# DEVELOPMENT OF A WEB-BASED TOOL TO SUPPORT THE DEVELOPMENT OF CITY-LEVEL URBAN TRANSPORT ROADMAPS TO 2030

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**ABSTRACT**
Cities in Europe are vital centers of economic activity, innovation and employment. Many European cities face increasing challenges to their mobility systems such as congestion, air quality, ambient noise, $CO_2$ emissions, accidents and urban sprawl. However, many city authorities do not have the necessary tools or expertise required to develop robust plans for addressing these problems. A web-based tool has been developed that will be freely available to all cities across the European Union to help them develop urban roadmaps for addressing the most pressing environmental, social, and economic issues faced by their transportation systems between now and 2030.

*Keywords*: Urban, roadmaps, sustainability, web-based tool, air pollution, $CO_2$, safety, congestion

## INTRODUCTION

Cities in Europe are vital centers of economic activity, innovation and employment. Many European cities face increasing challenges to their mobility systems such as congestion, air quality, ambient noise, $CO_2$ emissions, accidents and urban sprawl. These have significant negative impacts on the environment, health and economic performance of cities and can often affect a much broader area than the city itself. Many of these problems are expected to increase in the future as cities continue to grow in size and face demographic changes such as ageing populations.

Urban transportation in the European Union (EU) faces a number of sustainable development challenges. The EU's 2011 Transport White Paper calls for cities to implement a range of strategies to address these challenges. These include: land-use planning, pricing schemes, efficient public transportation services, infrastructure for non-motorized modes and charging/refueling of clean vehicles to reduce emissions. Cities above a certain size are encouraged to develop Sustainable Urban Mobility Plans (SUMPs) that bring all of these elements together.

The availability of tools and guidance documents is central to the development of cost-effective strategies, helping policy-makers to understand the range of possible actions and steps to successful implementation. However, currently there are many cities across Europe that do not have access to the tools and guidance necessary to develop robust urban mobility plans and roadmaps. This study is playing a vital role in taking this forward through the development and provision of a web based policy support tool that will be freely available for all EU cities to help them develop their own tailored urban transportation roadmaps. The tool will be supported by detailed illustrative policy roadmaps and underpinned by a range of stakeholder engagement activities.

## OVERVIEW OF THE TOOL

The policy tools developed in this project will support city authorities across the European Union (EU) in the development of Sustainable Urban Mobility Plans (SUMPs). These tools will be part of a wider framework that helps cities to define their own tailored transportation plans, and they will focus on the quantification of the potential costs and benefits of different policies or policy roadmaps.

The target audience for these tools is smaller and medium sized cities in Europe that do not necessarily have the resources to develop their own transport appraisal models. Such a tool also needs to be widely accessible and it has therefore been developed as a web-based tool that can be used on-line by a wide variety of users.

The following sections set out the key objectives and functionality of the tool as developed in the original project proposal and refined through engagement at the expert stakeholders workshop. An overview of the structure of the tool to deliver this functionality is also presented.

## OBJECTIVES AND FUNCTIONALITY OF THE TOOL

In developing the tool's functionality it was first necessary to state clearly the objectives of the tool, and then define the functionality to meet these objectives. These core objectives are as follows:

- Tools should provide cities with the ability to readily identify, develop, screen and assess different transport policies and measures;
- They should allow cities to explore different urban transport policy scenarios, thereby enabling city authorities to quickly gather a sense of the scale of impacts that could be expected based on some illustrative policy scenarios;
- They should provide cities with quantitative outputs covering a range of different metrics, including costs and cost effectiveness, covering the time period to at least 2030
- They must be adaptable to different city circumstances;
- They must be very easy to use, and in particular should be accessible and usable by people with no background or experience in transport modeling;
- The tool's interface and its outputs must be visually attractive and provide very high quality graphical outputs that can be used by city authorities to communicate any roadmaps they develop to a wide range of stakeholders;
- The tool should be readily accessible and not rely on users having access to specific types of software or be limited to users with computers that run on particular operating systems;
- The tool will need to cover all of the transport/travel modes that are used in urban areas (i.e. cars, vans, heavy goods vehicles, buses, bicycles, motorised two wheelers and walking).

Based on these objectives, the key functionality of the tool can be defined; this is outlined below in Table 1. Additional factors and those with further information are highlighted in italics.

**TABLE 1 Key functionality of the tool**

| Functionality | Rationale |
|---|---|
| **Input functionality** | |
| Ability to choose from a pre-defined list of city types | In order to make it easy for users to carry out analysis, the model will incorporate a pre-defined set of city types. |
| Ability to view a pre-defined set of policy options | Rather than requiring users to create policy measures from scratch, we will include a pre-defined set of policy measures that users can view and work with. |
| *Ability to capture exogenous conditions (at the national and broader level)* | *The tool will offer users the opportunity to select from a range of exogenous conditions (for example National level factors) including energy prices and energy taxation levels.* |
| Ability to select, edit and group policy options | In addition to the pre-defined policy options, more advanced users may want to edit the pre-defined measures or create groups of measures. |
| Ability to represent increased penetration of alternatively fueled vehicles for each mode of transport | Given the high level 2011 Transport White paper target to halve the use of conventionally powered cars in cities by 2030, it will be important for the tool to be able to quantify the deployment of different types of alternatively fueled vehicles (e.g. electric vehicles, hydrogen fuel cell vehicles, etc) |

| **Functionality** | **Rationale** |
|---|---|
| | |
| **Output functionality** | |
| Ability to quantify the impacts of policy measures on individual modes of transport and on multiple modes of transport | Some policy measures only affect single modes of transport whilst others have multi-modal effects. The tool will be able to analyses both types of measure. |
| *Calculation of impacts on Economic Factors including:*<br>• *Value of time traveled*<br>• *Scenario net benefit* | The calculation of impacts will be a key area of functionality required in the tool. Importantly, if city authorities are to be able to produce roadmaps, the tool needs to be able to provide them with robust projected impacts based on sounds evidence.<br>Additionally, the tool will need to be able to provide users with estimates of the cost effectiveness of different policy measures. This will enable them to be able to make rational choices for their roadmaps. |
| *Calculation of impacts on Transport Factors including:*<br>• *Car ownership*<br>• *Mode split* | |
| *Calculation of impacts on Environmental Factors including:*<br>• *$CO_2$ annual emissions*<br>• *Air pollution annual emissions* | |
| **User interface** | |
| Easy to use interface for controlling the tool | The tool should have very simple controls that do not rely on prior experience of using models. With this in mind, the tool should operate in a web-based environment with a minimal requirement for users to input datasets. |
| *Unique URL address* | *Provides for unique storage of roadmaps, allowing a range of users to access and compare them.* |

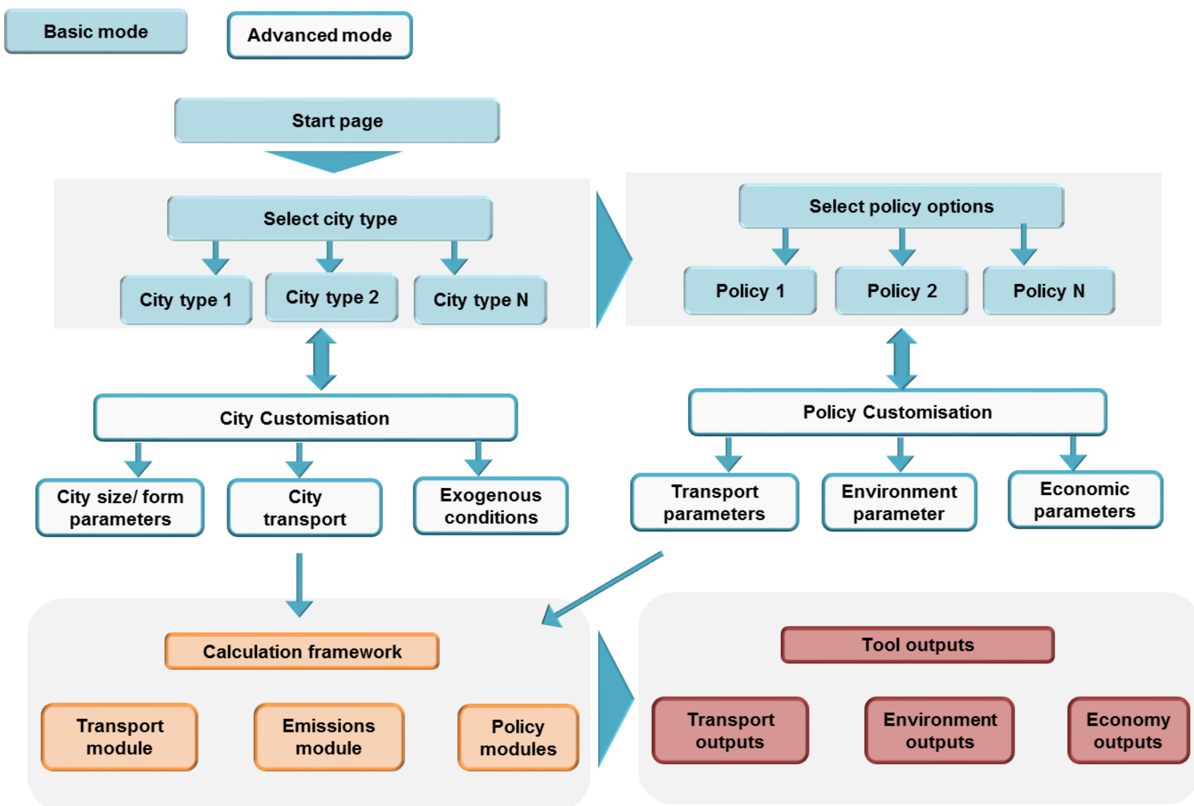
In addition, the tools will be accompanied by guidelines (user guides) to help users understand issues such as policy design, best practice and data gathering that will help real-world implementation.

## STRUCTURE OF THE TOOL

To deliver this key functionality the tool has four main structural elements, as illustrated in Figure 1. These elements comprise:

- **City type selection** – this is the main entry point of the tool and allows the user to select a primary city type to represent their city. Each primary city type will be associated with a set of default city and transport parameters that allows the model to set up the most appropriate basic transport patterns. This allows simple and quick initial configuration of the model.
    - *City customization* – for the more advanced user there will be the ability to customise the default data, using local data, to provide a more accurate representation of the city.

- ***Policy selection*** – having selected a city type, and potentially customised it, the user can then select various policies to apply in their city. The primary policy measures will be associated with default parameters, again allowing the user a simple and quick way to use the tool.
    - *Policy customization* – as with the city types the default data for the policy options can be customised to refine the policy measure. For example by adjusting tariff values for a charging scheme.
- ***Calculation framework*** – this forms the core of the tool and takes the city type parameters and policy measure parameters to calculate the results for the policy measures in the selected city. The calculation framework comprises three key elements:
    - *The transport module* - that calculates the base transport patterns for the city and then adjusts them in relation to the policies.
    - *The emissions module* - that calculates the emissions and environmental data associated with the transport activity.
    - *The policy modules* - that translates the policies into impacts.
- **Tool outputs** – these provide the numerical and graphical representations of the impacts of the transport policies on the city. There are three main types of impact that will be generated by the tool:
    - *Transport impacts* – including mode share, average trip distances and traffic levels;
    - *Environment outputs* – covering $CO_2$, CO, PM, NOx and VOC emissions, and accident rates;
    - *Economic outputs* – providing the direct cost/benefits associated with the policies, and the social cost of emissions and accidents.




**FIGUE 1 Outline structure of the tool**

These structural elements are then implemented in a web-based tool that allows simple on-line use.

## City definitions

A potential barrier to the use of the tool is the lack of sufficient data on the characteristics of individual cities. Therefore a central premise of the tool is the provision of a small number of default "city types" which can be selected by the user as a means for overcoming this issue. This reflects the need for the tool to be simple to use and hence bespoke solutions could not be provided for every city. Default data for typical city parameters will therefore be included in the tool. This will reduce the inputs required by users.

However, customization of the city parameters will be possible to allow the user to reflect local conditions where they have appropriate data.
Appropriate groups of cities were determined in order to:

- Tailor the policy calculations and assumptions so that they generate meaningful results
- Develop appropriate best practice examples and guidance.
- Allow cities to identify the range of tools and approaches that are most suited to its needs.

In this respect the characteristics of the city are relevant only if they affect the way that particular policies are modelled (e.g. using different parameters). Thus, the focus was on a narrow range of criteria that will have the largest impact on the modeling.

At the basic level, the fundamental distinction between city types can be made purely on the basis of population. In terms of city sizes, an OECD paper[1] developed a city definition and analyzed urban areas across Europe in regards to this definition. A city is defined as an area with a core (50% or more of the municipality area) with population density greater than 1,500 inhabitants per km$^2$ and a total population of greater than 50,000. It then defined six size categories as shown blow in Table 2 and assessed the number of cities and percentage of European population in each city category.

**TABLE 2 City size distributions across Europe**

| **City size** | | **No of cities** | **% of population** |
|---|---|---|---|
| S | 50 000 to 100 000 | 410 | 7.6 |
| M | 100 000 to 250 000 | 261 | 9.9 |
| L | 250 000 to 500 000 | 71 | 5.1 |
| XL | 500 000 to 1 million | 38 | 5.7 |
| XXL | 1 million to 5 million | 24 | 9.6 |
| Global city | more than 5 million | 2 | 2.8 |
| **Total** | | **806** | **40.7** |

As well as city size, other distinctions have been drawn between historic and new cities and mono-centric vs poly-centric cities. The former is more relevant to small cities with historic cores that face specific transport problems and have a particularly sensitive urban environment. The distinction between mono and poly-centric is most relevant to larger cities which may have a main core but also number of district centers. This can affect the land use and transport solutions relevant to these cities.

Key to the primary city definition are populations levels and basic urban form. The primary city definitions incuded in the tool are as set out in Table 2, although global cities with more than 5 million inhabitants have been excluded from the tool, because these types of cities typically already have their own tailored transportation models. The focus of use is likely to be the small and medium sized cities, as many large cities will have some modeling tools already. However, there will still be a need for some of the larger cities who are less developed in the modeling and assessment approaches.

For each of these primary city types, default values are provided for the key parameters that will define the working of the model. These parameters cover:

- Population: total population at the base year, trends in population development, distribution by zone at the base year, trends in urban sprawl;
- City size: average journey distances for internally generated trips by mode and zone of trip generation (urban core, outskirts).
- Economy: city economy type (whether the industrial sector is relevant or not, which is relevant for the features of the freight traffic) and income level
- Motorization level: number of cars per 1000 inhabitants

[1] ‘Cities in Europe – The new OECD-EC Definition’, OECD, 2012

- City users: share of incoming trips with respect to internally generated trips and share of multimodal trips (i.e. trips entering the urban area using a specific mode and interchanging on a different mode, e.g. park & ride).

Although default values will be available in the tool, the user will also be able to customize these if they have the appropriate data to reflect the local situation more accurately.

**Policy measures**

The definition of core policy measures from which the user can choose is the second key aspect of the modeling tool for allowing the user to assess a range of policies for the city in a simple manner. During the process of scoping the design and development of the tool, we have assessed a range of policy measures that could be included. The preliminary long list of policy measures was further analyzed in order to:

- Group them into different policy types (i.e. demand management; green fleets; infrastructure investment; pricing and financial incentives; and traffic management/control);
- Classify them according to the institutional level of implementation (i.e. by national or local authorities) in order to identify the policies city authorities are responsible for;
- Classify them according to effectiveness on key impact areas, cost distribution, and transport modes covered.

This screening process allowed for the identification of 21 core policy measures which are detailed below in Table 3. In finalizing the grouping, an element of pragmatism was required, reflecting that there would always be some level overlap between the measures and the different groups.

**TABLE 3 Policy Type Grouping and Policy Measures**

| Policy Type | Measure |
|---|---|
| Demand Management | • Area wide and personalized travel marketing<br>• Bike Sharing Scheme<br>• Car sharing (Car Clubs)<br>• Delivery and Servicing Plans<br>• Land-use planning, density and transport infrastructure<br>• Sustainable travel information and promotion |
| Green Fleets | • Green energy refueling infrastructures<br>• Green public fleets<br>• Low emission zones and parking areas |
| Infrastructure Investments | • Bus network and facilities<br>• Walking and cycling networks and facilities<br>• Park and ride<br>• Trolley, tram, metro networks and facilities<br>• Urban Delivery Centers and city logistics facilities |
| Pricing and financial incentives | • Congestion and pollution charging |

| Policy Type | Measure |
|---|---|
| | • Parking regulation and pricing<br>• Public Transport integrated ticketing and tariff schemes |
| Traffic management and control | • Legal and regulatory framework of urban freight transport<br>• Prioritizing Public Transport<br>• Access restrictions and road and parking space reallocation / Access opportunities for walking and cycling<br>• Traffic calming measures |

In relation to the development of the policy measures for inclusion in the tool, the key points from the first expert workshop were as follows:

- First, an overarching point was with regard to the phrasing of the policy measures. For example "access restrictions" in terms of road and parking space reallocation were also "access opportunities" for walking and cycling measures. This more positive phrasing needs to be captured in the tool and its associated documentation.
- Second, several participants discussed the choice of policy groups and how these had developed recognising the importance of pragmatism in the final decision, i.e. the participants agreed and understood the final selection.
- Third, was the importance of the user guides not only for providing information to support the tool, including justification for key assumptions, but also the opportunity for best practise examples.

Data gathering on the core policy measures was carried out to inform the development of the tool. Evidence was drawn from a wide base including from peer reviewed journals, policy focused research and previous consultancy projects. The data from these sources of evidence have been captured through the use of an Excel spreadsheet template which sets the different policy measures against the public implementation costs, public management costs, implementation aspects and observed impacts.

**Development of the calculation framework**

The calculation framework is the theoretical structure of the tool. It includes the equations used for the background calculations building on the pre-coded values of parameters and variables as well as on the user input provided through the interface. The overall approach of the calculation framework can be summarized as follows:

- The urban mobility system is described at a strategic level (e.g. networks are not represented) by means of several variables, many of which are linked to each other.
- Non-transport elements and exogenous aspects which affect urban mobility are also represented (e.g. population size, energy price).
- For all elements of the calculation framework pre-coded values are defined, nevertheless many of them can be adapted to tailor the calculations to specific local conditions.
- The variables describing urban mobility are described in their development between the years 2015 and 2030 on a yearly basis. The development is the result of exogenous trends (e.g. urban population growth) and of the interactions between the variables. These interactions are managed by means of parameters (e.g. elasticities)

- A reference trend of the urban mobility and of its effects (e.g. local pollution) is computed. This trend can be affected by policy measures.
- The conditions of urban mobility and its impacts are summarised by several indicators which are also used to assess the impact of policy measures.

The calculation framework consists of several components as shown in Figure 2 below. The components have different functions.

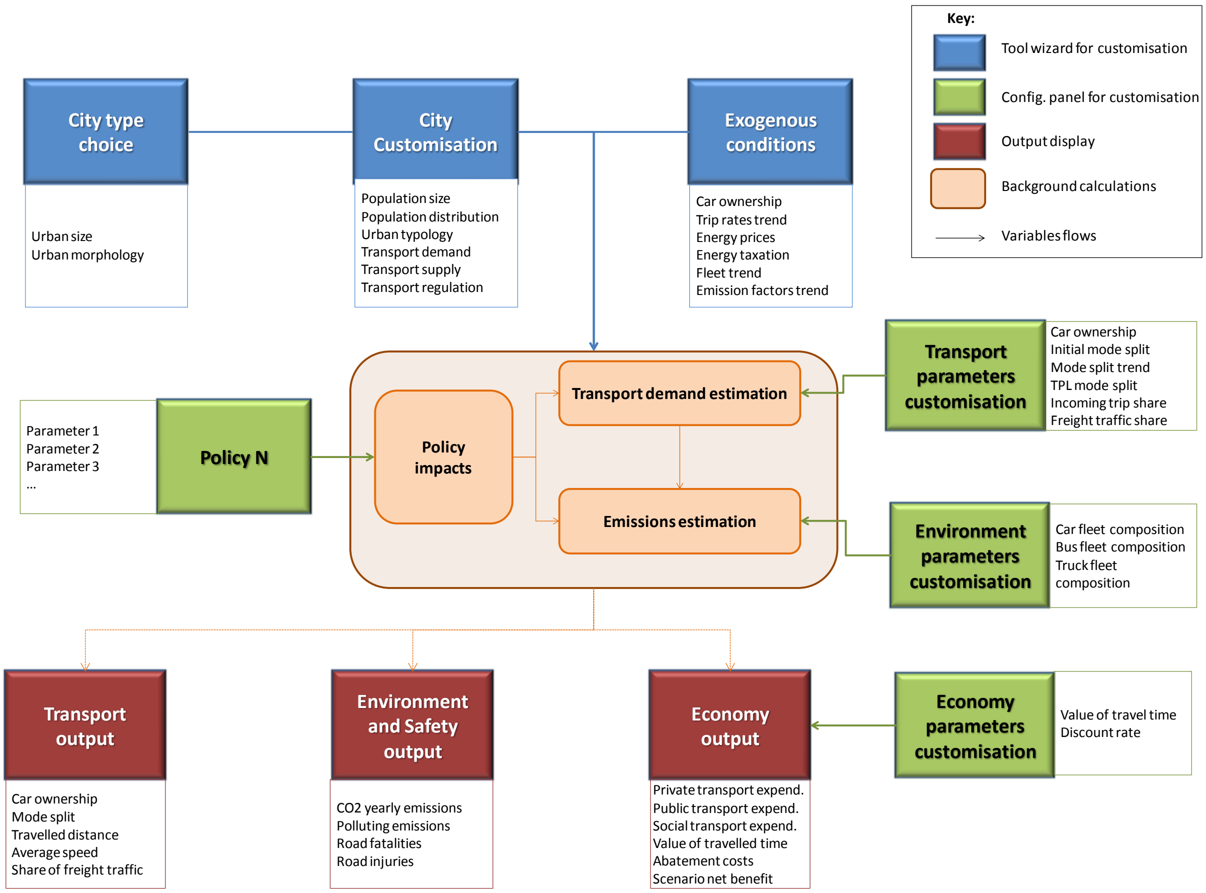



**FIGURE 2 Design of the calculation tool**

A first group of three modules (shown in blue Figure 2) deals with the customization of the elements used for the calculations. These modules are: *City type choice*, *City customization* and *Exogenous conditions*. An initial set of data is defined for each variable; it is however expected that the user will customize the datasets by selecting the most appropriate values to depict their city's circumstances. In addition, the user can choose between alternative sets of projections regarding the exogenous conditions (e.g. to include in the simulation a different assumption about national policies, e.g. fuel taxation). The values selected are used in the calculations for any scenario (unless the user wants to deliberately change some values).

The core of the calculation framework consists of the components managing the estimation of transport demand (trips generated, mode split, passengers-km etc), (road) vehicle fleet composition, pollutant emissions and fuel consumption. These modules are shown in light orange in the figure above. The calculations made within these modules are affected by several parameters, parts of which are modifiable by the users. Also, the effects of the policy measures are fed into the calculation.

A third group of components (colored brown in the figure) manages the calculation of the output indicators segmented into three domains: *transport output*, *environment and safety output* and *economy output*. Additional modules (*policy modules*) deal with the set-up of the measures (e.g. selection of tariff levels) and the calculations needed to simulate their impacts. The reference scenario (baseline), where no policy measures are activated, is used as a means of comparison - to assess the results of the policy scenarios. In addition a slightly more customizable ‘baseline’ will be possible to allow users to include existing policies in a baseline and explore changes or additions to these policies.

**Level of detail of the calculation framework**

The calculation framework represents the urban mobility system and its main components with a level of detail consistent with the strategic nature of the tool, namely:

- At spatial level, the urban area is divided into three types of zones generating transport demand: *(i) urban core, (ii) outskirts with good transit services, and (iii) outskirts with poor transit services*. The urban core is not just the inner centre of the city but the main urban area. Outskirts are suburbs or neighbourhoods which are someway distinct from the city (they can be also different municipalities surrounding the main city in a metropolitan area). Trips generated in each area are distinguished but without origin-destination details.
- Passenger demand segments are modelled according to where trips are generated (*internal trips* or *incoming trips*), their purpose (*working, personal*), period (*peak, off-peak*) and mode (*pedestrian, bike, motorbike, car, bus, tram, metro, car sharing*). The trip purpose type “working” includes both commuting and business, whilst all other trip purposes are classed as “personal”. “Peak” includes both morning and afternoon peak periods.
- Freight demand is differentiated by vehicle type (*light truck, heavy truck*), freight type (*distribution to retailers, mail, other*) and period (*peak, off-peak*).
- Road vehicle fleets are segmented by fuel type and emissions standard. For some modes, only some of the segmentations are available. The car private fleet is distinguished by the car sharing fleet (where it exists). In addition the fleet composition of the goods vehicles used for distribution from urban logistic platforms can be specified separately for example as all electric.
- Fuel consumption is estimated by fuel type.
- Pollutant emissions are estimated for particulate matter (PM), carbon monoxide (CO), oxides of nitrogen ($NO_x$) and volatile organic compounds (VOCs). Greenhouse gas emissions ($CO_2$) are estimated as well.
- For road safety indicators, fatalities are distinguished from serious injuries.

**Specification of the calculation framework**

The specification of the calculation framework consists of three main steps. In the first step, the content of the framework and of its modules was designed in theoretical terms. In this step the variables, the parameters, their segmentation, the linkages between different elements within each module and between different modules were defined.

In the second step, the theoretical structure was implemented in a set of spreadsheets using plausible dummy values. This phase allowed us to check that the various linkages specified in theoretical terms were actually working and to detect flaws which needed corrections.

Building on the results of this second step, the final phase consisted of revising the theoretical specification and documentation for the modules and their linkages in a format usable for coding the framework. The agreed format consisted of a technical note and the following items:

- A Microsoft Excel file reporting the elements of the calculation framework for every module and consisting of variables, parameters, equations, etc.,
- A set of Excel files providing a numerical example of the components and equations, including the linkages between modules and the impacts of the policies. The purpose of the numerical example was to provide the information to implement the calculation framework and to develop the interface, having an idea of the input variables, the type of equations used and the degree of complexity.

The description of the modules and the numerical example provide detailed information on:

- **Exogenous inputs**. All the elements of the module are populated with exogenous data during the building process. These elements are supposed to be read-only and should never be overwritten with different data (unless a revision is made by the developers of the tool)
- **Input from other modules.** This comprises all the elements used in the particular module of interest but produced in other modules.
- **User input elements.** These are all of the elements of the module that can be modified by users through the interface.
- **Calculations.** These comprise all the calculations which are computed within the module using other elements: the equations are explicitly reported.

In the file describing the elements the following information is specified:

- the name of the element,
- the symbol of the element (used in the equations),
- the dimensions according to which the element is segmented (see below for details),
- the unit of measure of the element,
- the data type (integer, double precision, percentage)

In order to help the interpretation of the structure of the calculation framework and of its components, various flow charts representing the modules were also prepared.

## ONLINE IMPLEMENTATION OF THE TOOL

The previous sections set out the overall objectives and structure of the tool, its scope in terms of city types and policy measures and the details of the underlying calculation framework. This section describes how these elements will be implemented in a web-based environment and the user interface that will provide access to the functionality of the tool.

### Build process for developing the online functionality

The on-line functionality has been implemented through two core elements: an underlying database and software layer that stores the data and evaluate the formulae, and a web-based user interface that allows the user to interact with the tool inputting data, changing data and viewing the results.

At the core of the on-line implementation, the calculation framework will use a database to store the data and the formulae. This approach will ensure that the tool is robust and that it can be accessed by many users at the same time, based on a single implementation on our IT servers. This is a much more robust approach than building the functionality of the tool in software such as Microsoft Excel, which is appropriate for standalone tools used by individual users on their own computers, but is not appropriate for the proposed city mobility tool. Excel has significant limitations in this respect as multiple users cannot access a single implementation of the tool. Hence, a database solution will be developed to host the tool's functionality.

Our approach to database development begins with a database schema. This is designed to be flexible and extensible so that the values and the formulae can be changed easily. Data management is handled by an effective and scalable relational database platform that will enable us to securely store and manage the data inputs, and support multiple concurrent users on the website.

The data model consists of values and formulae which are stored in tables in the database, and grouped to make them easy to reference.

The platform for our solution will be underpinned by what is commonly known as the "LAMP" stack, the technical makeup of that platform consists of:

**L**inux, **A**pache, **M**ySQL, **P**HP

From a technical perspective, the application has been built using object-oriented PHP5 delivered through an Apache web server that is running on a virtualized Linux machine. Making use of MySQL, a leading Open Source enterprise grade database product, offers great flexibility and performance when paired with PHP, the widely used server-side scripting language. The combination forms a secure and robust back end solution for our graphical front end tools. The software is designed with data security and efficiency of data access in mind, along with the critical ability to ensure the solution is scalable to meet the expanding needs of city initiatives in the area of urban mobility.

**Roadmap development**

A user of the tool will initiate the roadmap building process by selecting a city type and inputting some basic descriptive information about their city. A roadmap record is then created and linked to the database model.

The basic information is then used to configure the calculation framework and provide an initial set of results and outputs for the roadmap. As described above these city parameters can be customized using simple controls on the website. When these controls are used to add or update any value, all the relevant formulae are recalculated and the set of graphical outputs are updated. Having configured their city, the user can then add and customize policy measures, again using simple controls on the website. This is done in a responsive and interactive process so that as each policy measure is added or customized all the relevant formulae are recalculated and the set of graphical outputs are updated. Furthermore, any updates to the values or formulae in the underlying data model also trigger a recalculation of all saved roadmaps. Once a roadmap record is created, the user is redirected to a unique web URL that can be saved or bookmarked and used for viewing or editing that roadmap in the future. This unique URL can also be used to allow others to access the scenario, or for the user to compare different scenarios. New roadmaps can be created by the user at any point.

## TESTING THE TOOL

Five cities have agreed to pilot the tool and test its functionality. These cities were selected to reflect a range of types of cities, in terms of population, location and transportation features. The case study cities are as follows:

Bremen (Germany)

- Population: 550,000
- Transportation features: S-bahn (metro), port and river
- City type: industrial/commercial

Madrid (Spain)

- Population: 3.3 million
- Transportation features: Metro, river location
- City type: capital city

Zagreb (Croatia)

- Population: 800,000
- Transportation features: Trams
- City type: capital city

Gothenburg (Sweden)

- Population: 550,000
- Transportation features: port
- City type: port city

Burgas (Bulgaria)

- Population: 200,000
- Transportation features: surrounded by lakes
- City type: industrial

Alba Lulia (Romania)

- Population: 60,000
- Transportation features: river location
- City type: historical

The case study cities are currently working with the project team to carry out full testing of the beta tool to develop policy roadmaps for their cities. Following the completion of the beta testing program, the tool will be amended to take account of feedback received from the case study cities. The tool will then be launched in April 2016 at a stakeholder event and will then be freely available for all EU cities to use to support the development of their urban transport roadmaps.

## SUMMARY

This project has been used to develop a user-friendly, web-based calculation tool that can be used by cities to help them develop urban roadmaps that aim to improve the sustainability of their transportation systems. The tool has been developed to meet the needs of the many cities across Europe that do not currently have access to the resources or expertise required to develop robust sustainable urban transportation plans. The tool does not require any expertise in modeling and has been designed to be flexible enough to be suitable for the needs of different types of cities. Whilst the tool has been designed to support EU cities, it can also be adapted to meet the needs of cities elsewhere in the world.

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