to access to schools, shops, hospitals etc.
- The location of the defect relative to the positioning of users - especially vulnerable users - such as in traffic lanes, wheel tracks or pedestrian desire lines



- The nature and extent of interaction with other defects
- Forecast weather conditions, especially potential for freezing of surface water

5.6 The weight given to each of these parameters in determining the priority which should be attached to a particular defect will be a matter of on-site judgment. It remains necessary, therefore, for those undertaking inspections, or responding to reported incidents, complaints or requests for service, to decide whether any individual observed or reported defect should be recorded as Category 1 and the consequential urgent action put in hand.

5.7 In order to provide guidance and assistance in this respect, however, the following Risk Matrix has been adopted. This matrix is essentially identical to that recommended in the Code of Practice although some presentational changes have been made simply in order to provide better compatibility with the format of the intervention tables which appear at appendix 1 herewith:

Probability Impact	High (4)	Medium (3)	Low (2)	Very Low (1)
High (4)		12		
Medium (3)	12	9		3
Low (2)			4	2
Negligible (1)	4	3	2	1

Response Category		Category 2 (High) response		Category 2 (low) response
Response Time		7 days		Monitor/review annex inspection

- 5.8 Each and every decision which an Inspector takes in respect of priority could be critical to the safety of users and may also potentially be subject to legal scrutiny in the event of an accident occurring at or near to the site. It is therefore essential that these decisions are properly considered and are – so far as is possible – adequately justified.

Perhaps the overriding consideration which should always be borne in mind in this regard is the definition of a Category 1 defect provided by the Highways Agency -

**“Those which require prompt attention because they represent an immediate or imminent hazard or because there is a risk of short term structural deterioration”**

Ref " RLG Code 9 4 18"

- 5.9 All dangerous (Category 1) defects, as well as being recorded and transmitted will automatically be individually notified by e-mail to the Highway or Street Lighting Supervisor. Where necessary they may also be reported to them immediately by telephone and the Inspector may decide to stay on-site to warn members of the public of a potential danger until it is made-safe. Dangerous utility defects will be reported similarly to the Street Works Section
- 5.10 Non highway maintenance defects e.g. street lighting, street furniture, utility and contraventions are similarly recorded and are each transmitted back to the relevant officers/sections. Furthermore, any defects or hazards noticed in passing which are not on the highway, but on other Council owned land, will be notified to the relevant service.
- 5.11 A subjective assessment of the overall condition of the footways and carriageway (except Principal Roads) will be recorded using the AEI parameters at the end of Appendix 1 (p19). This information will be passed on a regular basis to the Civil Engineering Section of The Built Environment (7.8)
- 5.12 Details of the inspections are recorded on dedicated M3Sky hand-held data capture devices using in-house developed software. The devices allow the Inspectors to electronically record details of any defects found (including GPS location and digital photographs) and of the work and materials necessary to carry out repair. The devices are remotely synchronised to the SAP Works Management Modules of the Integrated Business Information System (IBIS) so data is remotely transferred directly from site to create related service notifications which can be instantaneously accessed back at the depot.

- 5.13 The service notifications are then duly assessed and allied onto Works Orders to be allocated to repair gangs – if necessary within just minutes of the defect first being found.
- 5.14 If no defects are found on an inspection then a notification which simply records this fact is created.
- 5.15 In the event of any temporary absence of electronic input capability, this data can be recorded onto blank preprinted proforma and transferred via manual input to the SAP database on return to the office.
- 5.16 SAP will also provide the environment for performance management for such indicators as:
  1. Inspections to target
  2. Repairs to target
  3. Defects per km
  4. Defects per month

## **6 Locating a defect**

- 6.1 The hand-held devices plot the location of recorded defects via GPS. However, in recording the details of a defect, the Inspector is also required to include a written description and it is vital that the information provided is simple and easily understood as this assists the repair team(s) to rapidly identify the precise defect. Simple and accurate description also helps greatly in the interpretation of inspection records by non-technical legal/insurance staff who depend greatly on this detail when dealing with the defence of claims against the Authority, particularly after the repair has been carried out.
- 6.2 Locations shall, where possible, relate to house numbers/names and lighting column numbers. In rural situations distance from certain fixed objects (telegraph poles, road junctions etc) will have to suffice. Simple abbreviations should be used:
  - os – outside
  - adj – adjacent
  - opp – opposite
  - so – side of
  - jn – junction

## **7 Processing the Inspection Data**

- 7.1 On completion of a street inspection the Highway Safety Inspector remotely synchronises the hand-held device with the Council's mainframe SAP Works Management system and downloads the collected inspection data. SAP then creates a new "service request notification" for each entry that the Inspector has recorded.
- 7.2 Notifications for 24 hour emergency work are passed directly to the Highway Maintenance Supervisors in Operations, who in turn will raise a works order for each, and ensure that the works are carried out promptly.
- 7.3 The remaining notifications, i.e. those for urgent or normal status works, are sorted by street and repair category and – where possible - are grouped together to generate Works Orders by the same street or general area and repair category. The works order and associated notification paperwork is then passed to the Highway Maintenance Supervisors in Operations for planning and onward issue to the operatives.
- 7.4 All notifications for hot rolled asphalt and sand carpet works are passed to the Technical Assistant (Highways) for completion under an external contract.
- 7.5 Running parallel to the above is the process for data generated by the Highway Technicians who also create Works Orders - generally against a notification logged from a complaint.
- 7.6 Each month a list of AEI category 1 footways or carriageways will be generated and passed to the Civil Engineering Section of The Built Environment for the roads to be assessed for possible inclusion in forthcoming planned structural maintenance programmes.

## **8 Recording of Works carried out**

- 8.1 Each Works Order and individual notification sheet (if attached to the Works Order) will be signed and dated (the date of the completion of the work) by the operative when the relevant works have been completed, and passed back to the Highway Maintenance Supervisor.
- 8.2 The completed Notification sheets will be passed to the highways administration team for the works order and notification records within the Works Management System to be updated – date of completion entered against 'technically complete'.

**9 Random Sample of Works**

- 9.1 On a monthly basis a manual random sample of those works certified as complete by operatives will be generated and passed to the Highways Supervisor so that they can be inspected and audited.
- 9.2 Those works that have either not been carried out or are not to specification will be identified to the Highways Supervisor and the work reissued against a new notification/works order.
- 9.3 The completed random inspection records will be held and analysed by the Highway Maintenance Manager for appropriate action to be taken under performance management/disciplinary procedures.

**10 Defective Apparatus Reporting Procedure**

- 10.1 When defective utility apparatus is found by the safety inspector, the reinstatement inspector, other highway staff or reported by the public the following procedure will be implemented:

The relevant inspector will make a risk assessment as to whether the defect should be categorised as an immediate (ie 2 hour) defect, an emergency (24 hour) defect, a hurry (7 day) defect or a non-dangerous (28 day) defect

**Immediate or Emergency defect**

Inspector contacts the Technical Assistant (Street Works) who in turn contacts the responsible utility by telephone (confirmed by fax) detailing the hazard and requesting that immediate or emergency remedial works are carried out

Utility faxes back confirming that the defect has been made safe

Failure to comply or unable to make contact, works made safe and reasonable costs charged

**Hurry or Non-dangerous defect**

Details will be faxed to the responsible utility

Utility faxes back confirming job number and/or that the work has been carried out

Failure to comply or unable to make contact, works made safe and reasonable costs charged

**11 Public Liability Claims**

- 11.1 The function of the Highway Management Section is to provide an inspection regime to meet the RLG Code's recommendations and for the Highways Section to repair highway defects within the timescales laid down, in order to provide the Council with a Highways Act Section 58 defence against such claims.
- 11.2 All public liability claims are dealt with by the Council's Insurance Section.
- 11.3 The Highway Technicians will investigate and provide the necessary inspection, repair information, photographic evidence etc. as required by the Insurance Section.
- 11.4 Investigations will be carried out as expeditiously as possible so as not to compromise the Pre-Action Protocol for Personal Injury Claims under the Civil Procedure Rules.

**DEFECT INTERVENTION CRITERIA - SAFETY INSPECTIONS**

**KEY**

- Emergency (24 hours unless otherwise stated)**
- Hurry - 7 days**
- Urgent - 28 days**
- No immediate action - review at next inspection**

**Defect Intervention Tables:**

The following tables outline the levels at which different defects are considered to become "actionable" (ie the point at which they will be considered for repair by the Safety Inspector), and applies those levels within the risk matrix formula outlined at paragraph 5.6 above.

The levels stated herein are very largely advised by established case-law and are fully in line with current national guidelines.

The tables are preceded by an extract taken from a 1994 directive issued by The Audit Commission which defines the point at which some of the most common general highway defects should be considered to be actionable. It is included here because it serves as a simple yet helpful pictorial guide.

The tables are shaded in a "traffic light" system in accordance with the following key -

**Category 1 (red) - 24 hour response (unless otherwise stated)**

**Category 2 (high) defect - 7 day response**

**Category 3 (yellow) - 28 day response**

**Category 2 (low) defect - no immediate action**

The tables are not exhaustive. In particular, they do not include every emergency situation with which the Safety Inspectors may find themselves to be faced. Defects such as collapses, major water bursts, broken manhole covers and missing highway gully covers all present an immediate and significant risk and will be dealt with immediately by telephone contact to the Highway Supervisors (or to the utility company concerned if the problem is with an item of their equipment) to arrange a 2-hour response to make safe.

If necessary, the Inspector may also remain on-site to warn the public away from such a hazard until such time as a repair gang arrives to make the area safe.



### Special Notes on Tables:

Under the Council's Risk-Management procedures relating to the highway it has been determined reasonable not to undertake repair of certain defects which might fall within the criteria set out in this code. In particular -

**Chipped or sunken kerbs** on a footway at either an obvious crossing point or located outside a point of interest such as, for example, shops, post box, bus-stop, school, hospital etc will be subject to the normal criteria set within the relevant stated footway intervention level. However, chipped or sunken kerbs located on a straight section of road and not at an expected pedestrian crossing point or outside of any particular point of interest will not normally be recorded as a defect requiring specific attention as the potential risk is felt to be low.

**Displaced or loose kerbs** which are liable to become detached from the footway, will however generally be identified for repair.

**Carriageway depressions** will be recorded if they exceed the appropriate intervention level but do not exceed 600mm in length.

**Potholes in the carriageway** will be recorded as actionable if they exceed the appropriate intervention level and extend in any one direction by more than 300mm.

(Ref The Kindred Association Report – Report on Highway Liability Claims 1998)

**Carriageway channel deterioration** at the kerb edge will only be recorded if it is wider than 100mm with a depth exceeding 40mm.

**Carriageway edge damage**, (on lanes where there are no footways and no kerbs providing edge retention):

Problems often arise in these roads due to vehicles overriding the edge of the "made" road surface - usually to pass oncoming traffic in narrow areas of road - thereby causing damage both to the unretained road edge and to the adjacent soil/grassed verge. This action can very easily result in the appearance of potentially hazardous "drop-offs" beyond the edge of the metalled surface as well as causing damage to the edge of the road surface itself.

In wet conditions, when ground conditions in the adjacent verge area are soft, such damage can occur very quickly and can even be the result of the action of a single vehicle being driven off the made highway surface.

Edge damage of this sort will therefore only be noted for attention where there is considered to be a medium to high risk of further vehicle interaction and will be prioritised for emergency repair only in limited circumstances and only when the problem extends into the normal wheel path of passing vehicles where the risk of impact is particularly high.

If the defect is located outside any edge of carriageway line marking then it will only be recorded at all if there is a particular and significant risk of interaction and damage.

**PCC Edgings (aka "pin kerbs") at tree pits** are provided both to physically delineate the tree pit area from the area of the footway where one would expect pedestrians to be walking and to retain the adjacent footway surface. They often contain an intentional up-stand above the level of the footway surface but are also often pushed upwards (or outwards from the tree) further than would be desirable by the effects of the roots from the tree itself

Pedestrians should have neither cause nor need to actually walk into a tree pit area, and – on that basis - the general height of any edgings that surround such a feature is not a major concern in itself. Rather, claims experience has shown that it is when individual such kerbs become horizontally displaced around the tree that they present the greater risk. The intervention criteria therefore require that attention be given where edgings have been pushed outwards by tree roots so as to present a tripping hazard and not where they have been simply pushed upwards

#### **Inspector's Discretion:**

These tables provide the guidelines by which the Safety Inspectors are directed to work. The intervention levels advised are in accordance with the nationally accepted "norm" and should be affordable within the budget provision that is made available for this form of highway repair. However, they are not, (and are not intended to be), absolute values which must be unthinkingly applied irrespective of any other consideration.

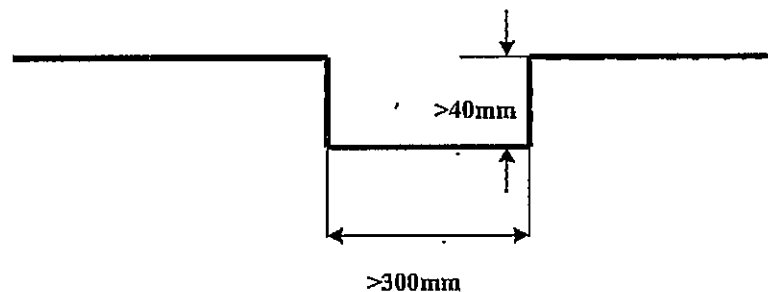
Safety Inspectors may, therefore, use their discretion and experience to arrange repair of a defect which does not strictly meet the specified intervention level but where they are convinced that such repair will remove a specific or potential future hazard.

## Definition of Damage to Highways

Ref - Audit Commission – The Publication of Information (Standards of Performance) Directive 1994:

### Damage to Carriageways:

Damage is defined as a defect in the highway, which impairs the value or usefulness of the carriageway and provides a safety hazard for road users. A sharp edged depression (pot hole) of 40mm or greater in depth and extending in any one direction greater than 300mm constitutes a safety hazard and should be repaired in accordance with individual highway authority response times

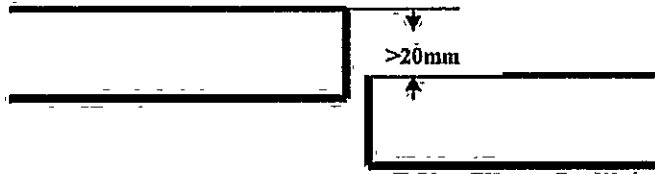


### Damage to Footways:

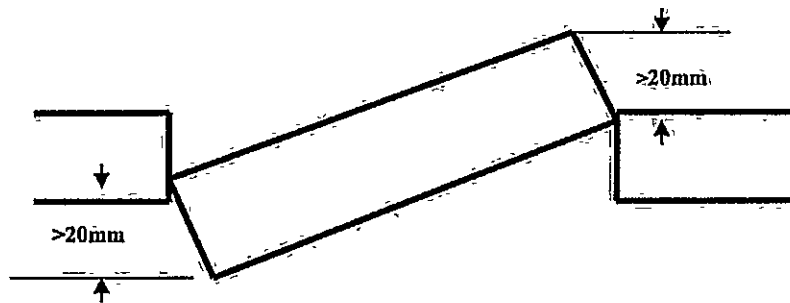
Damage is defined as a defect in the footway which impairs the value or usefulness of the footway and provides a safety hazard for pedestrians:

- Trips more than 20mm
- Rocking flags greater than 20mm
- Rapid change of footway profile greater than 25mm and extending in plan dimension less than 600mm

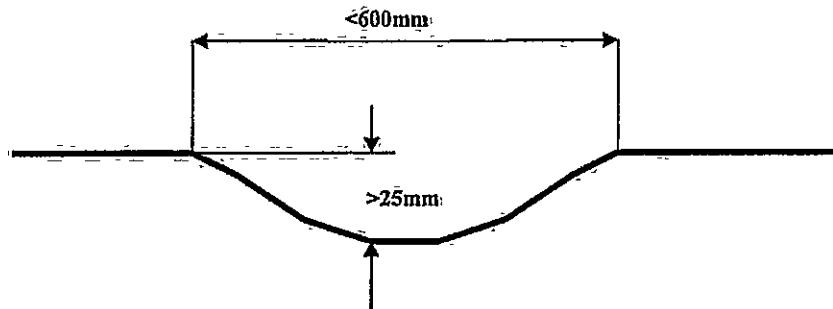
should be repaired in accordance with the individual authority response times.



Trips greater than 20mm.



Rocking flags greater than 20mm.



Rapid change of footway profile greater than 25mm and extending in plan direction less than 600mm.

CARRIAGEWAY DEFECTS	Potholes (ie sharp-sided defects)				Initial signs of openness. Cracking with limited loss of aggregate	Edge damage		Unevenness	
	The depth of a pothole is covered below. As a general rule the diameter at the surface level should be $\geq 300\text{mm}$					Road edge breaking, falling away so as to be potentially hazardous	Road edge extensive cracking, some deformation likely to worsen in short term	Sunken reinstatements, depressions in wheeltrack on high speed roads $>50\text{mm}$ and $<600\text{mm}$ in width	Less severe defects or defects located in low risk locations
	Marked Cycle lanes & recognised pedestrian crossing points		All other locations						
Impact	$>25\text{mm}$	$>20-25\text{mm}$ with likelihood of worsening in short term. Advanced local crazing likely to pothole	$>50\text{mm}$	$>40-50\text{mm}$ with likelihood of worsening in short term. Advanced local crazing likely to pothole					
High risk of vehicle interaction (ie in line with vehicle path)						*	#	#	
Medium risk of vehicle interaction (ie adjacent to path of vehicle)					*			#	
Low risk of vehicle interaction (ie other carriageway areas)									
Negligible risk of vehicle interaction						Edge damage should be classified as Class 1 in limited circumstances and only when extended into the wheel path and the risk of impact is high.		Extensive areas of unevenness should be reported to the Asset Management team for consideration. Defect priority repairs should be referred to the Streetworks Team for possible feedback to the authority responsible for	

FOOTWAY & KERBING DEFECTS	Potholes (ie sharp-sided defects)			General Surface Defects (inc flagging)			Kerbing defects			
	>25mm deep	>20mm deep	<20mm deep	>25mm trip	>20mm trip	<20mm trip	Bumps, depressions, surface heave, undulations >25mm deep/high & <600mm wide	Dislodged or loose	Uneven or clipped (exposed trip edge >50mm in height and >100mm in width)	Horizontal displacement (inc. edging kerbs around highway tree pits) >75mm
Impact										
High risk of interaction (town centre shopping areas, pedestrianised roads, main footfall areas on footways)			Inspector discretion may be used to include reports where there is evidence of short term deterioration or where there is a foreseeable injury risk			Inspector discretion may be used to include reports where there is evidence of short term deterioration or where there is a foreseeable injury risk				
Medium risk of interaction (adjacent to main areas of footfall in vulnerable areas)										
Low risk of interaction (most other footway areas)										
Negligible risk of interaction (particularly obscure or unused footway locations)										

IRONWORK DEFECTS	MANHOLES (ie: 600x600 inspection covers or similar) & including road gullies & hydrants.			SMALL BOXES (eg: stop taps, valve & water meters etc) & including footway drainage gullies					
	Any highway location			Footway, Marked Cycle Lanes & Pedestrian Crossing Points in Carriageways			Carriageway		
	Cover missing	Uneven, broken or loose cover (footway trip hazard >25mm, carriageway >50mm)	Loose, cracked or noisy covers not an immediate danger	Cover missing	Uneven, broken or loose cover (trip hazard >25mm)	Loose, cracked or noisy covers not an immediate danger	Cover missing	Uneven, broken or loose cover (hazard >50mm deep/high)	Loose, cracked or noisy covers not an immediate danger
Impact									
High risk of interaction									
Medium risk of interaction									
Low risk of interaction									
Negligible risk of interaction									

**NB.** The response times employed internally by individual utility companies may vary from those indicated above, (United Utilities, for example, recognise only 2 categories of defect – “dangerous” and “non-dangerous” – to which they attach a 2 hour or a 20 day expectancy of repair). Whatever their own systems demand, however, they will be expected to respond to defects at least within the timescales required here.

DEFECTS TO BE REFERRED FOR ATTENTION OF OTHER DEDICATED SECTIONS	STREET LIGHTING/FURNITURE							
	Street Lighting Columns				Illuminated signs & bollards		Non-illuminated equipment & street furniture (inc signs, street name plates, guardrails, non-illuminated bollards, public seats & litter bins)	
	Door missing, wires exposed	Damaged or leaning column	Broken or damaged lantern	Day burning lantern	Missing	Damaged	Missing	Damaged
<b>REPORT</b> (ie. contact relevant Technician or Street Lighting supervisor from site to instigate immediate response)				N/A				
<b>RECORD</b> (record on hand-held device for follow-up by Street Lighting Technician)	N/A				N/A			
<b>IGNORE</b> (will be noted and repaired under separate programme when necessary)	N/A	N/A	N/A	N/A	N/A	N/A	Missing street name plates should be ignored as they will be noted and re-ordered under arena based scheme	N/A



AEI Codes (Carriageway and Footway considered separately)

- 1 – very poor condition - consider for planned maintenance
- 2 – poor condition – certain lengths could be treated as small schemes
- 3 – Suitable for surface dressing – patching up to 10% - but surface generally OK (e.g. minor crazing, loss of chippings)
- 4 – Minor non-actionable defects
- 5 – New surface – no defects

### Notes on Contraventions:

### APPENDIX 2

Safety Inspectors must also always be aware of – and record – any contraventions of The Highways Act 1980 which they encounter and which might have adverse effect upon the overall safety of the highway for users.

The following is by no means an extensive list but amongst the most common contraventions are:-

#### **Overhanging or obstructive vegetation.** (ref: section 154, The Highways Act 1980) –

This includes vegetation of any description which infringes upon (or over) the highway such as to cause obstruction or potential hazard. Common examples are overgrown boundary hedges at adjacent properties which obstruct pedestrian access along the footway, low hanging tree branches which obstruct the passage of high-sided vehicles along a road (or adequate and proper illumination from street lights), vegetation which obstructs sight-lines at bends or corners or views of road signs or traffic signals anywhere or which obstructs access for maintenance purposes to highway equipment (eg access to lighting columns etc). Requirements are that vegetation should intrude no lower than 2.5m over a footway and 4.5m over a carriageway and that private hedges etc should be kept cut-back to the rear of the property boundary so as not to infringe upon or obstruct free pedestrian passage along the footway. Inspectors should record any examples that they encounter but should be aware that there is a Notice procedure to go through and that vegetation may not be removed quickly if those responsible for it do not act in accordance with our request.

#### **Water discharging onto the highway** (ref: section 163, The Highways Act 1980) –

It is an offence for an occupier of premises adjacent to the highway to permit surface water from their premises to discharge onto the highway.

This is a very widely disregarded subject however. Over the years very many property owners have laid non-permeable driveways or hard-standings in premises that drain outwards onto the highway but we have neither the staff resource nor the desire to enforce this section to the extent of becoming routinely involved in those cases. Indeed, there is now, in any case, some more recently introduced Planning legislation which is more specifically designed to try to combat this problem.

There are occasions, however, when use of section 163 is still necessary and inspectors should, therefore, be aware of it and of its potential use where a specific problem exists. Common examples include car-washing areas where insufficient internal surface water drainage is provided and individual properties where downspouts and/or internal surface drainage provisions are intentionally diverted to drain out onto the footway.

### **Obstruction of the Highway –**

Obstruction covers a wide range of issues – but we only have limited legal powers in this area and are therefore only able to act in similarly limited circumstances. Perhaps the single most common example of obstruction nowadays is caused by drivers who park vehicles up on footways such as to prevent free passage to pedestrians. This however, is a transitory problem over which only the Police (or the Traffic Wardens in some limited circumstances) have legal powers to act. Instances where we can intervene though, include, where shops store goods outside on the highway, "A-Board" advertisements placed on the highway and where building materials are left on the highway. Inspectors should record any such examples for later follow up by the Area Technicians as necessary.

### **Access to premises by where no vehicular crossing is provided (ref: section 184, The Highways Act 1980) –**

The Highways Act 1980 makes it a specific requirement for an occupier of adjacent premises who wishes to habitually access their property by driving over a footway or verge area, to have that area adapted for the purpose by provision of a vehicle crossing, (ie "dropped kerbs" and strengthened surfaces necessary to protect underground services). However, this again is a massively abused requirement in this day and age and much damage is caused to highway surfaces as a result.

Section 184 of the Act empowers local Highway Authorities to serve Notice and to compulsorily construct such a vehicle crossing, (and to recharge the full reasonable cost of so doing) where an occupier of adjacent premises flouts this requirement. However, the procedure involved is very staff-intensive, can involve appeals going so far as to The Secretary of State's office and is only now routinely pursued to completion in cases where actual damage to the highway is in evidence.

Nevertheless, inspectors should still record details of all properties which appear to have driveways and/or internal parking provision but which lack provision of a properly constructed vehicle crossing.

### **Skip Permits (ref: sections 139 & 140, The Highways Act 1980) –**

Builders skips can be deposited on the highway only by permission and issue of a permit to do so – and issue of such permit is subject to various restrictions that are outlined in section 139 of the Act, to the production of adequate insurance cover and to a charge. Skips that are deposited either in contravention of the permit, or without issue of a permit at all, can be removed and ultimately disposed of. Skip permits are issued by the Street Works section and inspectors should note and record any that they discover so that their validity can be verified.

INSPECTION PROCESS FLOW CHART

KEY TO FUNCTIONS:

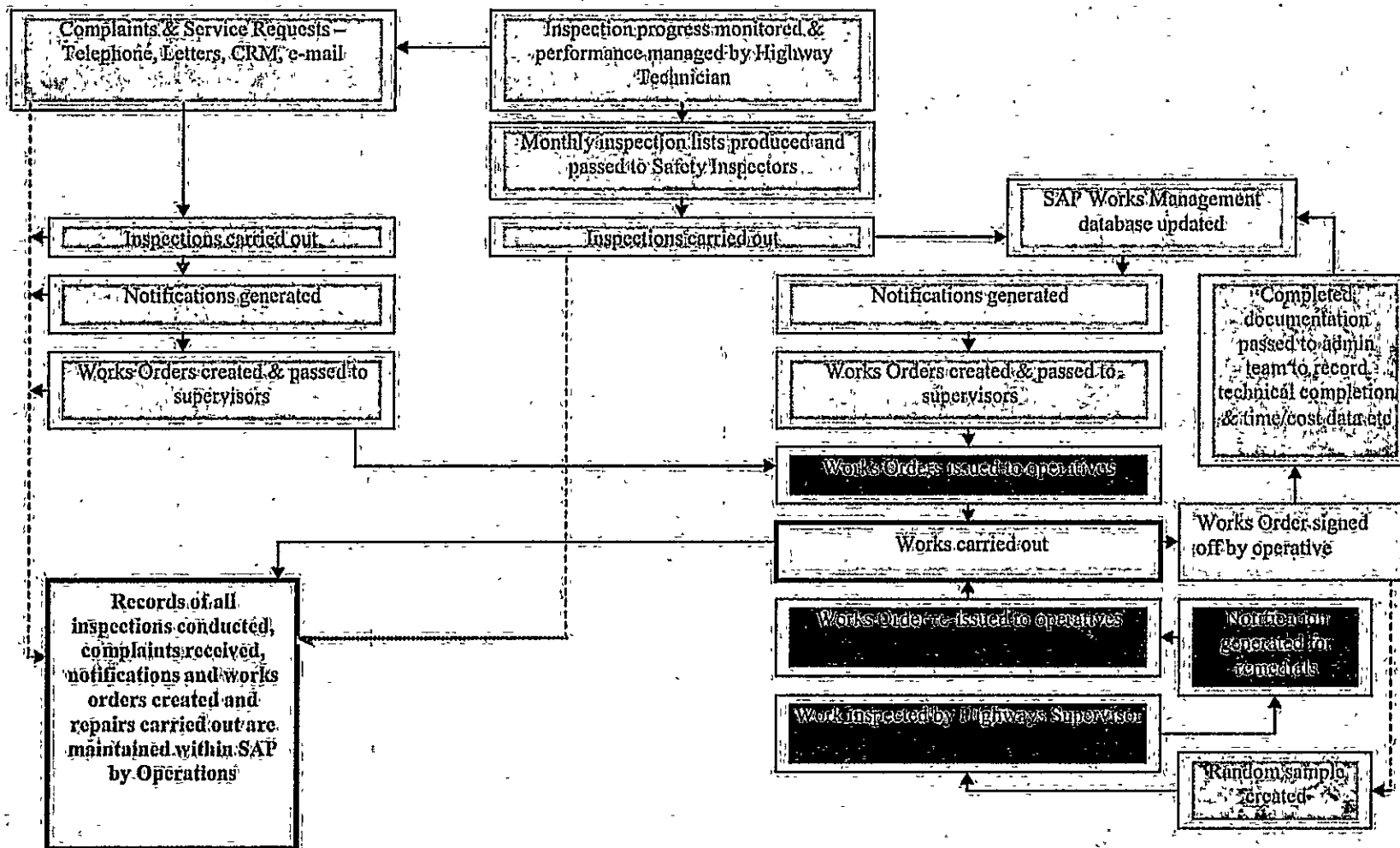
HIGHWAY TECHNICIANS

SAFETY INSPECTORS

ADMINISTRATION TEAM

HIGHWAY SUPERVISORS

HIGHWAY OPERATIVES



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**Lot 2a Highways Services Specification 90**

HIGHWAY SERVICES SPECIFICATION - AG DRAFT - 5 OS 2015 [10-5183306-15/121116-266]

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*See enclosed document entitled 'Highway Services – Lot 2a – Appendix 2 – Highways Policies – Transport Asset Management Plan'*

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**Lot 2a Highways Services Specification 91**

HIGHWAY SERVICES SPECIFICATION - AG DRAFT - 5 05 2015 [10-5183306-15/121176-266]

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## Foreword

### Picture insert

Trafford Council is delighted to publish its first transport asset management plan. This is also a first for Greater Manchester and reflects Highways as a priority for Councillors, residents and business across the Borough.

A high quality highway network is essential to Trafford as a high quality place to live, learn, relax and play. Our £1 billion asset provides a universal service to every single resident young or old across the Borough and is central to a place where business can grow and prosper.

It is the vital role it plays in people's lives that Trafford's road and transport networks require a robust and considered investment strategy. After years of successive under investment in the network and below levels deemed adequate to even maintain a failing network, we established a £24 million four year programme starting in 2008. This ambitious programme provides an immediate opportunity to make a real difference but only through an asset management approach will we be able to create longer term strategies for investment.

### Picture Insert

This first for Trafford is central to all our teams understanding clearly the scale of the challenge but also the opportunity to work together to transform our network. Understanding when and where parts of our network might be at the end of their effective life span is key to knowing when other elements of work might be coordinated and renewed at the same time.

Reviewing the entire asset in the street scene – bins, posts, signs, footways and carriageways - we can achieve far greater impact within the community than a traditional piece meal approach. We undertake our works not simply because they are time expired but rather there is a need for the wider transport asset to play its full part in shaping the communities which we serve.

This may not cost us more but it does require traditional professions and skills to be brought together in what at the outset might be 'novel' but in future must become the norm. By understanding what can be done simultaneously with major works, the overall cost savings can achieve more impact and the travel public will not have to see repeat visits from various road works teams.

By managing our transport asset through this plan we can better understand the impact of our investment strategies and help prolong and protect the life of our entire transport infrastructure. Over time, through managed and timely intervention we will succeed in reducing the need for unplanned maintenance and instead see resource re-focused in to careful and considered interventions that protect and preserve a high quality network.



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# General Summary

## 1 Introduction

- The road network is Trafford's largest asset, approximately £1 Billion
- This is a Technical report and a Glossary is attached
- Recognised by Residents, businesses and Politicians as a priority for Trafford.
- Asset Management is a strategic approach that identifies the optimal allocation of resources for the management operation preservation and enhancement of the highway infrastructure to meet the need of current and future customers
- Unplanned patching and pot hole repairs cost approximately four times the cost of resurfacing the equivalent area of footway or carriageway as part of a planned maintenance scheme.
- Asset Management concentrates on preventative and planned maintenance reducing the required revenue expenditure on pot hole repair and patching and as a result reduces insurance claims against the Council.



## Glossary of Abbreviations and Terms

Glossary item	name or description
AMG	Asset Management Group
AMSG	Asset management Steering Group
AMWG	Asset Management Working Group
B/C	Base Course
Best Value	Continuous improvement in a way an Authority delivers its functions having regard to a combination of economy, efficiency and effectiveness
BVPI	Best Value Performance Indicator
CSS	County Surveyors Society
Customers	Road users and the wider community served by the Highway network
CVI	Course Visual Inspection
Deflectograph	Road structural strength measurement survey
DfT	Department for Transport
DVI	Detailed Visual Inspection
EO	Extra Over
Gap Analysis	Simple process model used to identify business improvements
GM	Greater Manchester
GMADE	Greater Manchester Association of District Engineers
GIS	Geographical information System
HA	Highways Act
Highway Authority	The organisation responsible for the management and operation of the highway network – ie Trafford
HGV	Heavy Goods Vehicle
KPI	Key Performance Indicator
LoS	Levels of Service – a statement of the performance of the asset in terms that the customer can understand. LoS typically cover, condition, availability, capacity, amenity, safety, environmental impact and social equality. They cover the condition of the asset and non-condition related demand aspirations, that is, how the asset is performing in terms of both delivering a service to customers and maintaining its condition at the appropriate level.

LTP	Local Transport Plan
NRA	Neighbourhood Renewal Area
PSV	Polished Stone Value
PTE	Passenger Transport Executive
QBC	Quality Bus Corridor
R/B	Road Base
S/D	Surface Dressing -
SMA	Stone Mastic Asphalt
S/S	Slurry Seal – low cost surface treatment

Value Management Value Management is a style of management particularly dedicated to motivating people, developing skills and promoting synergies and innovation, with the aim of maximizing the overall performance of an organization. It has evolved out of previous methods based on the concept of value and functional approach. These were pioneered 1940's and 50's to develop the technique of Value Analysis (VA) as a method to improve value in existing products. Initially Value Analysis was used principally to identify and eliminate unnecessary costs. However it is equally effective in increasing performance and addressing resources other than cost.

W/C Wearing Course

## 1 What is a Transport Asset Management Plan

- Highway authorities exercise their duties to maintain, operate and improve their highway assets under increasing pressures included limited budgets and resources, mature networks with significant backlogs of maintenance, and increasing public expectations.

Whilst most highway authorities including TMBC are already practicing elements of asset management a more structured approach is required.

The County Surveyors Society (CSS) adopted the following definition for asset management in the framework document.

"Asset management is a strategic approach that identifies the optimal allocation of resources for the management operation, preservation and enhancement of the highway infrastructure to meet the needs of current and future customers" and Trafford has adopted the CSS approach and framework.

It is a systematic approach that takes a long term view, the whole life/life cycle of an asset being considered.

- The asset management plan is a tool to assist the decision making process and the transparency of that process particularly when available funding is not adequate to fund all the demands. The plan highlights both the long term and short term effects of the decisions made.

The plan identifies the level of funding required to meet the current aspirations (levels of services required) outlined in:-

- The community strategy
- The corporate strategy
- The LTP targets
- The GM Maintenance strategy aims
- The Central Government 10 year plan
- The BVPI targets

In addition it outlines the level of funding required to ensure that a high burden of maintenance costs is not passed onto future generations. (i.e. a sustainable highway infrastructure).

- The Transport Asset Management Plan includes facilities and assets which are used by the public either private car users, pedestrians or public transport users even where they do not form part of the Adopted Highway Network i.e. car parks, bus stations owned by the LA, pathways used as part of the infrastructure.

However, the initial concentration will be on -

#### Highways

- Footways
- Carriageways
- Street Lighting
- Cycle-ways
- Public Rights of Way (PROW)
- Highway drainage
- Carriageway marking and traffic management measures
- Signs/name plates
- Barriers and fences

#### Highway Structures

- Bridges
- Culverts
- Retaining Walls

- The TAMP differs from the Property Asset Management Plan. The Property Asset Management Plan is about managing the Council's property portfolio. The TAMP is concerned solely with the maintenance of the asset to current service levels so that an undue maintenance burden is not passed onto future generations.

## 2 Why a Transport Asset Management Plan is Required

Environment Strategy has been practicing elements of asset management for some time but there are now a number of factors in place that are contributing to the need to pursue the adoption of a total asset management approach:

- The introduction of the Prudential Code, requires authorities to consider asset management and strategic planning to assist in making capital investment decisions and option appraisal.
- The introduction of Whole of Government Accounts stipulates that each authority must have in place processes to value their highway assets and rates of depreciation. A detailed asset management plan will assist with these requirements.
- The Department for Transport (DfT) requested that a report on the development of a Transport Asset Management Plan be included in the second Local Transport Plan. They have subsequently commissioned a consultant to review progress with the development of asset management and the embedding of asset management practice within authorities. This is a strong signal of the DfT's continued desire to see councils develop asset management capabilities and practices.
- The new codes of practice:
  - Well maintained highways
  - Management of highway structures
  - Well lit highways

In addition, the Council is of the opinion that asset management offers many benefits, such as:

- The ability to demonstrate the value of the service being provided.
- An improved distribution of resources to those assets in greatest need of maintenance and investment.
- The ability to clearly demonstrate the level of management and maintenance possible with the available funds, and to predict future deterioration in the asset.
- The opportunity to measure actual asset performance against expected performance and identify areas for improvement.
- Justification of expenditure.
- More cost effective use of the available funds.

- An enhanced ability to integrate maintenance and improvement schemes and thereby reduce the impact of works on the network and provide better value.
- Longer term planning, to assist with Traffic Management Act duties
- Value for money assessments and whole life costing, to help achieve efficiency
- Also as a possible defence for 'top management' for corporate manslaughter.

Having a TAMP in place which is regularly monitored, reviewed and updated is a prerequisite of delivering a good highways management service in the future and may influence the availability of centrally available funding. It is therefore important to prepare and continually improve asset management practices. This plan forms the starting point for the formal adoption of a total asset management approach to the highways and transportation asset (excluding land and buildings) and will be the tool used to benchmark performance.

### **3 Purpose of the Plan**

The Transport Asset Management Plan has been produced to identify and evaluate current management, financial and technical practices and processes with the goal of defining and delivering the desired levels of service of each aspect of the highways and transportation asset in the most cost effective manner in the future.

The Plan will start to improve understanding about the highways and transportation asset in terms of

- Location, number and condition of assets
- The quality and relative importance of the asset data being held
- What new assets are being added to the network
- future demands that will be placed upon the asset
- The rate of deterioration.
- How planned work will affect performance
- What level of service is expected for each asset during its lifespan
- What funds are spent on the asset
- The value of assets.
- Predicting what future costs will be

The Plan will, therefore, help develop a longer term view, a clearer understanding of asset condition and performance, have a shared and consistent understanding of what is happening to the assets, more informed decision making and reduced risks of unplanned expenditure.

#### 4. Key objectives

Trafford has a number of key objectives for the adoption of a total asset management approach as follows:

- To adopt a life cycle approach, detailing the whole of life cost of the asset, which will contribute towards a long term forward plan, with predicted future demands, and future funding options for the asset.
- To develop cost effective management strategies for the long term which will enable detailed and accurate information relating to the asset to be obtained, ensuring that where strategies are decided, the risks and consequences resulting from decisions that are taken are fully understood prior to the strategy being put into action.
- To provide defined levels of service and monitoring of asset performance making it possible to explore options for differing levels of service for each asset group, and the effects this may have on the public, services and environment. Once the levels of service have clearly been defined, it will be possible to monitor the performance of the asset against the specified levels of service.
- To manage risks associated with potential asset failures and enable internal business risks, as well as risks to the public to be managed effectively.
- To ensure sustainable use of physical resources.
- To achieve continuous improvement in highway management practices.

#### 5 Trafford's first Transport Asset Management Plan

Discussions continue to take place with the other G.M. Authorities to maintain some consistency of approach. However, it is accepted that each authority has different technical maintenance design problems and political aspirations and hence a rigid format could not be applied.

This first plan has made best use of available asset and financial data to provide an indication of the value of the highways and transportation asset (excluding land and buildings), and as such should be regarded as an 'initial plan'. Although some of the information comes more from officer judgement than robust data, the plan is intended to improve understanding of the highway asset management issues facing the borough and to identify actions to put into place to address them. The financial and performance data, in particular, provide a 'snapshot' in time and elements of the plan will require updating on an ongoing basis so that it remains a 'live' document.

Over the coming years the Plan will be further refined with the use of better data to identify better value options for the asset such as the identification of

- Longer term options for managing the asset.
- Value for money options such as value management appraisal of schemes.
- The potential effect of a spend to save approach
- The effects of compromise on levels of service.
- Sustainable investment levels for the future.



## 6. The Asset

The Highways and Transportation related assets included within this Transport Asset Management Plan are as follows:

Asset Group	Number/length (km)
<b>Roads (all classifications):</b>	806
A roads	56
B & C roads	53 (B) 49 (C)
Unclassified roads	648
<b>Footways (all classifications):</b>	1560
Category 1 & 2	25
Category 3 & 4	1544
<b>Structures (total):</b>	
Road bridges	68
Subways	8
Foot bridges	44
Culverts (>1.5m)	28
Retaining walls	9
Sign gantries	1
Streetlights	26,569
Lit signs	3,288
Traffic Signals	
Intelligent Transport Systems (ITS)	
Solar panels (associated with traffic signals or ITS systems)	
<b>Public Rights of Way (all RoW):</b>	
Footpaths	94KM
Bridleway	2 KM
Byway	11 KM
Vehicle restraints (safety fences)	
Drainage systems	
Unlit signs	

Table E1

Asset Group	Number/length (km)
Cycleways (all cycleways)	
Off road cycleways	
On road cycleways	
Pedestrian barriers	

Table E1 (cont )

## 7 Major funding implications of the Plan

An assessment of funding gaps has been carried out to help identify any additional funding required to:

- Maintain the asset in its current condition (steady state).
- Meet acceptable minimum standards determined for each asset group. These minimum standards relate to activities and funding requirements to fulfil statutory duties, meet recognised best practice and recommendations from codes of practice for each specific asset.
- Meet performance targets set.
- Clear maintenance backlogs.
- Upgrade the asset/make improvements.

Table 1 provides the valuation and budget requirements and Table 2 provides a summary of funding gaps for the assets where information is available. Further refinement and collection of data required to carry out a thorough investigation in relation to the effect of spend to save on the asset and the adoption of a value management approach. Funding gaps can then be identified and funding priorities established.

It is important to note that different evaluation methods and approach are likely to have been taken to provide the information in the table by asset group. The long term aim is to have a consistent approach. Therefore a direct comparison of funding needs between one asset group and another is not recommended.

**VALUATION AND BUDGET REQUIREMENTS  
AT COMMENCEMENT 2007/8**

**STAGE 1**

**(Q3 2005 Rates)**

	Highways	St Lighting Illuminated poles and bollards	Bridge & Structures	Street Furniture	Traffic Calming etc	Total
<b>Valuation (Methodology)</b>						
	780	50	200	10		1040
Gross replacement cost See note (1)						
Depreciation (conventional acc)	N/A	N/A	N/A	8	N/A	8
Annualised – Depreciation (renewals acc)	6	-				6
Analyses depreciation (conventional acc) See note (2)	-	10	4	0.2		5.4
Depreciation replacement costs 5% zero residual life)	682	20		2.0		704.0
<b>Whole life cycle methodology See note (3)</b>						
<b>REQUIRED ANNUAL BUDGETS (Life cycle costs and replacement costs)</b>						
Sustainability steady state	5	1.0	2	[0.3]		8
Additional budget to meet BVPI						
223 (included in CPA)	0.3	-		-		
224(a) (included in CPA)	-	-		-		
224(b) 0.6% improvement/yr	1.1	-		-		
187 5% improvement/yr (included in CPA)	0.1	-		-		
Additional budget to meet community aspirations (over BVPI)	Not yet developed			-	-	
<b>Total</b>	6.5					
Cost to remove the maintenance backlog, Using valuation method	91					
Using Life Cycle Treatment Rates						
(a) (assuming 8% zero resided life)	27					
(b) (assuming 0% zero resided life)	52					
NB Required annual budget excluded reactive – pothole and patching budget but includes preventative SD/SS						

**NOTES**

(1) The Valuation is based on

- Costs of full reconstruction (using GM averaged construction rates)
- GM Method
- Average GM fee level 10.8%

(2) Annualised depreciation (renewals  
accountancy) based on

- TMBC theoretical whole life costing model
- 5% of the network at 5% "zero life" (requiring major intervention)
- TMBC construction rates
- Average GM fee level 10.8%

(3) Required annual budgets based on

- 8% of roads with "zero life" (requiring major intervention)
- modified construction method, based on historical data (full reconstruction is not always carried out) costs modified accordingly
- TMBC construction rates
- TMBC fee level 10%

Table E2

FUNDING GAP (£1,000)					
	Highways	Street Lighting	Bridges & Structures	Street Furniture	Traffic Calming Etc.
<u>Funding 2007/8</u>					
Capital	4,537	350	658	-	
Revenue	300	N/A	60		
Sub Total	4,837	350			
<u>Based on the Valuation Methodology</u>					
Depreciation (conventional accounting)	-				
Annualised Depreciation renewals	6,231				
Cost to remove backlog	91,629		3,500		
Cost to improve BVPI's	1,590				
	99,450				
Therefore funding gap 2007/8	94,613				
<u>Based on Whole Life Costing Methodology</u>					
Steady State Budget	4,971				
Cost to remove backlog	27,248				
Cost to improve BVPI's	1,590				
	33,809				
Therefore funding gap 2007/8	28,972				

Table E3. Funding Gap – amount required to bring condition up to optimum service level.

## 8 Asset valuation (Q3 2005)

In accordance with the CSS Guidance Document discussions have taken place across Greater Manchester's Highway Asset Management Subgroup and a common system and maintenance rates have been developed for the region in order to value the asset

An initial valuation of the highways and transportation asset, where data is available, has been completed. Asset valuation is the representation of the value of the road network in monetary terms but it makes no attempt to describe a value to the economic benefit of the road network i.e. the value to society in terms of enabling people and goods to travel. The method used to value the asset determines the replacement cost and follows the following three basic steps

### 8.1 Gross Replacement Cost (GRC)

Firstly an assessment is made of how much it would cost to build a completely new asset. This is known as the Gross Replacement Cost (GRC). The GRC is a theoretical value calculated by working out how much it would cost to build a modern equivalent of the asset in replacement for what currently exists including design costs. It will be a large figure which reflects the scale of the asset and the fact that the road network may be the most valuable asset the Council owns.

The initial assessment of Gross Replacement Cost (GRC), for highways and transportation assets (excluding land and buildings) where data is available, has been calculated to be £1 Billion. This means that the Council is responsible for a transportation asset potentially worth in the region of £1 Billion should it be in 'as new' condition.

### 8.2 Depreciated Replacement Cost (DRC)

The asset is, however, not a new one. The valuation represents this by calculating a depreciated replacement cost (DRC). The DRC takes into account the fact that parts of the asset have been 'used up' or consumed as a result of wear, use and ageing. The DRC is calculated by using available condition data coupled with experience to estimate how long it will be until components of the asset require replacement. Applied to the whole network this figure will not be of particular use but when applied at a component level it can be used to highlight parts of the asset that are running towards the end of their expected lives and may be at risk of sudden failure.

The assessment of the Depreciated Replacement Costs depends on the particular asset and the appropriate accounting method.

Renewals accounting is used for highways and structures and conventional accounting for other assets.

Depreciated replacement costs for highways and bridges is based on:

The cost of removing the backlog and the annualised depreciation cost are shown in Table 1

### 8.3 Annualised Depreciation Charge (ADC)

Using the figure produced for DRC an Annualised Depreciation Charge (ADC) can be calculated. The ADC represents the expected change in asset value in one year if no investment is made in renewing and maintaining the asset. Again this is a largely theoretical figure. Whilst more informative than the GRC or DRC the resulting figures need to be read in context.

The ADC is the most useful of the valuation outputs as it provides an estimate of the level of annual investment theoretically required to ensure that the asset value remains constant. It does not necessarily mean that it would be a wise or practical investment to spend that sum of money in the following year. Future asset investment decisions require a detailed assessment of the age and condition profile of the assets in question, decisions to be made about the desired condition (defining levels of service) and importantly assessment of the most economically efficient ways of delivering the chosen levels of service (i.e. whole life cost/value assessment).

The initial assessment of Annualised Depreciation Charge, for highways and transportation assets (excluding land and buildings) where data is available, has provided an ADC value of Highways £6.23 million. This means that the Council theoretically needs to invest in Highways £6.23 million a year to maintain the highways and transportation asset at its current asset value. A more detailed assessment of future funding need is being developed.

The values determined for replacement cost and depreciation will be updated on an annual basis. This will provide an indication of the effectiveness of policy decisions in the previous year.

It is important to note that the annualised depreciation or the budget required to maintain "steady state" is different dependant on the method used for the calculation. The valuation method assumes all roads with zero residual life require full reconstruction. However, based on experience and historical data this is not always the case and this has been reflected in the whole life costing model. Hence the figure using the "whole life costing model is lower.

## VALUATION

### Value of the Highway Asset

Highways	)	
Street Lighting	)	
Bridges and Structures	)	
Street Furniture	)	
Traffic/Transportation	)	
		<u>TOTAL £1Billion</u>

TABLE E4 (PART 1)

## ANNUAL COSTS TO PREVENT FURTHER DETERIORATION

		Valuation Method	Whole Life Costing
Highways	-	6.2	5
Street Lighting	-	1.0	-
Bridges and Structures	-	0.6	-
Street Furniture	-	to be assessed 2009/10	
Traffic/Transportation	-	to be assessed 2009/10	
		<u>TOTAL</u>	<u>5</u>

TABLE E4 (PART 2)

## COSTS TO REMOVE MAINTENANCE BACKLOG

Highways	-	91
Street Lighting	-	5
Bridges and Structures	-	8
Street Furniture	-	3
Traffic/Transportation	-	to be assessed 2009/10
		<u>TOTAL</u>

TABLE E4 (PART 3)

## COSTS TO IMPROVE THE CONDITION SERVICE LEVEL BVPI TARGETS

Highways	-	1.6
Street Lighting	-	N/A
Bridges and Structures	-	0.3
Street Furniture	-	N/A
Traffic/Transportation	-	N/A
		<u>TOTAL</u>

TABLE E4 (PART 4)



## FUNDING 2007/8

	Capital	Revenue
Highways	5.5	0.3
Street Lighting	0.35	-
Bridges and Structures	0.65	0.06
Street Furniture	-	-
Traffic/Transportation	1.3	0.045
<b>TOTAL</b>	<u><b>7.8</b></u>	<u><b>0.405</b></u>

(excludes cyclic and reactive maintenance budgets)

Table E4 (Part 5)

### 8.4 Valuation summary

In summary the asset valuation provides:

- An assessment of the monetary value of the asset and thus will reflect the scale of the asset.
- The ability to discharge anticipated future government reporting requirements (Whole of Government Accounts).

Asset Valuation will not provide:

- A definitive figure representing what should be spent in any particular year.
- Meaningful assistance with determining best value solutions.

## 9 Future Intentions

There are six key issues for the Council to focus on and address resulting from the production of this plan:

- Setting levels of service – understanding the relationship between cost, customer preferences and risk.
- Future funding needs – working towards the development of a financially sustainable plan.

- Value management and exploring and developing a business case for alternative asset investment strategies.
- Assessing future maintenance need – auditing future maintenance costs of improvement schemes and new developments
- Public/stakeholder consultation and awareness raising
- Implementation and annual reporting – following through with the plan into improved practices and outcomes

### 9.1. Setting levels of service

More detailed levels of service are required to support a better understanding of giving priority to funding one stream of work against another. This will enable a more informed choice and provide information to determine what is the appropriate level of service for Trafford for each asset. In condition terms this will relate to the level of defective asset that is acceptable when considered in the context of the relative price of changing it.

Development of costed options will be used to inform members and the public and assist with enhanced customer consultations.

### 9.2 Future funding needs

The TAMP identifies some significant future funding implications. These figures are in a number of instances based upon broad estimates and require further refinement and analysis but do indicate a significant potential shortfall between historical funding levels and initial prediction of current and future funding need.

The ability to predict long term funding needs is currently limited. Improving the ability to predict how long it will be before components of the asset require replacement will enable better planning and ultimately better value to be provided. The first step, therefore, is to focus on how to increase the ability to predict future funding needs with increasing confidence. A better understanding of expected service life and whole life (life cycle) costing, and of component age will improve the reliability of funding need assessment.

### 9.3 Value management

The development of this first Transport Asset Management Plan has shown that to fully embrace the asset management approach and to be able to make significant service improvements there is a need to make and influence key decisions on where funding is allocated and to consider long term need. With the need to make efficiency savings a review of the effectiveness of annual spend is becoming increasingly important.

Making use of an explicit value management process would assist with the identification of efficiency savings – in particular identification of assets that may not need immediate work,

assets that could be reduced in number/type, assets where a lesser standard is potentially acceptable and assets where an early intervention will prevent escalation of repair costs.

#### **9.4 Assessing future maintenance need**

New assets are currently added to the network either through improvement schemes or as a result of new developments without a formal process in place to assess the implication of these new assets. These will have a significant impact on future maintenance budget requirements and the plan for future maintenance need.

#### **9.5 Public/stakeholder consultation and awareness raising**

Whilst some public and stakeholder consultation process have been well developed in the Council there is a need to obtain and use more customer information to develop levels of service and shape future policy and practice on maintaining the asset. Informing the public and stakeholders on how decisions are made and what can be delivered with the available budget will help achieve a better understanding of how Highways and Transportation resources are used.

#### **9.6 Implementation and annual reporting**

The Transport Asset Management Plan on its own will not provide any meaningful benefit. It is the delivery of agreed improvement actions, changes in practice and process, a desire to achieve continuous improvement and a commitment throughout the Highways and Transportation service that will ensure that Trafford Council can prove that it is committed to a total asset management approach and achieving best value for the people of Trafford.

Using the TAMP as an overarching document and basing all decisions on an asset management approach will ensure that the Plan will become a live and working document and encourage an asset management approach to become embedded as normal practice.

The implementation of asset management is a more challenging and long term task than just the production of the plan. Implementation will require continued focus on:

- People – ensuring that the people tasked with implementing and further developing the plan have the time, resources and skills to do so.
- Data – ensuring that data management becomes an integral part of the relevant business processes.
- Processes – changing existing business processes (where necessary) to enable asset management information to influence key decisions about funding.
- Systems – most highway systems are not complete asset management systems. Over time existing systems need to be developed into decision support tools.

## 10 Improvement actions

An improvement Action Plan will be produced on an annual basis. A key aspect of this Transport Asset Management Plan is to facilitate a process of continuous improvement the plan includes a number of improvements that are proposed for implementation over the duration of the plan. Improvements have also been identified for specific asset groups.

It is anticipated that improvements will continue to be identified, assessed and programmed on an ongoing basis.

A detailed action plan has been developed to identify priority, timescales and responsible officer for each key improvement action.

## 11 Monitoring implementation of the improvement action plan and review

### 11.1 Monitoring

The Improvement Action Plan will be improved, developed and monitored in the following way.

- The Asset Management Team will have responsibility for and drive the delivery of the improvement actions and further development of the Transport Asset Management Plan. They will discuss the Plan on a regular basis, agree on priority actions and assess funding requirements and report to the Director of Environment Strategy.
- The Director of Environment Strategy will discuss progress with the Executive Member on a regular basis.

### 11.2 Review

The Transport Asset Management Plan will be a rolling plan that is reviewed annually each June. This will take the form of a report for the Senior Management Team and will include.

- Progress in delivering the Improvement Action Plan
- Progress in improving information on the asset
- Performance of the asset
- Updated lifecycle plans and level of service documents
- An option appraisal report

- Updated risk register
- Updated Gross and Depreciated asset values and Annualised Depreciation Charge
- Financial projections
- Progress on the development of forward programmes of works

A report (The Attainable Asset Management Plan) will be provided to the executive Member for Technical services in November to assist in the budget setting process.

## General Summary

### Conclusion

- (a) TMBC has been practising elements of asset management for a number of years. However, the Asset Management Plan identifies in a more transparent way the requirement and hence acts as a tool to assist the decision making process and has facilitated the "actions to date"
- (b) The plan highlighted both long-term and short-term effects of the decisions made
- (c) Actions to date (decisions supported by the information contained in this plan)
- A 3 year investment plan approved which allows for co-ordination and planning of schemes
  - £24M will be pumped into Trafford's highway network over the next 3 years
  - Spending on major highway maintenance has been increased from £1.1M in 2003 to £8Million in 2008
  - Spending on street lighting scheme has been increased from £105k in 2003/4 to £800K in 2008/9
  - The length of highway treated

	2007/8	2003/4
• Resurfacing/planned structural maintenance –	20 km	3.5 km
• Preventative maintenance	- 60 km	11 km
  - Around 2,000 street lights will be replaced over the next 3 years

# Chapter 1 - Introduction

## Why Asset Management?

### Council Policies and Priorities

- One of the Council's main priorities is the improvement to the condition of the highway network.
- A report was approved for the production of an Asset Management Plan and the format for that plan.

Delegated power being given to the Executive Member of Technical Services to agree the detailed information in the final document.

### Reasons for Asset Management

It is widely accepted that transport infrastructure is vital to the economic well being of our nation. For most local authorities their road network is the most valuable community asset under their control. Despite this there is a growing realisation that the management of these vital and valuable assets is not receiving the attention or funding required for the provision of the optimal state of repair and operation.

Highway authorities exercise their duties to maintain, operate and improve their highway assets under increasing pressures that include:

Inadequate budgets;	with funding diverted to support other services
Limited resources;	both staff and skill shortages
Mature networks;	with a significant backlog of required maintenance
Increased accountability;	to customers and funding providers
Increasing public expectations;	the public are increasingly informed and demanding

Whilst individual responses to these challenges vary there is a trend towards a more structured approach to the management of road assets. Many highway authorities are considering the implementation of asset management principles as a means of delivering better outcomes to customers.

In addition, a number of drivers are "pushing" Highway Authorities to produce Asset Management Plans;

### Whole of Government Accounts

The government is working towards the production of whole of government accounts (WGA). WGA accounts will be commercial-style accounts covering the whole of the public sector including local authorities. WGA will be produced on an accruals basis and will use Generally Accepted Accounting Principles (GAAP), adapted where necessary for government. This form of accounting is known as Resource Accounting and Budgeting (RAB). Under these requirements local authorities will be required to value their highway assets. (Initially it was proposed sample valuation by 2005/6 with full valuation in 2006/7, but this has now been delayed)

The valuation will be required to not only assess replacement value but also to assess the level and rate of depreciation in order to record current value in their accounts. Experience internationally and locally (with other government departments) shows that meeting these accounting requirements demands a detailed knowledge of the asset (including condition and maintenance backlog). This in turn drives a need for robust processes, based around asset management plans, backed by databases providing valid, relevant and up to date core data on the assets. It is anticipated that the introduction of these requirements in this country will provide a similar demand for improved asset information.

In many other countries the introduction of legislation requiring asset valuation has been the catalyst for the development of asset management practice and in particular for the publication of asset management plans.

#### The Prudential Code

The government has introduced the Prudential Code to govern the way in which local authorities can manage their assets. The code requires local authorities to have explicit regard to option appraisal, asset management planning and strategic planning when making capital investment decisions and to demonstrate that their plans are affordable, prudent and sustainable.

The code enables authorities to choose between revenue and capital intensive options for service delivery, undertake 'spend to save' capital schemes and undertake additional self-funded capital investment where they can afford to do so.

The code, therefore, enables the introduction of more sophisticated application of asset management than is possible under the previous financial regime. A robust asset management plan will be a valuable tool to any authority wishing to explore the potential benefits that the code enables.

#### The (DfT) Requirements

The Department for Transport (DfT) requested that a report on the development of a Transport Asset Management Plan be included in the second Local Transport Plan document. They have subsequently commissioned a consultant to review progress with the development of asset management and the embedding of asset management practice within authorities. This is a strong signal of the DfT's continued desire to see councils develop asset management capabilities and practices.

#### Corporate Manslaughter

The TAMP could be used as part of the defence, under the proposed legislation regarding corporate manslaughter, should a case occur.



## New Codes of Practice

The New Codes of Practice outlined below are all based on an asset management approach.

'Well Maintained Highways'  
'Management of Highway Structures'  
'Well Lit Highways'

(the above documents are all adopted for use by the Council and the principles incorporated in the 'G M Maintenance Strategy' (draft).

In addition, the Council is of the opinion that asset management offers many benefits, such as:

- The ability to demonstrate the value of the service being provided.
- An improved distribution of resources to those assets in greatest need of maintenance and investment.
- The ability to clearly demonstrate the level of management and maintenance possible with the available funds, and to predict future deterioration in the asset if these funds are not available.
- The opportunity to measure actual asset performance against expected performance and identify areas for improvement or of better than expected performance.
- Justification of expenditure.
- An increased understanding of the potential impact of investment decisions, both positive and negative.
- More cost effective use of the available funds.
- An enhanced ability to integrate maintenance and improvement schemes and thereby reduce the impact of works on the network and provide better value.
- Longer term planning, to assist with Traffic Management Act duties.
- Value for money assessments and whole life costing, to help achieve efficiency savings.
- Making the quality of life in Trafford better by reducing pollution, reducing crime, reducing energy consumption, reducing costs and improving accessibility.

Having a Transport Asset Management Plan (TAMP) in place which is regularly monitored, reviewed and updated will be a pre-requisite of delivering a good highways management service in the future and may influence the availability of centrally available funding. It is therefore important to prepare and continually improve asset management practices. This plan forms the starting point for the formal adoption of a total asset management approach to the highways and transportation asset (excluding land and buildings) and will be the tool used to benchmark performance

This first plan has made best use of available asset and financial data to provide an indication of the value of the highways and transportation asset (excluding land and buildings), backlogs and additional funding need and as such should be regarded as an 'initial plan' Although some of the information comes more from officer judgement than robust data and the plan has served to improve understanding of the highway asset management issues facing the borough and to identify actions to put into place to address them. The financial and performance data, in particular, provide a 'snapshot' in time and elements of the plan will require updating on an ongoing basis so that it remains a 'live' document.

Over the coming years the Plan will be further refined with the use of better data to identify better value options for the asset such as the identification of.

- Longer term options for managing the asset
- Value for money options such as value management appraisal of schemes
- The potential effect of a 'spend to save' approach.
- The effects of compromise on levels of service
- Sustainable investment levels for the future

#### **What is Asset Management?**

The definition adopted is that of the County Surveyors Society (CSS). "Asset management is a strategic approach that identifies the optimal allocation of resources for management, operation, preservation and enhancement of the highway infrastructure to meet the needs of current and future customers".

Discussions have taken place with other GM authorities in an attempt to keep some consistency, however it was agreed that each authority has different problems and political aspirations and hence a rigid format could not be applied (see Appendix B6), however a joint approach will be taken on the valuation of the asset (gross replacement value).

## Basic and Advanced Asset Management

This document represents an evaluation of asset management practices in TMBC and sets out a way forward. There are two internationally recognised styles of asset management – basic and advanced. The differences between the two models are shown in table below.

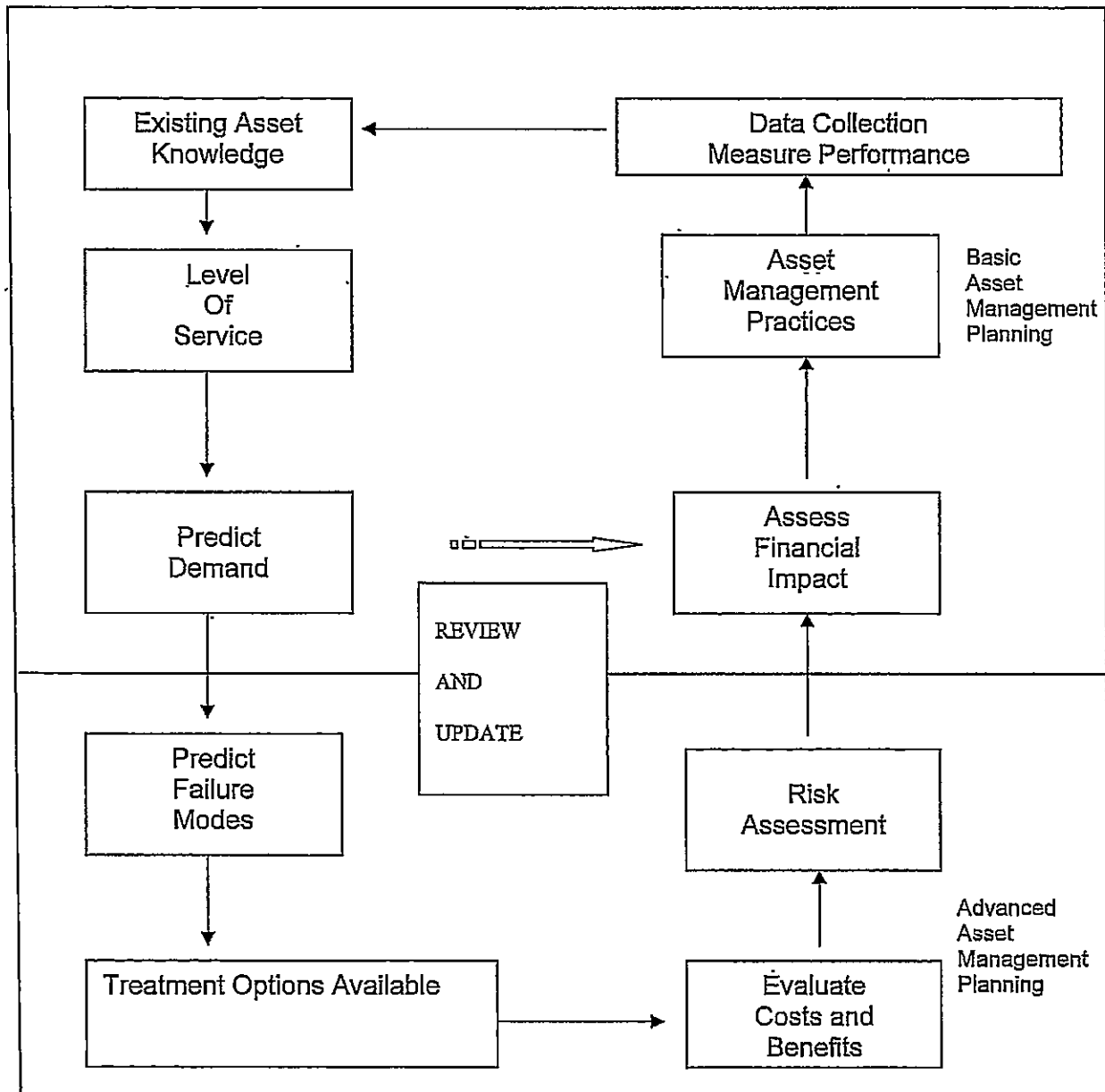


Figure 1.1

This plan will encompass some aspects of advanced asset management and it is intended to develop this further over the coming years.

Advanced Asset Management builds on the basic approach by engaging prediction modelling, risk management and optimised renewal decision-making techniques. These facilitate long term financial forecasts and programmes that minimise lifecycle costs whilst delivering required levels of service.

## **Purpose of this Plan**

The Transport Asset Management Plan has been produced to identify and evaluate current management, financial and technical practices and processes with the goal of defining and delivering the desired levels of service of each aspect of the highways and transportation asset (excluding land and buildings) in the most cost effective manner in the future

- The TAMP pulls together all the relevant strategies, goals, objectives, plans and methods in use in the Council for managing transport in the Borough
- The TAMP will identify in a transparent way the funding required for various current service levels, and the effect of funding decisions on service levels in the future.
- The development of the TAMP assesses the strength and weaknesses of our existing systems and methods in managing the transport and highway asset and the highway network. A GAP analysis has been carried out and an Action Plan produced to enable the authority to meet its strategic goals in respect of asset ownership in the most cost effective way

The Plan will start to improve understanding about the highways and transportation asset in terms of:

- Location, number and condition of assets
- The quality and relative importance of the asset data being held.
- What new assets are being added to the network and future demands that will be placed upon the asset.
- The rate of deterioration.
- How planned work will affect performance
- What level of service is expected for each asset.
- What funds are spent on the asset
- The value of assets.
- Predicting what future costs will be

It is important to note that the plan does not include land in the ownership of the local Highway Authority

Having a good understanding of asset condition and deterioration rates, funding requirements now and in the future and when treatment is required will give an indication of current and future asset needs, repair and replacement costs and help to identify priorities and plan work on the whole asset in a more joined up and cost effective way. It will provide demonstrable and transparent evidence of the distribution of resources to assets that have the greatest maintenance need. Decision makers will have better information to inform a choice of options, and budget requests will be supported with a fact based assessment of needs.

The Plan will, therefore, help develop a longer term view, a clearer understanding of asset condition and performance, have a shared and consistent understanding of what is happening to the assets, more informed decision making and reduced risks of unplanned expenditure.

Trafford Council has identified 11 corporate objectives for the service that it provides to its customers. The efficient and effective management of the highway infrastructure contributes to three of these strategic objectives.

- To increase the safety of individuals and communities
- To support local businesses and regeneration
- To improve the cleanliness and sustainability of the local environment

The Highways and Transportation Service is working to ensure service improvement with the particular aim of focusing improving the condition of the network.

Trafford Council has a number of key objectives for the adoption of an asset management plan as follows:

- To adopt a life cycle approach, detailing the whole life cost of the asset, which will contribute towards a long term forward plan, with predicted future demands, and future funding options for the asset.
- To develop cost effective management strategies for the long term which will enable detailed and accurate information relating to the asset to be obtained, ensuring that where strategies are decided, the risks and consequences resulting from decisions that are taken are fully understood prior to the strategy being put into action.

- To provide defined levels of service and monitoring of performance making it possible to explore options for differing levels of service for each asset group, and the effects this may have on the public, services and environment. Once the levels of service have clearly been defined, it will be possible to monitor the performance of the asset against the specified levels of service
- To manage risks associated with potential asset failures. The asset management plan will state the risks associated with asset failure (the data inventory identifies what the asset information is used for which will enable internal business risks, as well as risks to the public to be managed effectively)
- To ensure sustainable use of the transportation infrastructure
- To achieve continuous improvement in highway management practices. The asset management plan will encourage this in particular. It will challenge current working practices, and look for an increasingly efficient way of working, in order to provide the most cost effective way of completing works, prolonging the life of the asset and offering the best possible service to the residents of Trafford. Changes to current working processes will be required in order to close data gaps where beneficial, and to ensure that relevant asset data is shared in order to promote this way of working.

## The Asset

- The purpose of this document is to set out an approach for Trafford Metropolitan Borough council for the management of its transport asset. It is based upon the CSS Framework document for Highway Asset Management Plans.

Asset Group	Number/length km?
<b>Roads (all classifications):</b>	
A roads	56
B & C roads	53 (B) 49 (C)
Unclassified roads	648
<b>Footways (all classifications):</b>	1560
Category 1 & 2	25
Category 3 & 4	1544
<b>Structures (total):</b>	158
Road bridges	68
Subways	8
Foot bridges	44
Culverts (>1.5m)	28
Retaining walls	9
Noise walls	None
Sign gantries	1

Asset Group	Number/length
Streetlights	26569
Lit signs	3288
Traffic Signals	-
Intelligent Transport Systems (ITS)	-
Solar panels (associated with traffic signals or ITS systems)	-
Public Rights of Way (all RoW)	107
Footpaths	94km
Bridleway	2 km
Byway	11 km
Bus stops and shelters	-
Vehicle restraints (safety fences)	-
Safety cameras	-
Soft estate (trees, verges, hedges)	-
Drainage systems	-
Unlit signs	-
Cycleways (all cycleways):	-
Off road cycleways	-
On road cycleways	-
Pedestrian barriers	-

*Table 1 1*

*Note: this plan does not cover the land and buildings asset.*

*Note. Where information is not available it is planned this will be obtained ready for the updating of the plan in December 2008.*



The quality of data varies across the asset groups listed in Table 1.1. For some asset groups, there are high levels of data with good confidence, and for some groups there is either no data, or only little data that is not very reliable.

The asset is growing year on year due to the adoption of additional roads into the network and through improvement activities such as the development of traffic safety schemes, bus lanes and other road improvement works. Whilst this offers increased benefits to the public, it must be recognised that these additional assets will add to existing maintenance and management requirements and exert pressure on the maintenance budgets.

### Asset performance

There are a number of performance indicators in place across the service group, which illustrate the past and current performance of the particular asset in key areas

A detailed list of all BVPIs and results for 2004/05 in comparison with other local authorities can be found in Appendix C.

Due to historically low investment the highway network has been deteriorating faster than it can be repaired resulting in a general decline in condition.

- The condition of the principal road network:

Due to the changes in survey technique it is difficult to show recent trends. However the latest BVPI carried out using Course Visual Inspection (CVI) showed the principle roads at a level of 8% requiring major interventions (2004/5) latest scanner result 2006/7 15%)

- The non principal (B and C) road network;

As with the principal roads the survey technique has changed to scanner from CVI. In 2004/5 the CVI result was 5.5% requiring major intervention. (Latest scanner results 2006/7 20%)

- The condition of the unclassified road network;

The CVI results have varied over the last few years but have always shown a significant percentage of roads requiring major intervention

2004/5	-	17%
2005/6	-	11.6%
2006/7	-	12%

The rules and parameters for calculation of the BVPI, the variability of CVI compared with machine surveys, and the fact that not all network is surveyed each year explains the variability.

(In summary the condition of the highways has deteriorated over a long period and does not compare well with some other authorities).

**BVPI Performance 04/05**  
**(04/05 Year used as last year of surveys carried out using CVI)**

<b>Road Type</b>	<b>Achieved</b>	<b>Actual 04/05 %</b>	<b>Upper Quartile Target %</b>	<b>Bottom Quartile Level %</b>
Principal A Road – eg Washway 56km	BOTTOM QUARTILE	8%	-	-
Classified/Non Principal B & C Roads eg Trafford Park 110 km	TOP QUARTILE	5.53	7.03	18.46
Urban unclassified All other roads inc residential roads 648 km	NEAR BOTTOM QUARTILE	17.08	9.95	22.07
Footways 1 & 2 Main footways	NEAR BOTTOM QUARTILE	25.3	16	34

Source Audit Commission CPA database

Options for future funding and indicative figures are included in Chapter 11 of this plan.

When maintaining the network, the Council must also address the following key issues:

- Increased levels of traffic, and differing types of traffic using the network.

#### **Traffic Flows**

- 12-hour weekday flows on A and B roads in Trafford grew by 2% between 2005 and 2006 compared to no change in Greater Manchester
- Traffic flows on A and B roads in Trafford have increased by 20% between 1993 and 2006, compared to 2% in Greater Manchester and 6% nationally.

#### **Traffic Composition**

- A roads: 85% cars, 11% LGVs and 3% OGVs
- B roads: 83% cars, 11% LGVs and 3% OGVs
- The proportions of cars on A and B roads were slightly higher than the Greater Manchester averages of 81% and 82%  
(source: GMTU Report 1298 August 2007)  
More HGVs on the roads result in faster deterioration of the infrastructure.
- More frequent extremes of weather in recent years have accelerated the deterioration of the road network, putting increased pressures on already hugely stretched resources. This is compounded by the geological conditions and topography in Trafford with its high water table and flat topography, which requires greater investment due to its tendencies to retain water and become flooded. This leads to extra maintenance and care, and therefore extra cost.
- Increased public demand and perception of acceptable levels of service/condition of the asset.

## Chapter 2 - Business Processes (Goals and Objectives)

### Objectives

Highway Asset Management is a way of running the 'business' of operating a highway network. The development of asset management processes and plans must therefore be guided by the overriding corporate objectives of the authority

- There are a number of Transport related aims which Central Government wish to pursue. How it is intended to pursue these aims are outlined in the Local Transport Plan (LTP). The LTP is a joint document produced by the 9 Greater Manchester Metropolitan Borough Councils and the Passenger Transport Executive.
- The Trafford Council Community Strategies, corporate objectives identify that there is a desire to improve the condition of the highway infrastructure, (see Appendix C). The exact service level required however needs to be clarified.
- Whilst the community safety and corporate objectives identify that improvements to the highway infrastructure is required at the current time there is no reference to the sustainability of the infrastructure and policies to ensure that a disproportionate amount of maintenance costs are not passed on to future generations. The calculation of this requirement is seen to be the officer responsibility (Civil/Highway Engineering section and Building/Structures Section).
- The CPA assessments and the BVPI's targets requirements generally complement the other goals and objectives. However greater emphasis is put on certain areas of the infrastructure.
- In summary, there are 3 goals -
  - (a) Level of service required by community safety/corporate objectives
  - (b) To maintain a sustainable infrastructure
  - (c) To meet BVPI targets

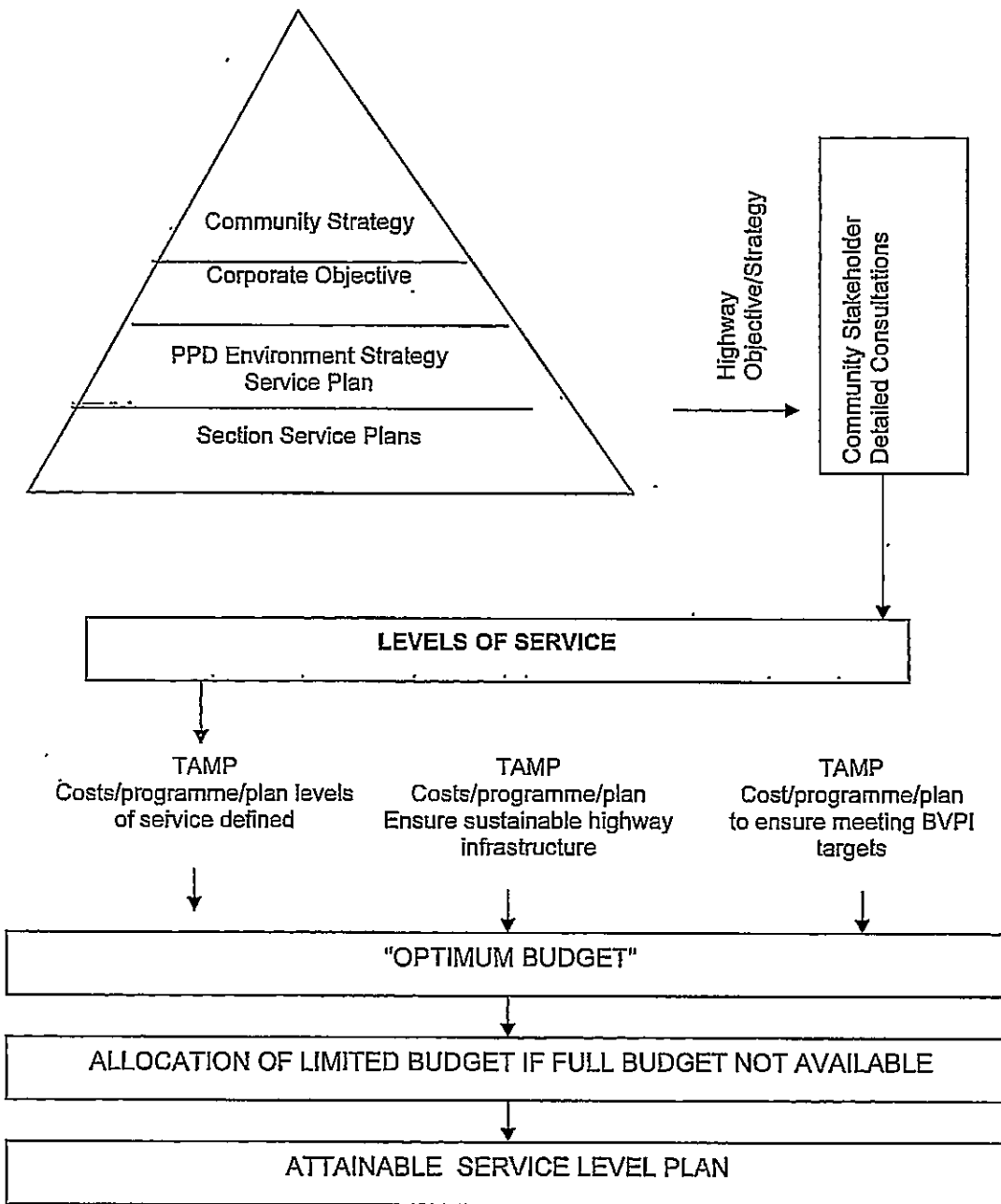
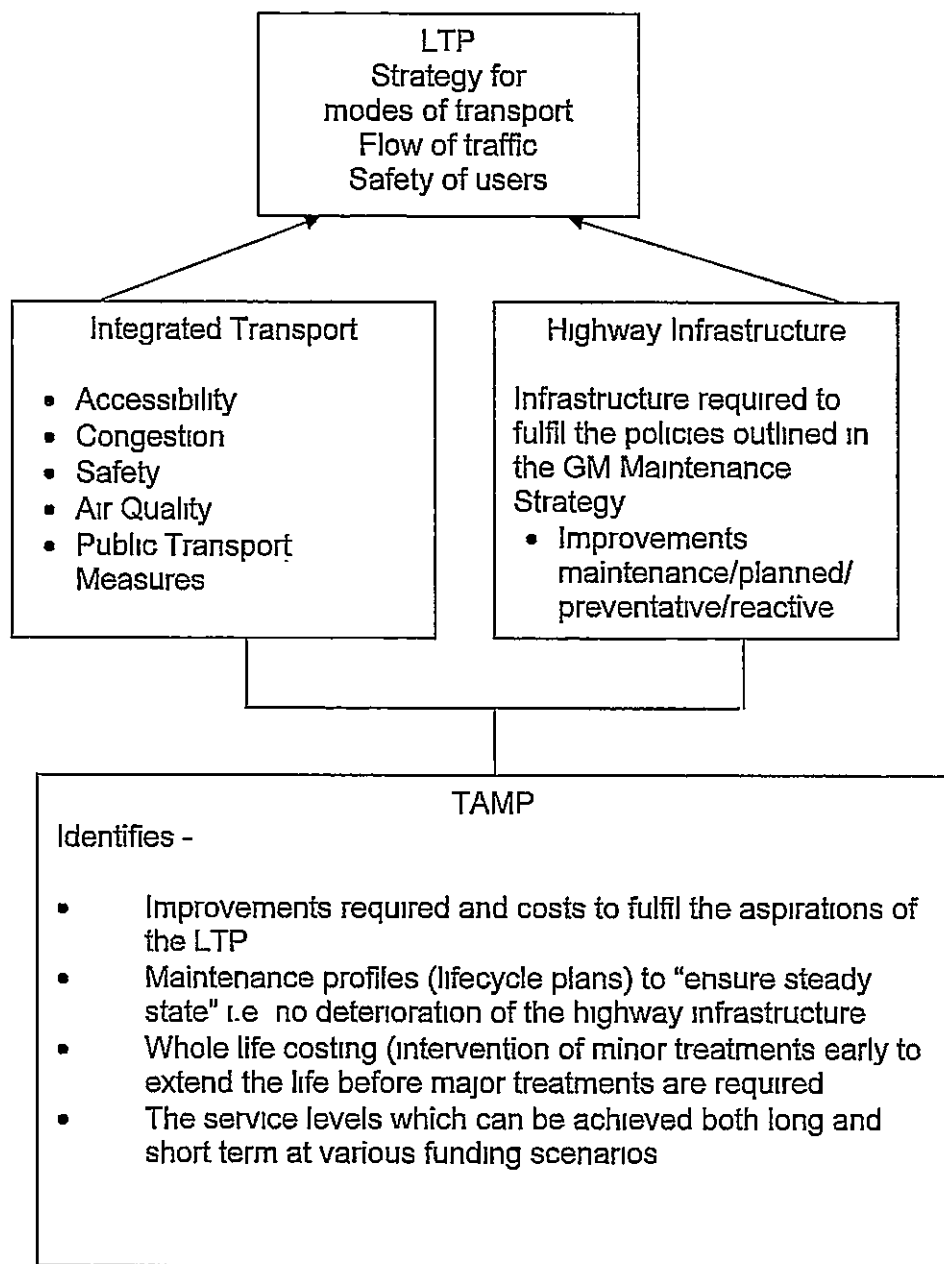


Figure 2.1



Note The TAMP and the GM Maintenance Strategy form part of the LTP

Figure 2.2

The objective is to address the following items:-

- Strategic Approach - A system process which takes a long term view
- Whole of Life - The whole life/life-cycle of an asset is considered
- Optimisation - Maximisation of benefits by balancing demands
- Resource Allocation - Allocation of resources based on assessment of need.
- Customer Focus - Explicit consideration of customer expectation

This chapter of the Transport Asset Management Plan deals with the key processes currently used by the Council to manage its highway assets. Processes have been reviewed and evaluated, and where required, changes to improve the delivery of services have been identified.

#### Business Processes

The following key Business processes influence asset management and the outcomes provided to customers:

- Determining customer need
- The overall budget setting process
- Drafting budget requirements and costed programmes of work
- Assessing budget requirements for the service
- Assessing value for money
- Determining levels of service

These processes need to be refined and documented procedures produced.

## Determining customer need

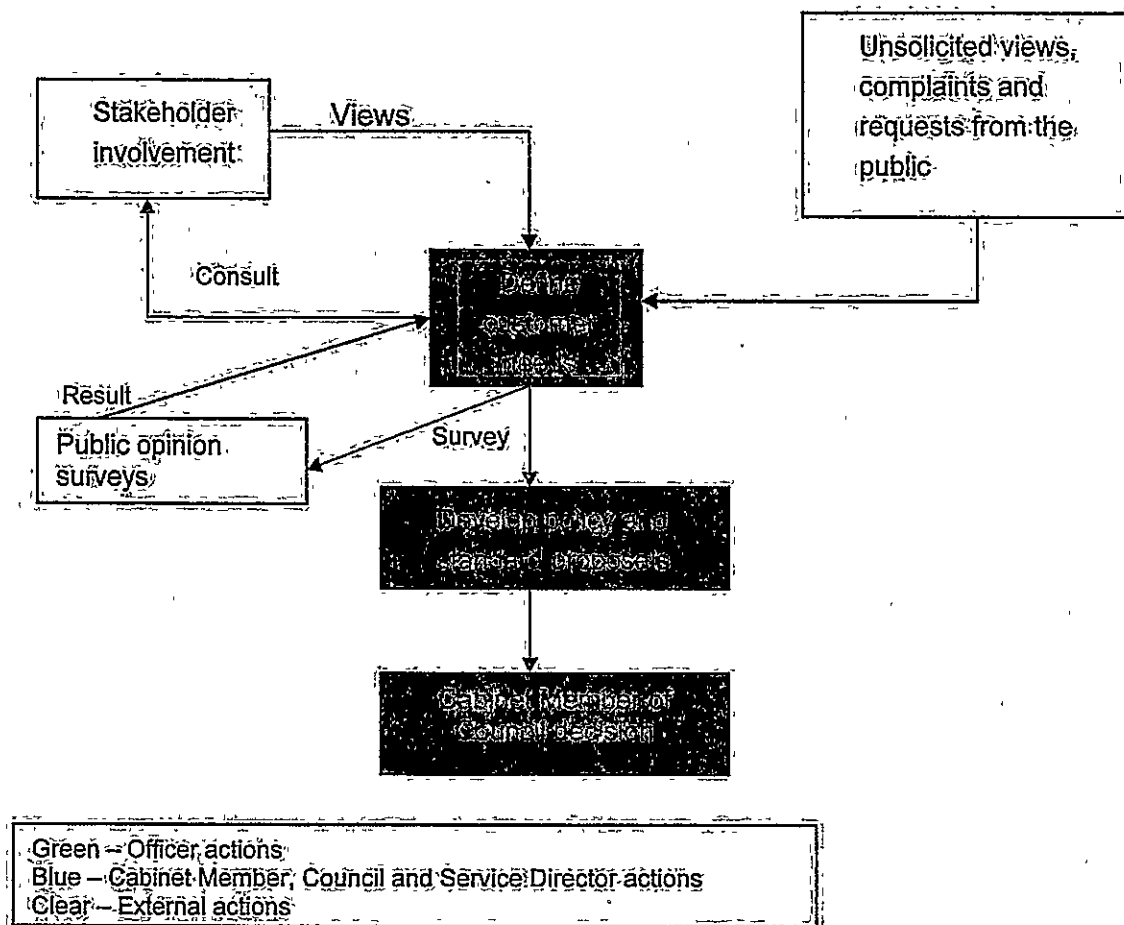


Figure 2.3: Flowchart showing process for determining customer need

The flowchart above demonstrates that customer need is identified both through formal consultation processes and regular contact direct from key stakeholders - members of the public, interest groups, elected members and parish council representatives. Consultation with stakeholders and the community are part of an inclusive approach to understand the real issues for people in Trafford and a commitment to effective public consultation.



## **Policy change**

This process could be further improved in the future by providing the public and key stakeholders with additional information detailing how decisions are made, policy and standards, anticipated levels of service that can be delivered with the available budget and the implications for other service areas/assets if funding is diverted.

## **The overall budget setting process**

The current budget setting process is described below.

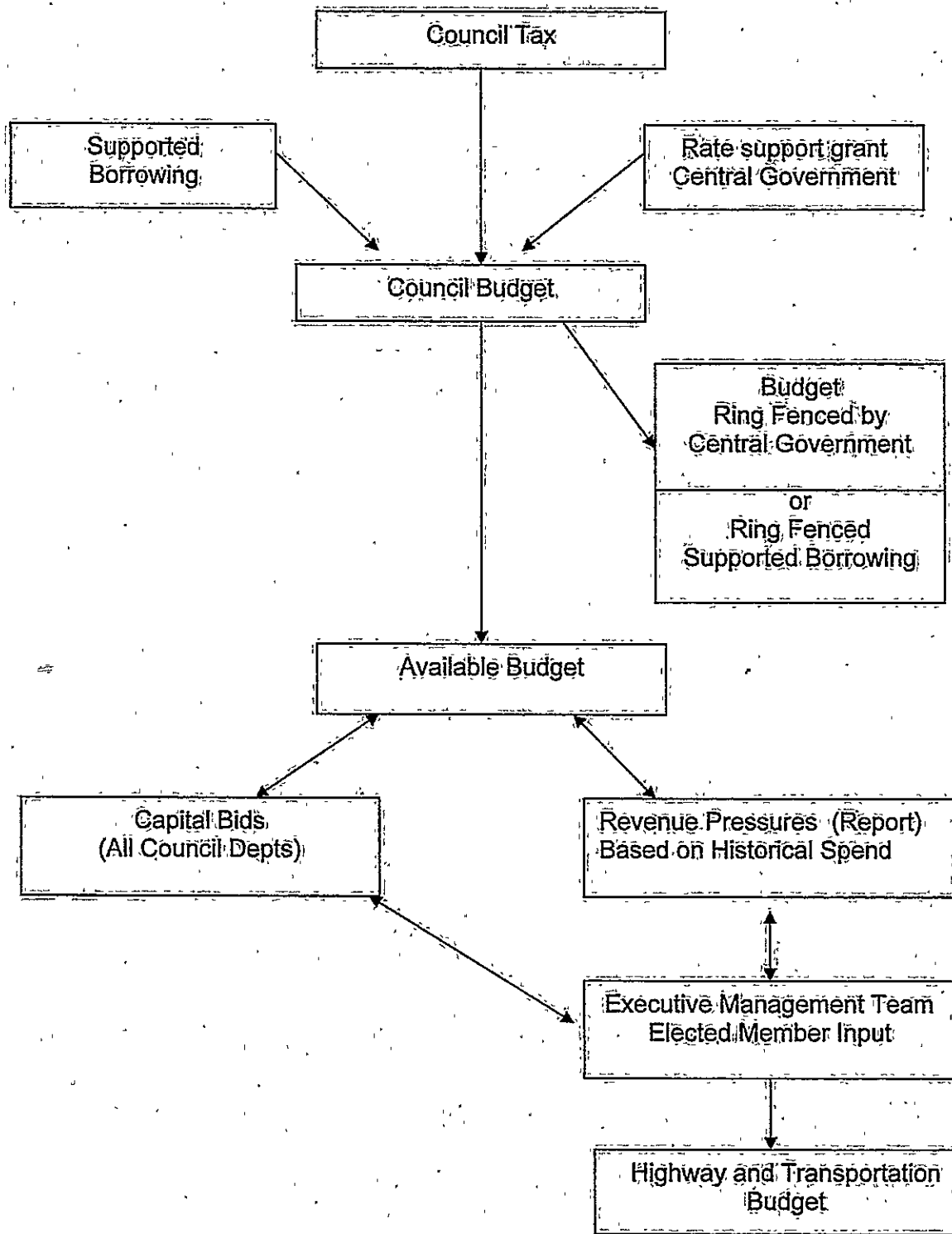
**Flowchart 1** shows the high level budget setting process representing the Council.

**Flowchart 2** illustrates the process for determining programmes of work at group level and is carried out by Officers.

**Flowchart 3** represents the process of budget setting at Service Group level (Highways and Transportation), and is carried out by the Cabinet Member and Service Director, based upon the information submitted by Officers in the process illustrated in flowchart 2.

**Flowchart 4** details the process of assessing value for money which is used in the process of determining programmes of work by Officers.

Figure 2.4 Flowchart 1— Overview of the budget setting process



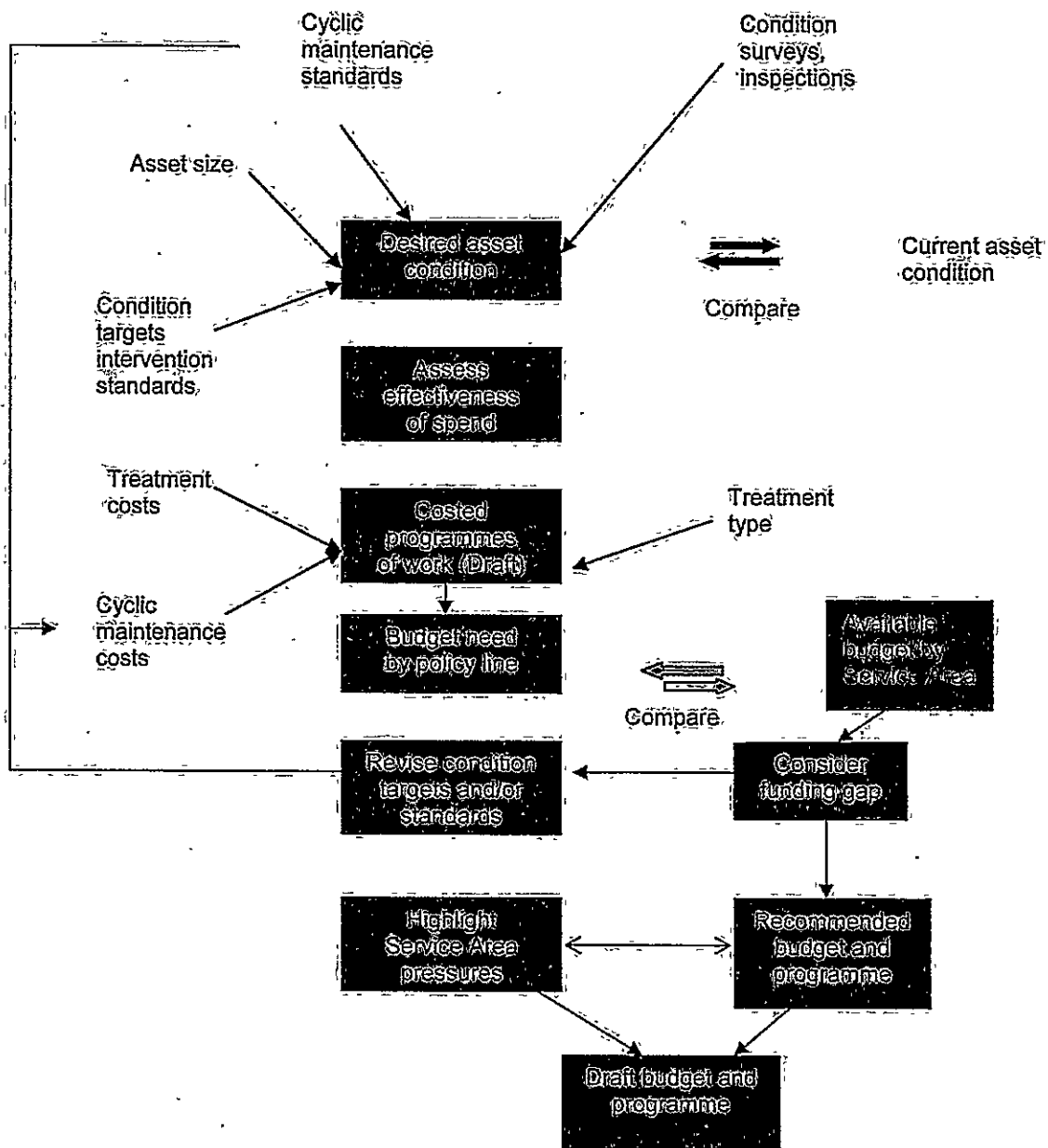
**Note:-**

(1) Highways Bid outlines the budget required for

(2) Capital Bids are analysed by "Capital Finance"

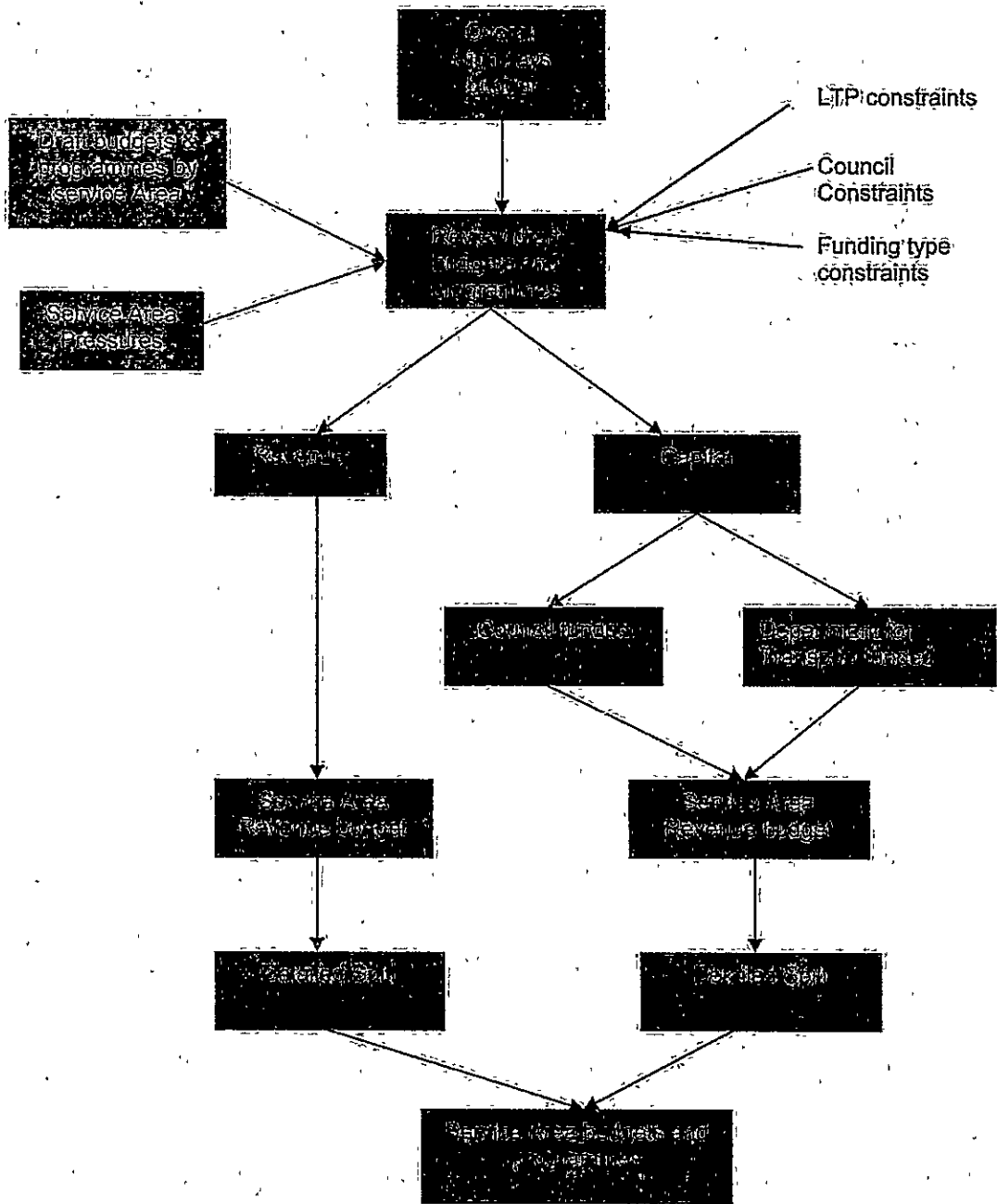
- "Steady State"
- To Meet BVPI Targets
- Community aspirations (specific projects)

Figure 2.5 – Flowchart 2  
Drafting budget requirements and programmes of work



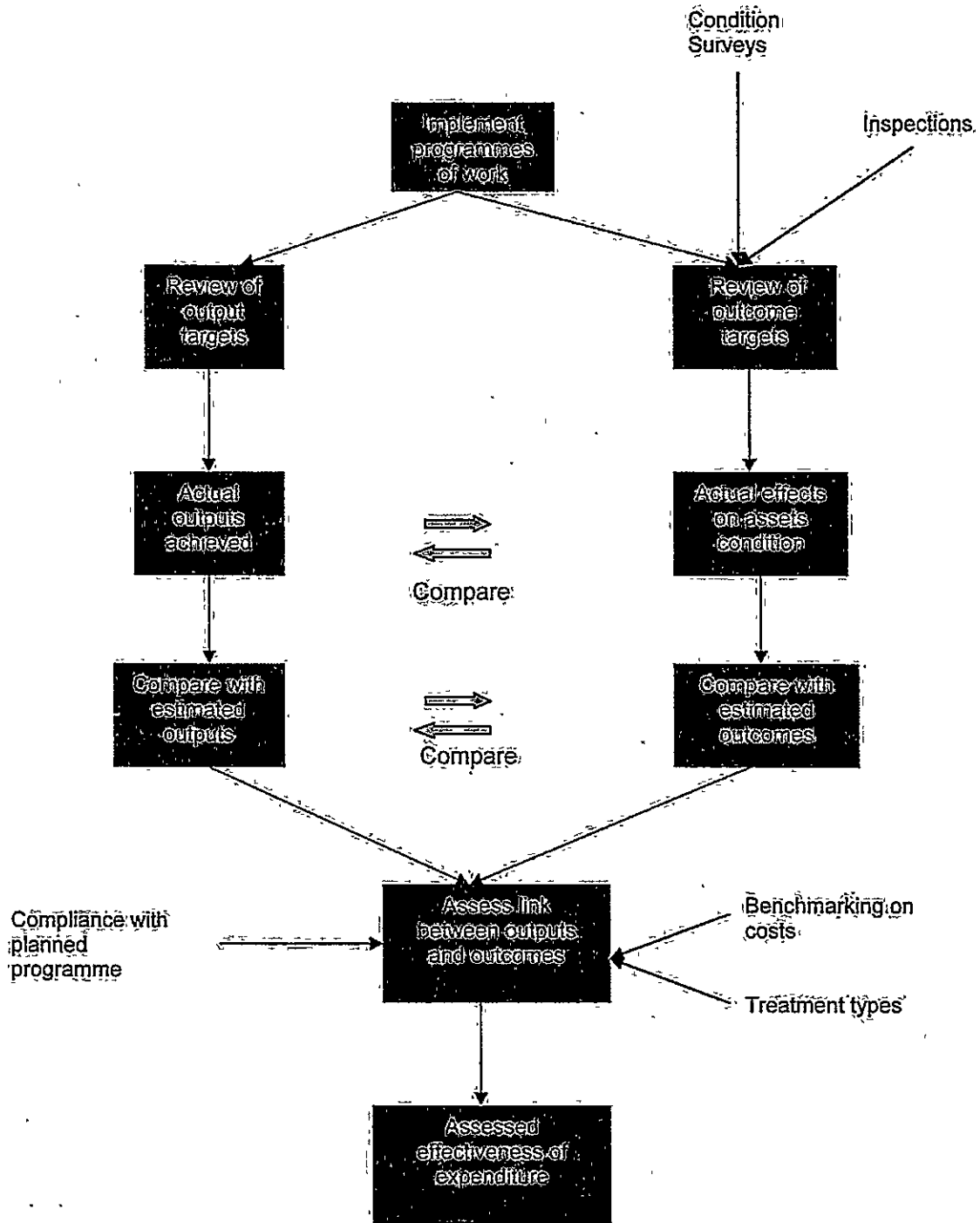
Purple – Refer to flowchart 4  
Green – Officer actions  
Blue – Cabinet Member and Service Director actions

Figure 2.6 - Flowchart 3  
Assessing budget requirements for the Service



Green - Officer actions from flowchart 2.  
Blue - Cabinet Member and Service Director approvals

Figure 2.7 - Flowchart 4  
Assessing value for money



Orange — Officer/Contractor actions.  
Green — Officer actions.

Formalisation of 'the Attainable Asset Management Plan' is an iterative process in which the Service Director and Management Team work closely with the Executive Member for Technical Services as the Council's budget setting process develops each year. The process is designed to enable Members and Officers to challenge budget assumptions and establish fully the technical implications of any proposed changes.

Informal discussions take place between the Executive Member for Technical Services and the Strategic Director (Highways and Transportation). In parallel with these discussions, detailed reports are produced for each service area, containing various options and costs, using financial information and projections of achievement, and improving condition options and proposals. These reports are then reviewed by the Highways and Transportation Management Team to ensure they reflect a department wide view of priorities at Officer level.

The Executive Member for Technical Services receives the report directly and in addition, these are discussed at monthly Business Performance Meetings and additional ad hoc meetings as appropriate.

The table on the following page shows how the revenue budget is split between the various functions within highways and transportation.

<b>2006/07 Revenue budget summary split</b>	
<b>Highways (Reactive Maintenance)</b>	
Operational total	
Departmental costs – staff	
<b>Total Controllable</b>	
Departmental costs - indirect	
<b>Total – Highways Maintenance</b>	
<b>Network Management (Enactments)</b>	
Operational total	
Departmental costs – staff	
<b>Total Controllable</b>	
Departmental costs – indirect	
<b>Total – Network Management</b>	
<b>Civil/Highways Engineering</b>	None
Operational total	
Departmental costs – staff	
<b>Total Controllable</b>	
Departmental costs - indirect	
<b>Traffic/Transportation</b>	
Operational total	
Departmental costs – staff	
<b>Total Controllable</b>	
Departmental costs - indirect	
<b>Total – Network Development</b>	
<b>Departmental Management</b>	
Departmental costs – staff	

Table 2 1 Summary of Highways and Transportation budget by policy line



A similar approach is taken with respect to monitoring of the budget programme and performance targets during the year where the main member interface is with the Executive Member for Technical Services.

The appropriate Managers will also be invited to comment on specific issues when necessary.

The existing processes for setting budgets encourages the basis of an asset management approach within the current constraints as budget needs are drafted based upon asset condition and size, treatment types, targets and standards. Current constraints include capital funding from the LTP that is designated for a particular use, overall Council priorities and funding levels.

Value for money is assessed as part of the process of putting programmes of work together. This is achieved by reviewing methods of achieving targets in the most cost effective way such as assessing different treatment types and the effect this would have on the asset to ensure that the target is achieved.

The overall process of setting budgets could be further built upon to place more importance on an asset management approach. This would involve increased emphasis on the longer term requirements of the asset and applying appropriate treatment types to minimise the whole life cost. Trafford could expand on the work already carried out, particularly on the highway asset by:

- Producing detailed options on the effects of different treatment types on the whole life cost of the asset and results on asset condition.
- Using historic treatment data and construction data to assist in putting together whole of life cost options for different treatment types.
- Having long term scenarios supported by robust data, which clearly demonstrate the benefits of treatments. This will also assist the Cabinet Member and Service Director when putting forward a case for funding for the service.
- Including new assets within the budget setting process. At present new assets are added to the network with no assessment of future maintenance requirements. It is proposed that a maintenance audit is included in the formal planning approval process so that maintenance needs can be identified and costed and committed sums can be obtained from developers for future maintenance requirements where this is possible.
- Improving monitoring such as recording and assessing information on lessons learnt, effectiveness of spending, benefits monitoring, efficiencies gained and assessing whether actions identified have met objectives set.

The Highway Network and the Asset is managed by:

- (a) 'Operations' Section (of the PPD/Directorate)
- (b) Strategic Section of (PPD/Directorate)

The Operations Section is responsible for the day to day activities.

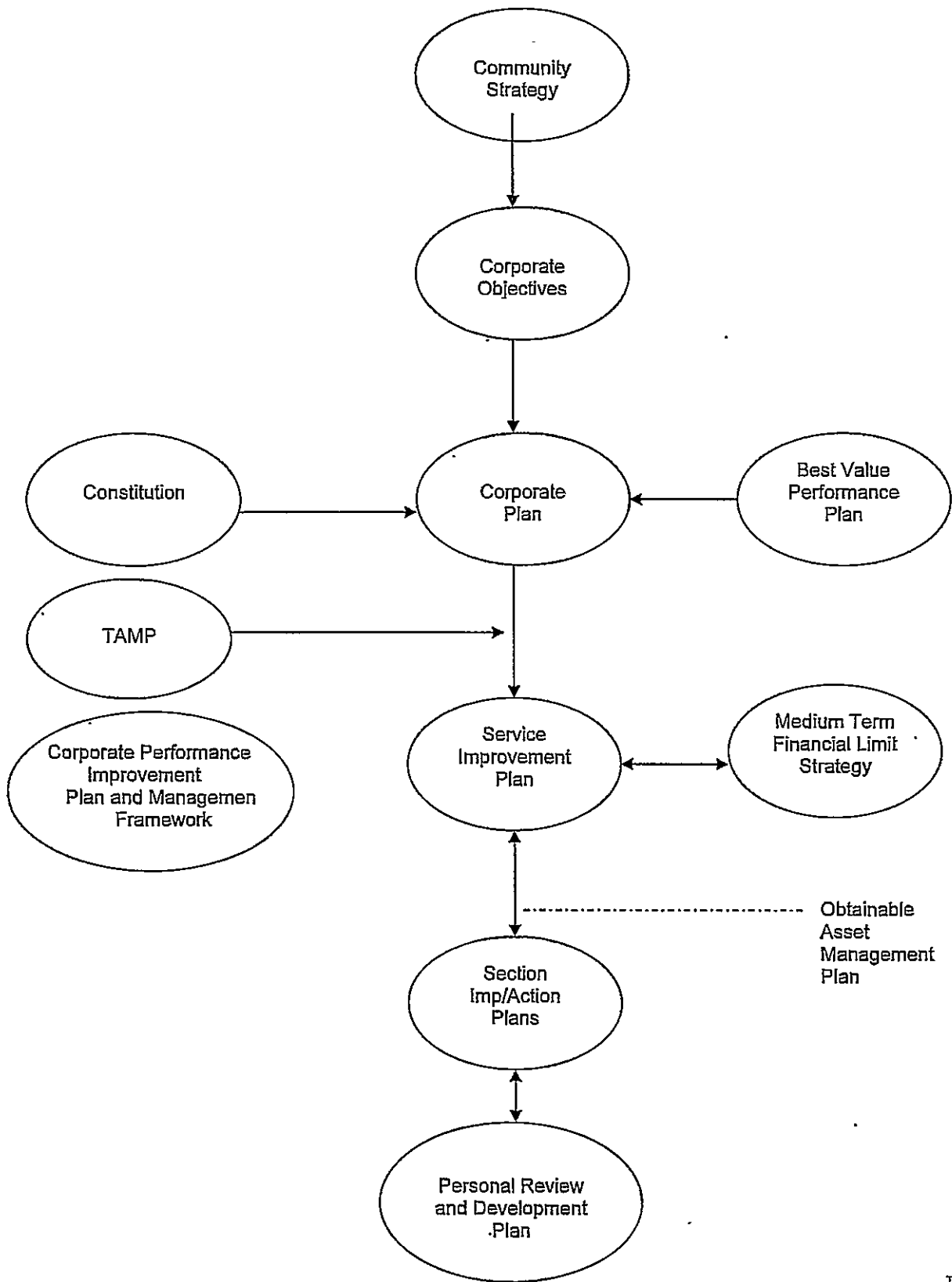
- Reactive maintenance (pot hole and patching)
- Cyclic maintenance (gully cleaning etc)
- Routine street lighting maintenance (outages etc/clean and block change
- Replacement and maintenance of street furniture
- Enactments - permits such as road opening notices, skip permits
  - obstructions on the highway
  - vehicle crossings
  - statutory undertakers co-ordination

The Strategic Section is responsible for the Asset Management Policy, strategy, procurement, project management

- Planned structural maintenance
- Highway improvement schemes
- Development schemes
- Preventative maintenance schemes
- Traffic safety schemes
- Quality bus corridor schemes
- Traffic calming schemes
- Highway and Traffic Input into planning

"The Golden Thread"

Figure 2.8 - Flow Chart demonstrating how objectives, strategies and action plans feed into each other throughout the organisation



## Chapter 3 - Levels of Service

Levels of service form a key part of an asset management plan. In order for an asset management plan to be successful, it is vital to have defined levels of service that clearly reflect users and stakeholders demands and expectations for each asset group, balanced with the cost of providing the specified level of service. The levels of service also take account of the statutory duties of the council as a highway authority and the authority's strategic transportation goals.

The County Surveyors Society (CSS) framework for asset management describes levels of service as:

"The quality of services provided by the asset for the benefit of customers. They are composite indicators that reflect the social, economic and environmental goals of the community. Levels of service are therefore the manner by which the highway authority engages with the customer and are about reflecting the customer's interests in terms that can be measured or evaluated."

Alternatively, levels of service are defined as:

"The defined service quality for a particular activity or service area against which performance may be measured."

Levels of service can relate to any or all of the following; quantity, quality, responsiveness, reliability, environmental acceptability and cost and are developed from both asset condition (existing/desired) and demand aspirations i.e. what the asset is expected to deliver both now and in the future.

**Attainable Service Level** - A service level that re-interprets the optimum service level in the light of available funding.

### Service Options

A list of generic Service Options have been identified for use within this plan, and these will be developed, over time for each asset group as the data, funding and performance measures become available to do so.

It is anticipated that these Service Options will be used to develop detailed levels of service for each asset on an annual basis. This information will form a report for the Senior Management Team and Executive Member for Technical Services which demonstrates the predicted levels of service, risk and cost for each asset group to enable informed choices about service levels to be made.

The Council have opted initially to use five service options as listed below:

- Statutory minimum – activities and funding requirements to fulfil statutory duties for each specific asset.
- Steady state of performance – activities and funding requirements to maintain the current level of performance, also considering past and predicted increases in asset base over the coming years.
- Current funding – levels of performance that will be achieved if there are no funding increases, also considering past and predicted increases in asset base over the coming years.
- Acceptable minimum – the minimum level of service that could be provided, and still meet statutory requirements, recommended actions from codes of practice and recognised best practice.
- Enhanced – funding and activities that are required in order to achieve an upper quartile BVPI score for the asset group (where assets have a BVPI measuring condition), or other measurable enhanced performance.

The service options above have been used to put together specific levels of service for each asset, for each of the options above. These levels of service can then be measured using appropriate performance measures.

Alternative levels of service will also be evaluated using a number of different criteria. These will include:

- Economic implications – whether the change will provide potential cost savings or achieve better value for money (life cycle/whole life costing).
- Political influences – the effect of initiatives and requirements from Central Government.
- Customer desires and expectations – to assess whether the change in service level will meet or exceed customer expectations, or have a negative effect both immediately and in the future.
- Policy and legislation – whether the proposed change meets statutory requirements or requires a change in policy.

## Use of levels of Service

Levels of Service describes the quality of services provided by the asset for the benefits of the users

Levels of Service are a way in which a highway authority can determine whether or not it is meeting current "customer" expectations, future "customer" expectations and its statutory obligations in the delivery of its highway services. They enable the Highway Authority to:-

- Document and measure the service provided
- Rationally evaluate service versus cost trade-offs
- Determine if adequate consideration is given to what is important to the "customer"
- Establish if operational activities support the achievements of strategic goals

Levels of Service can be categorised as either:-

- Condition Assessment – preservation of the physical integrity of the asset
- Demand Aspirations – The service delivered by the asset in terms of its use, generally expressed in terms of safety, accessibility, integration etc. such measures recognise that the asset provides a service to customers by enabling them to travel.

### 1. Customer expectations

Service levels are defined in this initial TAMP based on condition only

- BVPI targets (for example 224(b) % of urban unclassified roads requiring major intervention (works))
- Description for example "No further deterioration of the highway infrastructure"
- For cyclic operations – No. of times operation c/o per year.
- Reactive maintenance – time before repair
- Description based on customer expectation 'perceived' condition

Development of Defined Service Levels

- The community strategy the corporate, objectives whilst supporting an improvement in the condition of the highway infrastructure do not clearly identify or define the level of service desired (Appendix C). One of the actions in the action plan outlines the necessity to address this issue.

## 2. Legislative requirements

Where applicable, legislative requirements have been incorporated into the levels of service and identified as the statutory minimum requirement to maintain the asset. Legislation most relevant to the highway asset are:

- **The Highways Act 1980** states that the local authority has an absolute duty to maintain the highway pursuant to Section 41 of the Highways Act 1980. There is a special defence under Section 58 of the act, which does allow the authority to defend actions arising from accidents caused by the condition of the highway, where the authority can demonstrate that it acted reasonably. This requirement (to demonstrate reasonable action) supports the use of an asset management approach; this enables the authority to demonstrate that it has taken every reasonable action taking into account, risks, budget and priority based upon needs of the overall groups of highways & transportation assets to maintain the highway to the best of its ability.
- **The Traffic Management Act 2004** requires the authority to "secure the expeditious movement of traffic on their road networks" and also to facilitate the expeditious movement of traffic on other authorities' road networks. The act also stipulates other requirements such as the appointment of Traffic Officers to help deal with minor incidents and keep traffic flowing as freely as possible. By satisfying the requirements of this act, the authority needs to balance carefully the requirements of this act with the asset management approach, as to achieve the objectives of the Act may require the authority to carry out works not in the most cost effective manner.
- **The New Roads and Streetworks Act 1991** requires the local authority to control and co-ordinate road works on the network, as well as identifying traffic sensitive routes and structures of special engineering difficulty. Any works carried out on the highway must be reinstated and maintained by the organisation making them, and not the local authority. As with the Traffic Management Act 2004, the effects of this legislation also have to be carefully balanced with the asset management approach to ensure that the requirements of the legislation are achieved whilst still achieving elements of the asset management approach.
- **The Road Traffic Act 1988** requires the local authority to have in place and implement a program to promote road safety, including contributing to the cost of road safety measures, investigating accidents and taking any necessary remedial measures, including training, distributing information and advice on the use of roads, the construction, improvement or repair of roads for which they are responsible. When constructing new roads, appropriate measures should be taken to ensure that the roads, when they open, have suitable measures in place to help to reduce the possibilities of accidents. The recommendation and installation of road safety measures impacts on the asset in terms of adding to the asset and future maintenance spend.

- **The Road Traffic Reduction Act 1997** requires each local authority to prepare a report detailing levels of local traffic in the area and forecasts of anticipated growth levels. The report should also contain targets and plans for reducing levels of local traffic and reducing growth of local traffic. These targets can differ for different areas of the authority's area for different classes of local traffic. This approach will have a beneficial effect on the asset management, as the report will contribute to traffic forecasting and future deterioration modelling and so therefore will aid in the planning of maintenance and funding requirements.
- **The Transport Act 2000** requires local authorities to develop policies for the promotion and encouragement of safe, integrated, efficient and economic transport facilities and services to, from and within their area as well as carrying out the necessary actions to fulfil these functions. This act also requires each local authority to formulate their own local transport plan which contains the above policies. For Trafford, this has been achieved, and the second local transport plan is now in place. Any proposed changes to the way in which works are programmed or carried out because of the adoption of an asset management approach will need to be programmed in a complementary manner to the LTP, and vice versa.
- **The Rights of Way Act 1990, and the Countryside and Rights of Way (CRoW) Act 2000** collectively these acts stipulate the Borough's responsibilities for Public Rights of Way, such as the duty to erect Public Rights of Way (PRoW) fingerposts where the route joins/leaves the metalled highway. Responsibilities for landowners and farmers are also set out in the legislation in relation to the disturbance and reinstatement of cross-field Public Rights of Way, duty of care and maintenance of PRoW furniture (stiles, gates etc). Further powers of enforcement and a duty to take action in the case of a failure to comply with these legal requirements are also bestowed on the Highway Authority under these acts. The Disability Discrimination Act 1995 in conjunction with the CRoW Act 2000 places further duties on the Highway Authority to improve access for all. This has led to higher installation costs for DDA approved PRoW furniture or upgrading of bridges to facilitate disabled access. In addition future maintenance costs are likely to be higher. These will be the responsibility of the Council rather than the landowner.
- **The Crime and Disorder Act 1998** states that it is the responsibility of each authority to exercise its various functions with due regard to the likely effect of those functions on, and the need to do all that it reasonably can to prevent crime and disorder in its area. Under this act, authorities are also required to put into place a strategy for the reduction of crime and disorder in their area. This may have an effect on asset management because some measures may need to be put into place which, again may not be to the best benefit of an asset management approach.



- Local Government Act 1972 allows the transfer of street lighting functions from the Highway Authority to a Lighting Authority (this includes a Council or other body authorised to provide lighting under the Public Health Act 1875 or the Parish Councils Act 1957). This Act would potentially allow the transfer of lighting powers (i.e. ownership) from the Council to a District or Parish Council. This would impact on the Council by eliminating the requirement for maintenance for those assets that were transferred.
- Disability Discrimination Act (DDA)1995 has implications for a number of asset groups, listed below:
  - Public Rights of Way – the above legislation has stipulated that PRow must be more accessible. This is being implemented via the Rights of Way Improvement Plan, and will have maintenance and management implications, for example, preferential use of kissing gates, which are more expensive to install and also to maintain.
  - Passenger Transport – the raised kerb programme is in response to the need to make passenger transport more accessible.
  - Traffic Control Information Systems – The DDA requires pedestrian crossings to have DDA compliant facilities, such as tactile paving and audible signals. Ultimately, all of these additional facilities do require an increased maintenance allocation in order to ensure that the elements of the asset are in good working order and that the functions of the asset can be fulfilled.
  - Structures – the legislation requires structures to be fully accessible.

### **3. Council mission and objectives**

The Council mission and objectives (community objectives, corporate objectives etc) are reflected in levels of service decisions, prioritisation and target setting.

### **4. Best practice guidelines**

Best Practice Guidelines can be comprised of elements of the following; recommendations from relevant Codes of Practice and generally accepted best practice established by peers. Where Best Practice Guidelines are in existence, these have been used to inform the level of service options that have been identified by forming part of the acceptable minimum level of service. Whilst best practice guidelines are not a statutory requirement, they do represent a standard of accepted good practice, and may also assist with defence against any liability claims.

**5. Affordability**

Affordability has been assessed by determining how long the current level of service can be sustained should there be no increase in funding from that allocated in 2006/07. Where there is good data for an asset, such as street lighting, it has been possible to identify how long the statutory requirements for an asset could be upheld, and what elements of maintenance work would not be carried out as a result of lack of funding. Where this data is not available, general assumptions have been made based upon knowledge and experience.

**6. Availability of resources, skills and appropriate delivery mechanisms**

The availability of resources has been considered in relation to existing highways and transportation staffing levels by external consultants Kendric Ash

## Key points from Levels of Service Documents

The level of service documents that have been formulated for this Transport Asset Management Plan highlight a number of key issues which are summarised by asset groups in Table 3.1 below.

It is important to note that this data results from an initial assessment of funding gaps and in most cases, with the exception of carriageways and footways, the funding gap identified is based on assumptions made using officer knowledge and experience, and sample data. This is due to the current lack of data or measures to assess condition and performance of the assets. Further refinement and collection of data to establish levels of service is required in order to carry out a thorough investigation in relation to the effect of spend to save on the asset and the adoption of a value management approach before clear funding gaps can be identified and a case for additional funding made.

### (a) BVPI level of service

Asset group	Current Level of Service 2006/7	Activities currently below desired level of service 2006/7	Desired Level of Service	Initial assessment of indicative funding required to achieve acceptable minimum level of service Q32005
Carriageways	BVPI 187- 18 BVPI 223- 15 BVPI 224a- 20 224b- 12	Yes See Note See Note Yes	187- 8% 223- 61(1)* 224a- 82(2)* 224b- -	£150K - - £8m (3) *
Footways	CVI- 31.4(5)*	Yes	- 8%	£19m (4) *
Structures	-	-	-	-
Street lighting	BVPI 100 BVPI 215a BVPI 215b S 3/1 S 3/2	Yes		£4,182,345

### (b) Level of Service based on maintaining existing condition "steady state"

The funds require are detailed in Chapter 11

### (c) Level of Service based on customer expectation

Development of the ..... to determine customer expectation will be undertaken in 2008/9

#### Notes

- \* (1) } Desired level of service is 8% based on CVI's i.e. 8% of the network in need of  
} major intervention. (The relationship between scanner values
- \* (2) } and CVI values are currently being researched by DfT and Roads Board
- \* (3) } Based on the whole life cycle methodology, (not valuation methodology)
- \* (4) } Based on the whole life cycle methodology (not valuation methodology)
- \* (5) } Assumed future used by all GM authorities prior to detailed information

Asset group	Current Level of Service	Activities currently below desired level of service	Desired Level of Service	Initial assessment of indicative funding required to achieve acceptable minimum level of service
Traffic Control Information Systems				
Public Rights of Way				
Soft estate				
Safety cameras				
Vehicle restraints				
Pedestrian barriers				

Asset group	Current Level of Service	Activities currently below desired level of service	Desired Level of Service	Initial assessment of indicative funding required to achieve acceptable minimum level of service
Cycleways	LTP10 & (BVPI 178) NI 168 (BVPI 223) NI 169 (BVPI 224a)	Yes	95% by 2011	
Highway Drainage				
Signs				

*Table 3.1 Summary of key issues relating to current levels of service and additional funding required to achieve an acceptable minimum level of service.*

## Gaps in knowledge about the current level of service

For some asset groups, there is currently little or no information held making it difficult to review the current level of service and identify any known gaps. Appendix B contains a data inventory; however, missing elements impacting specifically on levels of service are listed below

- Cycleways – There is no robust condition and performance data to assess cycleways and inventory data is also incomplete. However, a survey will be carried out in 2008/9 to provide a coarse inspection and evaluation of cycleway condition
- Drainage - currently there are no measures to assess condition and performance of the asset other than local knowledge and reports from the public
- Vehicle restraints - there are no measures in place to assess condition and performance of this asset group.
- Structures - condition indicators are currently under development, however, inventory data for this asset group is also incomplete (see Data Management Strategy – Chapter 6 for further details). This data is of particular importance to help identify levels of service as well as being able to establish an accurate forward works programme and valuation
- Passenger Transport Infrastructure - currently there are no condition or performance measures in place. However, the infrastructure condition impacts on the BVPI and other indicators measuring bus passenger numbers and bus passenger satisfaction.
- Pedestrian barriers - currently there are no condition or performance measures in place for this asset, in addition, there is no policy on provision and siting of pedestrian barriers, and an incomplete data inventory.
- Soft estate – there are no condition or performance indicators for the soft estate There is also a lack of inventory information - virtually no inventory information is held for this asset group.
- Safety cameras - whilst the asset data for safety cameras is good, there are no overall condition measures in place for this asset.

The improvement action plan in Chapter 10 of this document proposes when and how these information gaps could be rectified.

## **Customer consultation on the service levels**

Public consultation on the service levels has not yet been undertaken. This is the first Transport Asset Management Plan that the Council has developed and it largely identifies the current extent and condition of the assets together with their current levels of service. It also formalises the Council's plans regarding future demands for the assets, together with the resultant improvement actions required to achieve them. It was therefore thought to be more appropriate that consultation with the public should take place once the improvement actions have been agreed and an updated and a more detailed Plan is being prepared.

## **Improvement actions**

- Fully develop levels of service for remaining assets (this will require existing policies and budget arrangements to be reviewed).
- Cost all the possible options for service levels for each asset.
- Prioritise data collection for the assets where level of service information is incomplete.
- Standardise and record inspection methods and categorisations within each asset group to help to measure levels of service consistently.
- Continue and expand consultation with the public to include questions relating to asset management and with particular regard to levels of service.

## Key points from this chapter

- Significant progress has been made with the development of Levels of Service; particularly for carriageways and footways, and street lighting.
- Levels of service have been developed taking into account relevant legislation, customer expectations, accepted best practice, policies and procedures
- Levels of service will be developed further in the future for more asset groups as inventory and condition data becomes available
- The cost of bringing carriageways and footways, structures and public rights of way up to the acceptable minimum level of service is to be calculated during the 2009/10 year.
- All financial figures quoted are estimates only and further refinement and collection of the data is required in order to carry out a thorough investigation in relation to the effect of spend to save on the asset and the adoption of a value management approach before clear funding gaps can be identified and a case for additional funding made.



## Chapter 4 - Lifecycle Maintenance Plans

Lifecycle plans are used to document how an asset is managed during each phase of its life and to identify current and future needs in relation to future demands and anticipated funding requirements.

Highways and transportation assets covered in this plan have been grouped as follows:

- Carriageways and footways
- Structures
- Street lighting
- Pedestrian barriers
- Vehicle restraints
- Cycleways
- Public Rights of Way (PRoW)
- Drainage
- Soft estate (trees, hedges, verges, planted areas)

### Types of Maintenance

There are a number different types of maintenance required to ensure the day to day functioning of the network and the sustainability of the network.

- Whole life maintenance – (based on whole life costing to minimise costs over the life of the asset this is concerned with the basic infrastructure, footways, carriageways, bridges and retaining walls. This involves the production of a maintenance profile for the asset which involves "early intervention" of low cost treatments which ensures the asset lasts longer "a stitch in time saves nine approach". A good example of this is the use of surface dressing/slurry seal to increase the time before costly major intervention is required.
- Maintenance of items which deteriorate over time at a steady rate and have a readily identifiable service life. For example street lighting or expansion joints on bridges or street furniture.

- Maintenance of traffic safety and traffic calming measures If this maintenance is not carried out there is an immediate safety and amenity loss It does not however increase the whole life costing to maintain the asset In fact costs in net present value terms are reduced if maintenance is delayed An example of this would be delaying the repair of an illuminated sign. This has no effect on the long term asset but does reduce the safety and the amenity

- Cyclic maintenance

Gully cleaning

Street lighting clean and block change

Illuminated signs clean and block change

Trees and weeds

Verges

- Repair to damaged infrastructure other than traffic safety or traffic calming measures An example would be litter bins, benches, and other street furniture. If this maintenance is delayed, it does not increase the whole life costing

- Reactive Maintenance

Intervention to ensure the highway network is safe. An example being pot hole and patching of the carriageway and the repair of street lighting outages

#### **Highways Structural Maintenance and Preventative Maintenance Lifecycle Plan**

- A maintenance profile is required which outlines a number of early interventions of minor treatments such as surface dressing to delay the requirements for more major costing treatments. See Appendix B
- This profile takes into account the theoretical life span of the materials used modified to take into account low traffic volumes on estate roads, based on engineering judgement and local experience

#### **Highway Structures and Bridges Life Cycle Plan**

- A maintenance profile is required for preventative maintenance such as silicon and pointing, cathodic protection and replacement of major components such as the bridge deck, etc.
- However the replacement of bearings and expansion joints and painting are assumed to be replaced in accordance with manufacturers anticipated life span.

### **Street Lighting Columns (Design Life)**

- The asset value and the costs to maintain the asset are based on the manufactures recommended life, modified by a painting regime which it is assumed will extend the life from 25-40 years.

### **Traffic Calming Measures/Design Life**

- The asset value and costs to maintain the asset are based on the design life of 50 years.

### **Other Items (Design Life)**

- Generally based on manufacturers design life or design life based on experience.

## **Inventory data**

A full inventory of the data held on each of the assets is contained in Appendix B of this report. The information is listed by asset group, and contains data, category of data and confidence level, collection frequencies and data usage.

The confidence levels in the inventory data held varies, according to the method of collection and age of data. In addition, surveys that are carried out annually are generally more reliable than those carried out on an ad hoc or infrequent basis.

## Asset Condition

Life cycle plans rely on knowledge of the asset condition, this determines when intervention is required.

Condition data for the asset groups is collected and assessed using a number of different surveys

The table below shows how condition is assessed for each asset group:

Asset Group	Repeatable Survey	Subjective Survey	Condition reported by exception (faults only reported)
Carrageways 'A'	Scanner	-	-
'B' & 'C'	Scanner	-	-
Unclassified		CVI	-
Footways		CVI	
Structures		Bridge Inspections	Bridge Inspections *
Street lighting Coloured	Standard test procedure		
Street lighting – electrical	Electrical Test Certificate		
Street furniture	-	-	Yes
Public Rights of Way	BVPI 178 type	Ramblers groups Local access forum	Yes – general public
Traffic Calming Measures			
Safety Cameras and Traffic Information Systems			

\* Subjective surveys are carried out which are repeatable in theory although there is a variance of up to 20% Emphasis is on faults but condition is also assessed.

Asset Group	Repeatable Survey	Subjective Survey	Condition reported by exception (faults only reported)
Soft estate			
Pedestrian barriers			
Drainage			
Vehicle restraints			
Signs and bollards			
Cycleways	Scanner (for highway based cycleways)	Ramblers Transpennine Trail Rangers Sustrans Rangers Cycle Forum Members	Yes through Trafford Direct and 'Fill That Hole' website

*Table 4.1 Summary of condition data assessment methods, by asset group*

Although it would be ideal to have condition data for all assets, the costs associated with the collection means that any additional data collection needs to be carefully reviewed in accordance with the priorities set in the Data Management Strategy (Chapter 6).

In 2005/06, the Public Rights of Way Improvement Programme was introduced and will capture various elements of information for this asset group, such as surface type and category of path, over a three year period. This programme also includes the identification and completion of required maintenance works, for example way marking of routes, and clearance of routes to make them accessible. Major maintenance requirements such as surface drainage works and bridge replacements, are identified and recorded for programming by the Public Rights of Way team at Waterside.

A survey to establish the condition of the most frequently used cycleways in Trafford is currently being undertaken and it is anticipated that this will be repeated on a regular basis. This survey will give similar results to DVI surveys carried out on footways.

The soft estate, pedestrian barriers, drainage, vehicle restraints, signs and bollards currently do not have any regular condition surveys and therefore, we hold no condition information. As a general rule, condition of these assets is reported by exception, for example if a tree falls down, or if a road floods this would be brought to the attention of the Council.

Desired condition targets for carriageways and footways have been identified for the whole of the period of the second LTP up to 2010/11. These targets relate to the overall condition of the carriageway and footway, and are either Best Value Performance Indicator (BVPI) targets or Local Trafford Council Indicator (TC) targets. These are tabulated below:

Asset Group	Survey Type	2005/ 2006	2006/ 2007	2007/ 2008	2008/ 2009	2009/ 2010	2010/ 2011
		Outturn	Target Set	Target Set	Target	Target	Target
Principal Carriageway	Scanner	N/A	15	14	(To be re-assessed)		
B & C Carriageways	Scanner	N/A	20	20	(To be re-assessed)		
Unclassified Carriageways	DVI	14.3	12	(based on 0.6% improvement per annum)			
Category 1, 1(a) & 2 Footways	DVI		18	13	8	8	8

Table 4.2 Summary of desired condition targets for Carriageways and footways, 2005/06 – 2010/11

Condition information for Structures is now assessed using Bridge Condition Indicators. The calculation of these indicators is a complex process, and further guidance on the calculation of Bridge Condition Indicators can be found in Bridge Condition Indicators (July 2002) volumes 1-3, County Surveyors Society reference documents.

In 2009-10 Trafford will present the condition of its bridge stock in this format and will be based upon one full inspection of the bridge stock. The data shows that 10% of the Borough's bridge stock is in very good condition, with insignificant defects or damage, 65% in good condition, with minor defects and/or damage and 20% in fair condition with minor to moderate defects and damage. The remaining 5 % are in very poor condition with severe defects and damage. However, this data is based upon subjective assessments of condition. Potential issues have already been identified by Regional Working Groups regarding the subjective nature of these assessments, and work will be carried out by the regional group to address these issues in an effort to ensure a common approach and best practice across authorities.

The remaining asset groups have no targets set that relate to the condition of the asset. More detail on performance measures can be found in the Performance Monitoring *Chapter 8* of this document.

## Demand

Demand relates to what the asset is expected to deliver now and in the future.

Over the coming years, Trafford faces a huge challenge of increases in housing stock, as well as increased volume of traffic. Traffic counts are currently carried out in various locations across Trafford. The transport network is vital to the daily lives of the residents of Trafford so it is essential that it is able to cope with the demands placed upon it

There are some common themes to the future demands placed upon highway assets:

- Providing for population change – increases in housing stock
- Providing for changes in traffic flows and composition - particularly changes in volume of Goods Vehicles (GVs)
- Ability to cope with extremes of weather
- Meeting public need and perception of service (Customer surveys and focus groups will ensure that public needs are known when forming new policies and during existing policy reviews )
- Needing to improve condition to help meet accident reduction targets
- Providing for changes in economics and lifestyle e.g. internet shopping, businesses moving into Trafford
- Providing safe and reliable routes for all network users at all times
- Meeting targets that have been set for improved condition of the asset, such as achieving upper quartile position
- Changes in current levels of service offered to meet new legislative requirements such as the Disability Discrimination Act



## Chapter 5 - Asset valuation

- Valuation basis - Depreciated Replacement Cost (DRC)
- Admissible costs - Only costs directly attributable to the works. This excludes service diversions, feasibility, authorities programme management costs.
- Indexation of cost - Unit rates adjusted using an appropriate industry standard price index such as Baxter.
- Modern Equivalent Asset (MEA) - Same potential performance but modern construction design. In cases where the existing is not of the required standard to take the required loads etc. then the Gross Replacement Cost (GRC) is calculated on the basis of the MEA which meets current requirements.
- Assets Under Construction - Value pro rata the % completed at time of valuation.
- Heritage Assets - It would not be appropriate to value these using modern equivalent (MEA) because this would not reflect the cost to the authority to maintain.

### Proposed Basis of Valuation

- Assets are valued on the basis of Depreciated Replacement Cost (DRC). As proposed in the Guidance Document. (This method has yet to be agreed by external audit).
- Depreciated Replacement Cost (DRC) =  
Gross Replacement Cost (GRC) – Depreciation & Impairment.
- An initial valuation of the highways and transportation asset, for where data is available, has been completed. Asset valuation is the representation of the value of the road network in monetary terms but it makes no attempt to ascribe a value to the economic benefit of the road network i.e. the value to society in terms of enabling people and goods to travel.

## The Valuation Method

The 9 Highway Maintenance Authorities in Greater Manchester meet together under the auspices of the GMADE Highway Maintenance Sub-Group

The C C S. Guidance document recommends that the "rates" used are based on recent contracts and that common rates are used for regions. Hence it must be accepted that the rates will be an average. Most of the G.M. Authorities have either term contracts/framework agreements for planned structural maintenance and it was decided to use these rates and averages then as the basis to be used by all the GM Authorities

- Common construction rates were agreed
- Common construction materials and thicknesses of materials were agreed for different classes of road
- Common street furniture, carriageway markings, drainage etc. was agreed for each category of road.

## Depreciation

- a Conventional method has been used where components have readily identifiable service life, (finite life) and are routinely replaced at the end of their life (straight line depreciation)

### Used for

- Highways lighting
- Street furniture
- Off highway drainage
- Traffic management systems

- b Renewal accountancy used to estimate depreciation where the infrastructure is maintained at a specified level of service by the continued replacement and refurbishment of its components (the level of annual expenditure required to maintain the level of service of the infrastructure is calculated from the life cycle/whole life costing) (Used where service life >50 years i.e bridges).

The level of annual expenditure to maintain the level of service of the highway infrastructure in "steady state" identified in the life cycle plan is treated as the depreciation charge and provided this level of expenditure is spent there will be no change in the net book value

Renewals Accountancy used for:-

Roads  
Structures

## Highways Depreciation

The guidance document refers to treatments in condition bands. It also states that a more refined approach is to base the calculation on condition, maintenance works needed and the associated cost of each individual asset/component.

There are no direct measures other than course visual inspection (CVI) or deflectograph to identify the condition of the highway, and all this identifies is the areas of highway requiring major treatment or having zero residual life.

Hence, it is proposed to use a theoretical maintenance profile of a mixture of minor treatments and interventions i.e. slurry seal, surface dressing, plane and resurface wearing course, and major treatment. The cost of the major treatment being modified based on actual-works carried out over the last few years.

The reactive maintenance does not add to or improve the state of the asset. Whilst it is an inevitable consequence of the overall condition of the highway, it is not intended to include this cost as part of the renewals accountancy process. The monies required per year to maintain steady state is based on 8% of roads always requiring major treatment (or at zero residual life) 8% figure based on DfT advice given 3rd September 2003.

## Structures Depreciation

Proposed calculations of D.R.C. for Highway Structures (considered Indefinite Life – no depreciative cost is made on the grounds of the length of design life i.e. 120 years).

Conventional - expansion joints  
Method       - bearings  
                  - painting

Renewal Accountancy Method – all other structural elements

## Traffic Management Measures (TMM) Depreciation

Proposed calculation of D.R.C. for traffic calming measures is the conventional method.

The TMM are considered as variable life items having a life of less than 50 years.

## Street Lighting

D.R.C. calculated using a time based maintenance approach based on the manufacturers estimated service life of the column (modified by protection due to a painting regime).

Assumes linear depreciation.

## Impairment

Impairment will be considered an unforeseen decrease in the condition and/or performance of asset (for example due to flooding)

## Land

It is not proposed to include in the highway asset valuation report land associated with the highway.

## Gross Replacement Cost (GRC)

Firstly an assessment is made of how much it would cost to build a completely new asset. This is known as the Gross Replacement Cost (GRC). The GRC is a theoretical value calculated by working out how much it would cost to build a modern equivalent of the asset in replacement for what currently exists including design costs. It will be a large figure which reflects the scale of the asset and the fact that the road network may be the most valuable asset the Council owns.

The initial assessment of Gross Replacement Cost (GRC), for highways assets (excluding land and buildings) where data is available, has provided a GRC value of £840 million (Highways/Street Lighting/Street Furniture). This means that the Council is responsible for a transportation asset potentially worth in the region of £840 million should it be in 'as new' condition.

Note above excludes bridges and structures

## Depreciated Replacement Cost (DRC) [Cost to replace the asset as it currently stands]

DRP = GRC – Depreciation and Impairment

The calculation of DRC has enabled the identification of assets that are close to the end of their expected lives and so have an increased risk of failure. It should be noted, however that this figure does not take into account the actual condition of the asset, and assumes that the service potential is consumed equally over time.

The initial assessment of Depreciated Replacement Cost (DRC), for highways and transportation assets (excluding land and buildings) where data is available, has provided a value of £704m for Highways/Street Lighting/Street Furniture

Note above excludes bridges and structures

## Annualised Depreciation Charge (ADC)

The ADC represents the expected change in asset value in one year if no investment is made. Again this is a largely theoretical figure. Whilst more informative than the GRC or DRC the resulting figures need to be read in context.

The ADC is the most useful of the valuation outputs as it provides an estimate of the level of annual investment theoretically required to ensure that the asset value remains constant (steady state). The ADC is based on an accountancy, methodology and the "sustainable steady state annual budget requirement calculated using life cycle costing methodology will provide a more realistic valuation of the annual budget required to maintain the asset. It does not necessarily mean that it would be a wise or practical investment to spend that sum of money in the following year. Future asset investment decisions require a detailed assessment of the age and condition profile of the assets in question, decisions to be made about the desired condition (defining levels of service) and importantly assessment of the most economically efficient ways of delivering the chosen levels of service (i.e. whole life cost/value assessment).

The initial assessment of Annualised Depreciation Charge (ADC), for highways and transportation assets (excluding land and buildings) where data is available, has provided an ADC value of £7.7 million (Highways, Street Lighting and Street Furniture). This means that the Council theoretically needs to invest £7.7 million a year to maintain the highways and transportation asset at its current asset value.

Note above excludes bridges and structures

The values determined for replacement cost and depreciation will be updated on an annual basis. This will provide an indication of the effectiveness of policy decisions in the previous year.

## Valuation summary

In summary the asset valuation provides

- An assessment of the monetary value of the asset and thus will reflect the scale of the asset
- The ability to discharge anticipated future government reporting requirements (Whole of Government Accounts)

Asset Valuation will not provide

- A definitive figure representing what should be spent in any particular year.
- Meaningful assistance with determining best value solutions

**VALUATION AND BUDGET REQUIREMENTS  
AT COMMENCEMENT 2007/8**

<b>STAGE 1</b>		<b>(Q3 2005 Rates)</b>				
(In '000)	Highways	St-Lighting Illuminated poles and bollards	Bridge & Structures	Street Furniture	Traffic Calming etc.	Total
<b>Valuation (Methodology)</b>						
Gross replacement cost	780,042	48,974	210,000	10,206		839,222
Depreciation (conventional acc)	N/A			7,654		
Annualised – Depreciation (renewals acc)						
Analyses depreciation/conversion	6,231	1,245	4,000	237		7,749
Depreciation replacement costs 5% zero residual life)	682,182	19,687		2,552		2,552
<b>Whole life cycle methodology REQUIRED ANNUAL BUDGETS (Life cycle costs and replacement costs)</b>						
Sustainability steady state	4,971	1,245	2,000	[273]		6,489
Additional budget to meet BVPI						
223 (included in CPA)	322	-		-		
224(a) (included in CPA)	-	-		-		
224(b) 0.6% improvement/yr	1,193	-		-		
187 5% improvement/yr (included in CPA)	75	-		-		
Additional budget to meet community aspirations (over BVPI)	Not yet developed			-	-	
<b>Total</b>	6,561					
Using Life Cycle Treatment Rates. Cost to remove the Maintenance Backlog						
(a) Assuming 8% zero residual life)	27,248					
(b) Assuming 0% zero residual life	52,424					
NB. Required annual budget excluded reactive – pothole and patching budget but includes preventative SD/SS						

**NOTES**

- The Valuation is based on
  - 5% residual life
  - Theoretical costs using full reconstruction
  - Average GM fee level of 10.8%
  
- Required Annual Budgets based on -
  - 8% residual life
  - Average cost which modifies the theoretical cost based on historical data (full reconstruction not always carried out)
  - 10% fee

Table 5.1

FUNDING GAP					
	Highways	Street Lighting	Bridges & Structures	Street Furniture	Traffic Calming Etc
<u>Funding 2007/8</u>					
Capital	4,537	350	658	-	
Revenue	300	N/A	-		
Sub Total	4,837	350			
<u>Based on the Valuation Methodology</u>					
Depreciation (conventional accounting)	-				
Annualised Depreciation renewals	6,231				
Cost to remove backlog	91,629				
Cost to improve BVPI's	1,590				
	99,450				
Therefore funding gap 2007/8	94,613				
<u>Based on Whole Life Costing Methodology</u>					
Steady State Budget	4,971				
Cost to remove backlog	27,248				
Cost to improve BVPI's	1,590				
	33,809				
Therefore funding gap 2007/8	28,972				

Table 5.2



## Chapter 6 - Data Management Strategy

### What is data management?

Data management is the set of processes and procedures an organisation puts in place to ensure that its data is contributing positively to the organisation's aims. At its simplest level it is just good housekeeping – ensuring that data that is wanted is accessible when required and provided at a cost and quality that meets the organisations needs. Effective data management allows an organisation to make decisions based on information about the cost, quality and the benefits of data and most importantly, data management is about understanding data and turning data into useful information.

Effective asset data management will result in the availability of a stable, high-information resource and in more reliable, better-understood data. This, in turn, could provide hard financial benefits and quantifiable improvements in service delivery, as well as soft benefits. Data that is meaningful and relevant can form the basis of sound decision making and could contribute to cost savings.

Data management is a long-term commitment, and costs must be considered as a long-term investment.

### Existing asset data

A data inventory was carried out to assess the:

- Amount of data on the asset that currently exists
- Reliability and therefore level of confidence in the data
- Age of the data
- Data usage
- Data collection frequencies
- Updating arrangements and frequency of re-collection
- Current storage arrangements
- Format the data is stored in
- Data gaps

The detail from the data inventory can be found in Appendix B.

Some key assets such as carriageways and footways have robust data due to the requirement to collect and report on condition for statutory indicators. Other assets have little or no location or condition data

The key areas of spend are set out below

Asset and data collection survey type	Annual cost
Carriageways – CVI, SCANNER	£30K
Footways – DVI surveys + ukpms prioritisation + carriageway	£35K
Structures	
Cycleways	
Traffic Control Information Systems	
<b>Total cost</b>	

Table 6 1 Annual costs of data collection

In addition to the above costs, is the cost of data collection for street lighting, and for Public Rights of Way These costs have not been included in the table above, as they also include maintenance activities as well as surveys, and currently, it is not possible separate these costs.

Where there were data gaps data requirements were reviewed in terms of :

- Who needs to use or access the data
- What purpose is the data required for
- Is there a link with other asset data groups
- Whether there are any current access issues to the data
- What format should the data be held in for ease of use/access
- What coverage of the asset is required e.g 100% of the asset, specific geographical areas
- What would be the arrangements for updating the information and how often would new data need to be collected
- Who should be responsible for the data
- Data collection methodology

- Who could collect the data
- Data collection costs
- Data collection timescales

## 2. Data storage

Asset data is held in various formats as listed in the table below.

Asset group	Electronic system	Paper based storage
Carriageways and Footways	MARCH/Ukpms	-
Structures	Yes	-
Street lighting	Yes	-
Public Rights of Way	-	Yes
Drainage	-	-
Vehicle restraints	-	-
Cycleways	-	-
Pedestrian barriers	-	-
Soft estate	-	-
Passenger transport	-	-
Safety Cameras	-	-
Unlit signs	-	-
Traffic Control Information Systems	-	-

*Table 6.2 Summary of data storage arrangements*

The Council envisions that in the future data from separate systems will be layered onto GIS so that all of the data can be viewed at the same time.

## 3. Data collection

The completion of the asset inventory has also identified categories of missing data as detailed in the Data Management Strategy chapter of this Plan

A business case will be made for the collection of missing data that has been identified as a priority as it is required for statutory or health and safety reasons or for long term planning and programming, valuation or defending claims

#### 4. Ensuring data is kept up to date

Updating of asset data is currently led by the need to provide updated information for Best Value Performance Indicators on an annual basis. Further work is required to assess the best methods of ensuring each type of data inventories are kept up to date.

## **Methods used to prioritise data for future collection**

A level of priority for data collection, where data is not currently collected, was identified using the following factors

**Priority 1 (high priority):** Statutory requirement to collect data or Health and Safety impact

**Priority 2:** Data required for long term programming, defending claims, financial planning, asset valuation or prioritisation

**Priority 3:** Data required to support generation of income, local Highways and Transportation Performance Indicators, condition assessment or fault reporting.

**Priority 4:** Data required to update maintenance history, data for inspection history or improving issues of public concern/interest.

**Priority 5 (low priority):** Data for inventory and highway records

A report identifying data gaps for priority 1 and 2 data was taken to the Senior Managers and Service Director for consideration. The missing priority 1 and 2 asset data was further categorised as very high, high, medium or low to aid decision making on which data must be collected first.

Priority 1 data – data collection and costs

The following table shows the asset group, the data gap, proposed data collection methods and the estimated cost of data collection for priority 1 data:

Asset group	Data gap	Proposed data collection method	Estimated costs of data collection
<b>Very high priority</b>			
Vehicle restraints (safety fences)			
<b>High priority</b>			
Public Rights of Way			
Anti skid surfacing			
<b>Low priority</b>			
Highway drainage			

Table 6.3 Priority 1 data – proposed data collection methods and costs

Priority 2 data – data collection and costs

The following table shows the asset group, the data gap, proposed data collection methods and the estimated cost of data collection for priority 2 data

Asset group	Data gap	Proposed data collection method	Estimated costs of data collection
<b>Low priority</b>			
Pedestrian barriers			

Table 6.4 Priority 2 data – proposed data collection methods and costs

Proposed priority data collection

other items:

- skid resistance – condition
- Public Rights of Way – waymarkers and promoted routes, gates and stiles and signs and fingerposts
- Anti skid surfacing
- Pedestrian barriers – location, function, structural type and condition
- Highway drainage
- Red and green surfacing
- Traffic calming



## Improvement actions

- Prepare a business case for additional funding for asset data collection for vehicle restraints (safety fences), Public Rights of Way, street lighting, lit signs, trees and pedestrian barriers.
- Assess overall costs of asset data collection and review where savings could be made through changing the frequency of data collection, carrying out a sample survey only instead of 100% survey, assessing the level of quality or accuracy required or finding a more cost effective or innovative method for data collection.
- Develop a consistent approach to data management through clear process and procedure.
- Ensure data collection and analysis has clearly defined methodology statements and audit trails.
- Ensure that asset data is kept up to date and relevant.
- Be clear on the cost/benefit of data collection.
- Consider the long term storage needs for asset data, the interaction of systems where data is currently stored and cost of purchasing new Confirm modules.
- Measure both outputs and outcomes.
- Ongoing review and improvement of asset data.

## Key points from this chapter

- Some key assets have robust data whilst others have little or no location or condition data.
- The asset data collection costs will be calculated in year 2009 - 10
- A business case needs to be prepared to examine in detail the benefits of funding asset data collection for the following high priority data
  - Vehicle restraints (safety fences)
    - condition, fixing arrangement, post type and fixing
  - Public Rights of Way
    - waymarkers and promoted routes, gates, stiles, signs and fingerposts
  - Street lighting and lit signs
    - location of ECC owned electricity supply cables and supply points
  - Trees – condition and location
  - Pedestrian barriers – location, function, structural type and condition

## Chapter 7 - Risk Management

Risk is the likelihood that a potential event will lead to unintended effects which will impair our ability to achieve our objectives and risk management is a continuous management circle that involves identification of the risk, analysis, prioritisation, action planning, management and monitoring.

The management of risk is a key element in the management of highway assets. In order to manage a highway asset effectively, not only must value for money, sustainability and service levels be considered, but risk must be considered as part of the process when deciding a strategy for the management of highway assets. All activities from identification and prioritisation of repair of defects to the establishment of budgets have risks associated with them.

Risk management has also been brought to the forefront in the past few years as liability claims have increased and society has become increasingly litigious, with the possibilities of organisations being held accountable on counts of corporate manslaughter. On average the Council pay out £1.3 million in highway insurance claims each year for personal injury and vehicular damage each year. These elements further increase the requirements for a robust risk management regime.

The objective of applying risk management within the Transport Asset Management Plan is to identify the specific risks associated with the management and operation of the network and by doing so ensure that these are managed in a structured, appropriate and auditable manner.

The assessment of comparative risk is a key asset management tool. It can be used to assist with option appraisal and selection by providing assessment of:

- The comparative risks of providing differing levels of service.
- Whether it is acceptable to fund only a minimum level of service for a certain asset group.
- The comparative risks of funding works on one asset group compared to another.
- The comparative risk of funding improvements to the network as opposed to maintenance works. For example, to determine whether it is better to provide funding to increase the response times to defects in the carriageway or to provide new speed control measures.

## **The Council Risk Management Policy**

Trafford Council has a Risk Management Policy in place, different types of risk have been defined such as strategic and operational risks.

The risks identified within this Transport Asset Management Plan have been categorised and scored using a method which is aligned to the overall Trafford Council approach to risk management but has also been tailored to suit the asset management approach

### **Criteria for assessing the consequences (impact) of identified risks**

Although the impact of risks can be wide ranging, the following criteria were selected to assess the consequences of each risk:

- Health and Safety – the impact to users of the network if the identified risk should be realised
- Service Delivery – the impact on delivery of the specified service if the risk is realised
- Cost – the resulting cost to the council such as resulting liability claims.
- Reputation – the impact on the reputation of the Council if the risk is realised.

#### **1. Strategic**

Strategic and tactical risks have been identified for each functional group in Highways and Transportation in terms of delivery of service objectives. These are detailed in the Highways and Transportation Service Plan.

#### **2. Operational risk**

Operational risks have been identified for the purposes of this Transport Asset Management Plan. Assessment of these risks is based largely on professional knowledge and experience.

## Risk assessment and evaluation

The likelihood of identified risks occurring and the impact of the risk have been evaluated using the definitions in table 7.1 below and table 7.2 on the following page. This approach ensured consistency and a balanced view of the risks associated with the highways asset as a whole.

Likelihood	Risk score	Definitions
Very High	4	Likely to occur each year/greater than 60% chance of occurrence
Quite High	3	Likely to occur every 5 years/up to 40% chance of occurrence
Quite Low	2	Likely to occur every 10 years/up to 20%-chance of occurrence
Very Low	1	Likely to occur every 10+ years/up to 10% chance of occurrence

Table 7.1 Likelihood of risk occurring evaluation table

Impact	Risk score	Health & Safety	Service Delivery	Cost	Reputation
Disastrous	4	Fatality/ permanent disability	Significant adverse impact on customers > 1 month duration	Over £1m	Third Party Intervention Public Interest Report. Regional/national media (long term)
Serious	3	> 20 days absence for > 5 people.	Significant adverse impact on customers > 1 day duration	Up to £1m	Managed report to Corporate Management Team. Regional media (short term)
Moderate	2	Short term absence for at least 5 people	Significant adverse impact < 1 day duration	Up to £250,000	Managed report to management team. Local media coverage (medium/long term)
Minor	1	Short term absence for < 5 people	Significant adverse impact for customers < 1/2 day	Up to £100,000	Managed report to business unit. Local media (short term)

Table 7.2 Impact of risk occurring evaluation table