CIVITAS
Sustainable and smart mobility for all

2030

The SUMP PLUS Action and Budget Tracker

Deliverable D1.5

CIVITAS SUMP-PLUS 2030

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Abstract

SUMP PLUS is piloting an Action and Budget Tracker and integrated Financial Framework Tool (FFT) to support city authorities when they undertake SUMP Guideline Activities 8.2 ‘identify funding sources and assess financial capabilities’ and 8.3 ‘agree priorities, responsibilities and timeline’. Design of the integrated FFT and Tracker Tool has been informed by the prior experience of project partners with respect to infrastructure implementation planning, as well as workshops undertaken in relation to the SUMP PLUS Klaipeda City Laboratory. This deliverable describes the main characteristics and format of the tool that has been developed at this stage of the project, and sets out the process for how further testing and refinement of the tool will be undertaken in the context of City Laboratories. The integrated tool has been developed in spreadsheet form, while a GIS version of the Tracker element is also being tested, with the aim that provision of online mapping of SUMP measures (including information on their implementation status) will help facilitate communication between departments and sectors.

List of beneficiaries

No	Name	Short name	Country
1	STAD ANTWERPEN	ANT	Belgium
2	MUNICIPALITY OF ALBA IULIA	ALBA IULIA	Romania
3	KLAIPEDOS MIESTO SAVIVALDYBES ADMINISTRACIJA	KLAIPEDA	Lithuania
4	COMUNE DI LUCCA	COMUNE DI LUCCA	Italy
5	DIMOS PLATANIAS	PLATANIAS CRETE	Greece
6	TRANSPORT FOR GREATER MANCHESTER	TR G MANCHESTER	United Kingdom
7	FONDATION NATIONALE DES SCIENCES POLITIQUE	Science Po	France
8	POLYTECHNEIO KRITIS	TECH UNIV CRETE	Greece
9	UNIVERSITY COLLEGE LONDON	UCL	United Kingdom
10	EUROPEAN INTEGRATED PROJECT	EIP	Romania
12	MEMEX SRL	MEMEX	Italy
13	SPACE SYNTAX LIMITED	SPACE SYNTAX	United Kingdom
14	VECTOS GmbH	VECTOS	Germany
15	ICLEI EUROPEAN SECRETARIAT GMBH	ICLEI EURO	Germany
16	UNION INTERNATIONALE DES TRANSPORTS PUBLICS	UITP	Belgium

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1. Introduction

1.1 The Action & Budget Tracker concept

SUMP PLUS has highlighted the so-called 'implementation gap' in the realisation of sustainable mobility policies and seeks to contribute concepts and tools that equip cities with the knowledge and approaches they need to address this. Research evidence has consistently demonstrated that significant institutional, financial and political barriers have blocked or slowed the transition towards sustainable mobility in most urban areas (see D1.2 'Developing Transition Pathways towards Sustainable Mobility in European cities'[1]).

With a focus on the lack of financial resources, and with the aim to support the development of a SUMP (Sustainable Urban Mobility Plan) Financial Strategy within project City Laboratories, SUMP PLUS proposed the creation of a Financial Framework Tool (FFT) and an Action & Budget Tracker (referred to as the Tracker throughout this report). For the FFT, the following main characteristics were envisaged at the outset of the project (Sub-Task 1.4.2). The tool aims to:

- enable city authorities to gauge the funding and organisational/partnership arrangements required to deliver individual measures and packages of measures;
- provide for the systematic analysis of the estimated costs, funding sources and revenue streams for the proposed measures; and
- record the responsibilities of public, private, third sector and community actors and allow for identification of additional regulation that would enable delivery.

In summary, the FFT can be seen as a tool that supports the identification of funding sources and partnership arrangements that are required to implement a SUMP, leading to a more robust Implementation Strategy.

The Tracker was foreseen as a 'live' progress monitoring and communication tool that could be used throughout a SUMP implementation phase (Sub-task 1.4.3). The tool seeks to:

- facilitate implementation planning and monitoring, recording key information on project costs, availability of funding, together with responsibilities and timescales for delivery;
- prepared in spreadsheet and online forms, the Tracker enables communication amongst stakeholders, as well as with politicians and other decision-makers, regarding implementation progress; and
- is aimed primarily at small to medium sized cities, acknowledging that larger cities are already likely to have appropriate financial planning and implementation monitoring processes/platforms in place.

During the process of developing the FFT and Tracker, it became apparent that there would be benefits to offering an integrated (spreadsheet-based) tool to cities, hence this deliverable documents the process of developing a combined tool and provides a description of the main features. As summarised in the figure below and explained in more detail in Section 3, three main stages for utilising the tool have been defined.

[1] Smeds, E. & Jones, P. 2020, UCL

Figure 1 - Overview of the three main stages of the integrated FFT and Tracker tool

Continued population of the pilot tool with mobility measure and funding information will occur within the context of the City Laboratories of Alba Iulia, Klaipeda and Platanias. This process will also involve ongoing refinement of the tool, prior to their being made more widely available (for example, via the City Consult website, WP7) and further dissemination and exploitation.

Work has also been undertaken to create an online, GIS-based form of the Tracker element of the tool (Stage 3) that shows the location of SUMP measures together with a summary of their implementation status (cost, availability of funding, responsibility for delivery, timescales etc.), facilitating communication of mobility measures across departments and sectors.

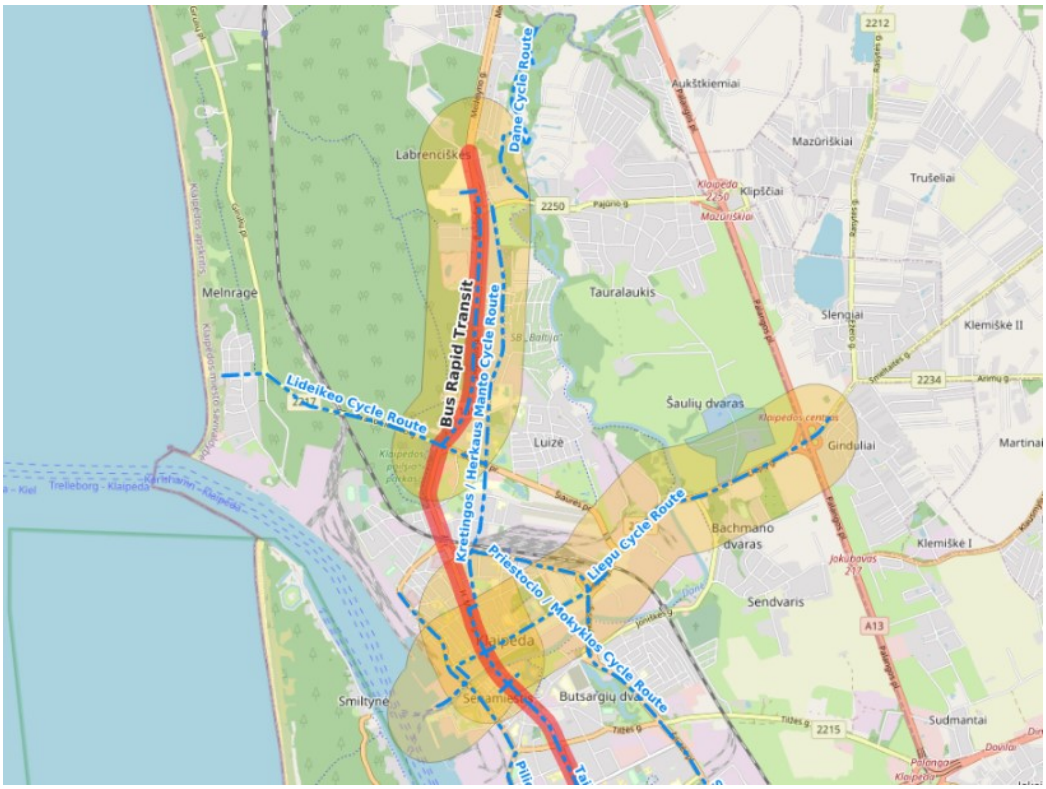
1.2 Stage of FFT and Tracker Tool development

As explained further in Section 2.2, development of the integrated tool commenced early in the project, with several avenues for the form of the FFT element being explored. In the first instance, development of the tool has been informed by and supported work to develop an Implementation Strategy within the Klaipeda City Lab. In this context, both spreadsheet and GIS-based pilot tools have been developed in parallel.

Images from the tool are provided in this report. Please note: financial information relating to Klaipeda has been removed due to the potential sensitivity of this, particularly while the tool is still being populated and information verified.

At the time of submitting this deliverable, the tool can be considered to have reached Technology Readiness Level (TRL) 3 ‘experimental proof of concept’, moving into TRL 4 ‘technology validated in lab’. Interest levels and response towards the concept and early prototypes of the Tracker tool, by Alba Iulia, Klaipeda and Platanias, have been positive. Continued development of the tools within the City Labs will be undertaken in order to verify tool applicability, potential for continued use by municipal partners beyond the project timeframe, and transfer to other cities.

Figure 2 - Screenshot from online version of the GIS Tracker tool, showing 'segments' of core measures identified as candidates for 'core measure package' development, Klaipeda



1.3 Relationship to the SUMP Guidelines and 'State-of-the-Art'

While consideration of funding options and financial limitations should permeate a SUMP development process from the outset, Step 8 of the SUMP Guidelines[2], 'Agree actions and responsibilities', provides the relevant overarching framework and guidance. The process of selecting measure packages with stakeholders (Step 7 of the SUMP Cycle) has therefore already been completed, and the SUMP PLUS FFT and Tracker Tool seeks to support ongoing implementation planning through the development of practical tools.

There are four activities under Step 8:

Activity 8.1 'Describe all actions' relates to the breaking down of measures into specific actions, in as much detail as possible, addressing questions such as: where should the action operate? When should the action operate? And who will use it? In practice, it is envisaged that this Activity will be completed to differing degrees for different SUMP measures, and therefore the integrated FFT and Tracker Tool is designed to allow for flexibility and updates over time. This includes the ability to label measures as 'concept', 'feasibility' or 'approved' (where beneficial, separate Actions can be recorded in separate Measure specific worksheets linked to Stage 3 Tracker worksheet). It is also anticipated that the process of utilising the integrated spreadsheet tool, combined with mapping of measures within the proposed GIS tool, may result in further queries and clarifications in relation to the questions above.

[2] Rupprecht Consult – Forschung & Beratung GmbH (editor), Guidelines for Developing and Implementing a Sustainable Urban Mobility Plan, 2nd Edition, 2019

Figure 3 - SUMP Guidelines, Step 8 - Agree actions and responsibilities

Activity 8.2 'Identify funding sources and assess financial capabilities' advises that 'a thorough financing plan is needed to ensure that the previously identified measures and actions are economically sound and financially viable'. Potential financing and funding sources listed are: local taxes, revenue funding, private sector involvement, fundraising activities involving appropriate sponsors, local budgets, national/regional subsidies, external loans, and municipal and green bonds.

As outlined also in SUMP PLUS D1.3 'Conceptual and Analytical Framework for New Business Models', further SUMP-related projects have added further written information and advice. These include the supplementary Topic Guide 'Funding and Financing of Sustainable Urban Mobility Measures'[3] and CIVITAS SUITS 'Capacity Building Toolbox CBT', which offer useful case studies of where finance and funding mechanisms have been applied.

Despite this existing availability of guidance, it is considered that there remains a need for a tool that presents funding options (including those that might be realised in mobility partnerships with the private sector) in a structured and comprehensive way, alongside the details and estimated costs of the SUMP measures to be implemented. This is what SUMP PLUS seeks to contribute with the FFT element of the integrated tool.

Activity 8.3 'Agree priorities, responsibilities and timelines' states that 'a clear picture of prioritised actions and schedules and who is in charge of them is a cornerstone of every SUMP'. The SUMPs-UP project provided further guidance and case studies in the publication 'Standards for developing a SUMP Action Plan', citing as one example, the implementation time plan developed by Thessaloniki – see Figure 4.

[3] Wuppertal Institute (2019) - https://www.eltis.org/sites/default/files/funding_and_finance_of_sump_v2.pdf

Figure 4 – Thessaloniki Implementation Time Plan (from SUMPs-UP, Standards for developing a SUMP Action Plan, 2018)

MEASURE	PROCEDURE	START TIME	DURATION (MONTHS)
1. Integrated and Smart Electronic Fare Ticket	Study	2013	4-8
	Implementation	2014	8-12
2.1. Bus Lanes mplementationmplementation	Planning	2014	4-6
	Studies	2014	4-6
	Implementation	2015	4-6
2.2. Priority at traffic lights	Planning	2014	2-3
	Studies	2014	4-8
	Implementation	2015	4-8
2.3. Bus Rapid Transit (BRT)	Planning	2015	4-6
	Studies	2015/2016	8-12
	Implementation	2016/2017	8-16

The intention behind the SUMP PLUS Tracker (Stage 3 of the tool) is to provide this action planning function in an online format that enables easy updates by multiple actors, acknowledging that SUMP implementation is a dynamic and ever-changing process. It will often be necessary for city authorities leading SUMP implementation to make hard choices on which measures to implement first, and the tool helps to facilitate the process of prioritisation. This includes the ability to display and update measure cost and funding information and the ambition that this information should be linked to GIS mapping, helping to improve communication and understanding of city-region's SUMP measures and their implementation.

1.4 Structure of the deliverable

Following this introduction to the purpose and stage of development of the integrated FFT and Tracker tool, the remainder of the deliverable is structured as follows:

- Section 2 provides background on the origin of the tool concepts, based upon experience preparing Infrastructure Delivery Plans in the UK, as well as the process followed so far within SUMP PLUS to develop the tools.
- Section 3 describes the main characteristics, structure and features of the three main 'stages' of using the integrated FFT and Tracker Tool. Information on how the tool is being applied within the Klaipeda City Laboratory is provided, together with comments on additional functions that could be added.
- Section 4 sets out how the tool will be utilised and tested in the context of the City Laboratories of Alba Iulia, Klaipeda and Platanias, informing their further refinement.
- Section 5 presents conclusions and the outlook for publication and exploitation of the tool.

2 Origin of the concepts and process for developing the integrated tool

2.1 Origins of the concept

Experience preparing Infrastructure Delivery Plans, UK

The ideas behind the FFT and Tracker came from the experience of Vectos team members working in the context of UK land use and transport planning. To support the preparation of spatial plans for cities, districts and counties, that set out land allocations for new housing and employment development, as well as priority areas for urban regeneration, it has been common practice for local authorities to prepare so-called Infrastructure Delivery Plans. These address the UK National Planning Policy Framework (NPPF) [4] requirement that local authorities '…should set out an overall strategy for the pattern, scale and design quality of places, and make sufficient provision for [the following infrastructure]:

- ***transport***, telecommunications, security, waste management, water supply, wastewater, flood risk and coastal change management, and the provision of minerals and energy (including heat);
- community facilities (such as health, education and cultural infrastructure); and
- conservation and enhancement of the natural, built and historic environment, including landscapes and green infrastructure, and planning measures to address climate change mitigation and adaptation.'

Provision of transport and mobility infrastructure is often key to enabling wider spatial planning, development and regeneration objectives, and therefore Local Transport Plans (LTPs) are important evidence base and strategy documents informing IDP preparation. Often LTPs are themselves are supported by transport-specific delivery plans, such as that prepared by SUMP PLUS partner, Transport for Greater Manchester[5] (see Figure 5), which feed into the cross-sectoral IDP.

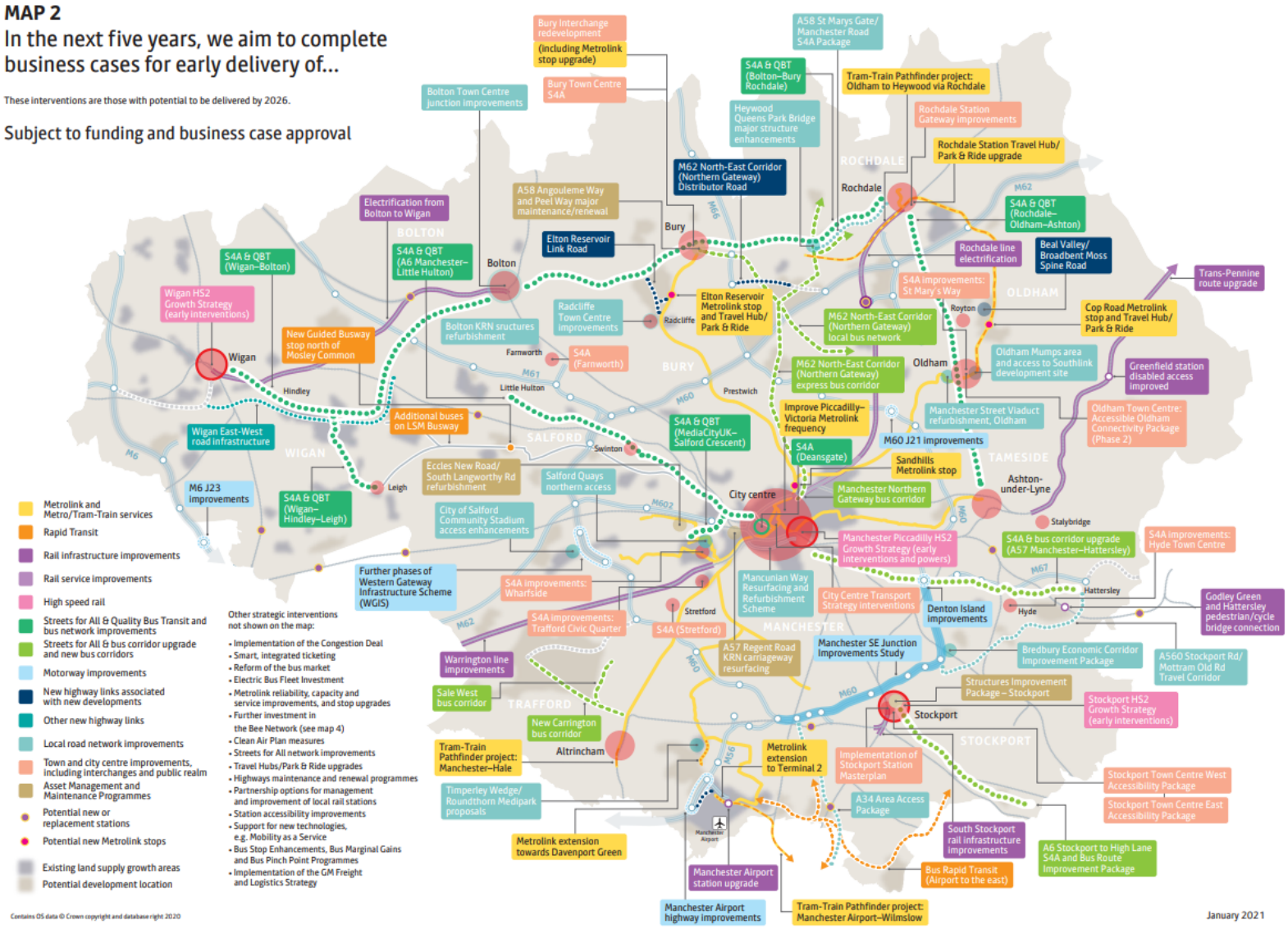
Alongside the need to demonstrate that the infrastructure to support a local spatial strategy (Local Plan) can be provided, an Infrastructure Delivery Plan also provides evidence for applying land value capture funding mechanisms. Planning Obligations and the Community Infrastructure Levy have a legislative basis in the UK and provide the means for property developers to provide infrastructure directly or contribute financially to its provision.[6]

[4] UK Ministry of Housing, Communities & Local Government (2021) 'National Planning Policy Framework'

[5] Transport for Greater Manchester (2021) 'Our Five Year Transport Delivery Plan' - https://tfgm.com/our-five-year-transport-delivery-plan

[6] For further information visit https://www.gov.uk/guidance/planning-obligations and https://www.gov.uk/guidance/community-infrastructure-levy

Figure 5: Map extract from Greater Manchester Five Year Transport Delivery Plan 2021-2026 (Jan 2021)



Infrastructure Delivery Plans are prepared through a process of consultation with infrastructure and service providers for each sector and reviews of related strategies, including the Local Transport Plan. Where detailed studies or modelling of infrastructure requirements have not been undertaken, interim estimates of need/requirements are prepared by applying infrastructure provision standards. For example, 100 houses results in the need for school provision for 'x' number of pupils, or a playground of a specified minimum size should be provided when a certain number of homes are built. Whenever possible, the results are made more precise with information on existing capacity within facilities, demographic profiling etc. The process of preparing the Infrastructure Delivery Plan can result in a long list of infrastructure requirements (both new and upgrades to existing facilities), across several sectors, and for a 10-15 year period. As the funding of these can be subject to a wide range of governmental and other sources, it is typically not possible to provide certainty of implementation of all estimated infrastructure needs. A process of prioritising investment and review of requirements over time is therefore necessary.

In the context of preparing Infrastructure Delivery Plans for UK cities, the concept of a 'live' tracker of infrastructure projects was developed, given that the status of the plans and projects is constantly evolving. Energy, water, education and health sectors prepare strategic and investment plans for differing timescales and the timing of review cycles is not aligned, hence there is a constantly changing picture. A paper-based implementation strategy supporting a 10-15 year spatial plan would therefore rapidly be out of date. Ideally the list of infrastructure requirements should also show mapping of the projects, to facilitate communication and understanding of projects across sectors. This is the ambition behind the **Tracker** concept in SUMP PLUS, with the understanding that the transport/mobility sector will be the initial focus, with the potential to extend to other sectors in the future.

Given that the Tracker is likely to show that funding is not available/has not yet been secured for all projects in the SUMP, an additional beneficial function is to display the prioritisation of funds towards certain projects, while also raising the questions of: from what source; and over what timescales, may further funding become available? This is the core intention behind the **FFT**, to provide a means for stakeholders and decision-makers to understand the current funding sources utilised, and to guide a discussion on potential supplementary options. In this regard, the published guidance to support SUMP development (as summarised in section 1.2) and other external sources are helpful resources and links to these can be provided within the tool.

Who pays what for urban transport?

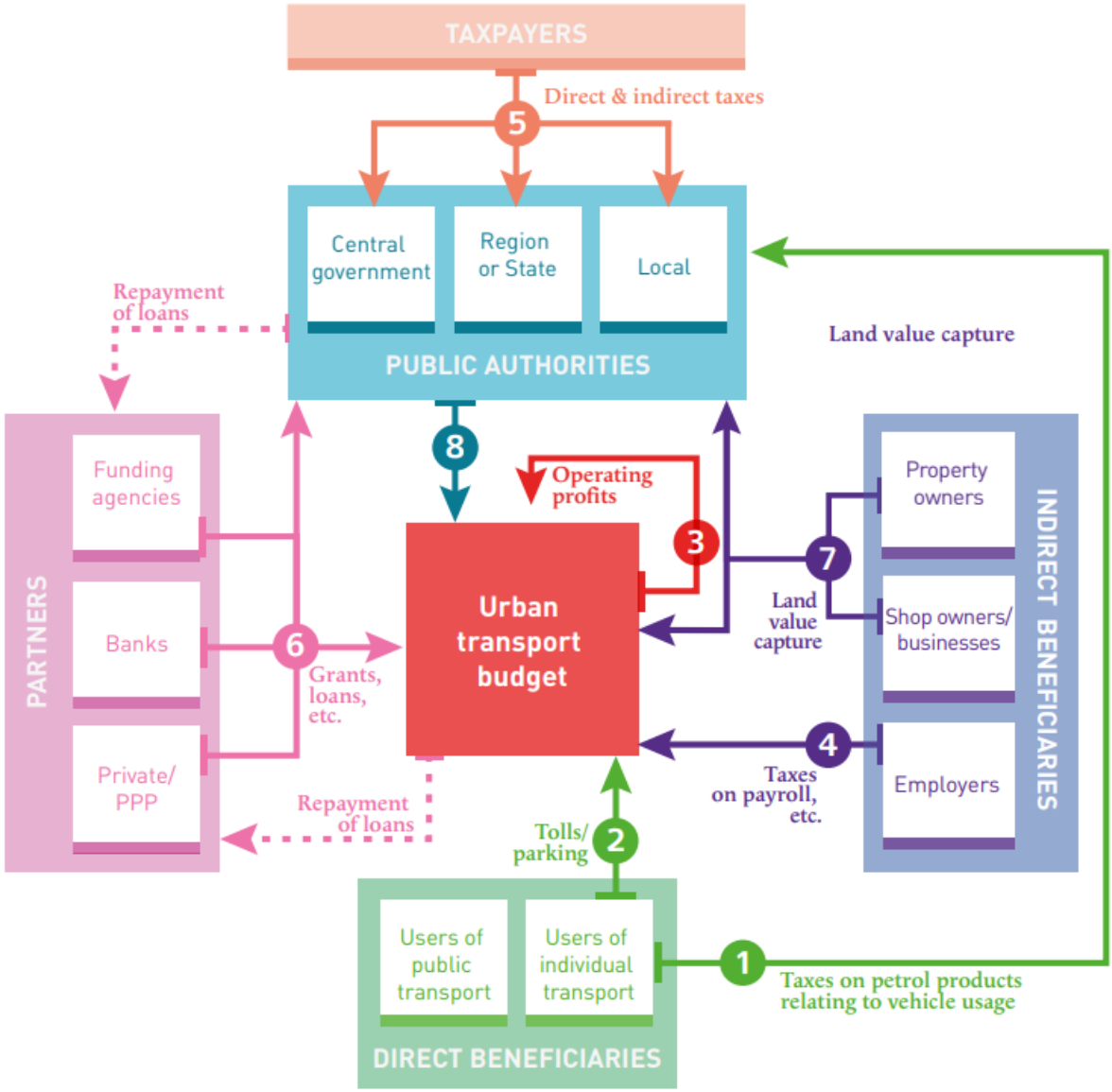
Development of the FFT elements of the tool have also been informed by the handbook of good practices 'Who pays what for urban transport?', published by CODATU. This provides a useful illustration of the spectrum of both financing and funding sources that contribute to an "Urban Transport Budget"[7]. As shown below (Figure 6), the graphic representation is divided into four main blocks: public authorities, at state, regional and local levels; indirect beneficiaries, such as the property owners, retailers and businesses that rely on urban transport services; direct beneficiaries, in terms of passengers and users of individual transport; and finally partners, namely the banks and funding agencies that can also provide loans and grants. Although this diagram was created with less developed countries in mind, it

[7] CODATU (2014) 'Who pays what for urban transport? Handbook of good practices' - http://www.codatu.org/wp-content/uploads/qui-paie-quoi-EN1.pdf

provides a useful basis for a funding system that SUMP PLUS has then supplemented based on the knowledge of partners and taking into account the conceptual frameworks developed during the preparation of D1.3 'Conceptual and Analytical Framework for New Business Models'. For example, advertising revenue is not included in the CODATU diagram, while discussions with the City of Klaipeda have revealed that the municipal authority has a contract with JC Decaux in relation to the maintenance of bus shelters, which in turn depends on advertising to support its business model.

During the process of developing the FFT, SUMP PLUS partners have sought to represent and incorporate the different ways that a multitude of partners can contribute to an urban transport budget, as well as the implementation and provision of individual mobility solutions. The stages at which project partners have provided input are described further below.

Figure 6 – Who pays what for urban transport investments?



Source: CODATU (2014) 'Who pays what for urban transport? Handbook of good practices'

2.2 Process followed to develop the integrated tool

Work to develop the FFT and Tracker commenced in December 2019, comprising: discussions with cities based upon 'prototype versions'; presentation of the concepts at SUMP PLUS meetings; and exploration of software options most suitable for the development of integrated/linked FFT and Tracker Tool. Together with dialogue with the WP leader, UCL, these activities have all contributed to the refinement of the concept, decisions on the key functions/ capabilities to be provided, and means for testing and further development.

An overview of the preparatory activities is provided below:

2.2.1 Dialogue with SUMP PLUS cities

Discussions regarding development of the tool have been held primarily with the City of Antwerp, City of Klaipeda and TUC (Polytechneio Kritis - in relation to the Implementation Strategy for the Platanias SUMP). Key outcomes from discussions are summarised below, including notes on how these have been addressed during the development of the FFT and Tracker (in italics):

- City of Antwerp – a meeting was held on 6th January 2020 in Antwerp, where the intentions of the FFT and Tracker, together with a draft spreadsheet, were presented. This was beneficial in order to gain initial feedback from the project coordinator and gain a city perspective. Key points were:
    - It is difficult to trace city budgets for transport and mobility directly to specific income streams. Many funding sources are pooled and departmental budgets are negotiated and fixed based upon strategic and current priorities. – *The FFT does not therefore seek input of precise funding figures where this would be difficult to obtain, but rather provides the means to gauge the relative contribution of different main funding sources towards delivery of SUMP measures – see Step 1 of the tool.*
    - Some potential funding/revenue sources, such as car parking charges, do also have an operational and enforcement cost associated with them – *For each city consideration needs to be given to the net revenue (once related costs have been accounted for), as well as the other SUMP objectives that such measures can contribute towards.*
    - It would be an interesting exercise to understand the relative amounts of money that city authorities dedicate to different modes of mobility, as an indicator of prioritisation of sustainable modes. – *This would be a valuable research activity, that would be informed by the FFT and Tracker Tool, although some forms of public funding support (such as subsidies) may not be captured.*
    - In relation to the Tracker, the City of Antwerp does already maintain a 'master' spreadsheet/database of all infrastructure projects. One challenge the Tracker would need to overcome is that not all measures (including for example travel behaviour campaigns and other 'soft' measures) can be pinpointed on a map. *An appropriate way to represent such measures in the GIS version of the Tracker, and on maps where appropriate) therefore needs to be found*.
- City of Klaipeda – The Klaipeda City Lab provides the primary and first 'test case' for developing and applying the FFT and Tracker within SUMP PLUS (see sub-activity 1.6 'Financial Strategy Development' within the CLP). Relevant activities to date have involved:

- Development of the Tracker in spreadsheet (telporal) and GIS (spatial) forms in order to inform discussions at workshops. These have included: presentation of the Tracker spreadsheet during the Workshop in May 2021, and use of draft Tracker mapping (prepared in QGIS) during Workshops in June and July 2021. In this context, the mapping has supported the selection of mobility corridor 'segments' that have become the focus of implementation planning. – *The approach taken to the development of the Implementation Strategy, based upon selected 'segments' of core measures and identification of potential supporting and enabling measures, continues to inform the tailoring of the Tracker to the purpose of the Klaipeda City Lab.*
- A dedicated workshop on the topic of Financial Strategy development was held during September 2021, which provided the opportunity for integrated FFT and Tracker spreadsheets to be presented in further detail and discussed with representatives of the city authority, under WP1 and WP4. Information in the Klaipeda City Portrait prepared by WP3 has been very useful for populating the FFT with information. At this stage the spreadsheet tool was developed close to its final form and populated with some cost and funding information, including the core bus rapid transit measure. – *Important actions arising from the meeting were: firstly, to consider how 'revenue' and ongoing 'maintenance and operational' (lifecycle) costs could be portrayed within the integrated FFT and Tracker worksheets; and secondly, to provide further guidance to the City of Klaipeda on the completion of the FFT and Tracker. The main points from this meeting have informed changes to the FFT and Tracker spreadsheets, as described in Section 3.*

- Platanias Municipality – the principal objective of the Platanias City Lab is to develop a SUMP for this small municipality and its Functional Urban Area (FUA). From City Lab status presentations and early discussions with partners involved in this work, in particular Polytechneio Kritis (TUC), it became apparent that the municipality already has a 'pipeline' of planned mobility and transport projects. Some of these relate to infrastructure repairs resulting from winter storms, such as reconstruction of bridges, while others are 'place-making' public space and activity mobility schemes - e.g. promenades with cycle lanes. Mapping these existing projects within the Tracker will help facilitate integration with the emerging SUMP, as well as communication amongst stakeholders with different responsibilities for delivering these. – *In correspondence with TUC it has been agreed that the mapping of existing projects will be undertaken in liaison with the municipality, using Google My Map, or another similar platform. This information will be transferred to the Tracker during 2022, in connection with City Laboratory Plan activity 4A3 'Implementation pathways' including identification of potential funding sources.*

2.2.2 Development influenced by D1.3 and presentations at project meetings

The FFT and Tracker concepts were presented in brief at project meetings including the Kick-off (Antwerp, September 2019), first project meeting (Lucca, February 2020), online project meeting (September 2020) and subsequently at the online meeting in February 2021, during which the main content of D1.3 'Conceptual and Analytical Frameworks for New Business Models' was presented.

The work undertaken to prepare D1.3 has informed the FFT and Tracker designs, including consideration of how different forms of **mobility partnerships** with private sector providers can be represented within the tool. In this regard, capturing the financial/resource obligations of the city authority will be important, even where the mobility service itself is delivered primarily by a private company as a business to consumer service. For example, in the case of the City of Antwerp, the *Velo* bike-sharing scheme is heavily subsidised by the city authority in order to ensure low costs and high service levels for users. Meanwhile, to facilitate shared e-scooter services, ostensibly provided by the private sector, the city has also actively been involved in defining drop-zones and ensuring these are visually and digitally apparent and geo-fenced. The City of Klaipeda has had the experience of a bike-sharing scheme being established in the city by a private-sector company, with usage only available during the warmer months, which has then been subsequently removed due to limited commercial viability. During the Financial Strategy workshop in September 2021, the city authority representatives explained that development of further shared mobility partnerships, for example to replace the bike-sharing scheme, is not currently a priority. As further work is undertaken on the FFT and Tracker in the context of the Platanias City Lab, it will be of great interest to explore the role of the tourism industry in mobility provision and opportunities to leverage this for a more comprehensive and year-round mobility offer.

Comments from the City of Antwerp and SUMP PLUS Advisory Board also stressed the importance of: firstly, ***partnerships with major employers*** who may directly purchase/commission Mobility-as-a-Service (MaaS) packages and collective transport services for the use of their staff; and secondly, ***partnerships with property developers***, who have an important role in the delivery of mobility, through on-site provision of infrastructure (from street design and delivery of mobility hubs, through to cycle parking and showering facilities in buildings) and through financial contributions where land value capture mechanisms are in place.

2.2.3 Selection of software options

The integrated FFT and Tracker tool are primarily spreadsheet-based, but the ambition to also link the Tracker measure table with online GIS (Geographic Information System) mapping led to exploration of different software options that would provide a suitable platform for this added functionality. GIS packages, such as the well-known providers ESRI ArcGIS and open-source provider QGIS, encompass both a mapping interface and database/worksheet. In principle, the Tracker can therefore be developed in a common desktop GIS package. In order meet the aims of the Tracker, however, there is the limitation that often only a small number of city authority staff have access to and know how to use this software. This creates a barrier to the ease of access to information and reduces the likelihood that the Tracker will be kept updated. In order that the communication benefits of the Tool (between departments and across sectors) can be maximised, an online, cloud-based solution is therefore much preferred. The main characteristics of the ideal solution would be:

- GIS-based tracker information can be accessed online from any computer, tablet or smartphone.
- Simple interface to minimise barriers to accessing and using the Tracker.
- The software solution should ideally be open-sourced, to reduce the cost barrier for a city authority of using a Tracker tool.

- Editing of information should be possible via the online interface: the first priority is to allow changes to key measure information within the tracker; and secondly, the ability to add new or edit SUMP measure locations within the Tracker mapping.
- Access to the online Tracker should be password protected, to help ensure that potentially sensitive financial information is secured. At a later stage in development, different tiers of access and levels of information shown may be desirable – i.e. approved SUMP measures can be publicly available, while other project concepts can be developed by a team in the first instance, prior to publication.

Several options were explored in order to see what software options would offer the best range of functionality during the development and piloting of the tool concept in SUMP PLUS:

Spreadsheets

- *Microsoft Excel* incorporates a 3D map function that enables worksheet data to be displayed in 2D and 3D forms on a geographic map. Excel has the benefit of being in widespread use and accessible to many staff, but the Excel worksheet forming the basis of the map needs to include clearly defined geographic coordinates. Such geo references may include ward, district and other administrational boundaries, but this does not allow for the more detailed depiction of specific SUMP measures. More detailed mapping capabilities, such as those available in GIS software packages, are required.
- *Google Sheets* and *MyMap* also have the benefit of being in widespread use and have the added plus of being cloud-based, providing the potential for easy sharing of Tracker information between organisations. While Google has developed the means to link Sheets with Google maps, this is not yet an intuitive and robust solution that enables the level of detailed mapping that would be required. *MyMaps* does enable a user to input line, Polygon and point features on an online map, which is a very helpful feature, but this cannot yet be linked with *Sheets.* This option was therefore discounted.

Online GIS solutions

Several online (cloud-based) GIS platform providers provide tools that enable information to be imported from a spreadsheet in order to automatically generate maps displaying data. These include providers such as: *GIS Cloud, Maptitude* and *Tableau*. There are also Add-ons for *Excel* and *Google Sheets* developed by 3rd parties that offer similar capabilities. In many cases the online GIS software offers a similar solution for the interface with a spreadsheet, as follows: the spreadsheet should contain a geo reference, such as a city name, district name or spatial coordinate. Where this information exists in the spreadsheet the remaining information can then be visually plotted through colour-coding, bar charts or other selected representations. For the purpose of the Tracker, this type of online tool does not enable the user to enter new point, line or polygon features on a map (to represent a SUMP measure), so do not provide the degree of detailed mapping required.

Combination of Excel and QGIS Cloud as selected option

Based on the review and trialling of alternative software options, it was decided that for the purpose of developing the Tool, *Excel* and *QGIS Cloud* would be utilised in parallel. This has enabled the gathering of SUMP measure information to proceed alongside the Implementation Strategy work led by UCL, and the structure and details of the *Excel* worksheets to be configured more quickly, involving an element of 'trial and error' (reproducing the same

elements and functions within a GIS package is more time consuming). Section 3 of this report sets out the three main ‘Steps’ (sections) of the tool produced in Excel.

At the same time, QGIS has been selected to develop the Tracker mapping. QGIS has the benefit of being an open source package, but is now also supported by the QGIS Cloud online platform which offers free and paid subscription options. The approach is therefore being followed whereby the Tracker mapping is being developed in the full QGIS desktop application, with the results then being published via QGIS Cloud. During the process of selecting QGIS Cloud, the following important and beneficial features were also attractive in terms of developing the tool:

- Viewer customisation, such as the ability to add the SUMP PLUS and city authority logos within the online platform.
- Ability to enable editing of Tracker information within the online version.
- Password protection of access to the online Tracker.

3 Description of the integrated FFT and Tracker Tool

3.1 Overview of tool structure and key characteristics

Drawing on discussions with partners University College London (UCL) and Fondation Nationale des Sciences Politiques (SCPO), it became apparent that the FFT and Tracker would need to find a balance between, on one hand, providing a simple structure that provides useful outcomes even when financial information is incomplete (e.g. estimated costs for SUMP measures and exact funding amounts); and on the other, dealing with the complexities of financial planning for a mobility strategy encompassing multiple forms of measures, from major infrastructure schemes through to behavioural change campaigns.

In order to address these matters, the integrated tool is designed with the following key characteristics in mind:

- A multi-stage approached to working with a combined FFT and Tracker Tool will make it more accessible to the target group of staff within mobility planning authorities, and clearer to understand.
- In situations where measure cost and funding levels remain more limited and rudimentary, the tool should still assist in building a picture of a SUMP funding strategy and opportunities that might be exploited. Further levels of detail and refined financial figures can be incorporated over time.
- Achievement of a robust and certain funding strategy for all desired measures may not be possible, and therefore a means for aiding prioritisation of measures would be beneficial.
- The integrated tool should complement the SUMP Implementation Strategy guidance and approach developed in SUMP PLUS WP1.

The FFT and Tracker tool that will be further populated and developed within the Klaipeda, Alba Iulia and Platanias city labs, comprises three main stages, as shown in Figure 7.

Figure 7 - The three stages of the integrated FFT and Tracker tool

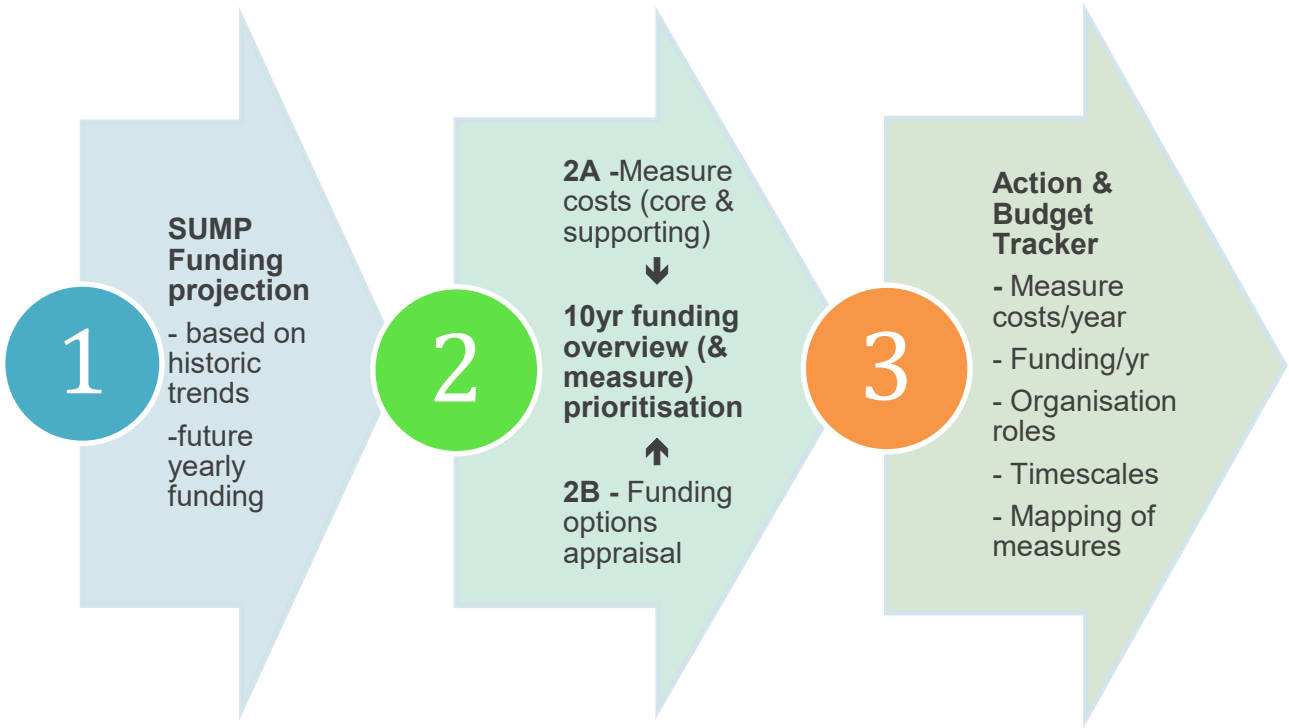
To provide a brief summary of steps:

- **Stage 1 – projection of SUMP funding**: This worksheet utilises historic information on core/main funding sources to provide a projection of the funding levels that could be anticipated in the future.

- **Stage 2 – 10 year overview of SUMP implementation costs and funding options**: Following the selection and definition of SUMP measures at stages 7.2 and 7.3 of the SUMP cycle, this worksheet is used to undertake the following exercises: 2A present an overview of estimated measure costs; and 2B undertake appraisal of the funding gap and whether all funding and revenue options are being pursued (taking into account partnership opportunities identified within D1.3 'Conceptual and Analytical Framework for New Business Models'. The tool therefore assists an authority to gain an overview of the feasibility of measure delivery.
- **Stage 3 - Action & Budget Tracker**: As well as recording key information on organisational responsibilities for delivering measures, the Action and Budget Tracker worksheet also enables the development of an implementation timeline and annual breakdown of measure costs, funding allocations and the resulting balance (positive or negative). The ambition is that this worksheet is linked (integrated) with the mapping currently provided in QGIS.

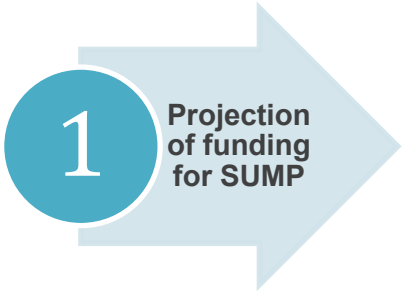
The main functions of each Stage are presented in Figure 8.

Figure 8 - Main functions of the three stage integrated FFT and Tracker Tool



The layout and functions of the worksheets are described in greater detail below, together with illustrative information on how each step of the process is being applied through the Klaipeda City Laboratory. The potential for additional functions to be added to the tool are also highlighted.

3.2 Stage 1: Projection of funding for SUMP



At stage 1, the main objective is to prepare a forecast of income from funding sources that is realistic, based upon historic urban transport budgets.

City authorities are requested to input information on 'main' (principal) funding sources[8] that have been secured over the last 5-10 years. The spreadsheet includes a line and bar graph, helping to illustrate the relative contribution of different funding sources over time, as well as their consistency. For instance, have urban transport budgets been very similar over time? Or more erratic due to the timing of major schemes and/or other city authority objectives or projects taking priority? Has the urban transport budget tended to increase or decrease over this period?

This historic information is used to provide a projection of funding amounts that could be anticipated in future years – these figures are rounded to the nearest thousand Euros.

Application in the Klaipeda City Lab: This step has been partially completed for the Klaipeda City Lab, based upon information provided by the City Authority, as well as details and sources recorded in the City Portrait (D3.1 & D3.2 'Governmental capacity building: current state and strategies[9]). Main sources of funding included are:

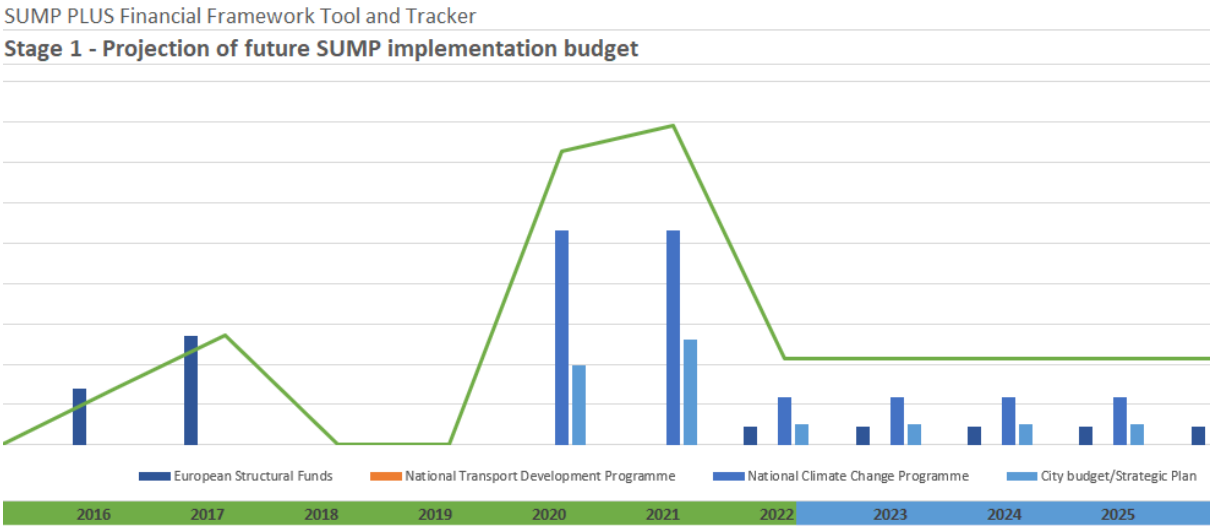
- European Structural Funds – Klaipeda has benefitted from multi-million structural funds grants for a range of transport infrastructure, including projects relating to port development (awarded 2017-18). Around €4mil of the overall funding package are considered to be relevant to SUMP implementation (under review with City of Klaipeda) and have been included in the FFT worksheet.
- National Climate Change Programme – A bus electrification programme has received substantial financial support at the national level, resulting in investment funds towards a new fleet of around €10.6mil.
- City transport budget/Klaipeda Strategic Plan – City partners have provided information for the current three-year funding period, which is primarily dedicated towards implementation of the Bus Rapid Transit (BRT) core measure (as identified in the SUMP PLUS Klaipeda Implementation Plan). Further historic funding information will be added within the City Lab process, together with the results of the city authority budgeting exercise being undertaken during the autumn 2021, for the period 2023-2025.

There is potential to include further funding streams within Step 1, such as the funding for pilots provided through the EU Horizon 2020 CIVITAS PORTIS project.

[8] The intention here is to focus on the major funding sources (largest in monetary terms) to give an overall impression of the situation, while recognising that other funding sources will contribute to SUMP implementation and on-going delivery of services (Steps 2 and 3 take these into account).

[9] Halpern, C., Sarti, F. & Rodriguez, R., 2021, SCPO

Figure 9 - Creating a funding forecast in Step 1 of applying the FFT (illustrative)



Note: This diagram shows funding achieved from different sources per year, followed by a projection of average funding amounts from 2023. Please note that the information is not yet complete.

Additional functions: In order to enable testing of future funding choices, there is the potential to add columns that allow users to select: percentage chance/risk of achieving certain funding levels in the future (for example, grants that require a funding proposal to be successful); and percentage increases in certain budget lines.

3.3 Stage 2: 10yr overview of costs & funding options

Supporting the development of a 10-year SUMP Implementation Strategy, Step 2 of the FFT presents an overview of SUMP measures (selected at Stage 7 of the SUMP cycle), the estimated costs of these, and the spectrum of funding sources (and partnerships) that will or could be used in order to implement these. Step 2 therefore provides a 'snapshot' of the current funding situation, and a tool to enable consideration of additional funding opportunities.

The layout and main characteristics of the table are summarised below:

- **Summary of SUMP measures and funding sources -** The spreadsheet table is set up to list SUMP measures (by category) in worksheet rows, with funding sources and forms of mobility partnership set out in columns.
- **Stage 2A - 10 year overview of estimated measures costs -** A summary of total estimated measures costs. It should be noted that the total cost here is considered to encompass investment/capital costs, as well as any ongoing operational and maintenance costs. The FFT allows for more detailed information for these different investment and lifecycle cost categories to be entered in the Step 3 tracker worksheet.
- **Stage 2B - Funding sources, options appraisal and prioritisation -** The main body of the table can be populated with details of the funding secured for each measure, and

from which source, resulting in updates to the overall implementation 'balance' (+/-) outlook for a 10 year period (per measure and for the SUMP overall). As it is often the case that there is a funding shortfall for implementation of all SUMP measures, Step 2 of the FFT tool presents two discussion/workshop options for users:

  - **Prioritisation -** Firstly, measures can be prioritised according to importance and timescales for implementation, in order that a worksheet filter can be applied. The total budget requirement can therefore be reduced allowing city authority staff to focus on a shorter priority list of measures.
  - **Funding option utilisation** - Secondly, the FFT tool provides an overview of which funding and partnerships opportunities are not being exploited, or where there is potential for these to be utilised to a greater degree. Potential revenue sources from road tolls, Urban Vehicle Access Restrictions (UVARs) and car parking charges are shown in a different colour, highlighting that these are mechanisms that offer the potential for funding generation, while also influencing mobility behaviour in favour of sustainable modes (see Table 1 also).

- **Funding and partnership opportunities** – Drawing on the work undertaken during the development of D1.3, Step 2 of the FFT seeks to recognise the contribution that mobility partnerships can make towards SUMP implementation. This can involve incorporating estimated costs and funding amounts for service provision by private sector partners, for example:
  - Direct provision of sustainable mobility infrastructure (e.g. cycle parking and lanes) by property developers.
  - Operation of shared mobility schemes by private operators, gauging the degree of financial or other subsidy support that may be needed (e.g. provision of "drop zones" in public space).
  - Provision of mobility services (e.g. dedicated bus services) or budgets (e.g. MaaS subscriptions) by major employers/businesses located within a city-region.

Figure 10 shows an extract from the worksheet and Table 1 provides a summary of the funding categories and options currently included in the Step 2 worksheet, which should not be considered exhaustive. These will be added to as appropriate as discussions in the frame of the Alba Iulia and Platanias City Labs progress. In particular, national and municipal funding sources will vary from country to country, so the FFT needs to be sufficiently flexible in this regard.

Figure 10 - Extract from FFT and Tracker Tool Stage 2 Worksheet

SUMP PLUS Financial Framework Tool and Tracker

Stage 2 - Estimate of SUMP implementation costs and funding sources/opportunities

							European				National			Municipal - regional	
					Funding utilisation		•••	••	•	•	••	•••	-	•	•••
				10 year overview											
Category	**Task**	**Measure**	***Priority***	**Total costs**	**Total funding**	**Balance**	Structural Funds	Horizon 2020/ Europe	INTERREG	URBACT	Transport Development Programme	Climate Change Programme	Road Tolls	Intermunicipal funding	City budget / Strategic Plan
High-speed public transport	**1.1 Implementing rapid eco-friendly public transport system**	Bus rapid transit corridor	Core												
		Public transport priority TMS	Core												
		Electric buses													
	1.2 Improving comfort and quality for PT users	Installation of light and informational boards													
		PT integration system (bus and route taxi/taxi bus)													
		PT fleet renewal													
		PT stops installation and renewal													
	1.3 Promoting inter-modality	Installtion of combined travel links													
		Integration of rail and ferry with PT network													
	2.1 Old Town - for pedestrians, cyclists and disabled people	Old Town paving renovation													
		Installation of parking places around the Old Town													
	2.2 Zones in the city without CO2	Traffic limiting infrastructure around the Old Town													
	2.3 Adaptation of New Town Centre for non-motorized transport	Project preparation and implementation													

Step 1 - Projection | Step 2 - Funding overview | Step 3- Tracker

Notes:

- Financial information removed for Klaipeda as figures to be confirmed during City Laboratory
- Columns are provided for 23 funding and mobility partnership options for the delivery of SUMP measures, as summarised in Table 1.

Table 1 - Funding categories and sources covered by the FFT

European	National	Municipal & Regional	Property owner / developer	Private sector mobility provider	Businesses / employers	People & households
Structural Funds	Transport Development Programme	Intermunicipal Funding	Levy – land value capture	Subsidised / contracted provision	Tax Increment Financing (TIF)	Ticket / 'pay as you go' revenue
H2020 / Horizon Europe	Climate Change Programme	City budget / strategic plan	Direct provision – land value capture	Non-subsidised provision	MaaS subscription revenue	MaaS subscription revenue
INTERREG	Road Tolls	Municipal asset utilisation	On-site provision / standards		Direct service commissioning	
URBACT		Urban Access Restriction (UVAR)/ Low Emission Zone (LEZ) revenue				
JPI Urban Europe		Car parking charges				

Application in the Klaipeda City Lab:

Work undertaken to prepare a City Portrait for Klaipeda by SCPO, together with discussions during the City Lab workshops, has enabled the consortium to gain an understanding of the current urban mobility funding situation and remaining opportunities. The city authority has been both proactive and successful in relation to securing European Union grants, including structural funds and Horizon 2020 demonstration projects, as well as URBACT projects that have provided further opportunity for exchange and capacity building. In relation to its autonomy to determine spending priorities, Klaipeda enjoys flexibility when compared to other Lithuanian cities. A large share of the total municipal budgets come from the central government, consisting of the income tax collected within the municipal area, as well as general and earmarked transfers from the state budget. In the cases of three largest cities in Lithuania, Klaipeda retains 91% of the income tax paid within their jurisdiction, in contrast to 46% for Vilnius and 75% for Kaunas (see D3.1 and D3.2). Within the current city strategic planning period (2020-2022), the City of Klaipeda has been able to allocate significant funds to the implementation of the Bus Rapid Transit scheme, encompassing both physical infrastructure and traffic management measures.

City Lab workshops have also led to the identification of further funding opportunities and partnership avenues that can be explored. These include the potential to formalise land value capture mechanisms, meaning that property developers would be involved in the direct provision of infrastructure and/or would contribute to a funding pot for mobility infrastructure and service provision. During the Financial Strategy City Lab Workshop in September 2021, Vectos presented the UK experience of utilising land value capture mechanisms, Planning Obligations and the Community Infrastructure Levy (CIL), as an example of an approach that has evolved over a number of decades. Additionally, through the selection of core measures and mobility corridors during Implementation Strategy workshops, such as the Liepu Cycle Route (shown in Figure 12), opportunities have been identified to work with employers/businesses and schools as partners in the delivery of complementary supporting and enabling actions that would help to increase usage of the new cycling infrastructure. These could include, for example, provision of cycle parking and changing facilities by employers, as well as the preparation of company sustainable travel plans.

Additional functions:

As some of the funding sources may not be familiar to people using the FFT, it will be necessary to add explanations and ideally also case studies, for each of the options presented. This is undertaken through the provision of hyperlinks to the catalogue of existing materials available on Eltis.org and resources prepared by projects including CIVITAS SUITS, SUMPS-UP and Park4SUMP.

In order to improve the intuitiveness and efficiency of using the linked FFT and Tracker Tool, funding information is linked between the Step 2 and 3 worksheets (automated links between cells). This means that estimates of measure costs can be included at Step 2 for an overall 10 year SUMP implementation period, but that these can be replaced incrementally with more detailed measure costing information as this becomes available.

There is the potential to add additional layers of risk management within both the Step 2 and/or Step 3 worksheets. For example, the term ***Optimism Bias*** is used to describe the demonstrated and systematic tendency for project planners and appraisers to be overly optimistic when estimating the costs, completion times and risks of planned measures. As

presented in CIVITAS PORTIS D5.1 'Innovation Guidance & Training Manual' (Vectos, 2017), the Edinburgh Tram scheme provides one rather more extreme example. The estimated base case costs for Tram Line 2 began at £255mil, resulting in a total predicted capital cost of £320mil, whereas a shortened tram line eventually cost £776mil, plus more than £200mil in interest on a 30 year loan. Addition of worksheet columns that enable optimism bias to be presented at different percentage levels is an option for consideration.[10]

3.4 Stage 3: Action and Budget Tracker

Stage 3 of the integrated FFT and Tracker Tool supports local authorities to address Activity 8.3 of the SUMP Guidelines and the creation of 'a clear picture of prioritised actions and schedules and who is in charge of them'. The Tracker provides the lead SUMP authority with a project management tool, as well up to date information that can be shared with other departments/sectors. The Tracker can be used to communicate progress to the elected politicians and citizens to whom the authority is accountable.

The overall structure of the worksheet enables linking of information/data across from the Step 2 table, by repeating the SUMP measures in the rows. Columns within the worksheet are set up to enable a series of measure filtering functions, as well as updates of measure delivery timescales and funding status. The main elements of the worksheet are summarised below:

- **Measure overview** – a measure title and description is given, and organisational responsibilities are also provided. To provide a summary of funding status, the '10 year overview' information is linked with Step 2 (total cost, funding and balance).
- **SUMP measure filters** – including a comprehensive list of SUMP measures, together with supporting and enabling activities (as identified through the Implementation Strategy), will result in a very long, potentially overwhelming list of actions and required information. For this reason, the Step 3 worksheet includes a series of filter categories, that enable a viewer to manage the number of measures and actions that are shown at any one time:
    - **Programme** – measures may be included from different plans and strategies, most notably the SUMP, but also more detailed public transport, cycle network plans and walking strategies etc.
    - **Measure Type** – aligning with the SUMP PLUS Implementation Strategy methodology developed within WP1, this filter allows for measures and activities to be identified as 'core', 'supporting' and 'enabling'.
    - **Package/segment** – a user of the Tracker may also wish to view a geographic cluster of measures, that should ideally be delivered simultaneously for the greatest cumulative impact.
    - **Measure Status** – identifying a measure as being at 'approved', 'feasibility' or 'concept' status provides for a form of prioritisation. For example, a staff member

[10] Recommended optimism bias percentage uplifts for some categories of transport infrastructure (including bicycle, pedestrian and park and ride facilities) are provided in The British Department for Transport (2004) 'Procedures for dealing with optimism bias in transport planning – guidance document'

may wish to focus a financial strategy on approved projects that will be implemented in the next 5 years, while also having the flexibility to add new ideas and measure concepts within the Tracker.

Within the worksheet there is the potential to apply more than one of the filters together.

- **Timescales and funding** – In comparison with Step 2, this worksheet provides for a far more detailed breakdown of whole-life funding requirements on an annual basis. A gantt form of table allows for an implementation phase to be identified for each measure per year, over a ten-year period (i.e. Design, Implementation, Operation). For each year, it is also possible to enter information on:
    - **Investment Cost** – entry of the upfront capital or implementation cost required to delivery a specific measure or activity.
    - **Finance repayment** – where a loan has been taken in order to finance measure implementation, entry of the associated repayment/interest cost.
    - **Operational cost** – entry of an operational and/or maintenance cost associated with an activity or measure.

Figure 11 - Extract showing structure of Step 3 Tracker worksheet, including information on Klaipeda SUMP measures

SUMP PLUS Financial Framework Tool and Tracker

Stage 3 - SUMP Action & Budget Tracker

DES	Design
IMP	Implementation
OP	Operation

Project Overview					10 year Implementation Strategy				Timescales and Funding						
									2021						2022
Category	Programme	Package/ segment	Type	Name	Total costs	Total funding/ revenue	Balance (+/-)	Description	Phase	Investment cost	Finance repayment	Operational cost	Funding / revenue	Balance (+/-)	Phase
Public Transport	**SUMP**		**Core**	**Bus Rapid Transit Corridor**				**Implementation of a BRT corridor**						€ -	
Public Transport	**SUMP**		**Core**	**Public Transport Priority TMS**				**Acquisition and implementation of a traffic management system with public transport priority**						€ -	
Public Transport	**SUMP**		**Core**	**Electric buses**				**Procurement of 49 electric buses**						€ -	
Intermodality	SUMP			Installation of combined travel links										€ -	
Intermodality	SUMP			Integration of stations and ferries with PT system					IMP					€ -	IMP
Intermodality	SUMP			Journey planning website / app					IMP					€ -	IMP
Shared mobility	SUMP			Pilot: carpooling system					IMP					€ -	IMP
Active mobility	SUMP	Old Town	Campaign	Pilot: non-car weekends in Old Town					IMP					€ -	IMP
Active mobility	SUMP	Old Town		Old Town paving renovation				Implementation of Stage 1 renovation project Old Town paving						€ -	
Active mobility	SUMP	Old Town		Parking places around Old Town				Installation of parking places around the Old Town - preparation of technical reports	DES					€ -	IMP
Active mobility	SUMP	Old Town		Old Town traffic limiting infrastructure				Installation of traffic limiting infrastructure around the Old Town (marking, road barriers)						€ -	
Active mobility	SUMP	Smiltyne		Smiltyne road traffic limiting infrastructure				Installation of traffic limiting infrastructure around Smiltyne (marking, road barriers)						€ -	
Active mobility	SUMP	New Town		Adaptation of New Town Centre for non-motorised transport				Project preparation and implementation of adaptations to the new town/city centre for non-motorised transport						€ -	
Active mobility	SUMP	Local centres	Support?	Pedestrian paths in local centres				Renovation and installation of pedestrian paths						€ -	
Active mobility	SUMP	Local centres	Support?	Cycle paths in local centres				Renewal and development of cycle paths in local/district centres						€ -	
Active mobility	SUMP	Local centres	Support?	Smart bicycle stands				Installation of smart bicycle stands helping people to choose safe driving speed	IMP					€ -	IMP

Step 1 - Projection | Step 2 - Funding overview | **Step 3- Tracker**

Note: Financial information removed for Klaipeda as figures to be confirmed during City Laboratory

Application in the Klaipeda City Lab:

Work undertaken on the Tracker has initially been guided by the development of the Implementation Strategy, which has followed a process of four steps (as based on the Klaipeda Implementation Strategy, draft version, Aug 2021) as summarised below:

1. The starting point has been to define key or 'core' measures from the SUMP, which can then be specified in greater detail through the identification of complementary 'supporting' and 'enabling' measures with potential to enhance the potential effectiveness of the measure. This results in the creation of **core measure packages** (core measures + supporting and enabling measures). During the Klaipeda CL workshops, the joint decision was taken to focus discussions around two core measures which form sustainable mobility corridors (and identification of particular geographic segments of these):

- Core measure package 1: Bus Rapid Transit and the Taikos-Smiteles Hub
- Core measure package 2: Cycling promotion and the Liepu Corridor

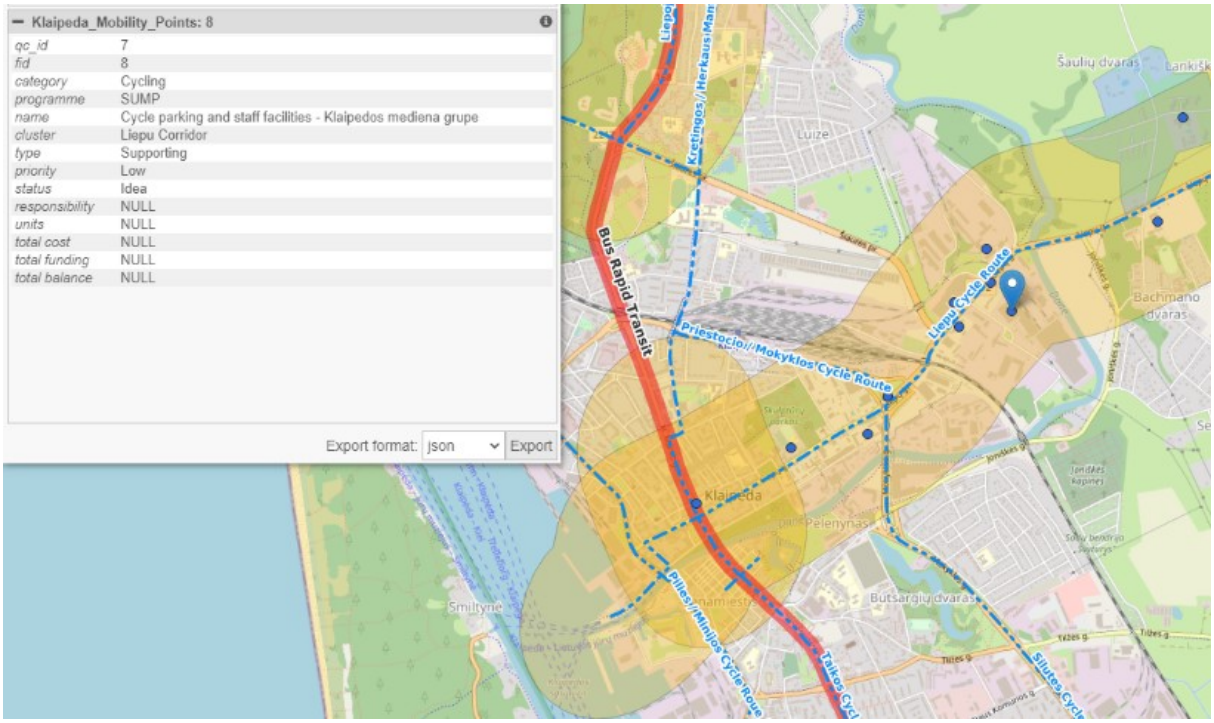
2. The spatial location or 'clustering' of measures is then defined, to identify how SUMP measures can be co-located and related to each other spatially. This includes:

- Identification and geographic location of 'supporting measures' (identified in the SUMP or through a matrix developed by SUMP PLUS) that can enhance the effectiveness of the measure, and where there may be practical and efficiency benefits (e.g. combined construction works) for implementing them in parallel.
- Identification of 'enabling measures' such as project-specific governance and engagement activities, that facilitate greater acceptance of a SUMP measure and the necessary institutional conditions for its implementation.

3. Following this, the Implementation Plan specifies in detail in what order (temporal sequencing) the measures (including core, supporting and enabling) within each package will delivered.

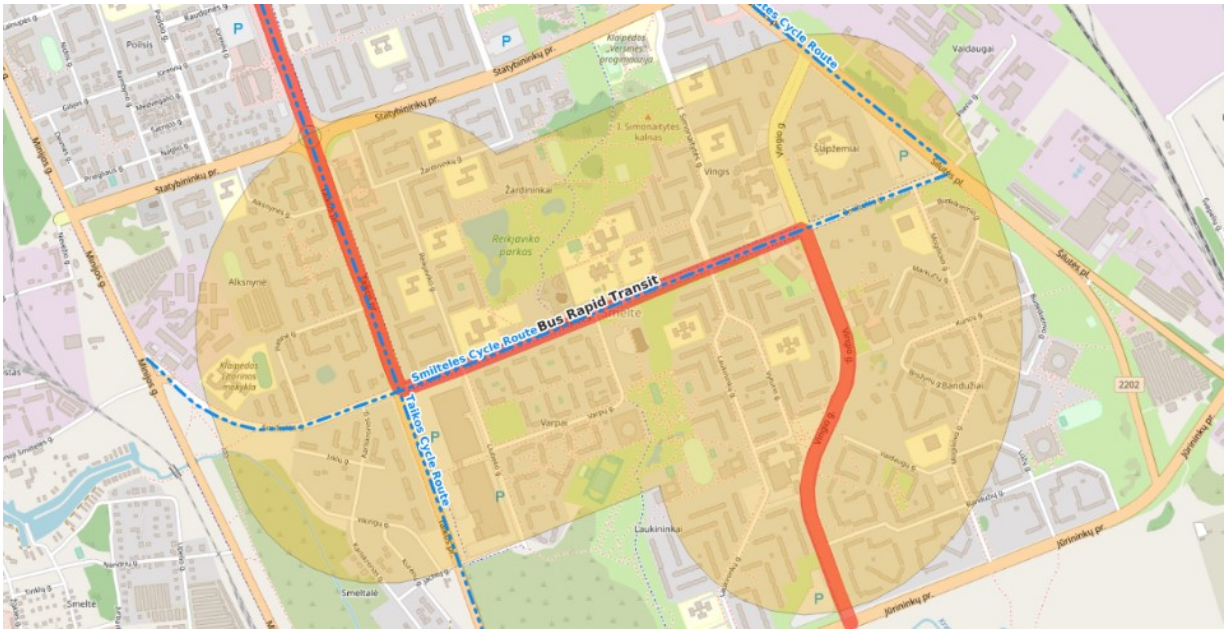
Drawing together information on proposed measures for the Implementation Strategy and development of the FFT and Tracker tool, it was found that details of estimated costs, funding and implementation timescales for the Bus Rapid Transit core measure is relatively detailed. This information has therefore been input within the Tracker tool.

Figure 12 - Extract from the online GIS Tracker showing the Liepu Cycle Corridor core measure and example of a supporting and enabling measures identified



Phasing information is also available for the main cycle network, including the Liepu Corridor that has provided the focus of discussions for core measure package 2. As will be detailed in the Klaipeda Implementation Strategy (a technical report resulting from the City Laboratory), workshops have involved the identification of supporting and enabling activities that will be incorporated within Step 3 of the Tracker, together with proposed interventions set out within the Klaipeda 2015 Cycling Special Plan.

Figure 13 - Extract from online GIS Tracker showing convergence of BRT and cycle corridors at the Smilteles-Taikos hub.



Additional functions:

Mapping of SUMP measures and activities using GIS - As introduced earlier, the ability to map measures and display key implementation strategy information is considered to add considerable value to the Tracker element of the tool. Maps prepared in relation to the development of a GIS Tracker prototype have already proven to be useful during the Klaipeda Implementation Strategy workshops and the ability to combine mapping of measures and activities from different transport and mobility strategies, as well as related initiatives from different sectors, contribute towards a powerful communication tool.

The process of selecting a GIS platform to enable the development of this platform as a prototype is described in Section 2.2.3, and an important achievement in this regard has been the first publication of maps on an online platform, that allows for all interested parties to view summary Tracker information using an internet browser on their computer or smartphone. As GIS mapping information held by city authorities is often only accessible via dialogue with an experienced GIS officer, enabling quick access to and editing of this information for all relevant staff (with password protection), greatly increases the communication benefits of this approach and the likelihood that data will be kept updated.

Supplementary worksheets for major/complex measures

In the case of some measures, a total estimated cost needs to be broken down into a series of components. A clear example is that of the Bus Rapid Transit corridor, for which the city has specified a series of infrastructure works that change in their nature along different sections of the route, as well as traffic management/priority measures to be implemented at signalised junctions. As this level of detail is necessary for the city authority, but is greater than that required to provide an overview of measures in the Tracker, this information can be held in a separate worksheet. Along with more detailed measure cost breakdowns, this worksheet can be used to define more detailed Actions, in accordance with Activity 8.1 of the SUMP Guidelines. In order to develop this functionality, an additional worksheet is provided in the FFT and Tracker spreadsheet for the Klaipeda BRT, with relevant overview information linked to Step 3 of the Tracker.

Figure 14 - Worksheet extract showing more detailed breakdown of Bus Rapid Transit measures

Bus Rapid Transit - major scheme						
Category	**Programme**	**Type**	**Name**	**Status**	**Units**	**Description**
Public Transport	**SUMP**	**Core**	**Bus Rapid Transit Corridor**	**Approved project**	**11km**	**Implementation of a BRT corridor**
Public Transport	SUMP	Core-sub	BRT corridor boards	Approved project		Modernisation of A lanes by installing BRT boards
Public Transport	SUMP	Core-sub	BRT priority measures	Approved project		Horizontal marking/ renewal of intersections and stops in PT priority lanes
Public Transport	SUMP	Core-sub	BRT information signs	Approved project	14	Installation and renovation of PT signs and information signs
Public Transport	SUMP	Core-sub	BRT terminals / loading stations	Approved project	3	Modernisation of public transport terminals / loading stations
Public Transport	SUMP	Core-sub	BRT bus parking lot	Approved project	1	Extension of bus parking lot and removal of parking in Vingio Str.
Public Transport	**SUMP**	**Core**	**Public Transport Priority TMS**	**Approved project**	**3**	**Acquisition and implementation of a traffic management system with public transport priority**
Public Transport	SUMP	Core-sub	PT priority at Minijos-Pilies-Najoji Uosto junction	Approved project	1	Traffic light installation works, lighting and hard surface restoration at Minijos St – Pilies St – Naujoji Uosto St
Public Transport	SUMP	Core-sub	PT priority at Taikos-Tiltu-Manto-Liepojos junction	Approved project	1	Traffic light installation works, lighting and hard surface restoration at Taikos av - Tiltu St - Manto St - Leeipojos St.
Public Transport	SUMP	Core-sub	PT priority at Priestoco-Mokyklos-Silutes junction	Approved project	1	Traffic light installation works, lighting and hard surface restoration at Priestocio St - Mokyklos St - Silutes Pl

Note: Financial information columns hidden for Klaipeda as figures to be confirmed during City Laboratory

4 Application of the Tracker in SUMP PLUS

So far in this report we have set out the work undertaken to develop the main characteristics, structure and features of the integrated FFT and Tracker tool. In this section we explain how the tool is being applied and further refined working with project partners in the city laboratories. As the focus at the time of writing has been on the Klaipeda City Laboratory, this is introduced first, followed by Alba Iulia and Platanias.

4.1 Klaipeda City Laboratory

The Klaipeda City Laboratory develops a SUMP Implementation Strategy, including a Financial Strategy, and seeks to enhance cooperation between the city and neighbouring municipalities. There is also an additional element where it seeks to strengthen partnerships between the municipality and the education sector.

Sub-activity 1.6 'Financial Strategy Development' of the City Laboratory Plan (D2.1, Feb 2021) sets out the specific tasks to be undertaken, that involve application of the FFT and Tracker tool:

- Identification of the funding/financing sources for the core measures and the development of additional instruments or partnerships for financial contributions from partners.
- Testing of the Action and Budget Tracker as a means for monitoring and communicating the implementation of SUMP measures

Based on discussions within the City Laboratory workshops, the following actions are foreseen and being undertaken:

- The City of Klaipeda is providing past funding information to enable the creation of a projection for a SUMP implementation budget. As the city authority is currently in the process of preparing its strategy plan for the forthcoming three-year period, this information can also be entered into the tool.
- The Tracker mapping can be used to provide an overview of SUMP measures, overlaid with distinct proposals within the Cycling Masterplan (form 2015) and there is the potential to add the related cycle proposals from neighbouring municipalities, to support discussions on coordinated delivery of cycle paths across the Functional Urban Area (FUA).
- Supporting the Implementation Strategy work led by UCL, potential supporting and enabling measures are being included in the Tracker, to illustrate the strength of a core measure package approach.
- The potential to also include information on the key mobility projects and measures of surrounding municipalities and districts, to facilitate communication and improved integration of investment.

At the end of this process, gaining the feedback of City Authority representatives on their impressions of the tool and ongoing utility and use will be highly beneficial to understand its transferability and wider exploitation potential.

4.2 Alba Iulia City Laboratory

The Alba Iulia City Lab has the overall objective to build capacity for sustainable mobility planning and implementation within the city administration of Alba Iulia and amongst its local partners. This has commenced with the formation of a SUMP managing group and provision of support in relation to SUMP implementation planning is being undertaken. Related to this, enhancement of links with the tourism and education sectors are foreseen, hence enabling communication of plans and updates via the Tracker may be of benefit.

For City Laboratory Activity 3A2 (see D2.1, City Laboratory Plan, Feb 2021) a similar approach to the Klaipeda City Laboratory is being applied, whereby a core measure and focus 'segment' has been selected. In the case of Alba Iulia this relates to public transport and active mobility prioritisation infrastructure works on a major boulevard, which raises opportunities for synergetic impacts to be achieved through a core measure package approach, and the potential of enabling measures to facilitate citizen engagement and communication around this important scheme.

Within this context, the Action and Budget Tracker tool will be used to help generate mapping and monitoring information for the core measure package (Sub-activity 2.4 'Spatial clustering'), but depending on needs and available resources, there is the potential to also apply other elements of the integrated FFT and Tracker Tool to support Alba Iulia.

4.3 Platanias City Laboratory

The small, tourism-focussed municipality of Platanias is developing a SUMP for its functional area utilising the co-creation approach and analytical tools developed within SUMP PLUS. Activity 4A3 of the City Laboratory Plan (D2.1, Feb 2021) relates to the development of an Implementation Pathway for a small city, including identification of short-term 'quick win' measures and the identification of potential funding solutions. Application of the linked FFT and Tracker Tool will be considered to support this process.

Discussions with partners developing the Platanias SUMP has revealed that the Tracker tool may also be beneficial to present those mobility projects that are already planned, forming an existing 'pipeline' of approved projects and concepts/proposals to be taken into account during SUMP development. These include projects to repair/replace infrastructure damaged during winter flooding events, as well as cycling and walking routes that are expected to enhance the appeal of the area for tourists. In relation to this, the communication potential of the Tracker

tool, to facilitate joint working between neighbouring municipalities and amongst departments, is recognised.

SUMP PLUS partners preparing the Platanias SUMP have begun the process of gathering information on existing projects, and mapping these using MyMap, forming the basis for the project details that can be presented in the Tracker.

5 Conclusions and next steps

The concept of the integrated FFT and Tracker is based on the previous experience of working with city authorities that have entered a SUMP implementation phase and would benefit from a tool that enables monitoring of the status and funding situation of measures. Coupled with this is the common realisation that prioritisation and phasing of measure implementation is often required due to insufficient funds, and there is the need to seek out additional/supplementary funding sources. This may involve the submission of strong applications for national and European funding competitions and programmes, or devising means to work with the private sector (property developers, employers/businesses, mobility service providers) in creative ways. The integrated FFT and Tracker Tool seek to build upon the existing knowledge published by the European Commission, for example on Eltis.org, by providing practical worksheets that encourage consideration of new forms of funding and partnerships.

An important ambition has been to link a spreadsheet based FFT and Tracker tool with online GIS mapping, helping to further the communication benefits of the tool by enabling sharing of key information on SUMP measures and their implementation timescales with other municipalities and across sectors.

This deliverable has set out the process that has been followed to develop the integrated tool and the current key elements of their design, which are now being tested and refined through their application in the City Laboratories of Alba Iulia, Klaipeda and Platanias.

Outlook for dissemination and exploitation

The experience of applying the FFT and Tracker Tool working with city authorities in SUMP PLUS will be highly beneficial in order to understand their real-world utility and potential for wider deployment and exploitation. At this stage, and based on the presentation of tool structure to the project consortium and first applications within the Klaipeda City Laboratory, the response of city authorities has been positive.

As a final output, it is planned to provide the tool (spreadsheet version) as a resource on the CityConsult platform (WP7) and depending on the feedback received from city partners, further development of the GIS Tracker tool for ongoing exploitation will be reviewed by partners. The ongoing experience and outcomes from applying the tool will be reported in the relevant City Laboratory deliverables within WP2 (D2.3 – D2.8). Considering that SUMP PLUS has a Follower City group of 19 city authorities representing a diversity of city sizes and European geographic regions, there is strong potential for further ‘market assessment’ involving presentation to and testing of the tool with these cities.

At this stage it is envisaged that the integrated FFT and Tracker Tool could present one part of a suite of tools for smaller cities developing and implementing a SUMP, alongside the simplified analytical tools developed by Space Syntax.