Strategic Choice of Measures

– *A new step for planning of transportation solutions*

Handbook

TRAFIKVERKET
SWEDISH TRANSPORT ADMINISTRATION

Swedish Association of Local Authorities and Regions

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Preface

The planning for the transport system and its development in Sweden is undergoing changes from the 1st of January 2013. The parliament has decided on changes in the strategic and economical planning as well as for the planning of road and railways projects according to the Road Act and the Railways Act. The handbook: Strategic Choice of Measures – A new step for planning of transportation solutions, should contribute to well functioning new planning processes. Choice of measures in accordance with the "four-step principle" contribute to a clearer methodology for a preparatory stage of planning.

Strategic choice of measures can therefore become a link between the strategic and economic planning on one hand and on the other hand the planning of specific infrastructure projects and other projects.

The methodology for strategic choice of measures studies contains an arena that is created for early dialogues which is an important key to success. The methodology can, in principal, also be applied for solving problems which has nothing to do with traffic and transportation. An application of this methodology can facilitate cooperation and coordination with other types of planning at regional and local level.

An initiator for a strategic choice of measures study could be the Transport administration, municipalities (local authorities), regional authorities or other actors. From this reasoning are the three bodies: Swedish Transport Administration, The Swedish National Board of Housing, Building and Planning and the Association of Local Authorities and Regions standing behind this handbook and wanting to promote the use of it. It is a joint ambition to follow up the experiences from the application of the handbook and after some time revise and publish a second version. In the handbook each authority and organization is responsible in accordance to its area of responsibility.

The coordinators for the development of the methodology for strategic choice of measures are Inga-Maj Eriksson and Per Lindroth, Planning Department, Swedish Transport Administration. Cecilia Mårtensson is the contact person at the Association of Local Authorities and Regions and Järda Blix (later Magnus Jacobsson) at The Swedish National Board of Housing, Building and Planning.

Borlänge, Stockholm and Karlskrona in October 2012

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Content

Terms used in this document

Actor	**Responsible for acting, for some part of the transport system, for planning or operation.**
Deficiency	**Difference between the current state and what is desired for the future transport system.**
Function	**A duty/task for e.g. a part of the transport system.**
Functionality	**Concerns quality, to what extent the transport system is functioning.**
Function in the transport system	**Travel and transport function e.g. function for long distant freight transportation, function for daily commuting etc.**
Functionality for transport system	**The ability to supply the functions included in e.g. accessibility, transport quality etc.**
Functionality for a commuting corridor	**How well the transport corridor is functioning for commuting journeys.**
Interests	**Public interests and private interests. In early stages of transport and land use planning the focus should be on the public interests.**
Stakeholders	**Those who have an interest in the case, e.g. concerned residents. Actors can also be stakeholders.**
Partner	**Someone who has a part in a negotiation or someone who has a special interest in a legal case.**
Problem owner	**An actor who has responsibility and initiative over the problem solving or part of solution.**
Travel center	**A travel center usually includes a railway station and a bus station. Travel centers should facilitate change of travel mode.**
National interest for transportation	**Land, under the Environmental Act, is protected against other measures which significantly can complicate the use and the construction of infrastructure for transportation.**
Corridor study	**A term used in different contexts. Strategic choice of measures can be carried out for a transport corridor, a multi-modal corridor, etc.**
System analysis	**Multi-modal analyses of the transport systems' functions and deficiencies with goals and needs as a starting point.**
Terminal	**A place where the carrier is changed.**

1

Strategic choice of measures – One part in planning for the transport system

1.1 A planning process in development

The transport system has one of the most important functions in society, a service function which we are all dependent upon. How transport demands should be satisfied and how problems and deficiencies should be solved presents a problem as well as engages many interested parties in many different situations.

Transportation seldom has a value of its own. It is the accessibility, the possibility to reach a supply (and target points), and to deliver goods which can be satisfied with a transport function. But improved accessibility can also be achieved by a better location of a growing industry, a school or housing. Target points (e.g., service points) that move or close down cannot, as a rule, be compensated by a transport solution. Several sectors of the society as well as other actors need to contribute to good accessibility and efficient transport solutions. Housing locations, activities and service should follow a planned long term spatial structure in order to provide good accessibility to target points and a cost-efficient transport system. Changing of transportation and housing structure takes time and is connected with large investment costs.

When deficiencies and problems in the transport system are identified, there are often several "owners" of each problem. In some cases the behavior of the users of the system can be the biggest problem. Concerning measures regarding the transport system they cover many types of measures, from the use of the system, behavior and the location of housing, to operation of transportation, vehicles and transport infrastructure. Many different actors and interests have impacts on and are impacted by the transport system.

Important public actors are the Swedish Transport Administration, regional planning administrations, regional public transport authorities and municipalities. Regional administrations (of different types) have the responsibilities for carrying out county transport plans, for regional development planning, and in some regions, also for regional planning in accordance with the planning and building law. The municipalities have the responsibility for the development of their respective municipality and for comprehensive land use planning in accordance with the planning and building law. The county administrative board has among other things the responsibility for coordinating the interests of the state in different contexts. The county administrative board is in some counties also a regional planning administration.

Important public actors in connection with the strategic choice of measures of the transport sector.

The planning system for the transport system is under development. The strategic choice of measures is a preparatory work / study before choice of measures, in accordance with the government act 2011/12:118 Planning system for transport infrastructure.

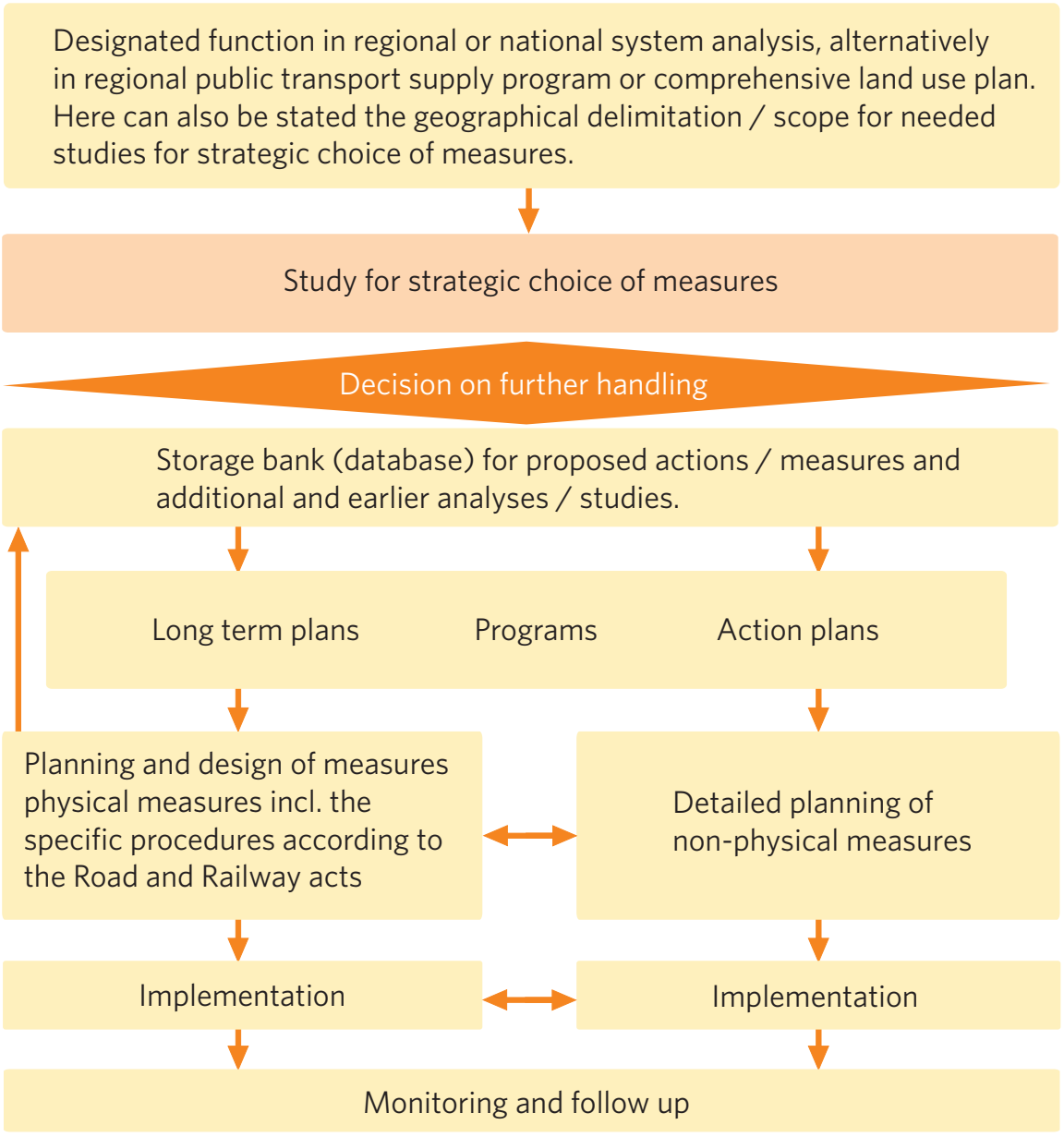
Guidance as well as competence and practice need to be further developed based on feedback and evaluation of activities.

1.2 Background - benefits

The analyses of deficiencies and problems and the unbiased search for alternative solutions in order to find suitable measures has not before had a clear place in the planning system for the development of the transport system. The establishment of the Swedish Transport Administration together with an improved planning system and especially the methodology for studies for strategic choice of measures is expected to ensure safe and cost-efficient solutions which take into consideration all transport and travel modes as well as all types of measures. It concerns both efficiency in the society and a contribution to sustainable development. The government states in the bill to the parliament, 2011/12:118, in the chapter on the physical planning of roads and railways, that:

”A preparatory study with an unbiased multimodal analysis and application of the “four-step principle”, should take place before any formal physical planning and design.”

The government bill, 2011/12:118, Planning system for transport infrastructure

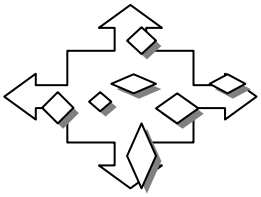


A decision on further handling can result in placing the study for strategic choice of measures in the "bank" for proposed measures, if it is considered to be a sufficient base for plans or programs and for actors to decide on planning of specific measure or a package of measures which in some cases may include to start a formal planning process in accordance with the Road or Railway acts.

For cases in which measures are expected to cover construction of road or railway the methodology for strategic choice of measures is expected to be applied before any formal planning of transport infrastructure project, according to either the Road act and/or the Railway act. Also in such planning at project level, for specific infrastructure projects, the so called "four-step principle" should be applied – but then within the frame of the projects scope and delimitation.

Studies for strategic choice of measures may cover a larger part of the transport system than the single projects that are expected to be planned for the eventual implementation. A study for strategic choice of measures which concerns a 100 – 150 km long transport corridor will probably be followed by several strategic choice of measures studies for shorter sections which can be more concrete in proposing measures that contribute to the solutions for the whole corridor. In a similar way an urban development study can be divided up into closer studies for different pieces before actual design of detailed areas and buildings can begin.

Division of a transport corridor into shorter studies and projects.



An urban package of measures consists of different pieces which require closer studies and further planning.

1.3 Prior work on the methodology

In the delivery to the government on the report "New planning system for the transport system" by the former four different transport administrations in February 2010, there was a planning activity named "Choice of measures according to the four-step principle". Later the same year the new Swedish Transport Administration (STA) decided to work out a more concrete description of a methodology, which then was presented in October 2010. Thereafter STA decided that this methodology for strategic choice of measures studies should be tested in six cases during 2011. Six rather complex cases were selected for this and took a rather long time to carry out (a more than one year process). For two of these cases there were other actors than STA who had already earlier taken an initiative to this kind of study.

Persons from STA regional offices that were representatives in these cases were gathered for exchange of experience during 2011, together with national persons responsible for the joint methodology. Also an independent evaluation was done regarding the test cases during late the autumn of 2011 (J. Odhage, 2012)

In the beginning of 2012 a preliminary handbook was presented and circulated even outside the Transport Administration and discussed with other authorities and bodies. The preliminary handbook was also used during 2012 when the application of the strategic choice of measures studies were stimulated to increase. Now also small and rather simple cases should be approached by this general methodology for strategic choice of measure studies. The proposed handbook was received positively by most internal and external bodies, but there were also requests for clarifications, etc. Afterwards the Swedish Transport Administration discussed adjustments together with Swedish Association of Local Authorities and Regions and The Swedish National Board of Housing, Building and Planning which resulted in that all three organizations could stand behind the handbook. The handbook on the methodology is primarily designed with regard to planning in the transportation sector. However it is considered that the methodology also could be applied for solving problems that are not connected with traffic and transport issues.

1.4 Aim of the methodology for choice of measures

A preparatory step for the selection of measures.

The strategic choice of measures studies should give a base for a prioritization of efficient solutions within the frame of available economic resources and contribute to the further development of the function of the whole transport system as a part of sustainable development.

Studies on the strategic choice of measures are a preparatory step for the actual choice of which solutions and type of measures to propose and bring into the "bank" of measures. The measures may be possible to implement rather soon within an existing program or framework of funding and they can be part of municipalities' and other actors' planning, except from the planning of the state owned parts of the transport system. Delimited projects or packages are created on the bases of studies of strategic choice of measures.

Before a study for choice of measures is done, there is also a prioritization between different proposed studies. It is necessary to select which problems are the most important to study, which contributes to efficient planning. Through early studies like those for strategic choice of measures, the issues that belong to a very early stage will be discussed at that time and not become a burden in later stages. Also the documentation from this early study is crucial for later planning stages where it can be most important to refer to such documentation.

During a study it is also clarified which actors have certain responsibilities for implementation of the measures and for the contribution to funding. How far this can be clarified at this stage of planning depends on the case and the situation. Normally it is after the studies for strategic choice of measures that the planning becomes so concrete that a discussion of agreement on the division of costs between the actors becomes meaningful. A study itself for strategic choice of measures can be funded by several parties if appropriate in the actual situation.

The application of the methodology according to these guidelines cover that solutions to problems that are shown or that are expected in the transport system are considered jointly of the concerned actors and interested parties with support from the four-step principle for the generation of alternatives. First, (step1) there is a search for solutions which affect travel demand and choice of travel mode. Second, the search is for solutions that make more efficient use of the existing transport system. As third and fourth options, reconstruction and new construction measures are considered. All are from a multimodal and intermodal perspective. Studies on strategic choice of measures may show that the solution of e.g. an accessibility problem becomes something else than what was first thought. The solution that comes out of a strategic choice of measures study may include non-infrastructure measures and measures outside the transport system, such as change of location of a target point in order to avoid a traffic barrier or other transport or traffic safety problems. Solutions could also include strengthening of specific transport modes in order to release traffic from congested transport infrastructure.

Implementation of the methodology for strategic choice of measures studies is done successively from 2012 through different information activities from the Swedish Transport Administration, the Swedish Association of Local Authorities and Regions, and The Swedish National Board of Housing, Building and Planning, connected to the dissemination of these guidelines. The application of the methodology, including recommended documentation of the studies, is expected to become a requirement for proposal for measures to be taken up in national or regional transport plans with connected funding programs.

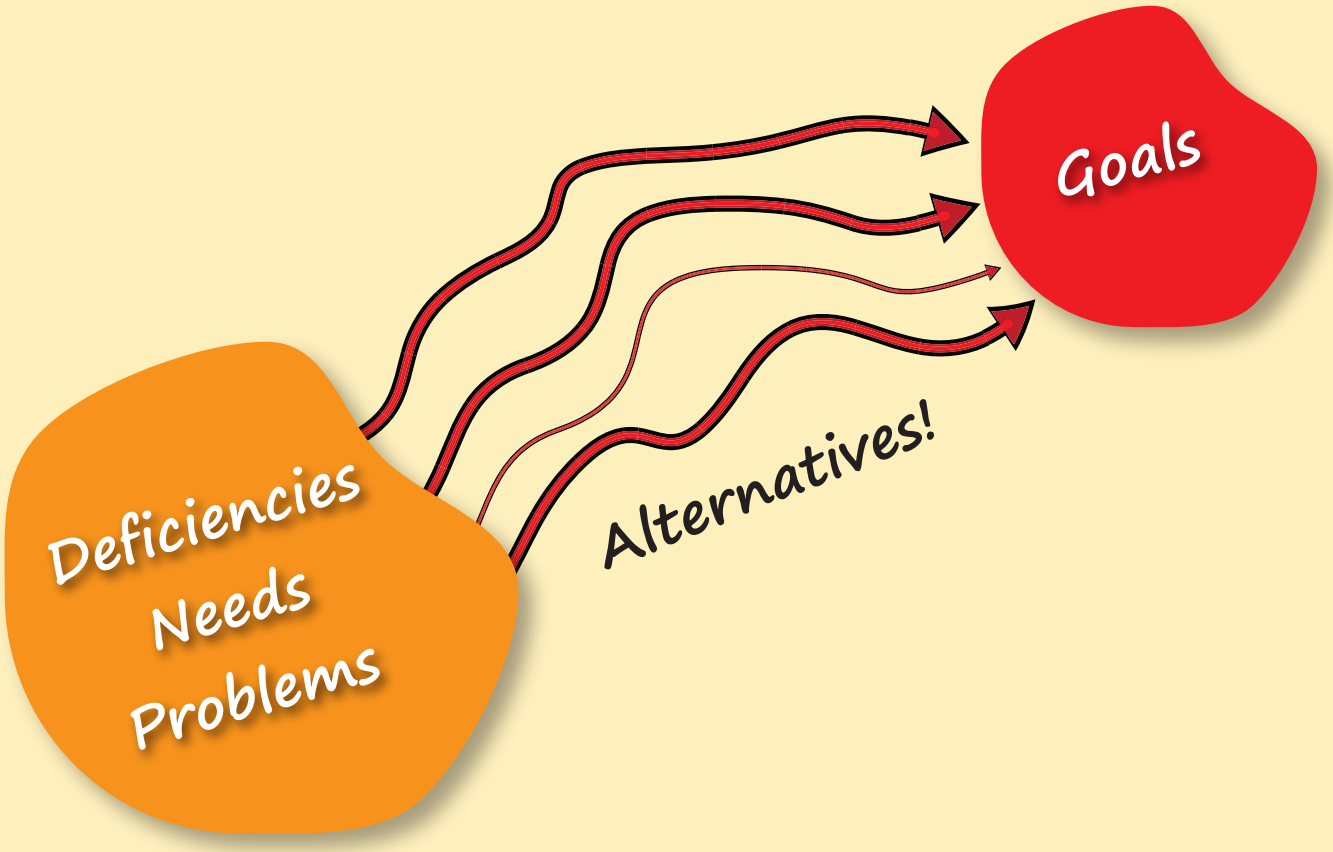
The methodology for strategic choice of measures studies connects to the planning methodologies of actors outside the transport planning authorities, and it creates preconditions for coordination of continued planning and implementation of measures as well as decisions on co-funding between actors. Studies for strategic choice of measures can function as a bridge between different types of plans and planning in accordance with different legislation within Sweden.

1.5 Target group

This handbook is a support to those who will apply the methodology for studies of strategic choice of measures and to use the results of such studies, which means planners and decision makers within possible actors and consultant firms who are active within this field. Moreover, there is also a larger group of planners, teachers and researchers who need to know about the new methodology.

2

Strategic choice of measures – What is that? When? For what?



During the last 10 – 15 years the Swedish Transport Administration and earlier Road Administration and Rail Administration have used different names for studies similar to what is recommended within this methodology. As the Swedish Transport Administration is now introducing the methodology for studies on strategic choice of measures, the earlier names for similar studies should not be used. The studies for strategic choice of measures for a very long transport corridor or for urban transport problems which results in a proposal of direction for measures could later be followed by several deeper studies for different parts of the problems that are to be solved.

A specific study on a new technical function within existing transport infrastructure owned by the Swedish Transport Administration could be thought of as sufficient or alternatively be carried out in connection with or after a study for strategic choice of measures. See also section 2.5.

2.1 Strategic choice of measures and the core issues

The broad strategic objectives of the Swedish transport policy are a natural starting point in any work concerning strategic choice of measures. In addition also regional and local objectives are important and the latter are expected to be in accordance with the national transport policy.

The overall objective of the Swedish transport policy is to safeguard a social economic efficient and sustainable transportation supply for inhabitants and for industry in the whole country. Under this umbrella objective there are more specific objectives for the transport functions and for the consideration of traffic safety and environment.

The transport policy's functional objective deals with accessibility. The transport system´s design, function and use should contribute to a good basic accessibility and to regional development in all parts of the country. At the same time the transport system should correspond equally to transport demands of both men and women.

Accessibility

The impact objective of the transport policy concerns safety, environment and health. The transport system´s design, function and use should be adapted so that nobody will be killed or seriously injured. It should also contribute to the fulfillment of the environmental quality objectives of the Swedish environmental policy and to improved health.

All measures which are planned in order to tackle problems and needs connected with the transport system should contribute to the fulfillment of the transport policy objectives. See chapter 4 on how to integrate these objectives in the methodology for strategic choice of measures.

2.2 From problems and needs to efficient measures and long term plans

The efforts to find efficient measures are expected to increase by this methodology for studies of strategic choice of measures. However, the total planning work is expected to become more efficient, partly because a slightly less number of initiatives will proceed further to a measures-bank, and partly because a greater number of small measures can reach implementation within a few years without any formalized project design

process. It is expected that there will be a cull among the problems before the decision to start a study for strategic choice of measures as well as a collection of connected proposed measures into packages[1].

2.3 How is strategic choice of measures connected to the long term plans for the state owned part of the transport system?

During 2012 the methodology for studies of strategic choice of measures will be increasingly applied. The aim is that all proposed infrastructure measures which are to be taken into a future national or regional transport plan (after 2013) should have been analyzed through a strategic choice of measures study.

It should be seen from the documentation of a study that the recommended methodology has been applied. In the future the documentation of the study should serve as the base for decision-making on further handling of problems and needs with possible measures. The written decision on further handling should show that the documented study has been considered. The study and then the decision on further handling are placed in a "measures-bank".

For infrastructure projects that are currently included in a long term plan and for which feasibility studies and/or detailed design studies have already started, there is no requirement for a strategic choice of measures study; it is not obvious that such a study would provide an added value compared to already carried-out planning studies. Existing documentation of studies can, after review, be approved or not approved as equal to a strategic choice of measure study.

2.4 Connection to other type of planning, plans and programs

The responsibility for recurrent review of areas of national interest lies with the national level of government (regulated by law), including among other things the transportation interests. The strategic choice of measures considers existing areas of national interests but can also contribute to bases for designation of national interests for transportation/communication purposes. Planning for the development of the transport system also has a connection with the planning for a joint transport system with the European Union. In an EU context so called "multi-modal corridor studies" could then correspond to strategic choice of measures studies.

Regional public transport programs and comprehensive regional development programs and development strategies could generate starting studies for strategic choice of measures. Also, the outcome of a geographically large study for strategic choice of measures can become an important base for such programs and strategies.

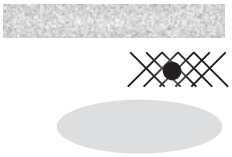
At the local level a study for strategic choice of measures can be linked to a transport or traffic strategy for a city. An up-to-date comprehensive land use plan in accordance with the Planning and Building Act is always an important background and source of information for a strategic choice of measures study. On the other hand, a strategic choice of measures study which covers a large geographical area could become a base for regional as well as local plans.

An assessment of environmental impacts is included in several contexts in planning for the transport system, and should be integrated in strategic choice of measures studies, when environmental issues are relevant. Concerning a strategic level of planning, see Method for environmental assessment of plans and programs within the transport system (in Swedish), Swedish Transport Administration publication 2011:134. Planning in accordance with the Road Act and the Railway Act for specific infrastructure projects include, for each project, a formal environmental impact assessment when the environment is expected to be significantly affected, and environmental impacts should be assessed and considered and considered also in other cases.

1: With packages mean an assembly of actions that have a dependency between them.

2.5 For what situations should a strategic choice of measures study be carried out?

A study for strategic choice of measures concerns how a transport function or a level of quality of transport service can be reached for the whole or parts of:



A transport corridor or a smaller **link** in the transport network

A transport network, e.g. for a city or a limited urban or regional area

A transport node, a hub or a junction, a terminal, a harbor, an airport.

These terms are neutral and may concern both road transport, rail transport, maritime and aviation as well as all types of travel modes.

When problems and needs are observed concerning a road or a railway etc., there is often a benefit for the problem solving to widen the analyses through a strategic choice of measures study, so that land use and housing issues and a slightly larger transport system and several transport and travel modes are included. The latter may be necessary when the use of the transport system is a part of the problem and the traffic distribution in a net need to be considered.

When is a strategic choice of measures study not needed?

If a comparable base for choice already exists (e.g. in an initial project study in accordance to earlier regulations or in a local or regional plan, and a study for strategic choice of measures should not make any difference) then the consideration may be that there is no need for any strategic choice of measures study. A short documentation in accordance with a simplified presentation could be appropriate as well as the addition of a reference to the already existing material.

Difference between a strategic choice of measures study and a study of new technical functions

Functional studies for railways are carried out within the Transport Administration. The aim is normally to improve the technical function within existing infrastructure, in order to supply new or extended needs from users. Functional studies are different from so called maintenance needs analyses which are carried out in order to preserve the function of a specific transport infrastructure.

A functional study can be carried out instead of a strategic choice of measures study if it is likely that potential measures concern the existing infrastructure reliability, standard, state of maintenance, technical state, etc. However, if there are potential measures of several types (in accordance with the four-step principles´ different steps), then a strategic choice of measures study should be carried out.

Within the frame of a strategic choice of measures study it can be appropriate to carry out a specific functional study when there is a need for deeper knowledge on potential cost effective measures within its existing infrastructure and its maintenance and traffic operation. In addition a functional study can be useful as a part of a deepened studies that may be needed before deciding on the implementation of specific measures.

2.6 Quality assurance

The methodology for strategic choice of measures study itself lends to the encouragement of good quality in bases for decisions on potential measures.

The aim of safeguarding the quality of strategic choice of measures studies is to check that the documentation (base for decision) is sufficient in terms of content and extent, but not un-necessarily detailed, in order to make it possible to decide if planning of specific measures (or packages of measures) should start, in what way and with what responsibilities of different actors. Obstacles, difficulties and cost driving factors are expected to be documented and considered in the assessment of effects, consequences, goal achievement, etc.

A strategic choice of measure study should be clear on why the proposed type of measures are the best and on what bases the possibilities for implementation have been assessed. Altogether the documentation and the respective decisions should satisfy the necessary base for prioritization in connection to the recurrent work in order to establish the national transport plan and county transport plans.

A draft version of a strategic choice of measure study should be sent to the concerned municipality, county administrative board and those responsible for the regional transport plan and other relevant regional bodies for comments. In their written comments it should be clear that both political board and their concerned unit have been involved, at least in the case of larger studies of great interest.

The main actor or actors in a study are also responsible for ensuring good quality of the strategic choice of measure study. The Swedish Transport Administration´s regional offices has a quality assurance checklist which they review several times before a strategic choice of measure study is completed. There is certain allowable flexibility depending on the complexity and difficulty levels of the cases. Sending the draft study to interested parties should be considered as a part of the quality control. This can be helpful in the future planning of specific measures where others have access to the comments around the strategic choice of measures study. Depending on the type of case this may involve municipalities as well as private companies, county administrative boards, regional planning organizations, the concerned public and interested organizations.

Before a revision of national and regional transport plans it may be needed to carry out additional analyses, calculations, and/or information and quality checks to support a strategic choice of measure study.

3

The methodology and its application

3.1 Principal methodology

Dialogue and cooperation on needs – problems – responsibility – goals – solutions – ways of inancing

The working methodology is divided in four phases which need to be managed separately. In practice it may be needed sometimes to work backwards a little during the working process. Documentation and preliminary presentation should take place successively as the work progress.

The working methodology starts with an Initiation-phase which leads to a starting decision where several actors can agree to carry out a joint study and sharing the costs for the study.

After that, a deepened analysis and discussion is carried out in order to clarify the situation and its reasons and the potential future development which need to be handled within the scope. Facts are collected. Dialogues are carried out. Reconciliation and compromise takes place between actors/stakeholders on the problems, objective and goals for the solutions.

Then it is time for generation of alternatives through dialogue and screening/culling of alternative solutions and assessment of their effects, consequences, possible goal achievement and costs compared to benefits. Quality control of the work is done based on a preliminary documentation.

Finally a direction and a recommendation on possible and feasible measures are formed and the documentation of the study as a whole is ready.

For a good result of the study the work needs to be arranged so that the right competences are involved in the analyses. However, equally important is that the support of all decision making functions among the participating actors is considered when the study is planned so that those participating can have a mandate which is strong enough.

3.2 Adaptation to each case and the situation there

The scope of the work and the documentation, in terms of extent and content, should always be adapted to the specific case. Adaptation to the specific case and situation means for example that:

- Each phase, according to the methodology, should be carried out to the extent that the benefits of the result is considered to be in conformance with the resources needed for doing it
- Relevant actors and interested parties are involved

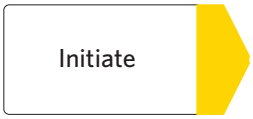
The working process as well as the result is documented and presented in accordance with recommendation (See Annex 2 and 3 in the Swedish version of the handbook).

The adaptation of process and presentation of results involves the following levels according to the scope:

- A level in which there is no need for applying the methodology for strategic choice of measures study because a similar documentation or decision already exists and could be referred to instead
- A simplified strategic choice of measures study with limited process and analyses in which results are presented in accordance with a recommendation for a “simplified” study
- A strategic choice of measures study with complete presentation of documentation according to the recommendations

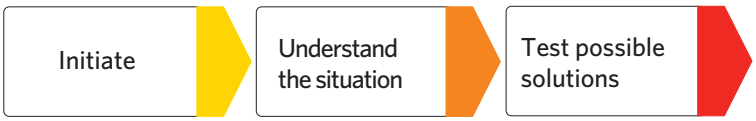
Flexible and informal

The methodology for strategic choice of measures can be beneficial even if a study is not finalized. This is due to the open and clear process. However the process in each case is not fully predictable. In some cases it may be sufficient to carry out one, two or three phases in the methodology.



Sometimes the initiating phase can be so clarifying that the problems disappear, the problem solving can be postponed or the problem can be handled in a way that does not need a strategic choice of measures study. Disagreements between actors can lead to a study never gets started.

The phase “understanding the situation” can sometimes clarify the causes or give a different picture of who the owners of the problem are, which may lead to a finalization of the strategic choice of measures study. A different reason not to fulfill the study could be disagreement on the goals for the problem solving. The reasons for closing a study should be documented. A documented analysis of a problem can then be transferred to, for example, works on a plan according to the Planning and Building Act.



The phase “testing possible solutions” means that alternative solutions are tested against the aims and goals developed in the strategic choice of measures study. Then it can be ascertained whether there is a lack of measures which can be implemented and with sufficient economic efficiency in combination with goal achievement. The strategic choice of measures study can then need to be closed in this step

If one reaches the phase ”testing possible solutions” it is also likely that the last phase can be carried out so that one or several solutions can be formed. Occasionally a delay of the study can lead to the conclusion that preconditions have changed. It may have become more important to work with another case which is more important to solve first.

3.3 Simple cases – When there is a decision already in some form

The application of the methodology for strategic choice of measures can be, in the simplest way, to go through and answer a number of questions or fill in a form made for simple cases. References may be included to documents that already exist showing that earlier considerations on the choice of measure that had a good base.

These documents can be:

- Collected planning information bases that already exist within the transport sector, such as descriptions of the current situation and connected listed potential measures
- Action plans for reducing the number of junctions between roads and railways
- Earlier studies, e.g. initial studies, idea-studies, feasibility studies
- Strategy documents e.g. on freight transportation
- Transport plans for counties and a national transport plan
- Regional public transport programs
- Comprehensive land use plans and programs for future detailed plans according to the Planning and Building Act.

3.4 Simple cases – One or few actors, few alternatives

In simple cases with very few actors and very limited number of alternatives, the work is concentrated during a short time (weeks, days, hours). Several competences need to be involved often but cooperation and dialogues should be kept simple. Still, all phases in accordance with the methodology should be documented. Documentation is made in accordance with the template for simplified studies of strategic choice of measures.

Sufficient competence is normally to be found within the involved actors' organizations.

3.5 Complex, more extensive cases

The work in complex and larger cases often needs to split between analyses and dialogues, workshops, meetings in steering group and reference groups, etc. over a longer time, and participants may need the extra time in order to gain support for the ideas. This may take a few months or a year. The time-management need to be clarified in the beginning of the work, and later be updated and revised. Work in all phases according to the methodology should be documented. Recommendations for the structure of the full documentation are available.

Analytical competences for these kinds of studies are often available within actors' organizations, but may need to be linked together and cooperative work safeguarded. Sometimes a consultant is needed.

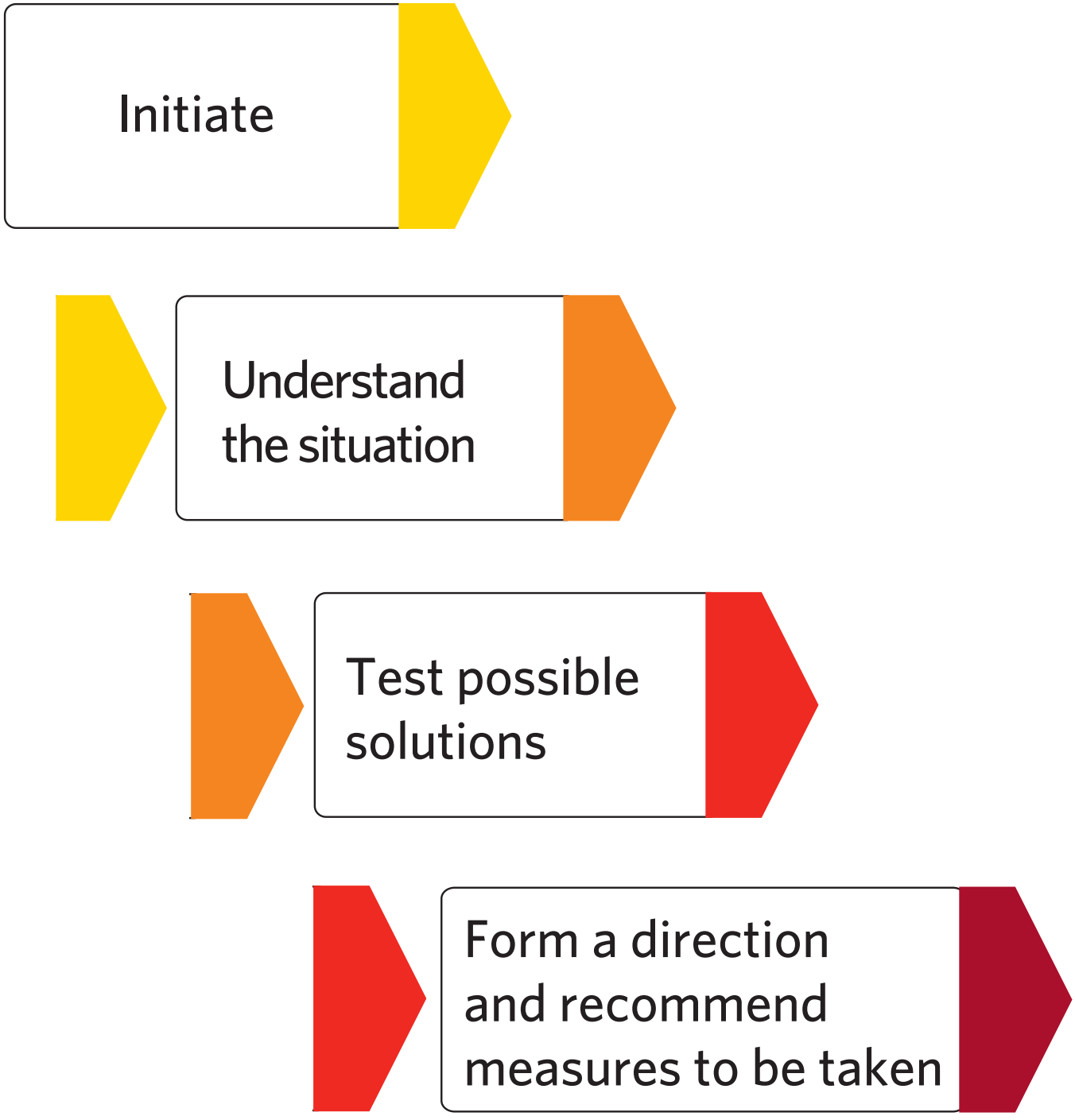
For larger workshops there is a need for a special leader or moderator who acts as a neutral voice and can safeguard the use of the knowledge among those participating.

Persons that manage a larger study have a great responsibility for balancing participation as well as the content of work and the documentation. Such a person has to look after that what is done is relevant and significant for this early preparatory stage and does not handle too much on details, which should be handled in a later planning stage.

In between or in connection with workshop activities there is often a need for analyses, consideration of results of workshops as well as for documentation and formulation of conclusions. This should then contribute to the final conclusion and before that be presented at the next workshop so that the participants should experience that there is progress in the joint work. The work can also be organized with working groups, steering groups, etc.

4

Working methodology



4.1 Initiating

A study on strategic choice of measures should start only in cases where it is considered that it is likely that there exists some kind of measure which would be beneficial and contribute to fulfillment of transport policy goals and a sustainable development. There also needs to be a great interest for solving the problem and timing should be right as well. Already in the Initiating Phase, those who has taken the initiative and others involved should ask themselves how much it is worth to solve the problem. How much is it worth for example that the risk for collisions between vehicles is reduced to zero, or that the travel time between two places is reduced with X minutes? Is the case comparable to other similar situations where cost efficient solutions have been recently implemented? How likely is it that possible sources of funding would contribute to funding in this case? Compare with other similar situations and reflect over what other cases are waiting for measures and may compete for funding from the same sources.

Resources

The initiative to a strategic choice of measures study can be taken by one or more actors, for instance the regional public transport authorities, regional planning bodies, county administrative boards, the Transport administration, municipality or business actors. To carry out a study there is a demand for resources and sometimes access to key competences. Therefore too many studies cannot be carried out at the same time. The more experience there is, from this type of study, within participating actors, the more time constraints can be set.

In many cases it is the Transport administration that has the responsibility to start a strategic choice of measures study, but also other actors can be responsible if the state interest is too little. Studies for strategic choice of measures should be funded by the actors who are responsible for the concerned transport system or in collaboration with other partners that have an interest in the context.

Competence

The group that carries out the strategic choice of measures study should all together have a sufficiently broad competence in order to handle current issues in a common way. It may be necessary with knowledge and experience from several transport modes, different steering instruments, environmental impacts and the processes of urban planning and building and about benefits and costs at large. The work should be characterized by a critical and creative attitude. A special process leader can be needed in complex cases.

Embedding the idea

To ensure sufficient support it can be necessary to organize the work into one working group, one steering group and perhaps also a reference group. An important issue is to clarify that the persons involved in the working group and other groups have the mandate they need for the mission.

Coordination with land use planning or other planning activities

In the initiating phase the study is planned and things are decided such as if it is appropriate to coordinate the work with other types of planning activities. If the process is coordinated with comprehensive land use planning or some other planning process it can be feasible also to coordinate dialogue activities. See also the handbook TRAST (Traffic for an attractive city). Important starting points for a strategic choice of measures study are earlier planning and planning bases: (policy documents, strategies and goals) from different levels of society (EU, national, regional and local).

The actors should write an agreement on performance and the costs of a strategic choice of measures study. The agreement should be based on a “project description” which contains a description of the background, the situation and the problem at large, the aim of the study, preliminary geographical delimitation / scope, who is responsible for the study and the organization, time plan and cost frame for the study. The description should also contain something about expected type of results and documentation. It should comprehensively cover observed and expressed problems and needs and other information that is considered to be important in this phase. If a cost limit and time horizons have been set for potential measures - that is important information to be included. It should also be clear from the description if the intention is a “simplified” strategic choice of measures study or not. The description of the study can be revised along with the carried out work.

In the continued work and documentation of the study for strategic choice of measures there needs to be a clear linkage to national and regional goals and to politically supported system analyses with designated transport- and travel functions. This is valid independent of the character of the case. Connections to regional- and local plans and to different types of strategic documents may also need to be clarified.

The transport policy goals as well as regional and local goals are important starting points. Study carefully the system analyses of the transport sector for the current area and the current local comprehensive land use plans. Take notice on what regional and local/municipal documents contain concerning needs and problems, the current and future situation. Problems and needs may also have been expressed directly from inhabitants and industry

The overall aim of the work need to be clearly formulated so that it is usable in the further study of strategic choice of measures. The aim should be that an intended travel or transport function (in accordance with system analyses or similar) should be reached from a current situation or future position where this is not achieved. The aim may also concern improved quality (within the frame of the travel or transport function) considering accessibility, traffic safety and environment or total quality in terms of efficiency and a sustainable development. One example of formulation of aim is "to considerably improve the possibilities of day commuting for work or studies, between A and B within the national transport corridor X-Y".

The aim should accordingly allow that several alternative (and maybe complimenting) types of measures can be tested in the phase "Testing possible solutions". The alternatives generated are first sorted out after considering if they are consistent with the aim. The types of measures or combinations of types of measures which are consistent with the aim are taken further to closer sorting and assessment.

Goals for the measures are more precisely formulated towards the end of the phase Understanding the situation.

4.2 Understanding the situation

The heart in this phase is to closer study needs, deficiencies and problems in light of the overall goals and the designated functions and qualities that are achieved for the transport system. See also e.g. regional system analyses.

Here, also a dialogue with more or all interested parties or groups can begin, which means not just the actors who are involved in the initiating phase. One or more dialogue occasions could be needed depending on the complexity in each case. Conditions and deficiencies are then studied comprehensively. Then a clear picture of the problem and a viable objective that states a reasonable ambition are needed before possible measures can be generated in collaboration with different actors and other interested parties. However descriptions of problems and goals may need to be adjusted later during the study for strategic choice of measures. The working process may therefore need to become iterative, which means that the actual process temporarily jumps back one or two steps or phases and adjusts earlier assumptions, etc.

Needs
Deficiencies
Problems

It is important that the actors develop an understanding of policy or strategy for transport functions, deficiencies and needs and together develop a description of the problems. This should lead to that, for example, focus is moved from "need for a bicycle track" to that "the traffic conditions are unsafe for bicyclists". A road, a railroad or a ship route is not as such needed – but the problem solving need to start from the point of certain problem definitions concerning transportation capacity, congestion problems etc. in parts of the transport system. Which groups of users and other interested parties are concerned? Which travel mode and transport mode are relevant to deal with in the current case?

Needs can sometimes be wishes or desires. They need to be interpreted with a connection to the transport system´s functions and qualities and also coherent deficiencies with regard to location of supply of target points. This makes it easier to identify possible measures. The description of problems should answer questions like:

- Who has the problems or the needs (groups of travelers, transporters, residents or others)?
- Which type of travel or transport is this about?
- Does it concern quality of accessibility for persons or goods transportation, for a certain travel or transport connection? Or transport chain?
- Are problems like traffic noise and traffic safety in a village relevant to study or should it be seen as part of a bigger problem and context?

Problems can also concern quality in accordance with the impact objective of the transport policy, which is environment and traffic safety related.

Conclusions should be drawn on which actors are the problem owners and what responsibility the users have.

Analyses of interested parties

It is a great responsibility to look after that those concerned and needed for the study also become involved themselves. Therefore interested parties need to be mapped out as well as how they may be concerned and in what way they can be reached or involved. Who can represent whom? Dialogue can take place in many ways, written or oral or via different media.

Example.

Primary	Secondary	Other interested parties
The Swedish Transport Administration The Swedish Maritime Administration (Sjöfartsverket) when fairways are directly concerned. Swedish Airports (Swedavia) when an airport is directly concerned.	Inhabitants and industry which are directly concerned of transport solutions of an area	Other inhabitants and industry Non-governmental organizations
Municipality, local authorities County transport plan – responsible body Regional public transport authority	County Administrative Board (provider of basic information, representatives for the interest of the state and coordination responsibility of these interests)	Central authorities
Specific company who needs e.g. access to public roads	Road carriers, railway operators, harbors, responsible body for fairways and airports Public transport operators	

An understanding of how the urban development is planned and integrated with urban traffic strategies is needed when it concerns urban transport problems. Development of industry and markets with smart logistics require transport systems with combi-terminals, etc. The description of problems should be put in relation to scenarios for development of society and transport demand. Bases for studies for strategic choice of measures are collected through access to existing databases and information sources.

Scoping is important

A delimitation need to be done so that the study does not become too extensive. The scoping is done before the current situation and the future situation (without measures) are described and concerns both content and geographical context. Scoping can also deal with time horizon for implementation of any measures and setting of any limit for costs for implementing measures – if these things have not already been decided at the initiation of the study. A system limit should also be clarified, which shows what parts of the transport system that should be included in the study. A larger transport network than a specific link or small net that is assumed to be in need of measures, may need to be studied.

The reason is that deficiencies or needs are not always to be found at the place or section where the problems are observed. Therefore the geographical scope cannot be clarified before reasons are clear as well as interaction between different parts of a limited system has been clarified. A preliminary geographical delimitation of certain strategic choice of measures studies could be carried out as a final part of the work with regional and national system analyses.

Delimitation of the content of a study concerns to large extent to sort up potential effects and consequences in order to find out what are the most important to deal with in connection to choice of measures. A small number of effects and consequences should be selected which primarily should be dealt with. These types of effects can be selected from relevant parts of the Transport administration´s template for collected effect assessment.

- Note that a too narrow scope may lead to neglecting of smart solutions.
- A too wide scope may lead to that the initially taken up problems are not tackled. A wide scope can be needed in order to understand, but for problem solving it is necessary to limit the scope and concentrate.
- A too open scope and too flexible process may lead to unrealistic expectations and the work may be filled with conflicts.
- A too early and too strict scope may lead to that important needs are brought forward and solutions can become contra productive.
- A too shallow study may lead to an insufficient basis for decision.

Deepening of one part of a study can lead to requests for even deeper analyses and other parts to be deeper studied. Then it can be difficult to keep a defined scope, time plan and cost frame. There is also then a risk that the strategic choice of measures study will include parts that belong to the planning process for a more specific project which belong to a later planning activity.

Describe the current situation, how it can be evolved and what the ambitions are

current state

A description of the current situation and what has led to this situation is of a great help in order to arrive to a more precise formulation of the problem[2]. Also the future development need to be studied, how the problem can be evolved and how the surrounding and conditions in society change.

For instance it might happen that the school where the traffic safety problems are located should be closed. Housing might have been planned in a location that will cause increased traffic congestions in the road system.

zero option

What will happen if nothing is done? A “do nothing” alternative or a reference alternative need to be described in order to assess the effects and consequences of potential type of measures. Effects concern the difference between “with” and “without” measures. This relates both to traffic aspects and to spatial, environmental, social and economic circumstances (in accordance with the scope of content of the study). Of special importance is to consider those aspects and conditions which are needed for the problem solving and which will not fit to take up in later project planning stage. A comprehensive

2: Methods of state descriptions and customer needs management are not described in this document.

assessment can be needed for certain conditions even if they will be studied later during a project planning process, such as landscape characteristics, terrain conditions, type of soils and rocks.

target for solution

A reference alternative can contain a number of already decided measures.

If the involved actors and other interested parties have understood the situation of the case, and agree on the description of the current situation and what the problems are – the preconditions are there for agreeing on goals for solutions or measures before alternative type of measures are generated. Except from that a certain function in the transport system should be achieved, the goal should also state a level of ambition and quality level for potential solutions. More precise quality goals can then be expressed as, "The travel time with public transports between A and B should be less than XX minutes so that more people would choose that travel mode instead of car", or "The air quality along the main street X should be below the air quality standard". A success factor for agreeing on measures for an urban transport system can be that the solution contributes to the attractiveness of the town. High quality does not necessarily mean higher costs for measures. It is "how" a certain level of quality is achieved that resolves the cost.

The study work in this phase is documented as a partial draft version. Partial documentation is useful in complex cases in order to present how far the work has come and what the state the different issues are in.

Important parts in the documentation from this phase are **a description of the problem** (the reason that something need to be done), **a more precise scoping** of the study work and one or several **more precisely formulated goals** for the problem solving. The latter can lead to that the aim of the study which was formulated initially in the initiating phase may need to be revised.

4.3 Test possible solutions

For the achievement of a particular functionality in the transport system, the planning needs to deal with all transport modes and travel modes as well as all types of measures. With the help from the "four-step principle" alternative types of measures and combined measures are analyzed. Type of measures, design of measures and how measures are combined are of significance for the total benefit and for the cost efficiency which is possible to achieve.

As a part of the generation of alternatives it can be feasible to gather all interested parties in a creative workshop. When several actors and other interested parties participate important information can also come up on already taken or planned measures that influence the size of the problem.

The reason why a strategic choice of measures study is initiated can be that earlier proposed solutions are considered to be old-fashioned and that conditions have changed. Earlier strategies are not always okay to use as they can contravene the current, newer, transport policy and lead in a wrong direction and not towards current goals of national, regional and local levels.

1. Think differently!
2. Optimize the use!
3. Reconstruct!
4. New construction!

One type of measure can be to influence the demand of journeys and transportation or the way it is carried out, in other words Demand Management (Step 1 in the four-step principle). A measure can also be to improve the efficiency of the existing transport system, to use the existing transport system more efficiently (Step 2), to adjust or improve existing infrastructure (Step 3) or to create large completely new parts of the transport system (Step 4). It is also important to consider measures from different actors´ field of responsibility.

System thinking and strategies that cover multi-modal corridors serve as an important basis for making right choices of measures. Multi-modal policies and strategies based on regional and national system analyses should be a guide concerning action within different transport modes. Examples of national strategies could be strategies for long distant freight transportation (both corridor and nodes) and strategies for operation and maintenance.

Alternative generation as well as assessment and evaluation of alternatives should cover the activities listed below and which can be carried out in parallel:

- Sort out a number of types of measures which can meet the needs, solve the problem and meet aims and objectives. Use the "four-step principle" and consider all travel modes and transport modes. A first criteria for those measures studied is that they contribute or leads to achieving the aim. Measures which lead to other transport function or over quality on the actual part or other parts of the transport system lies not within the frame of the aim.
- Assess which of these measures or combinations of measures are considered to be best in terms of achieving the functional requirements (transport function according to transport policy and strategies).
- Assess which of these, remaining, potential type of measures which fulfill other requirements – timing, coordination with other development, not leading to new problems, not contributing to many or large negative consequences.
- Select the remaining potential measures of solutions and which can be handled further because they have prerequisites to reach the aim and contribute to a socio economically efficient and sustainable transport provision for inhabitants and industry in the whole country (in accordance with the overall transport goal). These alternative solutions or measures are closer analyzed including assessment of: costs for implementing measures and other costs, relevant effects and consequences in relation to the "do nothing" alternative or the reference alternative, achievement of goals for measures and contribution to the overall transport policy goals, cost efficiency and balance between costs and benefits. The template "Method for collective effect assessment" supports this work. Instead of predicting effects, accepted standards and indicators can be used for broad impact assessments.

Present, discuss and document an evaluation of the alternatives.

Document the work in the phase in a preliminary report of the study for strategic choice of measures.

4.4 Forming a direction for action and recommendation of measures

Based on the best alternatives a comprehensive direction for action is formed. Proposals on recommended measures are worked out including estimation of costs, effects and consequences. The Swedish Transport Administration´s method for collective impact assessment can be a systematic support tool in this work.

A comprehensive direction for action may concern the following:

Example A: Due to problems from congestion, overload of traffic on a main road etc. the need for short car journeys within the town should decrease by the fact that housing and transportation planning as well as local shopping policies give priority to accessibility to service by walking, biking and public transport. The proposed measures consist of a number of smaller measures and responsibility shared between the municipality, central property owners and public transport mandatory and to a minor part on the Transport Administration.

Example B: Due to problem with lack of capacity in a railway corridor, the freight transport on this railroad should be prioritized in front of personal transportation until that additional rail tracks has been built. This should safeguard travel time and reliability of public transport for regional commuting between X and Y. The proposals of measures for the regional commuting journeys, concerns improvement of the bus traffic and the aforementioned prerequisites.

Quality review and documentation of a study

A draft proposal for direction for action and recommended measures, with all basic material and data, is subject to quality review before the work is finalized and presented. For major type of measures for which the project planning and design will be extensive and which is expected to be included in a long term plan for funding in about year 9-12, it is likely that the bases for decisions following the strategic choice of measures study need to be complemented to ensure trustable information in the collective effect assessment. In the case of reconstruction or new construction of transport infrastructure a project cost calculation in accordance with a specific template of the Swedish Transport Administration is required.

When a future infrastructure (the transport function) is considered to be of national interest and there are strategic passages where it can be located, these passages should be defined so that the municipality can safeguard a possible infrastructure location by including the passages (and later on also a corridor) in the comprehensive land use plan. The municipality has the role to state how a national transportation interest should be satisfied and include it in the comprehensive land use plan.

As a part of the quality assurance work, it is recommended that it is considered that a draft document of the strategic choice of measures study is sent for consultation to different interested parties. This can facilitate a future project planning process which then can easily refer to previous considerations. Depending on the type of case it would be concerned municipalities, county administrative board, regional planning organization, the public and interested organization, including non-governmental organizations. The documented results of a consultation on the draft study document is then presented to those responsible of decisions on the further handling of the case.

Depending on the type of problem and the identified directions of actions it is useful to present the recommended measures showing when in time they are suitable to be implemented. Dependencies between the different measures in the same package are important to describe, both in terms of timing and with regard to synergy effects. For example measures that belong to Steps 1 and 2 in the “four-step principle” can be suitable to implement very soon and then the monitoring of the effects before additional measures and possible larger measures are considered and planned.

5

Decision on further handling

5. Decision on further handling

One or several actors decide on further handling, together or separate, based on each ones responsibility and on agreement from the start of the study for strategic choice of measures. A joint decision document from several actors should include a joint part and in addition, when relevant, different specific parts for what a single actor is responsible for so that specific measures can be part of a combined solution resulting in the wanted effects.

The decision document should be added to the strategic choice of measures study. The decision should answer the question on if "the proposal on measures" should be taken to the measures bank and thereafter may be taken up in a long or short term plan or program. Also when the proposal on measures not should be taken further in any planning process it is important to document the reasons for that and add that information or decision to the strategic choice of measures study.

A decision for further handling should include:

- Reasons for choice of direction of measures and proposal of measures
- If any further planning activities should take place with specification of measures
- Which actor or actors are responsible for further handling / planning and if there are factors that should influence the time planning including linkages to other type of planning and project developments, including urban development, industrial development, etc.
- A potential form of funding

The fact that the methodology of strategic choice of measures has been applied should be clear from the documentation of the strategic choice of measures study which is the basis for the decision on further handling. It should be clear in the decision document on further handling that the strategic choice of measures study has been considered.

6

Documentation and presentation of a study for strategic choice of measures

6. Documentation and presentation of a study for strategic choice of measures

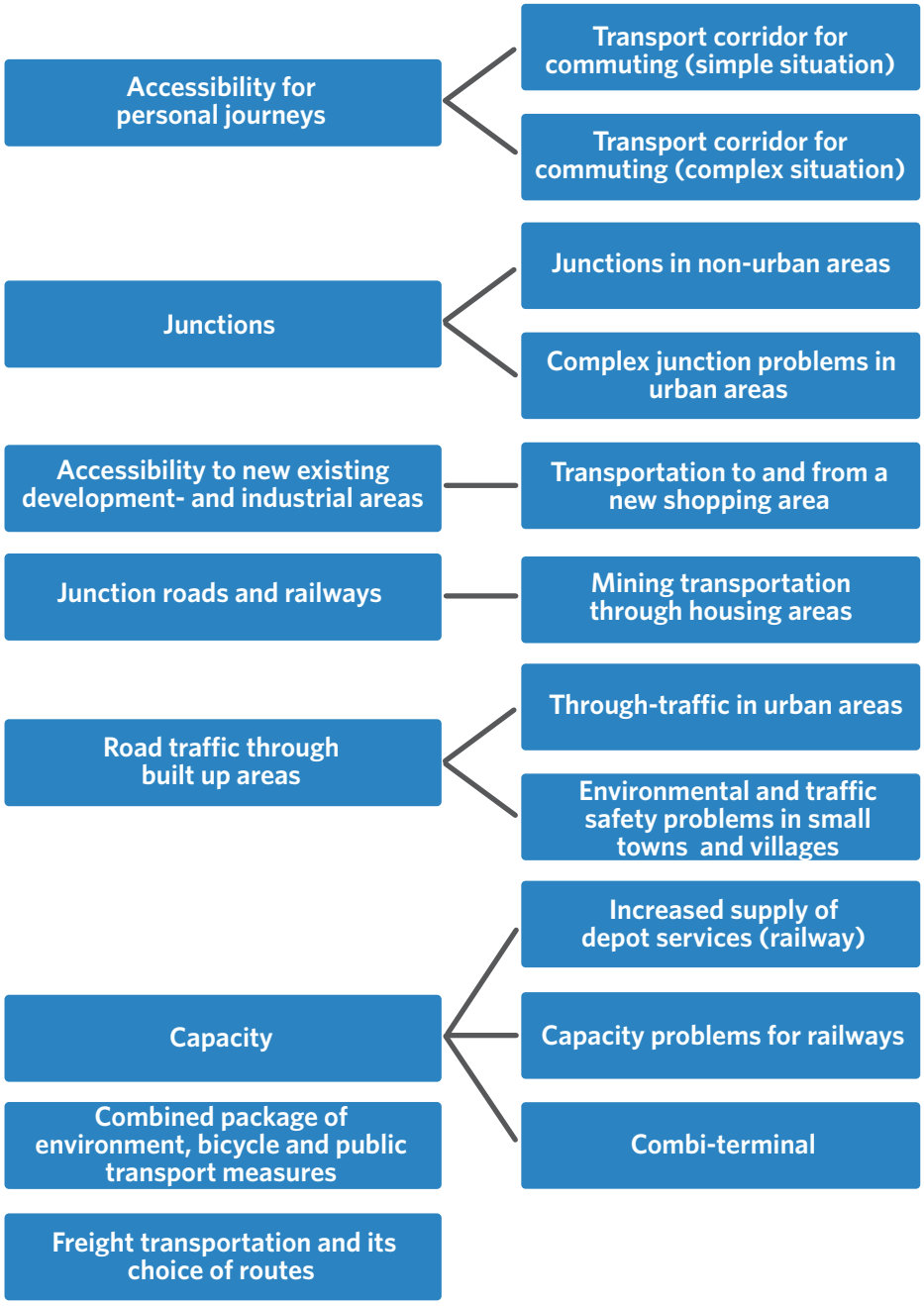
The documentation covers the organization of the work, dialogues, analyses and results of these activities. Also how the process was carried out with cooperation, participations in workshops etc. should be documented. Two types of recommended templates are available, including one for simplified strategic choice of measures study.

The template for simplified strategic choice of measures has the character of a “form” and may be limited to just a few pages.

Examples of situations and ways of working

7. Examples of situations and ways of working

In the English version of this handbook there is only the figure below covering a number of situations which can be subject to strategic choice of measures studies.



Annex 1

Version 2012-10-18

Ideas list: Measures, mainly step 1

Measure

Taxes, charges and subsidies

Road user charges to reduce and control road traffic

Economic incentives to increase the average occupancy per car (tolls, etc.)
Charges/taxes for use of infrastructure (e.g. bridge tolls)
Charges/taxes for certain types of traffic (e.g. charges for heavy traffic)
Charges in the car traffic system. (congestion charges, bridge tolls, etc., parking fees)
Differentiated place-and time-bound charges on transport, e.g. congestion charge, GPS-based road user charges (differentiated), fossil fuel tolls, higher road user charge where there is parallel public transport of high quality, higher road user charge for trucks if trains or maritime transport are available on the route

Taxes or charges to influence transport volumes (national level)

Taxes or charges on air travel to reduce air traffic
Emissions trading for air traffic
European road user charge system/payment system
Taxes on fuel or kilometres by car
Charges in the railway system
Different VAT rates for e-commerce/conventional commerce to reduce transport
Vehicle tax possibly offset by reduced fees for car rentals or car sharing

Taxes or charges to reduce or control the transport of goods

Taxes or charges at ports/terminals
Fairway dues
Taxes or charges at airports

Parking fees and other measures to control parking

Develop parking policy in the cities, pricing to make parking more expensive
Development of a parking strategy with the clear aim to prioritise sustainable modes of transport

Municipal charges to steer building development and operations towards transport efficiency

Encourage operations where there is good public transport in relation to operations where public transport is poor (control systems, e.g. by means of the municipal property charge)

Subsidies/rebates for public transport and other sustainable modes of transport

Lower fares in public transport (increased subsidisation of public transport)
Better fare structure that reduces the threshold effect of monthly passes
Subsidised taxi trips that serve as links in public transport
Rebates for commuting by bicycle

Mobility management (influencing behaviour through information, communication

Coordination and collaboration

Increased coordination of commercial transport between modes
Collaboration with transport purchasers – information initiatives and knowledge sharing

New services

Commuter passes for high-speed trains

Green travel plans, mobility management programmes, etc.

Integrated programmes for Mobility Management

Travel plans for e.g. schools and businesses

Traffic in schools (the municipality), e.g. "pedestrian school buses"/traffic sense/safety
Green travel plans, mobility management programmes, etc. in connection with physical planning

Marketing (for increased use of walking, cycling and/or public transport)
Marketing of public transport with conventional advertising and trial campaigns
Information on the safe use of the vehicles (speed, seat belt, alcohol and drugs)
Information campaigns and training on IT for travel-free meetings etc.
Encourage employers to introduce the flexible working week for a more even spread of
Campaigns for sustainable modes of transport, see e.g. City of Malmö's "No Stupid Car Journeys" campaign

Information, training, etc. for specific target groups
Information support for purchasers of vehicle fleets and for car buyers
Information for and cooperation with business and citizens (through organisations, networks
Direct canvassing and marketing of public transport and cycling at workplaces,
Vessel traffic information
Certification of smart transport choices for transport purchasers
Energy-efficient use of vehicles
Information on loading and unloading sites

Mobility management measures to reduce travel
Increased use of information technology for travel-free meetings etc.
Information prior to and during travel/transport

Mobility management in the construction phase
Mobility management in the construction phase (travel plans, marketing, campaigns, etc.)

Planning, localisation
Develop short sea shipping
Flexible workplaces and increased telecommuting/working from home, local office hotels situated where there is good public transport
Better integration of land use planning and infrastructure planning
Encourage co-localisation of service functions in rural areas
For detailed development planning of the road network - adaptation to a future scenario with more walking, cycling and
Localisation of building development and operations to minimise the need for car traffic
Fewer parking spaces at e.g. workplaces
Localisation of operations (e.g. workplaces, housing, visitor-intensive operations) where there is good public transport
Urban planning, land use planning, localisation of operations, etc.
Plan along public transport routes/areas near stations

Planning for an increased density and function blend in the city
Parking for carpool commuting

Regulation, legislation
Traffic regulations, speed control etc. (local level)
Reduced speed limits
Speedcontrol to alter competitiveness between travel modes
Traffic regulations adapted for cycling
Economic incentives and regulations that affect the choice of transportation
Carpool portals developed by the Municipality, so that all communities of a certain size have access to easy management (via text messaging) to find someone to carpool with or to get additional passengers in

Licensing, regulation of operations, etc.
Parking reviews for unified management of parking availability and fees in relation to attractiveness, so that it becomes equivalent to establish companies in this regard in all cities
More flexible handling and assessment of noise problems in big cities
Introduction of clearer guidelines and more detailed help for municipalities and developers regarding what is transport-efficient development structure (may be different at different locations and at different times), make sure this is also reviewed by the County Administrative Board
Regulation of taxi operations - e.g. reputable companies at designated locations (whole-journey-thinking)
Allow municipalities and large companies to adapt working hours to spread the times employees start and finish their work according to where they live. Collaborate with preschools and schools for optimisation.

Licensing for expanded operations/new operations to have greater emphasis on environmental impact of transportation
More flexible handling and assessment of noise and risk issues in areas near stations
Parking spaces, reduce the availability/supply of and change pricing to end direct/indirect subsidisation (especially with regard to workplace parking), allow only short time parking in city centers.

Legislation

Changes in legislation: External commercial areas to be considered for licensing in accordance with the Swedish Environmental Code (as are environmentally damaging activities)
Changes in legislation: Introduce binding regional planning in the legislation
Changes in legislation: More explicit demands for public transport provision for newly built areas in the Planning and Building Act
Changes in tax legislation/rebate regulations that favour walking, cycling and public transport

Other

"Complete solutions" for cities/business/industry
More integrated transport due to e-commerce
Create favourable conditions for combined travel and transport
Coordinated distribution of goods in major urban areas
Coordinated collection, drop-off and looking after of children at public transport hubs and
More local manufacturing, favour digital production and develop e-commerce with delivery hubs in every housing area
New forms of collaboration for better integration of land use and infrastructure planning
Improved knowledge of how the goods transport system functions

Ideas list: Measures, mainly step 2

Measure

Charge
Differentiation of track access charges

Operation
Frost-proofing
Improvement of the surface on gravel roads
Special operational initiatives – exceptionally high standard (e.g. winter operations)
Extended mowing, i.e. remove vegetation along roads
Develop more efficient production methods in order to maintain operation during construction period/track work

Planning
Improved terminals for goods, combination terminals
Flexible times for goods delivery to spread flows over the 24-hour period
Flexible opening hours/24-hour opening for transhipment centres to reduce idle time
Coordinated and possibly subsidised goods deliveries to public transport hubs and commuter parking
Coordinated train plans whereby different transport operators complement each other effectively
European train planning/timetabling with international freight channels

Priorities
Public transport
Separate bus lanes on the approaches to major cities, where accessibility needs to be secured
Bus lanes within the existing road reserve
Reversible lanes for bus traffic
Accessibility measures for bus traffic by means of signal priority and bus stop design
Reallocation of spaces within existing streets and roads, e.g. to create cycle lanes and bus lanes
Increased public transport at sea
Investments in better train traffic on existing lines (within metropolitan areas, major routes, other important
Bus lanes where accessibility needs to be secured
Priorities for public transport accessibility (e.g. bus lanes, signal/crossing priority, bus streets, snow removal priority on public transport routes, etc.)

Pedestrians and cyclists
Direct and sheltered pedestrian and bicycle connections to stations and stops
Improvement of conditions for walking, cycling and public transport
Strategic investments in cycle traffic
Improved pedestrian accessibility (can promote public transport use)
Reallocation of spaces within existing streets and roads, e.g. to create cycle lanes and
Prioritisation of cycle paths at crossings
Grade-separated crossing facilities for unprotected road users

Other
Signal measures
Road choice incentives, route incentives, guidance, especially of heavy traffic. The road network has many opportunities to get traffic not to choose smaller shortcuts, but to make greater use of appropriate trunk roads.
Special lanes for goods distribution in the major cities; the lanes can also be used by public transport
Reduced space for car traffic (road narrowing, etc.)
Reversible lanes for higher capacity during rush hour

Economic incentives, regulation, legislation traffic regulations, road signs, etc.

Speed reduction in the community

Digital signs to alert road users to level-crossing gates.
Speed cameras
Clearer signs to customer car parks
Clearer signs for goods delivery
Overtaking prohibited for trucks/ truck during certain times

Regulation of vehicles, operations, etc.

Fewer high-speed trains (to create space for more regional trains)
Optimise speeds for reduced energy consumption
Incentives for more energy-efficient and quieter aircraft
Higher fill rate for goods transport by, e.g., demands for higher average capacity utilisation for trucks, automatic volume measurement, etc.
Regular, scheduled, time channels for freight traffic through the route (e.g. ² per hour)
Equalising speeds (known as Skip/Stop) on railways in metropolitan areas
Allow longer and heavier trucks in certain relations
Higher fill rate for goods transport by e.g. demands for higher average capacity utilisation for trucks, automatic volume measurement, control towards higher loading degree with respect to track access charges per time channel
New stops for trains where there is sufficient track capacity and sufficient population base
Alternative road choice for goods transport on through-roads (e.g. choose another port, road, etc.) Alternative road choices for goods transport through villages

Protection measures

Noise/ Environment Noise measures

Soil remediation of contaminated areas
Environmental measures near roads and railways (noise protection, water protection, adaptation to biological functions, outdoor recreation, and cultural environment)

Traffic safety

Better traction in winter on designated road networks
Risk-reduction measures on road/rail based on climate change and vulnerability
Trimming and improvement of roads, ramps, ITS, signals and lanes and the adjustment of interchanges

Range of services

Frequency, standard and coordination of public transport

Greater frequency
Carpooling and bicycle rentals for public transport users
The whole-journey perspective for air travel (combine flights and public transport)
Taxi for commuting and coordination with other modes of transport
Subscribed taxi for carpooling to and from work
Improved conditions for carpooling (carpool systems, coordination via social media)
Reduced car ownership through more carpools/development of car rental systems (e.g. carpools at transfer points, cooperate with public transport operators, subscriptions associated with commuting passes, electric cars)
Improvement of stations/travel centres/transfer points (localisation, design, service level)
Waterways an integral part of public transport
Increased range and quality of public transport
Improved transfer points (with commuter car parks, etc.)
Higher quality of public transport in terms of comfort and service
Expansion/improvement of commuter parking for cars (preferably free) and bicycles (sheltered)
Increased opportunities for long-term parking at railway stations with high-speed trains
Bicycle-borrowing systems at e.g. travel centres, train stations and bus terminals
Improved commuter parking at train stations and at strategic bus stops
Commuter parking adjacent to crossings (and at a greater number of appropriate locations)
Increased frequency in the evenings, later last departure
Bus traffic that relieves train traffic
Better connections to railway stations with high-speed trains, ensure that buses always depart when trains have connected and vice versa)

Inter-regional ferry service, for example, with catamarans/fast ferries
Control in terms of time (including over the 24-hour period), place and speed, punctuality

Coordination of freight traffic

Combined passenger and freight trains (pre-laden wagons that can easily be linked to long-distance trains)
Freight commuting (public transport for goods) between important nodes in and outside the route
More transhipment centres/combination terminals
Coordinated distribution of goods, e.g. through regional planning for localisation of transhipment terminals, smaller (volume/weight) of standardised unit loads, coordination of goods transports within cities regarding time and place, business collaboration, requirements for e.g. electric vehicles in urban environments (for distribution)
Coordinated freight transport, e.g. through consolidation, increased intermodality, vehicle convoys on roads
Logistics solutions (fill rate etc.)
Publicly run logistics park

Safer, more direct and easier for pedestrians and cyclists

High-quality walkways from stop to entrance
Improvement of conditions for pedestrians and cyclists.
Creation of and signs for interconnected networks, e.g. for cycling (on existing roads/streets, embankments)
Improved conditions for cycling, e.g. bicycle parking in building codes/detailed development plans, bicycle rentals at public transport nodes and improved opportunities to take bicycles on the train and bus
Cycle paths in a uniform system
Improved bicycle parking at stops and stations

Technology, including ITS

ITS

Trimming of roads: ITS, signals
Variable speed limits on roads
Traffic signal with signal priority for public transport, and pedestrian crossings.
ITS solutions (e.g. real-time information about the traffic situation, personalised traffic information, disruption information, traffic management, traffic control, support during the journey, support before the journey)
ATK, Variable Message Signs (VMS), Control systems, cameras, etc.
ITS solutions (e.g. real-time information about the traffic situation)
Digital speed signs
Sensors with digital speed sign at pedestrian crossings
Increased capacity (road/street) (without new construction) through ramps, lanes, climbing lanes, widening, crossing measures, roundabouts, variable message signs (through ITS).

Travel planners, ticket systems, carpooling, etc.

Ticket systems (e.g. text message tickets)
Better digital tools to optimise travel - identify when and how to carry out a journey
Real-time travel planner that provides information on travel time, traffic disruptions, own costs and external costs (emissions and congestion)
Better disruption info to enable choice of the fastest driving route
Real-time systems
Carpooling systems

More resource-efficient and environmentally efficient vehicles, including their use

Longer passenger trains
Safe vehicles (ISA and alcohol ignition interlock systems)
Energy-efficient vehicles
Availability of renewable fuels (biogas, ethanol, etc.) for heavy goods vehicles on the road
Longer and more space-efficient trains (only relevant where there is a lack of seating, does not affect journey times and frequency)
Development of vehicles towards a smaller (weight) of passenger cars with lower emissions, better, more economical and cleaner engines, battery technology development
More railway vehicles using the line's top speed
Faster freight trains
Fast trains with few stops

Vehicles adapted to existing infrastructure, tilting, adapted length, width and height
Energy efficiency (lighting)
Trimming and improvement of roads in major urban areas, ramps, ITS, signals and lanes and the adjustment of interchanges

Standardisations

Introduce the control system ERTMS (European Rail Traffic Management System) on the railways
Trains adapted to existing infrastructure in terms of international traffic and speed requirements or acceleration requirements in relation to planned time channels
Standardised unit loads or smaller units (single consignments), smaller unit loads for home delivery and for transport to secondary residences

Other

Adaptation of block routes – signal measure for more frequent traffic
Increased rail capacity through railway yard measures, signals, switches, passing tracks, local reinforcements of bearing capacity, the elimination of obstacles for a wider loading gauge,
Equally good opportunity for transporting luggage by public transport as by car, e.g. via personal standardised load units delivered to the destination
Traffic management system – railway, development of systems for operational management and monitoring, telecommunication systems for communication between technical systems.
Enhanced power transmission to the railway system Truck trailers on boats
Continuously good mobile coverage along public transport routes (even inside vehicles)

Ideas list: Measures, mainly steps 3 & 4

Measure

Measures to develop the infrastructure for pedestrians

Minor measures

Secure pedestrian and cyclist crossing, railway

Re-construction

Decommissioning of streets, roads, railways, etc. for other uses
Re-construction of local streets to standards that to a lesser extent increase capacity or reduce travel time sacrifices in the road network

Measures to develop the infrastructure for cycle traffic

Minor measures

Secure pedestrian and cyclist crossing, railway
Trimming and improvement of roads, ramps, ITS, signals and lanes and the adjustment of

Re-construction

Re-construction of local streets to standards that to a lesser extent increase capacity or reduce travel time sacrifices in the road network
Decommissioning of streets, roads, railways, etc. for other uses
Expansion of commuter parking for cars (preferably free) and bicycles (sheltered)

New construction

Super cycle paths on appropriate routes (e.g. Malmö–Lund, Göteborg–Kungsbacka)

Measures to develop the infrastructure for public transport on roads

Minor measures

Trimming and improvement of roads, ramps, ITS, signals and lanes and the adjustment of
Bearing capacity investments – for increased bearing capacity Noise-reducing surfaces
Reinforcement (of the shoulders) of $^{2}+^{1}$ roads
Traffic calming measures (bumps, gateways, chokers)

Re-construction

Re-construction from smaller to larger interchanges
More lanes between some interchanges with a high proportion of local traffic
Road re-constructions that improve accessibility, increase speed of ^{50} and ^{70} to ^{60} and ^{80}
Widening of existing roads to increase capacity or speed
Re-construction from roads with less capacity to roads with
Bus lanes by widening of road reserve
More stops for public transport
Separate bus lanes on the approaches to major cities and where accessibility needs to be secured
Re-construction/new construction of bypasses
Conversion of local streets to standards that to a lesser extent increase capacity or reduce travel time sacrifices in the road network
Decommissioning of streets, roads, railways, etc. for other uses

New construction

New construction of new local streets that increase capacity or reduce travel time sacrifices in the road network
Additional lanes
New construction of interchanges
Roundabouts
New construction/routing of motorways/major routes
New construction/routing of primary roads
Conversion/new construction of bypasses
Regional BRT solutions (Bus Rapid Transit)

Measures to develop the infrastructure for public transport on railways

Minor measures

Platform extensions for longer trains
Separation of the traffic flows on railways (where parallel tracks exist). Assign trains of equal speed to the same line
Remote blocking and new/longer passing tracks

Re-construction

More tracks for night parking along the route where needed
Upgrades of parts of the existing railway to be able to utilise 250 km/h (or 240 to pass platforms)
Turning tracks for commuter trains (e.g. Mölndal and Kungsbacka)

New construction

Separate lines for fast and slow trains
Rail connections to airports
Double tracks on railway lines
Expansion of separate freight routes on railways
More passing loops and partial four-track on the railway

Measures to develop the infrastructure for car traffic

Minor measures

Bearing capacity investments – for increased bearing capacity
Noise-reducing surfaces Reinforcement (of the shoulders) of 2+1 roads
Traffic calming measures (bumps, gateways, chokers)

Re-construction

Conversion/New construction of bypasses
Conversion from smaller to larger interchanges
Additional lanes
More lanes between some interchanges with a high proportion of local traffic
Road conversions that improve accessibility, increase speed of 50 and 70 to 60 and 80
Conversion from roads with less capacity to roads with
Widening of existing roads to increase capacity or speed

New construction

New construction of new local streets that increase capacity or reduce travel time sacrifices in the road network
New construction of interchanges
New construction/routing of motorways/major routes
New construction/routing of primary roads
Commuter car parks
Roundabouts
Electric Motorways (extend to important nodes - ports and terminals, combine with
Conversion/New construction of bypasses
Better connections to the airports

Measures to develop the infrastructure for freight on railways

Minor measures

Re-construction

Decommissioning of roads, railways, etc.
More passing loops and partial four-track on the railway
Turning tracks for commuter trains
Upgrades of parts of the existing railway to be able to utilise 250 km/h (or 240 to pass platforms)
Expansion of separate freight routes on railways
Separation of the traffic flows on railways (where parallel tracks exist). Assign trains of equal speed to the same line

New construction

Longer platforms
Rail connections to airports
Double tracks on railway lines

More tracks for night parking along the route where needed
Separate lines for fast and slow trains
Platform extensions for longer trains
Remote blocking and new/longer passing tracks
Separate lines for fast and slow trains

Measures to develop the infrastructure for freight on roads

Minor measures

Bearing capacity investments – for increased bearing capacity
Trimming and improvement of roads, ramps, ITS, signals and lanes and the adjustment of
Reinforcement (of the shoulders) of 2+1 roads
Traffic calming measures (bumps, gateways, chokers)

Re-construction

Conversion/New construction of bypasses
Decommissioning of roads, railways, etc.
Road conversions that improve accessibility, increase speed of 50 and 70 to 60 and 80
Conversion from roads with less capacity to roads with higher capacity
Widening of existing roads to increase capacity or speed
Conversion from smaller to larger interchanges
Additional lanes
More lanes between some interchanges with a high proportion of local traffic
Separate bus lanes on the approaches to major cities and where accessibility needs to be secured
Increased capacity in interchanges with high load (e.g. extension of ramps)
Harmonisation of passing track lengths
More lanes on heavily used routes (increased capacity)

New construction

Conversion/New construction of bypasses
New construction of new local streets that increase capacity or reduce travel time sacrifices in the road network
New construction of interchanges
Roundabouts
New construction/routing of motorways/major routes
New construction/routing of primary roads Commuter car parks
Electric Motorways (extend to important nodes - ports and terminals, combine with
Central combined terminals

Measures to develop the infrastructure for freight by sea

Minor measures

Improvements or conversion of connections to ports and terminals, including the adaptation of roundabouts for heavy and long trucks that call at the port

Re-construction

New construction

Fairway investments

Measures to develop the infrastructure for freight by air

Minor measures

Conversion

New construction

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