



Appraisal methodology and guidelines on its application for workshops

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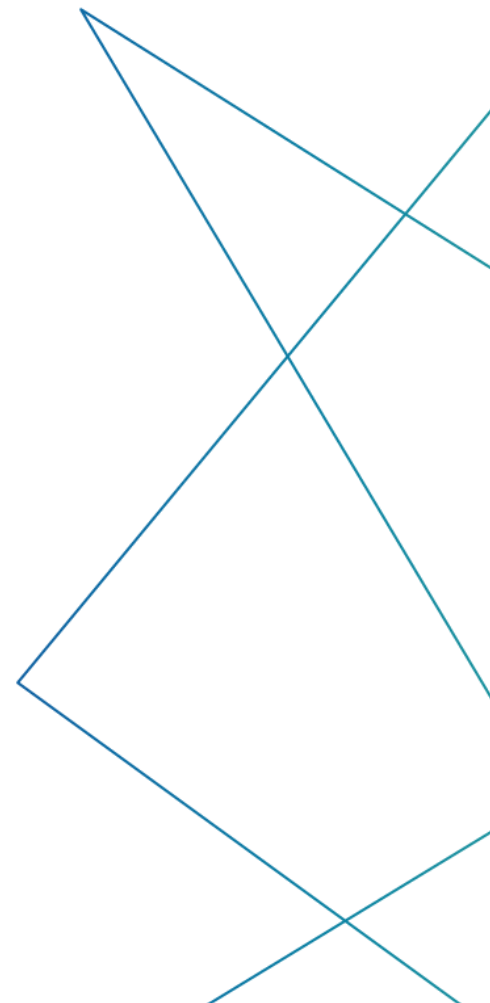
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Authors: Ricardo Poppeliers, Onno de Jong, Jochen Maes

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Lead participant	Ecorys
Written by	Ricardo Poppeliers, Onno de Jong, Jochen Maes (Ecorys)
Reviewed by	Raymond Linssen (RWS), Kevin van der Linden (RWS), Susanne Boehler – Baedeker (Rupprecht)
Approved by	Sjaak van der Werf (Project Coordinator) Jos Arts (Innovation Manager)
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1 Summary

One of the objectives - within the overarching objectives - of the Vital Nodes project is to assess, validate and categorize solutions for improving the integration of urban nodes in the TEN-T corridors. To achieve this, the impact criteria of solutions need to be defined and operationalised.

Methodology: broader than ..

To assess the impact of solutions it is required to understand the following aspects:

- The challenges of an urban node for which a solution is searched for, including the specific context (circumstances and situation of a node);
- the specific mechanisms that influence the impact of a solution.

The project Vital Nodes – and specific the WP 3 workshops - learns that for most of the stakeholders there are two new elements added within Vital Nodes compared to the usual way of looking at transport solutions¹:

1. The linkage between the broader spatial development of an urban node and transport and infrastructure (mobility and freight) solutions;
2. the linkages between the local scale, the (regional) functional urban area scale (FUA) and the European TEN-T / corridor scale.²

The direct consequence is that the Vital Nodes methodology used in WP2 is necessarily broader than “only the application of an appraisal methodology” and also entails the development of insights into the local (including functional area) situation. Therefore, facts and figures, challenges and the appraisal methodology are developed in an integrated way with the workshops with Tier 1 nodes and presented as an integrated deliverable (report D3.3).

Impact criteria

We advance a set of five impact criteria that are distinct and aligned with the Commission’s 2011 White paper to promote the single European transport area³. In order to assess each solution on the impact criteria a few criteria are advanced.

Guidelines

The guidelines consist of six steps to apply the methodology in the workshops.

1. Gathering of relevant facts and figures specific for the node
2. Acquire missing data via (urban node) stakeholders
3. Provide draft facts and figures to workshop participants
4. Complete factsheets/fingerprints

¹ The main focus within Vital Nodes is on freight transport

² More information on the FUA concept can be found in D5.1 and D5.3

³ EC (2011), ‘Roadmap to a single European transport area — Towards a competitive and resource-efficient transport system’



5. Discuss challenges and (the impact of) solutions
6. Validate the factsheets/fingerprints and impacts before, during and after the (WP3 and WP4) workshops.

Conclusions

Conclusions relates to the application of the methodology as well as to the process steps.

The methodology proved feasible in facilitating the discussions with the participants in the workshops. A common understanding of the specific nature of the node and related challenges was established by using the aforementioned methodology. The availability of data (see also D2.2 and D5.1 and 5.3) is scarce. This means a.o. that (a) possible impacts should be based on expert judgement including the judgement of urban node experts and (b) impacts are not absolute and therefore solutions between nodes can not be compared.

Furthermore the Vital Nodes project is a CSA and not a research project, meaning a.o. that a lack of data is not filled up within this project, other than via recommendations. This aspect means also that the workshops are not dedicated to assessment of solutions, but that the assessment is only a part of different elements of the workshop.

The work packages 2 and 3 as well as WP4 are closely related which makes the deliverables D2.2, D2.3 and D3.3 strongly related with each other as well. In M11-M20 of the Vital Nodes project this relation will be extended to WP 4. The outcomes and recommendations based on the insights gathered from tier 2 and tier 3 urban nodes are to be discussed in deliverables D2.4, D4.2 and D4.3. Recommendations – based on the conclusions of the application of the methodology - are included in D 5.1 and D5.3.



2 Introduction

Before we can discuss the purpose of this deliverable within the broader Vital Nodes project we have to establish some understanding of the Vital Nodes objectives.

An effective integration of an urban node in the TEN-T network is complex. Complexities arise from:

- different scales of transport services (local distribution/last mile and long distance freight transport are specific logistic expertises);
- different types of stakes and stakeholders involved (economic, infrastructure and environmental policies, etc.) with a mix of public and private organisations.
- different spatial scales of the networks (fine-mazed local/regional road networks, terminals and extensive multi-modal corridors);
- different planning and governance approaches (local, regional, national and cross-border – TEN-T - policies) and private-driven investments in freight logistics.

Vital Nodes addresses the challenging integration of urban nodes in the TEN-T network. It addresses specifically the planning perspectives on three different freight transport scales (TEN-T, functional urban area/Daily Urban System and local scale). These are shown in the figures in D 2.2 and D3.4.

2.1 Scope of this report

The scope relates to the contribution of this deliverable to the main objectives of the Vital Nodes project.

One of the objectives - within the overarching objectives- of the Vital Nodes project is to assess, validate and categorize solutions for improving the integration of urban nodes in TEN-T corridors. To achieve this the impact criteria of solutions need to be defined and operationalised.

An overview of solutions⁴ and their (potential) impact is provided in D2.2. This report (D2.1) describes the pragmatic methodology to appraise solutions and guidelines on its application for workshops.

2.2 Relation with other reports of Vital Nodes

In M1-M10, WP 3 of the Vital Nodes project has carried out various workshops with urban nodes across Europe (the 8+1 urban nodes of tier 1) The urban nodes have been carefully selected in their (geographic) relation to the TEN-T network. Work packages 2 and 3 are process wise closely related to each other and will be followed-up in WP 4. In WP 4 the tier 2 and tier 3 urban nodes are subject of discussion. In deliverable D3.3 the outcomes of the tier 1 workshops are discussed in the form of *recommendations* to the EC (NB: D3.1 was issued earlier and provided the preliminary outcomes for the

⁴ The Vital Nodes project contributes to more effective and sustainable integration of long-distance and last-mile freight delivery and logistics in urban areas by innovative solutions for optimising accessibility, liveability and vitality.



first urban node Vienna). The actual application of the methodology on solutions (and their possible impact) in the workshops held within WP 3 has been described in D 2.2.

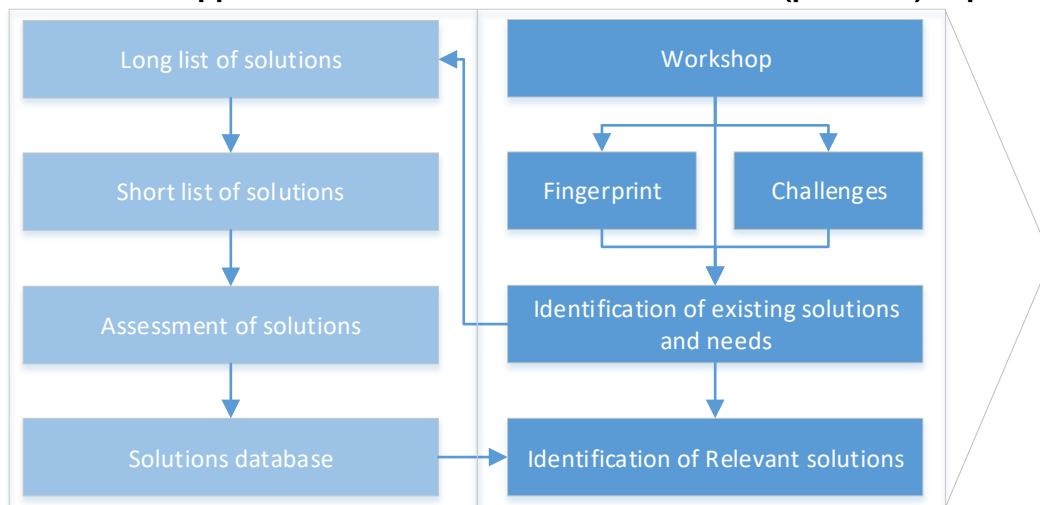
The work packages 2 and 3 as well as WP4 are closely related which makes the deliverables D2.2, D2.3, D3.3 and D4.1 strongly related with each other as well. In M11-M20 of the Vital Nodes project this relation will be extended to WP 4. The outcomes and recommendations based on the insights gathered from tier 2 and tier 3 urban nodes are to be discussed in deliverables D2.4, D4.2 and D4.3.



3 Approach and process to gather and validate solutions

The figure below shows the overall approach and process to scan and validate solutions and their potential impact within the project Vital Nodes.

Figure 1. Overall approach identification solutions and their (potential) impact



In this work package we have started with compiling an overarching list of possible solutions. This is based on a scan of relevant European projects for the selected urban nodes where workshops were held. These projects included:

- Projects under Horizon 2020;
- CEDR Research Call Freight and Logistics in a Multimodal context⁵;
- ALICE⁶ and study on urban logistics⁷;
- CEF-calls urban nodes.

Based on this desk research the impression emerged that many possible solutions have already been identified. These possible solutions have, amongst others, been presented in toolboxes or overviews. However, these solutions are not categorized alongside the dimensions identified in this WP or not linked to the different scale levels as discussed in the introduction.

The long list of solutions have been used as background information for the workshops in tier 1. Several solutions or project experiences have been presented and discussed in the tier 1 workshops, at conferences (e.g. the SUMP-conference in Nicosia) or working groups of Polis, EURO CITIES, CIVITAS, ALICE and with Mr (Lóri) Tavasszy, Professor Freight & Logistics at TU Delft.

The solutions and their (potential) impact are listed in D2.2 and are a first step in a fast changing world.

⁵ <http://www.cedr.eu/>

⁶ <http://www.etp-logistics.eu/>

⁷ https://ec.europa.eu/transport/themes/urban/studies_da

4 Appraisal methodology

4.1 Introduction

To assess the impact of solutions it is required to understand the following aspects:

- The challenges of an urban node for which a solution is searched for, including the specific context (circumstances and situation of a node);
- The specific mechanisms that influence the impact of a solution.

The project Vital Nodes – and the workshops so far - learns that for most of the stakeholders there are two new elements added within Vital Nodes compared to the usual way of looking at transport solutions⁸:

- The linkage between the broader spatial development of an urban node and transport and infrastructure (mobility and freight) solutions;
- The linkages between the local scale, the (regional) functional urban area (FUA) scale and the TEN-T / corridor scale.

The specific scope of Vital Nodes, focussing on freight transport and the interrelation with the different geographical scales, makes that existing methodologies cannot be directly applied. In addition we emphasize that the analysis of solutions is of little use if there is no understanding of the challenges and context of the urban nodes. Many solutions can in theory be applied to all nodes, yet the effectiveness of the solution is very much dependent on the specific nature of the node. Also the effectiveness is influenced by factors like the main challenges at hand and the desired impacts.

No research project

Vital Nodes is a Coordination of Support Action (CSA) and not a research project and therefore no comprehensive conceptual developments are anticipated. The goal of the workshops has been focussed on challenges, (possible) solutions and their impact on challenges. The goal is to deliver in the end deliver validated recommendations to the EC. From the WP3 workshops information is deducted on solutions including impact which is used to validate the methodology: i.e. data collection and validation before, during and after the workshops.

The direct consequence is that the Vital Nodes methodology within WP 2 is necessarily broader than “only the application of an appraisal methodology” and also entails the development of insights into the local situation. Therefore, facts and figures, challenges and the appraisal methodology are presented as an integrated deliverable (report D3.3).

⁸ The main focus within Vital Nodes is on freight transport

4.1.1 Impact criteria and description

We advance a set of five impact criteria that are distinct and aligned with the Commission’s 2011 White paper to promote the single European transport area⁹. The selected impact criteria and the description are shown below.

Table 1. Impact criteria and description

Impact criteria	Description of indicators
Accessibility	Concerns the available capacity on the transport networks (multi-modal) in the urban node.
Safety	Concerns the number of injuries sustained due to transport activities and the measures taken to improve the safety of network users.
Economy	Concerns the level of socio-economic development of the urban node.
Vitality	Concerns the quality of living in terms of sustainability (energy transition), environmental conditions and health in the urban node.
Connectivity	Concerns the degree to which the urban node is connected to the wider region (functional urban area) and the TEN-T Corridor(s).

To avoid unclarity ‘Quality of living’ is defined in criteria of social cohesion (overcoming barriers) as well as energy transition. It might be possible that with the application of the methodology in tier 2 workshops, criteria might be further specified or added. As an example of the quality of living score: Urban quality might be raised by;

- moving industry (e.g. moving heavy industry development outside);
- urban densification (facing a demand for housing which is fulfilled by means of transforming inner city industrial sites / re developing harbours);
- overcoming barriers;
- negative societal effects of congestion in urban nodes;
- circular economy / energy transition.

4.1.2 Assessment of solutions

In order to assess each solution on the impact criteria a few criteria are advanced. The next overview presents the associated questions and the template in which solutions are assessed.

⁹ EC (2011), ‘Roadmap to a single European transport area — Towards a competitive and resource-efficient transport system’

Figure 2. Assessment template

Solutions name			
Type of solution			
Node			
Link or contact			
Investment costs			
Description			
Impact overview			
Impact criteria	Questions	Answer	Source: data or expert judgement
A Accessibility	The solution impacts the chosen modality of the flows	0	
	The solution impacts the route of the flows	0	
	The solution impacts the volume of the flows	0	
	The solution impacts the timing of the flows	0	
	The solution impacts the available infrastructure capacity	0	
B Safety	The solution impacts the number of pedestrian casualties	0	
	The solution impacts the number of cyclist casualties	0	
	The solution impacts the number of motorised vehicle casualties	0	
	The solution impacts the external safety of dangerous goods transport	0	
	The solution impacts the external safety of warehousing operations	0	
C Economy	The solution impacts the attractiveness of the local scale (city) of the Node for investments (value capturing)	0	
	The solution impacts the attractiveness of the FUA from logistics perspective of the Node for investments (va	0	
	The solution impacts the price of living in urban areas (socio economic)	0	
	The solution impacts synergies with other sectors	0	
	The solution impacts the GDP	0	
D Vitality	The solution impacts the air quality	0	
	The solution impacts the noise levels	0	
	The solution impacts health of citizens	0	
	The solution impacts the ease of moving in the city for citizens	0	
	The solution impacts the quality of living	0	
E Connectivity	The solution impacts the connection between the city and the functional urban area from a mobility persp	0	
	The solution impacts the connection between the city and the functional area from a logistics perspective	0	
	The solution impacts the connection with other Nodes on the Corridor	0	
	The solution impacts the connection with other TEN-T Corridors	0	
	The solution impacts the connection with the comprehensive network	0	

2 strong positive impact 1 Positive impact 0 No substantial impact -1 Negative impact -2 strong negative impact



The appraisal framework uses the following principles:

- The answer on above questions generates a +, 0, or -, meaning a positive, no substantial, or negative impact;
- In the spider a + colours green, a 0 grey and a – red;
- Positive answers will increase the green area on the spider web, whereas negative answers increase the red area. Neutral answers will not have a visual effect.
- Only one answer is possible. If five positive answers are given, no negative (red) area can be shown. If only negative answers are given, no positive (green) area can be shown.
- Based on the questions per impact dimension, the outcome moves on a scale between -10 up to +10.

This method is based upon the Dutch “Omgevingswijzer”¹⁰(sustainability check) which proved to work well in a context with a large set of distinct objectives and with a diverse group of stakeholders (spatial planning, infrastructure, environment, economy, nature, leisure, etc.). References include “Overcoming Lock-in: instruments for value creation and assessment early in the infrastructure planning process” and “Towards Area-oriented infrastructure planning – National road network development in a local spatial context”.

¹⁰ www.nuvit.eu and <https://www.omgevingswijzer.org/>



5 Guidelines on the application

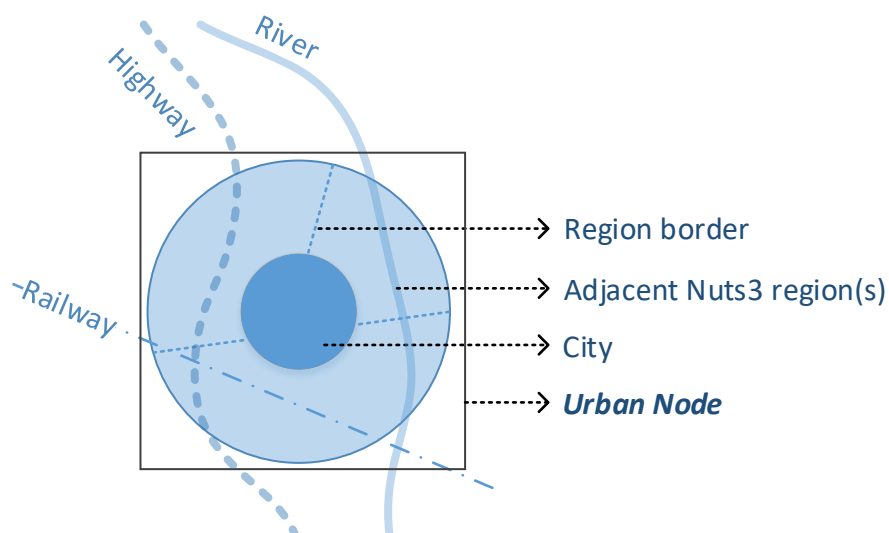
5.1 Background

5.1.1 Data collection

In order to guide the data and information collection as well as to harmonize data over the nodes, it is preferred to make use of available data at Eurostat. Insights which are statistically comparable between nodes require harmonized European data (for freight, cities, et cetera).

In the Vital Nodes project it is important to come to a common understanding and description of an urban node and/or to understand which definition we have to use given the availability of data. The figure below gives a stylised understanding on the applied understanding of the urban nodes from a freight transport perspective.

Figure 3. urban nodes versus logistical systems¹¹



Data on NUTS3 level are used based on the available Eurostat data. Available data at NUTS3 level is data on demographics (area, population size, population density), GDP and national annual road freight transport by regions of loading and unloading. The information that is not available at NUTS3 level is data on rail / IWW transport and freight transport statistics. Therefore use of other available data sources is required as much as possible, including national statistics agencies, policy documents, business magazines, OECD territorial reviews, websites of port authorities, websites with data on intermodal

¹¹ This is a simplified figure and does e.g. not contain the gateway functions of the node.

terminals and websites from EU-funded transport projects in the respective nodes. This definition makes that the geographical scope of an urban node can differ amongst NUTS3 regions. To structure data and information collection and to better understand transport developments, this definition will however be useful, clear and robust.

For the experienced lack of data in the application of the methodology– including data on last mile freight – we refer to deliverables 2.2, 5.1 and 5.3.

5.1.2 The context of the urban node – fingerprint - baseline

The impact of solutions should be understood from the perspective of the urban node's specific context together with the endogenous qualities of the solution itself. The interaction between the chosen solution and the context in which it is applied are influencing the impacts. For example, a solution to promote intermodality is likely to have larger impacts in heavily congested cities compared to cities with greater available road capacity. To account for these interactions Vital Nodes proposes a two-phased approach.

- Firstly, a so-called '*fingerprint*' is developed for each of the selected tier 1 and grouped tier 2 urban nodes in which key facts and figures are presented. The fingerprint provides information on the socio-economic status of the urban node, as well as information on its logistical function from a corridor, regional and local perspective. The facts & figures act as input for the workshops as it helps to contextualise and define the urban node's key challenges.
- At the same time the workshop results will be input for the typology of urban nodes including challenges, for good practice (defined as solutions with main impact, see deliverable 2.2) and therefore, for future transport and infrastructure investments funding strategies at urban, metropolitan and European levels thus improving the performance of the urban nodes throughout the entire TEN-T network.

The fingerprint is an integrated part of the methodology. This is in the first place required as a reference point to sketch the possible impact of solutions/good practices tailored towards the specific context of the node. At the same time it is required for another purpose: to categorize an urban node in order to be able to group. These fingerprints has been visualized in D3.3.

5.2 Application steps

5.2.1 Step 1 – facts and figures

- Fill the facts and figures (including challenges, factsheets see D 3.3) with information from Eurostat and relevant extra sources (via desk research or provided by stakeholders). Make use of other available data sources as much as possible, including national statistics agencies, policy documents, business magazines, OECD territorial reviews, websites of port authorities, websites with data on intermodal terminals and websites from EU-funded transport projects in the respective nodes.
- Make sources explicit.



5.2.2 Step 2 – get lacking information

It might be possible to get lacking information (e.g. challenges and impact of solutions) from key (expert) stakeholders in the node. Therefore it is required to contact and discuss by phone or – preferably - face to face. As the organisation of workshops (tier 1 and tier 2) are directly related to required data and information from the appraisal perspective, an integrated approach is required.

5.2.3 Step 3 – provide draft facts and figures to workshop participants

Send the already partly validated facts and figures, challenges and impacts of solutions at forehand to all participants to get a focused discussion. Include questions to all participants before the workshop on the challenges related to impact as well as the good practices in the node related to impact. See attachment 1. (The challenges, good practices and impact are analysed by the consortium and framed within the appraisal framework combining the input of participants and – if available – data.)

5.2.4 Step 4 – complete factsheets/ finger prints

Collect the answers to complete the finger print and impacts as much as possible and present those – eventually added with solutions and impact from other nodes - in the workshop.

Before the workshop participants are in this way already questioned on the prioritization of challenges as well as on solutions /good practices (implemented, impact). This gives a typology of challenges from an impact perspective and the opportunity to structure the workshop(s) along the already available information.

5.2.5 Step 5 – discuss challenges and (the impact of) solutions

During the workshop challenges and (the impact of) solutions / good practices are discussed further. This might be already implemented solutions in the node, but also possible solutions for the node with potential impact. It depends on the available time of the workshop, if and how deep impact scores can be discussed.

It is of ultimate importance in this methodology to work with spatial design (maps as shown in the finger print) to make stakeholders understand:

- Working on three scale levels, as prerequisite for understanding the (potential) relation between solutions and investments at local, regional and corridor scales.
- Interaction between spatial and infrastructure concepts and investments
- Impact on variety of objectives, and underlying mechanisms

Spatial design (mapping) is therefore an integrated part of the methodology to make stakeholders understand the base case as well as impact of possible solutions beyond their own ('silo') scope.

5.2.6 Step 6 – validate the factsheets / finger prints / impacts

Send the fingerprint and impact scores of solutions after the workshop to the participants in order to get the last validation.



6 Conclusions

6.1 Methodology

The methodology proved feasible in facilitating the discussions with the participants in the workshops. A common understanding of the specific nature of the node and related challenges was established by using the aforementioned methodology.

The availability of data (see also D2.2 and D5.1 and 5.3) is scarce. This means a.o. that (a) possible impacts should be based on expert judgement including the judgement of urban node experts and (b) impacts are not absolute and therefore solutions between nodes can not be compared.

Furthermore the Vital Nodes project is a CSA and not a research project, meaning a.o. that a lack of data is not filled up within this project, other than via recommendations. This aspect means also that the workshops are not dedicated to assessment of solutions, but that the assessment is only a part of different elements of the workshop.

Last: The combination of (a) innovations, (b) future developments and (c) interactions between long distance and last mile makes that the methodology is suitable for expert judgements, but that there is no long term data based evidence for the long term impact (in a fast changing system) of solutions. This is a research recommendation.

6.2 Process

The project Vital Nodes – and specific the WP 3 workshops - learns that for most of the stakeholders there are two new elements added within Vital Nodes compared to the usual way of looking at transport solutions¹²:

1. The linkage between the broader spatial development of an urban node and transport and infrastructure (mobility and freight) solutions;
2. the linkages between the local scale, the (regional) functional urban area scale (FUA) and the European TEN-T / corridor scale.¹³

The direct consequence is that the Vital Nodes methodology used in WP2 is necessarily broader than “only the application of an appraisal methodology” and also entails the development of insights into the local (including functional area) situation. Therefore, facts and figures, challenges and the appraisal methodology are developed in an integrated way with the workshops with Tier 1 nodes and presented as an integrated deliverable (report D3.3).

The application of the methodology has been described in deliverable 2.2 (overview of solutions and their (potential) impact) as well as in the deliverables of workpackage 3. The work packages 2 and 3 as well as WP4 are closely related which makes the deliverables D2.2, D2.3 and D3.3 strongly related with each other as well. In M11-M20 of the Vital Nodes project this relation will be extended to WP 4. The

¹² The main focus within Vital Nodes is on freight transport

¹³ More information on the FUA concept can be found in D5.1 and D5.3



outcomes and recommendations based on the insights gathered from tier 2 and tier 3 urban nodes are to be discussed in deliverables D2.4, D4.2 and D4.3. Recommendations – based on the conclusions of the application of the methodology - are included in D 5.1 and D5.3.



Attachment 1. Format example

Dear all,

In preparation of the workshop in the node @@ we have two specific requests before our call at @@:

1. A draft fingerprint of your node will be send this week. We aim to send the fingerprint not later than @@@ before the workshop to the participants. Therefore we would like to ask you to provide information during our call on:
 - a. The most suitable maps (in the fingerprint we have included several maps of the area of @@@ from various sources)
 - b. Input on lacking information in the fingerprint (in order to get the fingerprint as complete as possible)
2. Specific questions on challenges from the perspective of the impact as well as specific questions on good practices and/or barriers in your node, as described below. We ask you to answer these questions not later than @@@. We also want to send these questions to the participants – if possible directly after your agreement - before the workshop with a request for feedback not later than 10 days before the workshop. The “letter” below is mentioned to send via a mail attachment to the participants.

Introduction

As a project partner in Vital Nodes, Ecorys is responsible for the content knowledge (per urban node and across all nodes). For the overview of all Vital Nodes partners see the attachment of the invitation. During the workshops, we will present the “fingerprint” of the node. This fingerprint has been attached to this e-mail. The fingerprint comprises facts and figures about the node and specific challenges for your urban node.

Identifying challenges

In order to make the workshops as effective as possible, we want to identify as many specific challenges as possible in advance, in collaboration with the stakeholders. During the workshops we can then focus on refining these challenges and identifying possible solutions to tackle them.

Identifying solutions

Within the Vital Nodes project, we map effective solutions (“good practices”) that contribute to a better integration of urban nodes into the corridors of the TEN-T network (with a focus on logistics). The underlying goal of this exercise is the learning effect. Can urban nodes learn from each other and benefit from good practices – or possibly barriers - that have been successfully applied in other nodes?

Categorising challenges and good practices

In order to categorise challenges as well as good practices, we have defined the following impact criteria:

	Description of indicators
--	---------------------------

Impact criteria	
Accessibility	Concerns the available capacity on the transport networks in the urban node.
Safety	Concerns the number of injuries sustained due to transport activities and the measures taken to improve the safety of transport network (water, rail, road, air) users.
Economy	Concerns the level of socio-economic development of the urban node.
Vitality	Concerns the quality of living in terms of sustainability (energy transition), environmental conditions and health in the urban node.
Connectivity	Concerns the degree to which the urban node is connected to the wider region (functional urban area) and the TEN-T Corridor(s).

Question 1

Before the workshop, we would like to ask you to prioritize the challenges from your point of view in the urban node from 0 to 5 (0 = irrelevant, 5 = relevant). For example: is the challenge of tackling safety issues more relevant than the challenge of tackling vitality issues? This gives us a deeper impression of the challenges at forehand.

Question 2

Because good practices are context-dependent, it is also interesting for us to know at forehand which good practices (already implemented) in your node should be mentioned from your professional background. Therefore we kindly ask you to answer the following questions:

1. What do you consider as good practices related to accessibility in your node and why?
2. What do you consider as good practices related to safety in your node and why?
3. What do you consider as good practices related to economy in your node and why?
4. What do you consider as good practices related to vitality in your node and why?
5. What do you consider as good practices related to connectivity in your node and why?

To make answering the question more easy, we have added a table in Excel in the attachment. We kindly ask you to fill this table in per good practice. If possible, we also ask you to give a direction of the investment costs as well as yearly maintenance or exploitation costs of the solution.

As mentioned before, please kindly provide your input before @@@, so that we can include them in the fingerprints.

Thank you in advance for your collaboration and if you have any questions, please do not hesitate to contact us (see contact details below).

Best regards,

