SFT Quantitative Benefit Calculation Methodology

1. Introduction

The Scottish Futures Trust ("SFT") was established in September 2008 with a clear mandate from Scottish Ministers to work to deliver benefits in the delivery and use of infrastructure in Scotland. The methodology which is used by SFT in capturing the benefits that it delivers is based upon an 'in-year' calculation approach which is then considered on a 10-year rolling average basis. This enables a comparison against the Scottish Government's requirement of SFT to deliver benefits within a range of £500m-£750m over the 5-year period of the 2014-2019 Corporate Plan.

This paper sets out the basis for the calculation of benefits on a rolling average basis, using a methodology that has been validated by both the London School of Economics ("LSE") and Grant Thornton LLP ("GT").

2. Categorisation of Benefits

The methodology considers the areas in which SFT operates ("SFT Workstreams") and calculates all benefits at this level. The following table shows how the SFT Workstreams have been grouped together under the 6 key areas of SFT Activity for Benefits Reporting purposes.

SFT Workstream	SFT Activity
hub	SFT BUILD
Lifecycle/FM Basket Saving	SFT BUILD
Schools	SFT BUILD
Legacy – Queensferry Crossing	SFT BUILD
Economic Investment	SFT INVEST
NPD	SFT INVEST
Housing	SFT HOME
Operational PPP	SFT PLACE
Asset Management	SFT PLACE
Low Carbon	SFT GREEN
Waste	SFT GREEN
Digital	SFT CONNECT

3. Benefit Calculation Mechanism

The mechanism calculates the benefits which have been delivered in each year under consideration ("Relevant Year"). In order to calculate the in-year benefit for each SFT Workstream two elements of information will be required:

- The **Activity Total ("AT")** for that benefit area (see further detail in Section 4 below); and
- The **Effectiveness Factor ("EF")** for that benefit area. Section 5 below considers the EF in greater detail.

Each SFT Workstream will have a Leadership Team ("LT") member who will be responsible for the collation of the necessary AT input data and for the consideration of the appropriate EF for that benefit in each Reporting Year ("LT Benefit Owner").

For each SFT Workstream, the benefit for each Relevant Year is calculated as follows:

AT **x** EF = Relevant Benefit

Note that all reported figures will be in real terms (i.e. excluding inflation) in the Relevant Year in question.

4. Derivation of the Activity Total

The Activity Total ("AT") represents the stream of inputs in each year under consideration which will be used to calculate the final benefits values. The underlying basis for input raw datasets will differ between SFT Workstreams, for example the hub Workstream's base dataset will be the actual amount of construction on hub projects which has been undertaken in the Relevant Year whilst the Operation PPP Workstream's dataset will be the total operational savings which have been identified and brought to the attention of the PPP Project owner. Each dataset will be described within the detailed Benefit Proforma (Appendix A). The basis for the underlying data has been challenged and agreed by senior members of the LT to ensure that it best represents the nature of the work which SFT is undertaking in that sector.

5. Derivation of the Effectiveness Factor

A single Effectiveness Factor ("EF") for each SFT Workstream benefit is used to derive the benefits in the specific area under consideration.

The EF reflects:

- The benefit which SFT have incrementally added to the SFT Workstream through their involvement in a 'basket' of activities. This basket of activities will be described by the LT Benefit Owner in the Benefit Proforma (see Annex A);
- Any consideration of the sharing of the benefit with other Public Sector bodies; and

- For non-Capital delivery benefits (such as Low Carbon and Waste), a consideration of the likely uptake of SFT's advice and guidance as to potential savings in that SFT Workstream. For all capital delivery benefits, such as hub or NPD, this element will be 100% as the benefit is based solely on actual construction undertaken during the Relevant Year.

Ceteris paribus, the EF should remain reasonably constant over time, assuming that the SFT involvement remains consistent. However, should SFT undertake more work within an SFT Workstream, or identify a new area within an SFT Workstream to develop and deliver (or, conversely, contract their involvement in an SFT workstream) the LT Benefit Owner may consider it appropriate to revise the EF.

6. Methodology

The following table shows the steps which are applied to calculate the benefits under each category.

Stage	Description
1	Identify and describe the interventions that have/will realise a financial benefit
2	Allocate all the benefits within a specific workstream to a benefit owner (LT Benefit Owner)
3	Benefits are initially categorised by sector but are to be grouped under three SFT Activity categories for reporting purposes: Capital Efficiency; Additionality; and Operational Efficiency.
4	Set out the actual/forecast annual financial benefit profile in each Workstream
5	Apply the Effectiveness Factor ("EF") to the input data stream by workstream
6	The Relevant Benefit value each year is the summation of the benefits from each SFT Workstream less SFT's cost of operations for the Relevant Year

Sensitivity analysis (2 upside and 2 downside) is undertaken to the forecast benefit profile to show a range of possible benefit values.

7. Reporting

Whilst an annual benefit figure will be calculated, the reported figure in each financial year will be based upon the average Relevant Benefits achieved over a 10-year period. SFT's operations began in financial year 2009/10, therefore this represents the starting point for the calculation. For example, the reported benefit in financial year 2016 is the rolling average of all benefits calculated from 2009-2019. This reflects a data set of 7 years of actual data and 3 years of forecasts.

The methodology is therefore based upon a rolling 10-year average that reflects 7 years of actual data and 3 years of forecast data.

8. Example calculation

In order to demonstrate the above methodology, a worked example is provided for this year's benefit attributable to hub DBFM.

The Effectiveness Factor ("EF") for this benefit, as defined and discussed in the Benefits Methodology, is 10%. This means that the raw input data in respect of the hub DBFM construction profiles will be multiplied in each of the 10 years under consideration by 10% and the total summated to provide the total benefit figure EXCEPT for the three years of projected activity (April 2016 – March 2019) which have probability factors of 95% (2017), 90% (2018) and 85% (2019) applied as well. This is shown in the figure below.

Year	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**10 Year Total**
Construction Profile	-	-	-	12,210,598	26,726,350	112,311,611	192,927,639	388,006,042	516,355,893	217,060,568	1,465,598,700
Effectiveness Factor	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	
Probability Factor	100%	100%	100%	100%	100%	100%	100%	95%	90%	85%	
Benefit	-	-	-	**1,221,060**	**2,672,635**	**11,231,161**	**19,292,764**	**36,860,574**	**46,472,030**	**18,450,148**	**136,200,372**

Annex A – Benefit Proforma

SFT Activity	**SFT BUILD/SFT INVEST/SFT HOME/SFT PLACE/SFT GREEN/SFT CONNECT**
SFT Workstream	hub/NPD/Schools/Queensferry Crossing/Economic Investment/NHT/Lifecycle & FM Efficiency/Low Carbon/Operational PPP/Asset Management/Waste/Digital
LT Benefit Owner	Kerry Alexander/Christa Reekie/Viv Cockburn/Colin Proctor/Tony Rose
Activity Total Source Information	Description of: • where the input data comes from; • how the data was prepared; • how has its accuracy been validated; and • why it is considered to be the best form of data for the purposes of Benefits calculation.
Effectiveness Factor	[xxx]%
Basis for Effectiveness Factor	Detailed description of: • the basket of activities which is undertaken under this SFT Workstream; • any comparator metrics which can be used as a basis for generation of the EF; • any sharing element which has been taken into account in the calculation of the EF; and • any confidence element which has been taken into account in the calculation of the EF.
Movements in EF	In the event that the LT Benefit Owner is proposing that the EF for an SFT Workstream is to change from that used in a previous year a full explanation for the rationale for this should be provided here.