15 December 2016

K2 - Sweden's national centre for research and education on public transport

Research agenda 2015 - 2019

Revised in December 2016

Address: K2, Medicon Village, 223 81 Lund
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Contents

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Foreword

K2 is Sweden's national centre for research and education on public transport. We investigate how public transport can help to make future metropolitan areas attractive and sustainable. K2 is governed and funded by Lund University, Malmö University and VTI in cooperation with Stockholm County Council, Region Västra Götaland and Region Skåne. We are supported by Vinnova, Formas and the Swedish Transport Administration.

K2's activities are based on the concept of co-produced research. This means that public stakeholders and trade and industry work together on the development of research topics, the execution of research and the dissemination of results. Our research is to be of good scientific quality and must be relevant for the organisations that work with or are affected by public transport in various ways.

K2's research orientation is based partly on the application to create K2 which was drawn up in 2012, and partly on a series of workshops that was held during the start-up phase in 2013-2014. Researchers, representatives from public authorities at various levels, businesses and trade organisations have all participated in the formulation of K2's research orientation. Five areas/themes have been chosen to form the foundation of the research projects done at K2. To a large extent, these five areas overlap, meaning that K2's research projects may be linked to several fields.

The research orientation was established by the K2 executive board and is valid for 2015-2019. During the autumn of 2016, the orientation was reviewed and some minor changes were made with regard to changes in the world around and the results of the research that was done during K2's first year of operation.

Lund, December 2016

John Hultén

Director, K2

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1. Financing and governance of public transport

General description of the problem

Financing and governance are key areas for public transport at a time when there are great expectations for the relative number of public transport users to increase. Increased public transport also raises questions about how investments and operational costs are to be funded. There is currently insufficient knowledge about, for example, the optimal formulation of contracts; the consequences of the new Public Transport Act; how value is created in the relations between public authorities and stakeholders in the procurement process; and how different price strategies can help to reduce the operational costs of public transport and/or increase revenues at a time when public budgets are under strong pressure. It is unclear what innovative methods can be used to provide more funding for public transport, and how different stakeholders view these methods.

Contract issues: It is uncertain whether the existing business models and contracts between public authorities and private stakeholders are optimally formulated when it comes to giving sufficient incentives to operators, or promoting collaboration between different parties. After contracts have been signed, there are gaps in how well they are followed up; many transport service organisers have only a limited picture of what they are getting for their money. Contracts with incentives must be evaluated so that conclusions based on research can be drawn. The evaluation of the effects of altered policies, contract types, prices, delivery, etcetera can be problematic simply because there is only a limited amount of data (or data that are difficult to access) on revenues (per trip, per mode of transport, per type of ticket). There is a need for more and better data and also a need to consider why insufficient data are being gathered and analysed at present. This means it is difficult for regional public transport authorities to know how operators will react to new/different contract incentives and it is therefore difficult to predict the effects of the services that are provided.

The governance and management of public transport: It is a challenging task to find a feasible balance between the political governance of local and regional public transport and its more tactical and operational management. The “new” Public Transport Act raises questions about how deregulated and regulated markets work together. Forms of governance are viewed differently depending on the perspective of the organisation in question, for example, national level, regional public transport authority, or local operator. The relative effectiveness of different policy instruments with regard to supporting public transport has still not been sufficiently examined. Better

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understanding is needed of the implementation processes in which general political objectives are realised in practical activities.

Cost effectiveness and financing: The fact that the cost of public transport is increasing faster than the number of passengers implies a growing deficit, whether or not any improvements are made to the system. More knowledge is needed about what measures can make public transport more cost-effective, thereby providing more transport services for the money invested. Ambitious goals for attractive and sustainable cities with an increased share of public transport users place high demands on financing. More knowledge is needed about the possibility of broadening the financing of both the operational costs of public transport and investments in new facilities and vehicles.

Examples of research questions

Contract issues:

- How (well) do different types of contracts work, with regard to both "hard" and "soft" aspects, and how they can be improved? Both demand and supply should be considered.
- What effects do different forms of contracts have on the market?
- How can mutually advantageous partnerships be realised, at the same time as power relations are retained as a necessary part of competitive procurement?
- From a broader point of view, what unforeseen consequences has competitive procurement, in particular different forms of incentive contracts, had?

The governance and management of public transport:

- What policy instruments (including those at national level) can contribute to improved public transport (including a survey of the policy instruments used in other countries)? In relation to that, what conflicts exist between policy instruments used at different levels?
- How can the legal context of public transport be improved, including the question of how welfare transportation services and school transport are to work in relation to conventional public transport? How can they be integrated in a more practical and sensible way?
- How can commercial and subsidised transports work together?
- Is it possible to find out more about how increased accessibility and frequency of services can help to improve the functionality of the public transport system?

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- How can congestion in the public transport systems in metropolitan areas be handled, both in the short and long term? What mechanisms can be used to spread demand and thereby even out differences between peak and off-peak?
- How do the organisations concerned handle incidents and traffic disruptions in a planned way (crisis management)? How can different (private and public) stakeholders cooperate in dealing with disruptions, especially on a deregulated market?

Cost effectiveness and financing:

- How can the economic situation of local and regional public transport be described and explained? What ways are there of improving the economic situation, for instance, through different methods of operation, networks, time planning and price setting of public transport?
- What is the economic value of public transport as it works today?
- Are there new ways of financing public transport?
- What is the significance of customers' assessment of and willingness to pay for public transport?
- How can price and product differentiation influence passengers' choices and why? How can this be communicated to politicians, together with information about assessments of effects on revenues and on various stakeholders in the public transport system?
- Is there any potential for value added services in public transport?

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2. The contribution of public transport to societal development

General description of the problem

Public transport is increasingly seen as an instrument for the development of cities and regions. From that perspective, public transport must be understood on the basis of a broader agenda of development with several involved stakeholders and policy areas/measures. This leads to a more complex reality. There are many stakeholders involved in the planning and decision processes which can lead to conflicts and disagreement about how public transport is to be developed. It is easier to mobilise key players if there are instruments for evaluating how public transport contributes to societal development. Therefore, more knowledge is needed about we can maximise, analyse and evaluate the way public transport contributes to the development of society.

Relatively speaking, a lot is known about the consequences of public transport with regard to aspects such as accessibility, health, safety, the environment, economic growth, attractiveness, etcetera. However, this knowledge is spread over different disciplines and there are no models for a coherent analysis of the effects that are not normally included in socioeconomic models. Knowledge about the consequences of increased public transport for people's everyday lives, well-being and living conditions - and how these effects are distributed over different groups in society - is an important factor for the analysis of the effects of investments in public transport. There is also a need for more knowledge about the effects of new services and new technology, for instance, combined mobility, sharing services and self-driving vehicles.

New methods and routines for evaluation will be of crucial importance for the development of strategic public transport plans and investment decisions for metropolitan areas. Institutionalised use of ex post evaluations can contribute to increased learning. More knowledge is needed about the effects of public transport as a basis for transport models. Decisions concerning land use and infrastructural investments are not only dependent on knowledge about probable effects; they are also affected by how knowledge is negotiated in planning and decision processes. These questions are not only related to a shift in policy towards more public transport; they are also linked to the professional knowledge of politicians and planners, the methods that are used, methods of working and power relations. More knowledge is needed about how and why strategies are developed, and how and why (or why not) they are then implemented.

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Examples of research questions

The effects of society/cities on public transport:

- What would a society that is more centred on public transport be like and what changes would it entail for the way people live?
- How can urban development support attractive public transport and what incentives are needed in order for that to happen?
- How can preconditions for fully integrated planning be created? Can physical plans be operationalised on the basis of "closeness to public transport" and "longest acceptable distance from home to work"?
- How is public transport affected by changed mobility solutions in cities, for instance, self-driving vehicles, car-sharing services or bicycle rental systems?

The effects of public transport on society/cities:

- What significance does public transport have financially and socially with regard to equality and access to opportunities? To what extent is a lack of good public transport an obstacle for social and economic participation?
- How can public transport contribute to the development of a sustainable society? What economic and institutional mechanisms, work methods and deliberative planning processes are needed in order for this to happen?
- How can public transport help to make towns and cities more attractive places? What possibilities does new technology, for instance, the electrification of buses, imply for the development of cities?
- How big is the structural effect of public transport on land use in cities?
- What will the consequences be for societal development and the economy if the capacity of public transport is not improved?
- How can public transport be of use and benefit to other policy areas such as social integration, health, safety and security, and/or the environment?
- What are the effects of new concepts that, for example, link the public transport systems in cities together with new mobility solutions in the cities' surrounding areas?

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Methods of evaluation for widespread, comprehensive effects:

- Assessment methods for new public transport systems - what methods can be used to assess more widespread and comprehensive effects of public transport measures?
- How can the social consequences of public transport be analysed and evaluated?
- How can demonstration projects and evaluations of processes and the effects of ongoing public transport investments contribute to increased understanding of the contribution of public transport to societal development?

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3. Collaboration for improved public transport

General description of the problem

The planning, execution and operation of attractive public transport solutions require an integrated approach. The public transport system involves a number of public and private stakeholders and interested parties, for example, the Swedish Road Administration, regional public transport authorities, municipalities, operators and passengers. All these parties have different tasks, roles and mandates and are sometimes driven by different agendas and interests. The development of efficient and attractive public transport is dependent on the ability of different stakeholders to collaborate, despite their different roles and interests.

However, it has been seen that bringing about collaboration between different stakeholders, both within the public transport sector and with other related sectors, is often a challenging task. The purpose of the 2012 Public Transport Act was to facilitate strategic regional planning of public transport but it is still unclear to what extent these expectations have been fulfilled. Despite new regulation frameworks and increased awareness of the importance of coordinated strategies, the governance of public transport is often fragmented and characterised by sub-optimisation. There are coordination problems at both strategic (governance) level and operative (management) level.

Research shows that organisations that take part in transport planning are often aware of the importance of developing more coordinated strategies but in practice, it is still difficult to bring about such coordination. There are various reasons why this is the case, relating to a number of aspects such as poor formal institutional preconditions, incompetence, conflicting perspectives and priorities, formal and informal power relations, attitudes and organisational cultures, a lack of clear political governance and/or a lack of strategic planning capacity, a lack of time or other resources, etcetera. Moreover, the emergence of new forms of combined mobility, where different modes of transport are integrated in one common service, requires a high degree of collaboration between public and private stakeholders who have in part different interests and perspectives. The research that is done in this field aims to increase knowledge about collaboration as an important component of improved public transport.

Examples of research questions:

- Changes in legislation have led to new institutional structures and a situation where many new stakeholders have entered - and continue to enter - the public

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transport arena. What challenges does this lead to with regard to collaboration? Are there any general success factors for efficient collaboration in a situation with complex and changeable constellations of stakeholders?

- How is strategic public transport planning in Sweden's metropolitan areas currently done? What preconditions for collaboration are created under existing formal and informal institutional frameworks and what are the most important measures for improving the possibilities of collaboration between the most important stakeholders?
- What planning models, routines and methods can effectively support more coordinated and integrated strategies for land use and transport planning? What happens in practice when new methods and work methods are implemented?
- What are the critical interfaces between private and public stakeholders who are involved in the production and consumption of public transport? How is collaboration affected when public transport is regarded as a market? What are the critical aspects with regard to democracy, openness, legitimacy and power?
- How can citizens be meaningfully involved in strategic transport planning, for example, through the use of citizen dialogues? How can inclusive preconditions be created by the organisations that are responsible for land use and transport planning?
- What advantages, risks and/or complexities have to be handled in a public transport system that is characterised by increased collaboration? What power relations play a role and how can they be identified and handled?
- What conditions with regard to creating meaning and ways of thinking currently form the strategic governance of public transport? What norms, ideas and visions shape this political arena? What subjects dominate the agenda and what topics are not even viewed as being relevant? How are conflicting ideas and rationalities handled, for example, class, gender, ability, ethnicity and/or age, or in relation to competing societal objectives?
- How can public and private stakeholders collaborate within the framework of new forms of combined mobility?
- How can the range of public transport services in cities be linked to the new, emerging mobility solutions in the cities' surrounding areas?

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4. The opportunities digitalisation implies for improved public transport

General description of the problem

More knowledge is needed about what information passengers lack or may need in order to improve their travel experience. This is important not only to retain existing passengers but also to attract new ones. It is a major challenge to plan (and dynamically re-plan) resources for public transport in such a way that they are utilised as well as possible so as to fulfil societal objectives, for instance, by giving passengers the best possible service. Greater insight is needed into the potential and consequences of the ongoing digitalisation process (for instance, sensor networks, ubiquitous computing, smartphones and other technology) within and related to public transport.

Another major challenge is that passengers make choices based on insufficient information, or at least on insufficient access to correct information. Efficient methods must be developed to provide passengers with the right information at the right time, for example, through context-aware information systems. This information could be about ticket prices, how tickets are purchased, or what travel alternatives are available in a certain situation. For example, a passenger may try to get his/her normal travel plan to work even when it is pointless to do so because of disruptions in the transport system.

The effects of giving information to passengers must be analysed. Another example could be to investigate how passengers' behavioural patterns can be changed, for instance, how different types of passenger information affect passenger behaviour. There is a need to understand the reasons why potential passengers decide not to use public transport and whether it is possible to influence that by using the technologies that digitalisation can provide. Moreover, different categories of passengers have different needs for support. In many situations, we do not know what information is lacking. From the perspective of the passenger, customers may have different abilities and resources to adapt to and use a technology-based information system. This highlights issues linked to accessibility.

Another aspect of these issues is experiences of best practice when it comes to the use of information for operators, including how passenger-related information is used, for example, data from ticket systems or the passengers' information systems. From an organisational perspective, a deeper understanding of the specific needs and possibilities of information and IT systems for the different public transport stakeholders (operators, different customer categories, etcetera) is needed. In addition, more knowledge about institutional obstacles, for example, legal issues (including questions about integrity) and business aspects is needed.

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Examples of research questions

What are the general information needs of different stakeholders?

- How can organisations, public authorities, companies and private individuals benefit from a thorough understanding and analysis of information needs?
- What type of information can be gathered, both in real time and retroactively? How can new ways of gathering data be used and how can existing data (for all types of transport modes) be analysed in new ways?
- What type of information is de facto usable for different stakeholders in different situations? This can also include information about the effects of transport, for example, impact on climate.
- What type of information can be used to improve the travel experience? This can include different types of information about the geographical area, the purpose of the trip, etcetera.
- What is the most effective way of gathering this information? This can include non-conventional methods such as crowd-sourcing.

How can information give support to the passenger before and during a trip?

- Ticket and payment systems
- Information about the whole trip, including multi-modal travel such as taking a bicycle onto public transport
- Context-adapted information at interchange points
- Special priority to passenger categories
- What types of services can contribute to improved passenger experiences, including different forms of combined mobility services?
- How can IT support be used in relation to legislation on passenger rights (for example, as feedback in real time to passengers as regards whether they will be compensated for the measures they have taken)?

How can ICT contribute to real time support for operators?

- What methodological challenges need to be handled?
- How can large amounts of sensor data in conjunction with disruptions create new possibilities for operative planning?

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- How can improved use of real time information, including ticket sales data, contribute to a more accurate adjustment of traffic services (reallocation of vehicles, etcetera)?
- Can crowd-sourcing be used to improve information quality and also provide new information? If so, for what purpose and by whom?
- How can ICT solutions support transport planners?
- How can gathered information, including ticket data, contribute to improved system design?

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5. The attitudes and behaviour of passengers

General description of the problem

This research field focuses on the norms, values and needs of existing and potential public transport users. It investigates different categories of passengers by using an explicit "whole-trip perspective" and studies in what ways it is possible to influence the decisions taken by individual passengers. One important issue is how the perspective of passengers can be integrated into public transport planning and decision-making. Another important matter is the attitudes and behaviour of existing and potential passengers in relation to combined mobility services that integrate several modes of transport.

Knowledge about passengers' attitudes and behaviour is currently relatively limited compared with other research areas related to public transport. Research often tends to view passengers as passive objects that can be influenced to use public transport through different types of measures. This field of research will instead strive to understand the frequently complicated internal and external, individual and social factors that affect passengers' daily behaviour. It is important to take into account the long period of car dependency, land use and transport development in Sweden's metropolitan areas and understand how this still influences and shapes people's transport choices and preferences.

Research in this field is justified by the current need for a more strategic and dynamic analysis of current and future movement patterns, rather than a one-dimensional investigation of people's attitudes to existing public transport services. This presupposes a deeper understanding of the motifs behind people's travel routines and behaviour and an understanding of public transport as a dynamic and intermodal system, taking into consideration the entire door-to-door trip and all daily trips. Modern research on public transport must be based on a theoretical approach and development of planning instruments that includes sociological and psychological factors. The focus should not only be on existing public transport users; it should also be on large future passenger categories. This is a very important question, not least in relation to the demographic structure of society. It is essential that users with functional impairments are also taken into account and that attention is also paid to heterogeneity within traditional passenger categories.

Examples of research questions

Passenger perspective with regard to personal needs

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- Who are the users and non-users of public transport services in Sweden's metropolitan areas today? What are their experiences of and attitudes towards public transport? What are their transport needs, wishes and preferences with regard to family, work, everyday tasks, obligations, anxiety, expectations and limitations with regard to time, place and space?
- What are the norms and attitudes of future passenger categories?
- What is the situation for vulnerable categories of passengers and/or passengers with special needs?
- What limitations and resources do public transport users have and what strategies do they use to meet their transport needs?

Passenger perspective with regard to public transport

- How do public transport providers operationalise concepts such as quality, service and reliability and how is that related to passengers' norms and attitudes?
- What are the most important functions (with regard to both design and operation) of a public transport system that meets the needs and wishes of both existing and potential users and which is perceived as being efficient and accessible to everyone? Are these functions the same in all contexts or do they vary depending on, for example, the size of the town, whether it is a regional centre or a more remote place? In conjunction with this, how can potential effects on urban planning, architecture and ICT be understood?
- How does public transport congestion affect the function of public transport and how does congestion affect the norms, attitudes and behaviour of passengers?

Public transport planning on the basis of users' needs and wishes:

- What theoretical models, decision support etcetera related to users' attitudes and behaviour are most common in current public transport planning and policy decision-taking? How is the passenger represented in these models and theories?
- How can the relationship and interaction between passengers, planners and operators be strengthened, that is, how can a user perspective be better integrated with the planning and design of public transport? What perspectives and knowledge are lacking?
- How is universal design applied to public transport?

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Door-to-door perspective:

- What are the most important characteristics of travel route behaviour in metropolitan regions today and how are these perceived by existing and potential passengers?
- How can the experience of the whole trip (i.e. from door to door) be improved? How can a better understanding of multimodal travel be used in practice to improve and increase the use of public transport? What effects do combined mobility services have from the perspective of the passenger?
- What effects (with regard to choice of transport mode, the performance of the system, accessibility, perceived quality of the trip, etcetera) can improved service at multimodal hubs have?
- It is also important to understand how congestion, security and comfort can influence decisions whether or not to use public transport.

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Appendix 1 – K2 research projects (ongoing and completed)

Innovativ finansiering, Project manager: Désirée Nilsson, Financier: K2, Period: 2015-2017.

Effektivare styrning, Project manager: Anders Wretstrand, Financier: K2, Period: 2015-2017

Kontrakt för samverkan, Project manager: Helene Lidestam, Financier: K2, Period: 2015-2017

Styrmedel för kollektivtrafikens utveckling och bidrag till ett hållbart samhälle, Project manager: Anders Wretstrand, Financier: Swedish Transport Administration, Period: 2013-2015.

Uppföljning av E20-avtalen, Project manager: Roger Pyddoke, Financier: Stockholm County Council and K2, Period: 2015-2016

Beslutsprocesser i Sverigeförhandlingen - finansiering och styrning, Doctoral student: Erik Ronnle, Financier: K2, Period: 2014-2018

Pendeltågens och regiontågens betydelse för utvecklingen av fastighetspriser i Västra Götaland, Project manager: Desirée Nilsson and Helena Bohman, Financier: Region Västra Götaland. Period: 2017.

Modeller för effektiva åtgärder för att öka andel resande med kollektivtrafiken, Project manager: Jamil Khan, Financier: Swedish Energy Agency.

Energieffektivisering genom minskad biltrafik i städer – policy, process och institutioner, Project manager: Robert Hrelja, Financier: Swedish Energy Agency.

Kollektivtrafikens bidrag till samhällsutveckling, Project manager: Désirée Nilsson, Financier: K2, Period: 2015-2017

Implementering av metod för jämställdhetskonsekvensbedöming (JKB) i svensk transportinfrastrukturplanering, Project manager: Lena Levin, Financier: Vinnova, Period: 2013-2016

Samhällsekonomi i kollektivtrafiken, Doctoral student: Erik Johansson, Financier: K2, Period: 2015-2020

Effekter av kollektivtrafikåtgärder - en kunskapsöversikt. Désirée Nilsson, Financier: Swedish Transport Administration, Period: 2016

Framing Mobility in the Just City - the case of bike sharing programs, Doctoral student: Zahra Hamidi, Financier: K2, Period: 2014-2018

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Utveckling av metod för sociala konsekvensbedömningar för svensk transportplanering: ett transdisciplinärt angreppssätt, Project manager: Lena Levin, Financier: Formas, Period: 2016-2018

IMPACT-1, Project manager: Claus Hedegaard Sørensen, Ida Kristoffersson, Joakim Ahlberg, Financier: Shift2Rail, Swedish Road Administration, Period: 2016-2018

Living lab Uddevalla, Samverkan, Project manager: Stig Westerdahl, Financier: K2, Period: 2015-2017

Jämförande fallstudie, Samverkan, Project manager: Fredrik Pettersson, Financier: K2, Period: 2015-2017

BRT - en studie med utvärdering av fyra svenska demoprojekt, Project manager: Maria Börjesson, Financier: Vinnova, Period: 2014-2019

Samverkansmodeller för hållbara kollektivtrafiklösningar, Project manager: Karolina Isaksson, Financier: Vinnova, Period: 2014-2016

Kollektivtrafikens strategiska styrning och omställningsförmåga, Doctoral students: Malin Aldenius, Jens Hylander, Financier: Swedish Energy Agency, Period: 2015-2019

Planering av strategisk cykelinfrastruktur, Project manager: Till Koglin, Financier: Vinnova, Period: 2016-2018

Integrerad transportplanering mellan höghastighetståg, lokal och regional kollektivtrafik (förstudie), Project manager: Jane Summerton, Financier: K2, Period: 2015-2016

Agentbaserad simulering av persontransporter i urbana områden, Project manager: Paul Davidsson, Financier: K2, Period: 2015-2017

Effektiva bytespunkter, Project manager: Andreas Tapani, Doctoral student: Therese Lindberg, Financier: K2, Period: 2015-2017

Informationsbaserad störningshantering för kollektivtrafik , Project manager: Jan Persson, Financier: K2, Period: 2015-2017

Hållbart Vardagsresande Genom Dynamisk Kollektivtrafik, Project manager: Sten Minör, Financier: Vinnova, Period: 2015-2016

Kollektivtrafikens roll och plats i resenärens vardagsliv - idag och i framtiden, Project manager: Lena Levin, Financier: K2, Period: 2015-2017

Resmöjligheter i vardagen bland äldre människor i storstadsområden, Doctoral student: Jean Ryan, Financier: CASE, Lund University, K2, Period: 2013-2018

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Hållbara stadsmiljöer med ökad andel kollektivtrafik – ett projekt om stadsmiljöavtalen, Project manager: Helena Svensson, Financier: Swedish Transport Administration, Period: 2016-2018

Laddsträcka i Lund - En studie av busslinje i körsimulator, Project manager: Arne Nåbo, Financier: Swedish Energy Agency, Period: 2016-2017

Hot och kränkningar av tågpersonal och bussförare, Project manager: Anna Anund, Financier: AFA Insurance, Period: 2016-2017

Brus: Mindre störningar i tågtrafiken, Doctoral student: Carl-William Palmquist, Financier: Swedish Road Administration, K2, NTNU, Skånetrafiken, Period: 2016-2018

IRIMS (Institutionella ramverk för integrerade mobilitetstjänster i framtidens städer), Project manager: Annica Kronsell, Financier: Vinnova, Period: 2016-2018

Integrerade mobilitetstjänster - systematisk omvärldsbevakning, Project manager: John Hultén, Financier: Swedish Transport Administration, Period: 2016-2017

Integrated mobility services: Creating favorable conditions for procurement, development and use, Industrial doctoral student: Göran Smith, Financier: Region Västra Götaland and K2, Period: 2016 - 2020

Kombinerad mobilitet för hållbara tjänsteresor, Project manager: Sonja Forward, Financier: Vinnova, Period: 2016-2018

Effektutvärdering av Regional superbuss, Project manager: Anders Wretstrand, Financier: Swedish Road Administration, Period: 2016-2021

Utveckling och genomförande av regionala superbusskoncept, Project manager: Fredrik Pettersson, Financier: Sveriges Bussföretag, Period: 2016-2019

Regional superbuss - samverkan som lärprocess, Project manager: Fredrik Pettersson, Financier: K2, Lund University, Period: 2014-2016

Provdyk, Project manager: Johan Olstam, Period: 2014-2015

Utvärdering av Pågatåg nordost och Krösatåg, Project manager: Christina Scholten, Period: 2013-2014

Elektrifiering av stadens transporter, Project manager: Jamil Khan, Financier: K2, Period: 2015-2016

Vad styr våra val om resande eller inte resande i kollektivtrafiken. Project manager Christina Stave, small K2 project

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Kollektivtrafikens options- och icke-användarvärden. Project manager Lena Hiselius, Lund University, small K2 project

Kollektivtrafik, resandemönster och lokal utveckling i Skåne. Project manager Magnus Andersson, small K2 project

From One Track to All Track – gendered transport politics. Project manager Christina Scholten, small K2 project

Sustainable Mobility in Swedish Cities: A Comparative International Assessment of Urban Transport Indicators in Sweden's Five Most Populous Urban Regions. Project manager Desirée Nilsson, small K2 project

Kapade toppar i peak-trafik – en studie av kostnads- och miljöeffekter. Project manager Helene Lidestam, small K2 project

Variationer i resande med regionaltåg i tid och rum. Project manager Roger Pyddoke, small K2 project

Konsumentperspektiv på hållbart vardagsresande. Project manager Oskar Christensson, small K2 project

Incitamenter til busfremkommelighedstiltag i store og større byer. Project manager Claus Hedegaard Sørensen, small K2 project

Risk of violence by local bus stops? An exploratory study of relative risk for violence in the city of Malmö. Project manager Manne Gerell, small K2 project

Kunskapsöversikt och förstudie beträffande Transport Equity. Project manager Mattias Haraldsson, small K2 project

Effekter av gratisresande för äldre och färdtjänstberättigade personer. Project managers Tania Dukic Willstrand and Helena Svensson, small K2 project.

Visit www.k2centrum.se for full and updated information about the projects that are conducted within the K2 framework.

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Appendix 2 – K2 publications and articles

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