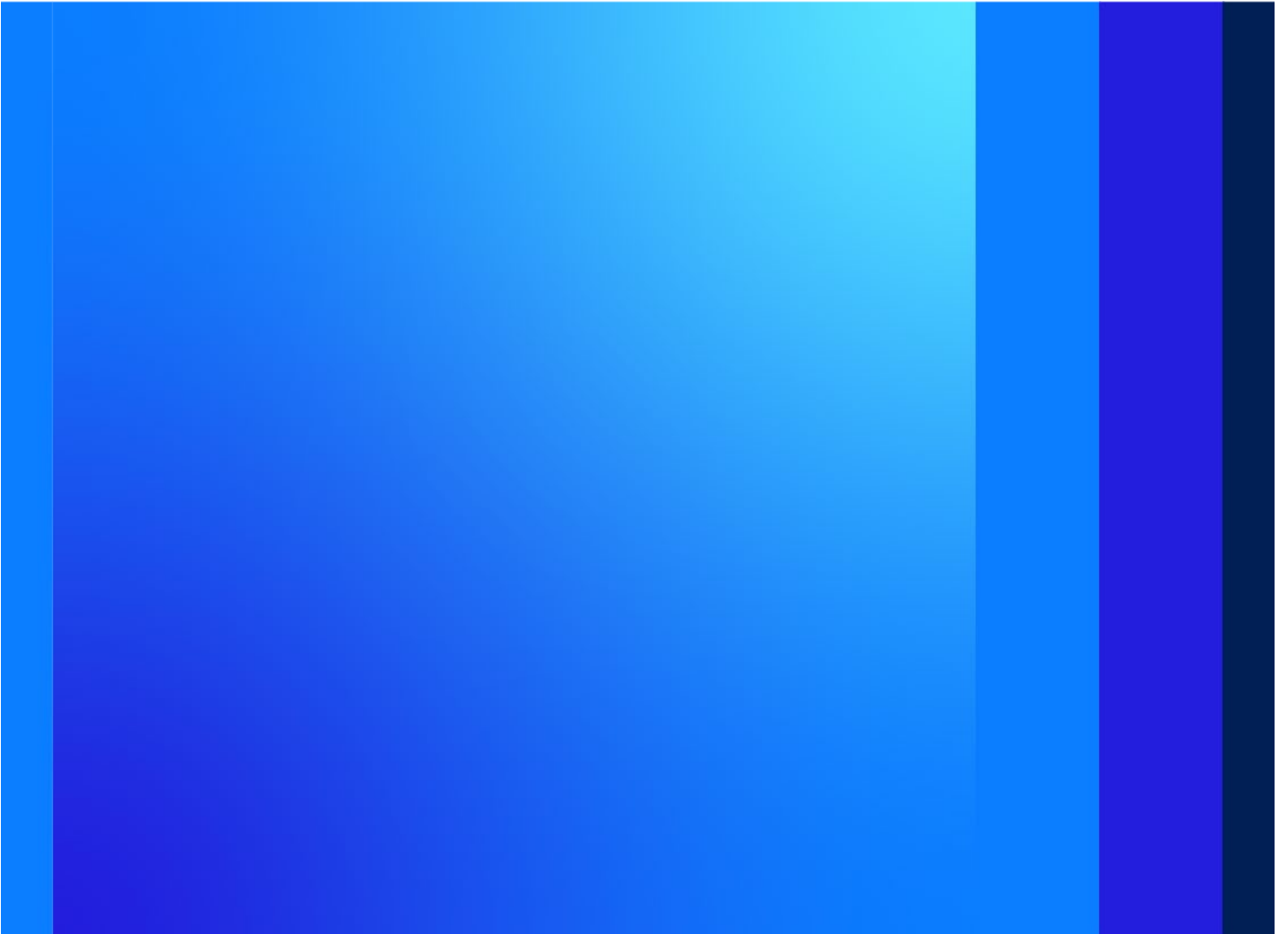


Commuted Sums Policy

Final Report
Bristol City Council



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1. Introduction

1.1 Purpose of the document

This document sets out the standards by which Bristol City Council (BCC) should approve materials used in the maintenance of adoptable highway assets and identifies those materials for which they can collect Commuted Sums for future maintenance activities.

It is intended to provide a transparent and consistent approach to the levying of Commuted Sums so that increased clarity for developers is provided, by enabling Commuted Sum requirements to be considered at an early stage.

It is acknowledged that there is not a 'one size fits all solution' when it comes to which materials/detail to use for different features, so it is accepted that developers will in some cases wish to use non-standard materials. Where these non-standard, or 'enhanced' materials are intended to be used, there will as a result be an increased maintenance burden on BCC for which a Commuted Sum will need to be collected.

1.2 What are Commuted Sums?

Commuted sums can be defined as:

"A payment of a capital sum by an individual, authority or company to the highway authority, local authority or other body, as a contribution towards the future maintenance of an asset to be adopted or transferred" (County Surveyors' Society (CSS)¹, 2008).

The payment of a Commuted Sum will form part of the final certificate, and once issues will have the effect of relieving a developer or owner of an asset of any future maintenance responsibility for the adopted assets. As a result, any obligations and associated risks will then lie with the adopting party to maintain the asset. Payments of Commuted Sums are often not restricted to a single payment and can take the form of a series of payments where relevant agreements are in place. It is also noted that the use by the adopting authority Commuted Sums is not limited to maintenance and can include inspection, repair and relocation of an asset.

The typical procedure followed for charging Commuted Sums is shown in Figure 1. This demonstrates the steps between the initial discussions with developers and local authorities and the issue of a final certificate.

1.3 Background

BCC, as the Highway Authority, has a statutory responsibility for the maintenance and management of adopted highways in Bristol. As well as highway surfacing, this responsibility also includes the structure and fabric of the highway.

When BCC enters into a Section 278 or a Section 38 Agreement (both explained in Chapter 2) with a developer, and the terms of the Agreement have been complied with, BCC then assumes the full responsibility for the maintenance of the highway assets constructed, which can entail potential liability in the event of any failure to meet the requirements of this statutory duty.

Whilst BCC has collected Commuted Sums previously, discussions have historically taken place with developers at different stages of the process. The purpose of this new policy is to provide a means of identifying which assets are defined as 'standard' and, as such, will not attract Commuted Sums, and which assets are classed as 'enhanced' or 'non-standard' and will generate a requirement for Commuted Sum payment for future maintenance.

¹ Former name of the Association of Directors of Environment, Economy, Planning and Transport (ADEPT).

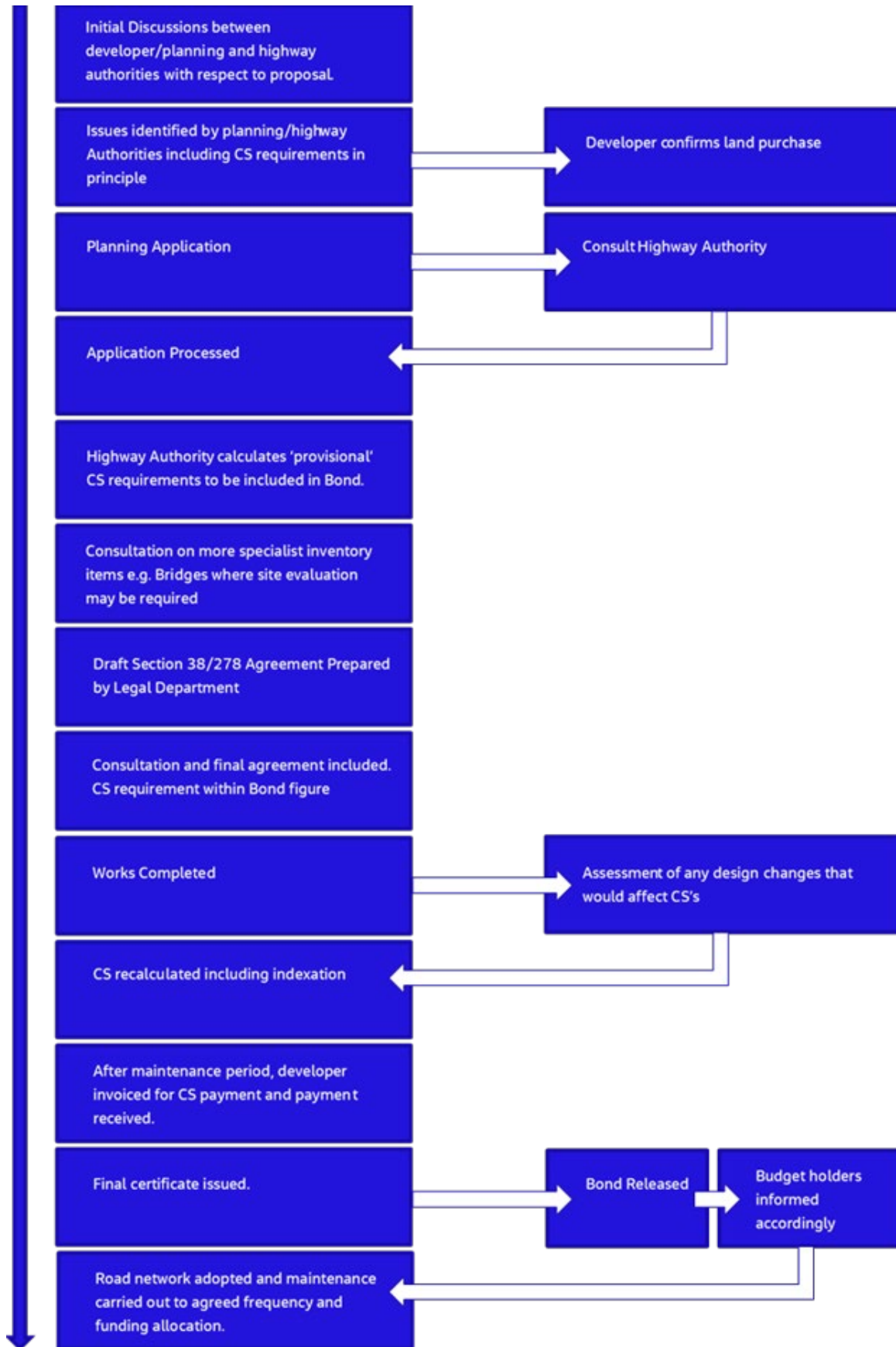


Figure 1 - Commuted Sum procedure

2. Legislation and Policy Framework

2.1 Introduction

This chapter sets out current policy and legislation that are relevant in relation to the adoption and future maintenance of assets, Commuted Sums and the suitability of the materials used. This document is intended to be read alongside the legislation and other documents reviewed in this chapter.

2.2 The Highway

It is important to identify what is meant by 'the Highway'.

For the purposes of adoption, the highway includes all surfacing, bridges, tunnels, drainage, lighting and all objects legitimately located in or on the highway with the permission of the highway authority. The highway should be marked clearly or have agreed and recorded boundaries. Within those boundaries, all elements for which the highway authority will assume liability can be included in the S38 or S278 agreement.

There are several ways in which assets can be adopted by the highway authority. These are set out in the following sections.

2.3 Section 38 Highways Act 1980

Section 38 of the Highways Act 1980 is often the mechanism by which assets are adopted by the highway authority. When planning consent has been granted for a new development, developers may ask the highway authority to 'adopt' new roads that have been constructed as part of the development, along with associated infrastructure. This adoption means the highway authority agrees to undertake maintenance of the road from an agreed date at the public expense.

The Section 38 Agreement may contain:

- Details of the relevant planning permission.
- Drawings indicating the extent of the area to be adopted.
- Provision for land dedication.
- Technical drawings of the works.
- A programme for the works and for the adoption
- Provision for inspection and certification of the works.
- Agreement regarding the adoption, or not, of supporting structures.

There will be fees associated with the agreement, covering the cost of checking designs, preparing the agreement, and inspecting the works, in addition to the securing of Commuted Sums for the ongoing maintenance of items not essential for highway purposes. There may also be a requirement for a bond from the developer, to cover the highway authority against the possibility that the developer fails to properly complete the works, for example if they become insolvent.

The works as identified in the agreement must be constructed to a design and standard agreed by the highway authority. The developer will be responsible for carrying out the works at their own expense, and for all maintenance costs until adoption.

There will generally be a 12-month maintenance period between the completion of the works and the ultimate adoption of the roads. If the development is phased, then adoption will generally take place after the final phase is completed. This is because the roads may in the meantime continue to be used as a means of access by construction traffic.

2.4 Section 278 Highways Act 1980

Section 278 of the Highways Act 1980 effectively allows a developer to carry out works on the public highway. This is generally necessary where planning permission has been granted for a development that requires improvements to, or changes to, public highways.

Section 278 Agreements often include provisions generally seen within Section 38 Agreements, which allow developers to carry out works to a public highway. This may be necessary, for example, to provide access to a new site or to improve access to an existing site.

The agreement between the highway authority and the developer is called a Section 278 Agreement, and it may allow for items such as:

- Roundabouts.
- Priority junctions.
- Junctions with traffic lights.
- Right turn lanes.
- Improved facilities for pedestrians and cyclists.
- Improvements to existing junctions
- Traffic calming measures.

The details of the agreements will vary, but details such as the following, where applicable, will include:

- Details of the relevant planning permission.
- The agreed design.
- Details of any bond required.
- Details of who will design and manage the works.
- The programme for the works.
- Provision for inspection and certification of the works.
- Costs.

In addition to the works themselves, the developer may be required to pay costs associated with:

- The drafting, negotiation and completion of the agreement.
- Agreeing the scheme for the works.
- Permissions associated with the works.
- Land acquisition associated with the works.

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- Administrative expenses incurred by the highway authority.
- Maintenance of the works (Commuted Sums).

If the developer is carrying out the works, there may be a requirement for a bond to cover the highway authority against the possibility that the developer fails to properly complete the works, for example if they become insolvent as with Section 38. The bond will be released incrementally until a twelve-month maintenance period has elapsed after the works are complete.

The planning application associated with the development will generally establish the principles of the works required. The highway authority cannot then refuse to enter into an agreement for the developer to undertake the approved works, as long as the works meet the appropriate standards.

If the developer fails to make agreed payments, or if the works are not carried out in accordance with the agreement, the highway authority is empowered to close the access to the site.

The procedure necessary to reach agreement can be time consuming and protracted, and so it is desirable to enter into discussion with the highway authority as early in the project as possible.

2.5 ADEPT Bridges Commuted Sums Guidance 2017 (amended)

The Association of Directors of Environment, Economy, Planning and Transport (ADEPT), previously the County Surveyors' Society (CSS), have produced guidance notes on Commuted Sums. This guide sets out best practice approach for the application of Commuted Sums including understanding whole life costs to ensure undue burdens are not placed on maintenance budgets and the public purse. However, it stresses that Commuted Sums should be applied in a reasonable manner that does not stifle innovation and is fair to all parties. The general principles of this document have shaped this BCC policy.

2.5.1 Scope for use

In a highway context, ADEPT guidance outlines that there are typically two situations in which a local authority may wish to charge Commuted Sums:

- a) Adoption of an item/asset as public highway under Section 38 or Section 278 of the Highways Act 1980.
- b) Transfer of an item/asset from another public body or from private ownership to the highway authority.

ADEPT also outlines that policies regarding Commuted Sums often vary between local authorities, for example in some instances developers are charged routinely for the adoption of new infrastructure and in others Commuted Sums are requested as a single payment.

However, where a Commuted Sum payment is offered, the highway authority may still resist adoption of a particular proposal where it would be inappropriate for it to do so. This is commonly when the proposal is not acceptable in principle, including on highway safety grounds, e.g. street art or where materials are of an unacceptable specification.

2.5.2 Overriding Principles

ADEPT outlines the following key principles that are typically applied when exercising the provisions that relate to Commuted Sums, these include:

- Commuted Sums are equally applicable to Section 38 and 278 agreements.
- Commuted Sums are not appropriate for newly constructed infrastructure where there are other sources of funding to cover on-going maintenance.
- Commuted Sums are payable for “extra over” costs which are deemed by the local authority to place an extra burden on the maintenance budget.

- All assets should be treated on the same basis for Commuted Sum calculation purposes.
- All new works carried out as part of a Section 278 Agreement are appropriate for application of Commuted Sums.
- There is no requirement to calculate any degree of benefit to the local authority in respect to Commuted Sums for Section 278 works.
- Commuted sums are not applicable to additional works that only provide aesthetic value rather than design reasons.
- Where Section 38 works are deemed as “standard” construction, Commuted Sums are not generally applicable.
- The provision of “standard” street lighting within section 38 works will not generally be subject to Commuted Sums.
- Commuted Sums should be calculated objectively and as fairly as possible to reflect the genuine present-day value of predicted future costs which they are designed to service.

2.5.3 What’s included for charging

It is not practical or feasible for Bristol City Council to document these in advance for all material products that might feasibly be permitted on its network (both now and in the future). Instead, the developer should work with contractors and suppliers to generate the required inputs for calculation. These will then be subject to negotiation and agreement with Bristol City Council.

Table 1 below demonstrates asset categories as identified by ADEPT for which it is appropriate for developers to pay a Commuted Sum. It is noted that this list is not exhaustive and Commuted Sums are not limited to these assets alone.

1) Asset Type	2) Asset Group
Carriageway Surfacing	SMA, Negative Texture Surfacing (Thin Surface Course), Asphalt Concrete, Surface dressing, High friction surfacing, Pigmented, Block paving, Modular paving.
Carriageway Ancillaries	Kerbs, road markings, road studs, combined drainage kerbs, specialist road markings
Footways, cycleways, paved verges (including PROW)	Pigmented (binder, aggregates or chippings), block paving, modular paving, tactile paving, unbound surfacing, footway ancillaries.
Fences and Barriers	Safety barriers, amenity fencing.
Structures	Bridges, major structures, miscellaneous structures, tunnels.
Street Lighting	Architectural, high mast, wall mounted lighting, decorative lit bollards, subway/bridge lighting.
Street Furniture	All
Verges and landscaped areas	All
Traffic/pedestrian management	Traffic signals, pedestrian signals, illuminated traffic signs, non-illuminated traffic signs, illuminated pedestrian signs, non-illuminated pedestrian signs, illuminated bollards, heritage pedestrian signs, finger posts, gateway signs, information signs, variable message signs, rotating plank signs, traffic calming, hydraulic bollard systems, CCTV.
Drainage	SUDS, positive drainage, soakaways.

1) Asset Type	2) Asset Group
Public Open Space	Specialist activity areas, play areas, public amenity areas, public art.
Miscellaneous	Pay and display / parking ticket machines.

Table 1 - Asset Categories as examples as identified by ADEPT

2.6 Manual for Streets - Department for Transport

The Manual for Streets document provides guidance on the planning, design, provision and approval of new streets, and modifications to existing ones. It aims to increase the quality of life through good design which creates more people-oriented streets. Although the detailed guidance in the document applies mainly to residential streets, the overall design principles apply to all streets within urban areas.

One of the main approaches recommended by the document is:

“encouraging innovation with a flexible approach to street layouts and the use of locally distinctive, durable and maintainable materials and street furniture”

Within the document there is a section entitled Materials, Adoption and Maintenance. The aims of the guidance within this section are to:

- Encourage authorities to adopt a palette of materials which allow for more creative design.
- Show how planting can be included in a street environment.
- Advise on foul water and surface water drainage systems, including the use of sustainable urban drainage systems (SUDS).
- Provide guidance on accommodating utilities, etc., and planning for maintenance in the long term.
- Advise on highway adoption procedures and requirements.

It recommends that all materials meet the following requirements:

- easy to maintain;
- safe for purpose;
- durable;
- sustainable (including the manufacturing process and energy use); and
- appropriate to the local character.

2.7 Local Planning Policy

2.7.1 Bristol Development Framework Core Strategy adopted June 2011

Policy BCS11 states that:

“Development and infrastructure provision will be coordinated to ensure that growth in the city is supported by the provision of infrastructure, services and facilities needed to maintain and improve quality of life and respond to the needs of the local economy.

Development will provide, or contribute towards the provision of:

- *Measures to directly mitigate its impact, either geographically or functionally, which will be secured through the use of planning obligations; and*
- *Infrastructure, facilities and services required to support growth, which will be secured through a Community Infrastructure Levy (CIL) for Bristol.*

Planning obligations may be sought from any development, irrespective of size, that has an impact requiring mitigation. Contributions through CIL will be required in accordance with the appropriate regulations.”

Commuted sums are indicated as a possible requirement for the maintenance of facilities provided in connection with this policy. There are however a number of policies relating to quality of design and encouraging innovation and the use of high-quality materials. It is this balance that this, Commuted Sums policy seeks to address, between the benefits of superior development both in looks and materials to the city of Bristol, and the financial burden of maintenance and replacement to BCC.

2.7.2 Bristol Local Plan - Site Allocations and Development Management Policies Local Plan adopted July 2014

No specific policies are mentioned within this document in relation to the requirement of Commuted Sums. There are however a number of Design Policies that would potentially require enhanced materials in order to fulfil their requirements in terms of high-quality design.

2.8 Bristol City Council Planning Obligations SPD 2013

This document sets out BCC’s approach to planning obligations and states the types of obligation that the Council may seek to secure from development.

The section of the document relating to index-linking states that where commuted maintenance payments are required that the payment will be index-linked from the point at which maintenance costs are agreed.

The document makes specific mention to Commuted Sums in relation to a number of types of assets.

2.8.1 Traffic Signals:

“If the Highway Infrastructure Works include the provision of new or upgraded traffic signals, a commuted maintenance payment will be required, which will be payable upon the issue of Certificate 1 (Certificate of Substantial Completion).

Payment covers for 20 years plus a one-off replacement cost, after which the signals will be maintained at the City Council’s expense.”

2.8.2 Landscaping Scheme undertaken by the Developer:

The developer will be required to design and implement any landscaping scheme, having submitted it to BCC and secured BCC’s approval beforehand. Once in an adoptable condition, it will be transferred to BCC and upon this transfer a Commuted Sum will be payable to cover the first 15 years of maintaining the landscaping scheme. Where landscaping includes trees, BCC will undertake the tree-related design and implementation and the costs payable by the developer will be in accordance with the tree section outlined in the SPD and summarised in section 2.8.4 below.

2.8.3 Public Realm

The SPD requires public realm to be designed and constructed by the developer as agreed with BCC, and upon transfer to BCC a Commuted Sum should be paid to cover 15 years maintenance.

2.8.4 Trees

The document requires tree planting, either to mitigate the impact of development or as replacement planting. Where tree planting is directly into open ground, the payment is less than in hard standing as the latter requires an engineered tree pit.

The “open ground” figure will apply in the following circumstances:

- Where development results in the loss of Council owned trees in open ground.
- Where development results in the loss of trees on the development site and is unable to provide replacement tree planting on site.

In both these cases the Council will provide replacement tree planting in the nearest appropriate area of open space.

The “hard standing” figure will apply in the following circumstances:

- Where development results in the loss of Council owned trees in areas of hard standing.
- Where new tree planting in hard standing is required to mitigate the impact of development (for example street trees required as part of highway improvements).

2.9 West of England Sustainable Drainage Developer Guide 2015

This document was prepared by BCC, and is supported by the Environment Agency, the Lower Severn Internal Drainage Board and Wessex Water. It sets out the vision for sustainable drainage (SuDS) to be more than a number of drainage techniques, and rather be a sustainable way to drain a site with consideration to water quantity and quality, biodiversity and amenity.

Commuted Sums are mentioned specifically in relation to permeable paving. It states that this is not a preferred option for BCC and other SuDs techniques are preferred. It states that if BCC were to consider adopting permeable paving systems, this will need to be at the head of any drainage system and will require the agreement of Commuted Sums with BCC for both ongoing maintenance costs and full replacement value.

The document includes information on SuDS ownership and maintenance. It specifically makes mention of Commuted Sums in the following contexts:

“In the Lower Severn Internal Drainage Board areas of Avonmouth and Severnside, subject to IDB consent, by agreement and following either payment of a Commuted Sum or ongoing infrastructure charge, a developer may build (or contribute to) SuDS that the IDB subsequently owns and/or maintains.”

“SuDS serving the public highway may also be adopted as part of a publicly maintainable highway constructed in line with guidelines, following agreement between developer and Bristol City Council using a model agreement and Commuted Sum, under a Section 38 Agreement of the Highways Act 1980.”

2.10 Sourcing of Materials

BCC encourages the use of locally sourced good quality materials.

2.11 Equality Act 2010

The Equality Act came into force in October 2010, acting as a consolidation of different statutes that had previously covered different types of discrimination. Under the Act, people are protected from discrimination in many situations such as education, employment, exercise of public functions, goods, services, facilities and transport, with reference to nine protected characteristics, which include race, age, disability, sexual orientation and gender reassignment.

In relation to this legislation it is important to ensure that the choice of materials or location of assets considers the rights of all, including those with mobility impairments and specific needs.

2.12 BCC Equality and Inclusion Policy and Strategy 2018-2023

BCC's Equality policy and strategy sets out our commitment to equality and diversity, and under the policy the Council will:

- tackle equalities issues;
- aim to eliminate discrimination;
- create good relationships between communities in Bristol; and
- ensure those from different backgrounds have similar life opportunities.

As with the Equality Act, it is important to ensure that specification of materials avoids discrimination against those with protected characteristics or those identified in the Council's own policy..

3. Approved Materials

3.1 What are Approved Materials?

Approved materials are set out in the Adoptable highway material palette **Appendices**. These materials have been used within Bristol previously and their performance and lifecycle is well known, therefore can be included within maintenance schedules with both the timing and cost of maintenance being predictably known.

They are split by type of asset, e.g. carriageway, footway, kerbs and channels. Within the asset type, they are listed in relation to their appropriateness to particular locations, residential streets, high streets, city centre and Conservation Areas. City Centre standard materials can generally be used elsewhere within Bristol but may require the payment of a Commuted Sum.

In some circumstances, the ongoing maintenance costs of these approved or standard materials would attract a discounted Commuted Sum payment from the developer. This would be dependent on the scheme and through negotiation with the local authority. This is subject to the use of the materials is carried out in the correct manner, in terms of procurement, installation and appropriateness within the development.

‘Standard’ construction definitions will typically include:

- Carriageway surfaced in flexible construction to the normal standard of the highway authority
- Footway surfaced in asphaltic materials and paving to the normal standard of the highway authority
- Gully drainage and connections (not associated with adoptable surface water sewers)
- Standard street lighting layouts, columns and lanterns included within the authority’s lighting policy
- Highway signing, or other features associated with safe design
- Precast concrete and granite kerbing,

4. Enhanced Materials

4.1 What are Enhanced Materials?

Enhanced Materials are non-standard, which can be defined as all construction types or materials that are not included in the definition of 'standard' construction. This therefore includes any materials not designed, specified or constructed in accordance with relevant published standards and industry best practice, that will have future maintenance implications. These implications must be assessed, and consequently a Commuted Sum will be determined.

5. Commuted Sum Calculation Formula

Commuted Sums is set out below. Here we apply a nominal risk-free rate to generate a future nominal (outturn) cost. This is best represented in the following formula:

$$CS = \sum_{y=0}^n FV_y / (1 + DR)^y$$

Where:

CS = Commuted Sums

FV = Future Nominal Value of the sum of reconstruction, maintenance, refurbishment

DR = Nominal risk-free rate of return

y = year

n = appraisal period

Appendices

Appendix A: Commuted Sum Calculations

Commuted Sums Calculations and Benchmarking

How are Commuted Sums currently being calculated?

There are a number of variations on the formulae used to calculate Commuted Sums, depending on whether the formula is to calculate ongoing maintenance, reconstruction or eventual replacement of an asset/item. The essential feature is that the Commuted Sum paid is discounted to allow for the fact that it will be earning interest, which will make up part of the maintenance payment when it is required.

Commuted Sum calculations are based on various timescales depending on the asset/item under consideration and can include an interval between periodic maintenance years. Determination of Commuted Sums therefore require all future costs over the given timescale to be discounted to the net present value (theoretical sum that should be invested now to provide funds in the future), commonly these costs are then discounted at a rate of 2.2%.

Below is an example, followed by ADEPT, that comprises of three elements which are determined separately:

SUM A – To provide costs of reconstruction

SUM B – To meet the costs of predictable maintenance

SUM C – To provide costs of refurbishment

Each of the abovementioned elements are explained in greater detail below and the total Commuted Sum is a summation of SUM A, SUM B and SUM C.

SUM A – Costs of Reconstruction

Depending on the design life of the asset being considered, all reconstructions from the date of ownership must be taken into account. ADEPT outlines that for each planned reconstruction the Net Present Value (NPV) of the reconstruction cost must be calculated using the below formula.

$$Sum A = \frac{\text{Cost of Reconstruction at current prices}}{1} \times \frac{1}{(1 + d)^y}$$

Where:

d is the discount rate (commonly 2.2%); and,

y is the number of years from ownership.

SUM B – Costs of Predictable Maintenance

This calculation must consider average maintenance costs and anticipated intervals at which they are likely to be necessary for a range of structural types and elements. This calculation and its elements are detailed below:

$$\text{Commuted Sum} = \frac{\sum Mp}{\left(1 + \frac{D}{100}\right)^T}$$

Where:

Estimated periodic maintenance costs (Mp);

Discount rate (D) of 2.2%; and,

A time limit for commutation (years) (T).

Maintenance unit costs (Mp) are based on contract rates current at the time of calculation and the frequency of treatment or intervals of replacement, based on planned frequencies or historic information.

There is often a case for the time limit for commutation (T) to align with the expected life of the development. A time period of 60 years is often used as the default period for calculating Commuted Sums for future maintenance, with the exception of highway structures when a 120-year period will often apply, in accordance with the standard design life requirement.

SUM C – Costs of Early Refurbishment Work

An additional allowance is required if any elements of a structure are in poor condition. If refurbishment is not required immediately but will be necessary within a few years, then the cost must be discounted in a similar manner to reconstruction costs and the cost of early refurbishment work will need to be included in the Commuted Sum.

Benchmarking

The table below demonstrates the findings of a benchmarking exercise conducted to understand how alternative councils determine Commuted Sums. This exercise investigated formulas used and when Commuted Sums are applied. This benchmarking has been conducted considering how councils apply Commuted Sums to materials being used/proposed within the highway boundary.

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Table How other Local Authorities calculate Commuted Sums

Authority	Are they charging?	What for?	What approaches?
Gloucestershire	Commuted sums are charged based on the difference between the discounted maintenance costs for the Enhanced material compared to the Standard alternative. The difference is the amount due as a Commuted Sum.	Pigmented Hot Rolled Asphalt; Enhanced Stone Mastic Asphalt; Exposed Gravel; Unbound Gravel; Natural Stone Slabs; Natural Stone Setts; Resin Bonded; Resin Bound; Premium concrete products with alternative shapes, dimensions, colours or textures; and, Clay pavers.	$Mp/(1+D)^{nt}$ Mp = Estimated periodic maintenance cost (£) T = Interval between periodic maintenance (years) D = Discount rate (%) Tmax = Time limit for commutation Where n is the number of maintenance events and nT does not exceed Tmax.
Oxfordshire	Commuted sums are applied for standard and non-standard materials, with standard materials attracting lower Commuted Sums than non-standard.	Commuted sums are calculated based on anything 'over and above' the Standard Highway Corridor funding from Central Government. Used for all Section 278 and 38 Commuted Sums within Oxfordshire.	Formula Used to Calculate Present Value: $Mp/(Dr)^T$ Mp = Maintenance/ Replacement Cost based on current contract rates. $Dr = (1+D/100)$ D = Effective Annual Interest Rate of 2.2 T = Time Period of 30 years for all assets apart from highway structures, which will be calculated using 120 years
Hampshire	Hampshire County Council will require developers to pay a Commuted Sum towards maintenance of items that have a higher maintenance cost compared with conventional materials or items or would not be required for the development.	Unusual paving, surfacing and HFS.	$Mp/(1+D/100)^T$ Mp = Estimated periodic maintenance cost T years from now D = Discount rate (effective annual interest rate) (%) T = Time period before expenditure will be incurred (years)

Authority	Are they charging?	What for?	What approaches?
Nottinghamshire	Use of alternative materials should be supported by a Commuted Sum to meet the additional costs in maintaining and replacing non-standard assets. Traditional or agreed surfacing and kerbing will not normally have to pay a Commuted Sum.	Crushed rock aggregate from specific non-local source; Pea gravel aggregate; Crushed gravel aggregate; Stone Mastic Asphalt; Hot or cold applied coloured surfacing; Coloured binder, aggregate or chippings; Hot-applied, polymer-modified, synthetic bitumen-based compound; Tegula	$Mp/(1+D/100)^T$ Mp = Estimated periodic maintenance cost D = Discount rate (effective annual interest rate) (%) T = Time period before expenditure will be incurred (years)
Leicestershire	Any alternative materials used should not place a burden on the existing budget. Where it is agreed in principle to use alternative materials and features, a Commuted Sum to cover any additional maintenance costs will be required.	Crushed rock aggregate from specific non-local source; Pea gravel aggregate; Crushed gravel aggregate; Stone Mastic Asphalt; Hot or cold applied coloured surfacing; Coloured binder, aggregate or chippings; Hot-applied, polymer-modified, synthetic bitumen-based compound; Tegula	$Mp/(1+D/100)^T$ Mp = Estimated periodic maintenance cost D = Discount rate (effective annual interest rate) (%) T = Time period before expenditure will be incurred (years)
Rhondda Cynon Taff	Commuted sums will be required for the future maintenance of highways that use approved alternative materials over and above standard highway construction materials.	Alternative materials to those typified as standard. RCT outlines standard materials as flexible asphalt, concrete, block paving and pre-cast concrete kerbs, edgings and gullies.	$Mp/(1+D/100)^T$ Mp = Estimated periodic maintenance cost based on current rates D = Periodic Discount rate (effective annual interest rate) (%) T = Time period before expenditure will be incurred or cyclical period (years)

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Authority	Are they charging?	What for?	What approaches?
Somerset	Commuted sums are applied to additional carriageway over and above minimum requirements; 'extra over' items; alternative materials; and SuDS.	<p>CS are applied following the use of any materials (e.g. surfacing materials), which whilst being approved will result in maintenance or replacement costs over and above the authority's 'standard' highway construction.</p> <p>CS are also applied to proprietary or coloured surfacing materials specified for aesthetic reasons only such as coloured high friction surfacing.</p>	$Mp/(1+D/100)^T$ <p>Mp = Estimated periodic maintenance cost T years from now D = Discount rate (effective annual interest rate) (%) T = Time period before expenditure will be incurred (years)</p>
Wolverhampton	Any alternative materials should not place a burden on the council's budget. So, where a alternative materials and features are agreed in principle, the council will normally require payment of a Commuted Sum to cover any additional maintenance costs.	Additional areas and features, and non-standard features on new adoptable highways and alterations to existing highways.	$Mp/(1+D/100)^T$ <p>Mp = Estimated periodic maintenance cost T years from now D = Discount rate (effective annual interest rate) (%) T = Time period before expenditure will be incurred (years)</p>

Toolkit

In this case, an estimated periodic maintenance cost (Mp) is calculated by determining the difference in maintenance costs between pigmented and standard hot rolled asphalt. This is then applied to the Commuted Sum formula below and discounted for the design life of this material (40 years).

$$\text{Commuted Sum} = \frac{\sum Mp}{\left(1 + \frac{D}{100}\right)^T}$$

Commuted Sums Calculation			
Site:			
Asset Type:	Materials		
Item:	Pigmented Hot Rolled Asphalt		
Data Entry			
Mp	Estimated Periodic Maintenance Cost (£)	£0.18	
T	Interval between periodic maintenance (years)	1	
D	Discount Rate (%)	2.2	
Tmax	Time limit for commutation (years)	40	
Commuted Sum			
Total Commuted Sum Due:		4.76	commuted sum per m ²
Calculation			
Event No.	nt	Present Value	
1	1	0.18	
2	2	0.17	
3	3	0.17	
4	4	0.16	
5	5	0.16	
6	6	0.16	
7	7	0.15	
8	8	0.15	
9	9	0.15	
10	10	0.14	
11	11	0.14	
12	12	0.14	
13	13	0.14	
14	14	0.13	
15	15	0.13	
16	16	0.13	
17	17	0.12	
18	18	0.12	
19	19	0.12	
20	20	0.12	
21	21	0.11	
22	22	0.11	
23	23	0.11	
24	24	0.11	
25	25	0.10	
26	26	0.10	
27	27	0.10	
28	28	0.10	
29	29	0.10	
30	30	0.09	
31	31	0.09	
32	32	0.09	
33	33	0.09	
34	34	0.09	
35	35	0.08	
36	36	0.08	
37	37	0.08	
38	38	0.08	
39	39	0.08	
40	40	0.08	

Appendix B: Considerations for Commuted Sum Calculations

Discount rate

The calculation needs to be discounted, to allow for the time value of money. Effective Annual Interest Rate (EAR) can be used to evaluate interest payable on a loan, debt or assessing the earnings from an investment. EAR is adjusted for compounding interest over a time period and is an important tool that allows the evaluation of the real return on an investment or real interest rate on a loan.

The recommended discount rate (effective annual interest rate) is 2.2%, and is worked out as follows:

$$D = ((1.045/1.0225) - 1) \times 100$$
$$= 2.2\%$$

where 1.045 is the interest rate (4.5% based on long-term neutral base rate), 1.0225 is the inflation rate (2.25% based on RPI-X that is RPI excluding mortgage payments). This formula ensures that both the interest earned on the commuted sum, and the effect of inflation in increasing the cash sums eventually required, are taken into account.

This rate is liable to change based upon variations in the RPI-X

Time period (T)

When the life of a development is 60 years or more, it is recommended that a period of 60 years be used as the default period for calculating commuted sums for future maintenance. The period of 60 years is conventionally used as the life of housing and highways assets. 60 years for commuted sums represents a reasonable compromise between covering future costs and the uncertainties over whether they will be required in the future.

- Commuted sums will need to include for replacement of assets with a shorter life than that expected for the development.

The potential exceptions to the use of this time period are:

- Where assets have been constructed to serve a development that is intended to have less than 60 years life. In such situations it is reasonable to use the expected life of the development as the period for which commuted sums for future maintenance should be sought
- Where commuted sums for maintenance of assets adopted under S278 cover a period of, say, 15 or 30 years until major repair/refurbishment, this period should continue to be used
- Where a highway authority or other body is adopting a substantial asset (e.g. a bridge) which forms part of a public network (particularly where it is part of the strategic network) rather than serving a development. Where the need for the asset is long-term, it is reasonable to seek commuted sums covering replacement of the asset, provided that there is a strong likelihood that it will be needed for a period longer than 60 years.

Appendix C: Typical Asset Categories for which Commuted Sums may be sought

Carriageway Surfacing

- Hot Rolled Asphalt
- Negative Texture Surfacing
(Thin Surface Course)
- Asphalt Concrete
(Bituminous macadam)
- Surface dressing
- High friction surfacing
- Pigmented
- Block paving
- Modular paving

Carriageway Ancillaries

- Kerbs
 - Bull-nose/full batter/half batter/Granite/Safety kerb/Bus stop kerbs
- Road markings
 - Line/text/symbol/numeral etc.
- Road studs

Footways, cycleways& paved verges(incl PROW)

- Pigmented (binder, aggregates or chippings)
- Block paving Paved visibility splays
- Modular paving
- Tactile paving
- Unbound surfacing

Footway ancillaries

- Vehicle crossovers
- Kerbs
- Markings
- Edgings
- Stiles and gates

Fences & barriers

- Safety barriers
- Steel safety barriers
- Concrete safety barriers
- Pedestrian guardrail
- Parapets

Amenity Fencing

- Knee-rail fencing
- Boundary fencing
- Noise fencing

Structures Bridges

- Subways
- Major Structures
 - Culverts
 - Retaining walls
 - Head walls
 - Sign/signal gantries and cantilever road signs
- Miscellaneous Structures Fords and causeways
- Cattle grids
- Tunnels

Commuted Sums Policy

Street lighting

- Columns
- Architectural
- Foundation
- High mast Lantern
- Wall mounted lighting
- Control gear, switching, cabling,
- Decorative lit bollards feeder pillars etc.
- Subway/bridge lighting

Street Furniture

- Bus shelters (where these are highway authority assets)
- Bus stop poles and flags
- Seating
- Litter bins
- Dog bins
- Bollards
- Marker posts
- Street name plates
- Cycle racks
- Benches
- Hanging baskets
- Planters
- Raised beds
- Tree pit grating
- Tree supports/protection

Verges and landscaped areas

- Earthworks Embankments
 - Structural earthworks
 - Cuttings
 - Reinforced earth
- Vegetation
 - Grass
 - Trees
 - Plants
 - Shrubs
 - Hedges

Traffic signals and Pedestrian signals (incl Signal, column, foundation, control equipment, bulbs, cables)

- Illuminated traffic signs
- Non-illuminated traffic signs
- Illuminated pedestrian signs
- Non-illuminated pedestrian signs
- Illuminated bollards
- Heritage pedestrian signs
- Finger posts
- Gateway signs
- Information signs
- Variable message signs
- Rotating plank signs

Traffic calming

- Speed bumps/humps
- Side road entry cushions/tables
- Chicanes
- Speed cameras
- Traffic island
- Pedestrian refuge

Rumble strips
Hydraulic bollard systems
CCTV

Drainage

SUDS, Drainage, Soakaways
Petrol interceptors
Pumping stations
Gullies
Pipework/connections
Channels
Access chambers
Ponds
Combined kerb drainage units
Grips
Hydro-brakes
Storage chambers/tanks
Balancing ponds
Ditches
Reed beds
Control valves
Catchpits
Swales
Infiltration Trenches
Filtration trenches
Permeable Paving
Infiltration blankets
Storage blankets
Dry detention Basins
Wet detention basins
Tidal flaps, suburb

Public Open Spaces

Specialist activity areas
Bowling greens
Tennis courts
Athletics tracks
Pitches
Allotments
Play areas
Community gardens
Playing fields
Equipped play space
Informal recreational areas
Public amenity areas
Landscaping
Public art
Street art

Miscellaneous

Pay and display / parking
ticket machines