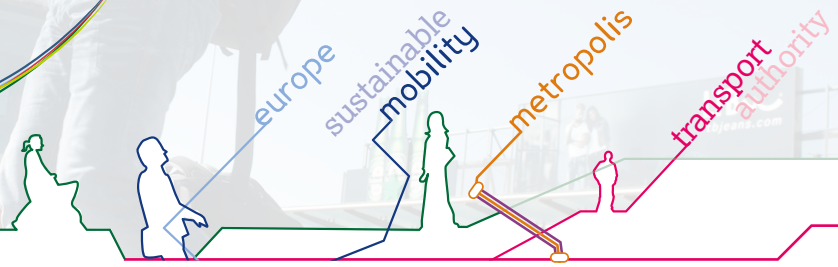


EMTA



News from the cities

European public transport in 2018: chasing value

2018 takeaways from the 2017 EMTA survey on
the state of public transport
REBEL funding in Europe.

Even in today's sharing economy, the case for mass public transport remains uncontested. Public transport delivers many benefits to commuters, travellers and cities worldwide. It creates personal freedom through mobility, it improves the quality and resilience of the urban environment, and it unlocks the full economic potential of rapidly growing urban agglomerations. The last decade has seen demand for public transport services increase substantially. More citizens expect more quality, more frequency, and better reach. As a consequence, governments need to spend more on public transport.

Not only to invest in bigger and better infrastructure, but also to cover growing operational expenditures. In most cities, the burden of fuel, electricity, payroll and other costs weighs heavier every year. The result is an ever growing funding challenge: where to find more money?

With this question in mind, during 2017, the organization of associated European Metropolitan Transport Authorities (EMTA) surveyed its members looking for the state of play with respect to public transport funding across the continent. With a particular interest in finding out how authorities pursue innovative funding solutions.

Rebel supported EMTA on survey implementation. In this one-pager we share three of its key observations, followed by three core ideas to kick-off 2018.

SAVE THE DATE: 24 April 2018

CIPTEC Final conference, Brussels, Belgium

The CIPTEC H2020 project is coming to an end. Now, it's time to share our findings with the community. Do you wish to know more about the CIPTEC innovation tools, gain new insights in user needs and find out how to nudge people towards more PT use? Then save the date and join us in Brussels on 24 April 2018!

More info & registration: <http://conference.ciptec.eu>

1. Public transport fares are not keeping up with rising costs

Total expenditure on public transport has continued to grow. But income from public transport fares has not grown at the same pace. Survey data for the years 2012 to 2016 suggested that, in the overall mix of public transport funding sources, the relative share of fare revenue and related direct income streams decreased by approximately 7 percent.

2. The resulting funding gap is largely closed by subsidy and grant money

The survey suggests that there has not been an observable rise of successfully developed "innovative funding sources" such as levies on commercial developments or sophisticated area tax regimes aimed at covering public transport costs. As fare revenue growth lagged behind the growing costs of public transport, authorities responded by pouring more money into subsidies and grants.

3. But authorities are conceptualizing and piloting innovative value capture approaches

However, that is not to say that experimentation does not occur. The survey revealed that many authorities investigate and pilot the possibilities of additional funding from alternative revenue streams. Value capture concepts – concepts of public financing that allow for the recovery of some of the value that public transport generates for private parties and individuals – are particularly popular. Several cases were found, from station-linked development practically everywhere, to passenger volume-linked levies in Barcelona, to incremental tax decentralization and retention in the northern cities of the UK, to pooling and auctioning of corridor-linked land rights in London. There is much to learn from these cases.

4. Thinking differently about value capture helps to make the most of these new approaches

Taking our cue from these survey findings and drawing lessons from its cases, we promote three ideas to inspire you at the start of the new year:

- I. Value capture is not only there to support financing of investments in infrastructure. Many value capture approaches result in long-term revenue streams which can support operational expenditure just as well. In fact, most of the surveyed schemes wherein value capture income is used nominally to finance additional infrastructure do not even earmark this income for covering financing.
- II. In addition, value capture becomes more powerful when integrated fully with urban planning and development. Not only with planning and development of commercial properties around stations, but also with reorganizing, pooling and development of existing land rights along entire corridors. Zonal levies or tax increment agreements can be used to capture part of the economic value generated by public transport connectivity across these corridors.
- III. But besides setting levies, authorities should also make more and better use of market-based approaches to determining the amount of value that can be captured, instead of relying on the “paper reality” of public sector business cases. While useful, these business cases tend to result in under- or overestimation of value capture potential. Tenders, auctions or other market-based approaches on the other hand will enable more targeted and specific value capture by authorities – if done properly.

The full survey report is available on EMTA's website for further references under [Publications](#).

EMTA and the authors can also be contacted for further queries or comments.

[RebelGroup](#) (Rotterdam, Antwerp, Washington DC, Johannesburg, Manila, Jakarta) helps public and private organizations bridge the gap between their infrastructure and service needs and financial resources, by focusing on optimization of public service concessions, PPPs and transaction processes, innovative capital financing, project delivery strategies, efficient management, and performance improvement.

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Ambitions to achieve Zero Emission Mobility in Amsterdam region



Things are going well with the introduction of Zero Emission buses in the Amsterdam region. From April 2018 100 zero emission buses will be deployed in the area around Schiphol Airport. In summer, the Waterland region will follow with 10 electric buses. Within the entire Amsterdam metropolitan region plans to make public transport more sustainable in the coming period are rolled out at a high pace.

In 2016, the Transport Authorities in the Netherlands signed the National Administrative Agreement Zero Emission Regional Public Transport by bus. This states that by 2025 all new buses must be Zero Emission and must use 100% renewable energy. In 2030, the entire public transport should comply with the zero-emission standard.

Transition continues

The transition has now started in the Amsterdam region. In April 2018, the first 100 full electric buses will run in the Amstelland-Meerlanden concession area. In the 4 concessions (or contracts) in the region of Amsterdam, there are now several plans to convert specific traditional bus lines into Euro-diesel buses by ZE bus lines.

In addition to the sustainability of the buses, we see several trends, such as the change from car ownership to the use of other shared mobility services. The transition to sustainable public transport should match with the new approach of clean and lean mobility. It is important, for example, that the charging infrastructure is located at strategically efficient locations that cater for facilities to charging of electric cars or for car- an bike-sharing at a smartly located public transport hub.

Zero Emission Mobility Program

To organize the transition to Zero Emission Mobility, not by concession, but covering the entire regional scope of policy, the Transport Authority has drawn up a scheme in which together with the operators, the 15 municipalities and the network managers prerequisites are defined, that should enable a logical roll-out of Zero Emission mobility measures.

E-hub at Edam Bus station

In the summer of 2018, operator EBS will start operating with 10 electric buses on a BRT-line (R-Net 316) that connects Amsterdam with the fishermen's village Edam-Volendam, one of the main typical areal touristic attractions. On that route a choice is made for opportunity charging.



Besides a charging facility at the depot, together with the power network operator a suitable location for a charging station is defined. Discussions with the road authority on the establishment of the interchange are ongoing. It will be designed and equipped as an E-hub where passengers easily switch from bus to bicycle and where space will be made available for an E-car share location and a pick-up point for diverse services and meeting places.



The contract with EBS in the Waterland area expires in December 2021. Nevertheless, the Vervoerregio Amsterdam as transport authority and EBS agreed to invest in ZE buses. The new buses and the E-charging infrastructure at the depot shall be part of a dedicated

buy-out and take-over arrangement in the new contract to enable a smooth transfer of assets. 'Beleidskader Mobiliteit' of the Vervoerregio Amsterdam

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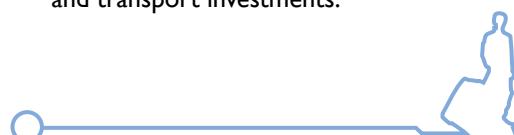
Corporate Plan of the Transport Authority Amsterdam

Renewal of regional traffic and transport strategies

The Amsterdam (Metropolitan) region is growing: the population increases, employment rises, and the number of visits increases as well and it is expected that without expansions the traffic and transport system will be unable to answer to the mobility demand already on the short term. At the same time, there are major challenges with regards to global warming, and to reach the goals set by the Paris climate agreement. Road safety and the quality of life in this densely populated urban region are other major issues the Transport Authority Amsterdam should deal with in this new Corporate Plan.

As a response to the above-mentioned challenges, the Transport Authority Amsterdam will focus in its new regional traffic and transportation corporate plan ('Beleidskader Mobiliteit') on the following:

- Ensuring an adequate level of accessibility, mainly by integrating transport modes into one efficient and connected (or coherent) traffic and transport system (or network);
- Reduce CO2 emissions and the environmental impacts of the traffic and transport system;
- Enhance user experience by optimizing the comfort, ease of access to travel information, quality of service and improving the perception of safety of the traffic and transport system;
- Creating a better match between transport infrastructure and its environments, including the quality of the surrounding public space;
- Support the completion of the most urgent urban development schemes in the region, by improving collaboration and attuning the regulation between urban planning and traffic and transport investments.



Restrictions on circulation and promotion of public transport and sustainable mobility to combat environmental pollution in Barcelona



From December 1st 2017, by virtue of an institutional agreement, the Department of

Territory and Sustainability (DTES) of the Generalitat de Catalunya can declare episode situations of environmental air pollution in Barcelona. The agreement was signed in March 2017 between the main agents and the public administrations in Area 40 of the Barcelona conurbation (see figure 1).

During such episodes, the DTES is expected to trigger a series of measures aimed at reducing emissions of nitrogen dioxide and particles of less than 10 microns in diameter. The objective is to reduce traffic emissions in Area 40 by 10% in the next 5 years, and by 30% within 15 years in order to reach the levels recommended by the World Health Organization (WHO).

Area 40 (in green in Figure 1) includes 40 municipalities and is defined as a zone of special protection of the atmospheric environment, to tackle emissions of nitrogen dioxide (NO₂) and particles in suspension of less than 10 microns diameter (PM₁₀). The agreement also defines an Area of influence of Area 40 (in blue in Figure 1), which includes 34 additional municipalities.

An environmental episode of high air pollution is defined as a situation in which the meteorological conditions are unfavourable for dispersion and ventilation. This may increase the concentration of one of the two pollutants, and may lead to an excess of the limit values established by legislation. In these cases, three scenarios can be given:

- Preventive notice to an episode statement, but without declaration of environmental episode
- Declaration of environmental episode due to high pollution without traffic restrictions
- Declaration of environmental episode due to high pollution with traffic restrictions (*only activated by pollutant NO₂*)

In the case of an episode declaration with traffic restrictions, the circulation of all cars and vans that have not received a label issued by the General Directorate of Traffic identifying the level of emissions of the vehicle will be prohibited. The restriction applies to the Low Emissions Zone (ZBE). See figure 2.

The traffic restrictions will be applied in order to reduce emissions on days with a lower dispersion of atmospheric pollutants. The DTES calculates that the limitations in the ZBE of Barcelona (see figure 2) will reduce around 18% the urban emissions on both NO₂ and suspended particles with a diameter of less than 10 microns (PM₁₀). This figure represents 11% of the emissions associated with traffic in the entire Barcelona conurbation.

At the same time restrictions on private transport are put into place, special measures to improve the public transport network are also applied, such as:

- Increase in the public transport offer during the episode of high air pollution
- Guidance and information about the closest P & R station via the public transport route planner “Mou-te”. This measure will be permanent throughout the year.
- Creation by the ATM of a transport ticket, for use only during the episode, to attract new travellers (T-aire). The new title offers two trips on public transport at a price 10% lower than that of the 10-trip Card (T-10). [More information.](#)

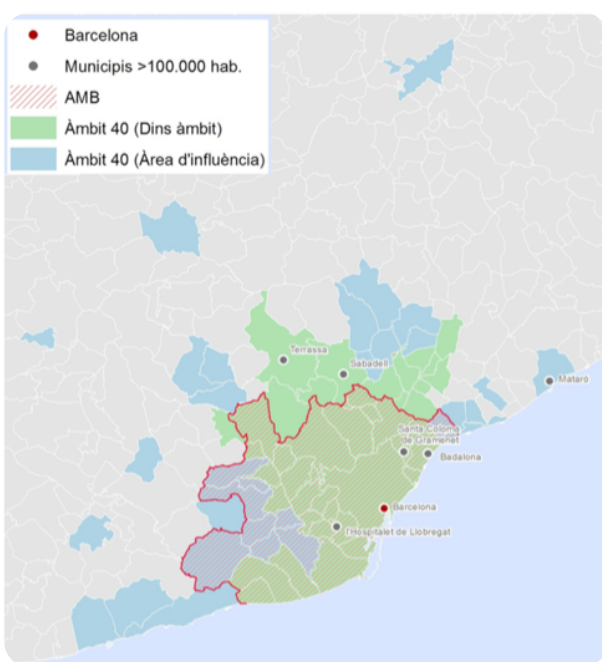


Figure 1 - Territorial areas of the Institutional Agreement

- Creation of the **T-verda** card that entitles 3 years of free public transport for all integrated public transport services of the Barcelona ATM. Vehicle owners who give up and demolish a light diesel vehicle up to Euro 3 (manufactured before 2005), or gasoline or gas up to Euro I (manufactured before 1996) and motorcycles type pre-Euro or Euro I, and do not acquire any new vehicle during the term of three years. [More information.](#)

To carry out these measures, the ATM together with the agents involved, have drafted a **protocol** detailing the actions to be taken by each one of them in each level of alert, the activation mechanisms of the measures to reinforce public transport, the infrastructures and the T-air title, as well as the communication channels and the coordination of the institutions.



Figure 2 - Low Emissions Zone (ZBE) of Barcelona (in green)

The ATM has created a tool in web format to monitor the activation of public transport reinforcements agreed with public transport operators, which also allows the monitoring of historical data on the measures taken.

When will traffic restrictions occur?

The restrictions will be implemented in 2019, 2020 and 2025, according to the following calendar:

As of January 1, 2019: Vans prior to Euro I (registered before 1994) and Euro I and prior cars (registered before 1997) will not be able to circulate the weekdays throughout the ZBE

As of January 1, 2020: Permanent prohibition of circulation within the ZBE of vehicles without labels of the DGT. For working days from 7 in the morning to 8 in the afternoon.

As of January 1, 2025: Permanent prohibition of circulation in the municipalities that make up the Metropolitan Area of vehicles without labels of the DGT.

Other related measures

In the short and medium term, the political agreement signed in March also contemplates other measures related to mobility, some of them still under study:

- Promote the renewal of the vehicle fleet with **aids and bonuses in the tolls**, to replace them progressively with low emission vehicles.
- Facilitate the **flexibility** of the public staff of the Generalitat during the environmental episodes.
- Implementation of a possible **access toll** to the central conurbation.
- Study the introduction of a **surcharge on the price of fuels**.
- Drafting of a white paper on **good logistical practices** aimed at rationalizing the urban distribution of goods.

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HELSINKI public transport news flashes



Metro extended from Helsinki to South Espoo

Metro services in the Helsinki region took a giant leap forward on 18 November 2017, when the Metro extension from Ruoholahti in Helsinki to Matinkylä in Espoo was opened with eight new stations. For the first time, the Metro carries passengers beyond the boundaries of Helsinki, providing a fast, direct transport link from southern Espoo to the eastern parts of the capital. At peak times, the trains run every two and half minutes.

The extension of the Metro to Espoo has substantially changed the travel patterns of people living along the new line. At the beginning of 2018, HSL withdrew nearly all bus services from South Espoo to Helsinki city center and replaced them by feeder services to Metro stations.

In the 2020s, the Metro will carry passengers even further: line extension from Matinkylä to Kivenlahti is already under construction.

The interface will be available next year at sales-api.hsl.fi. At the same time, HSL is inviting all transport operators, in Finland and abroad, to develop and innovate new mobility services using the interface.

“We are building a highly innovative and advanced digital retail API. A lot of work remains to be done but we are confident that we will have many types of businesses and innovative pilot projects generating creative value-added services using the interface. We also aim to actively contact transport operators both in Finland and abroad,” explains Mari Flink, director of HSL’s Customer Experience and Sales Department.



HSL to launch world’s first public transport retail interface open to everyone

HSL is creating an open retail platform for single tickets that allows anyone anywhere, in Finland and abroad, to purchase single tickets for retail sale.

HSL’s single tickets available from parking ticket machines in Helsinki

As a result of cooperation between Helsinki Region Transport HSL and Helsinki City Parking Control, HSL’s single tickets are now available from all parking ticket machines accepting card payments in Helsinki. HSL believes that making parking tickets and public transport tickets available from one location around the clock makes it even easier for motorists to transfer to public transport. The network of parking ticket machines is dense, with nearly 400 machines around Helsinki. The machines provide a ready-made sales channel, enabling cost-effective single ticket sales.

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Analysis shows how TfL's free open data boosts London's economy



Research by Deloitte shows the release of free, accurate and real-time open data by Transport for London (TfL) is generating annual economic benefits and savings of up to £130m (€150m) a year. The report found that customers, road users, business and TfL itself all benefit.

More than 80 data feeds are now available for developers through the free unified API, which ensures accurate real-time data is available from one system for over 13,000 developers. The research, commissioned by TfL and conducted by Deloitte, shows that by providing open data to developers, TfL is improving journeys, saving people time, supporting innovation and creating jobs.

For almost ten years, TfL has been releasing a significant amount of data – timetables, service status and disruption information – in an open format for anyone to use, free of charge. This allows developers and partners to bring new products and services to market more quickly, and therefore extend the reach of TfL's own information channels within stations, at bus stops and online.

TfL has worked with a wide range of professional and amateur developers, ranging from start-ups to global innovators, to deliver new products in the form that customers want. This has led to more than 600 apps now being powered specifically using TfL's open data feeds, used by 42 per cent of Londoners.

The Deloitte report found that TfL's data:

- Saves time for passengers allowing them to plan journeys more accurately using apps with real-time information and advice on how to adjust their routes
- Provides better information to plan journeys, travel more easily and take more journeys
- Creates commercial opportunities for third party developers with a wide range of companies now using TfL's open data commercially to help generate revenue, many of whom are based in London.

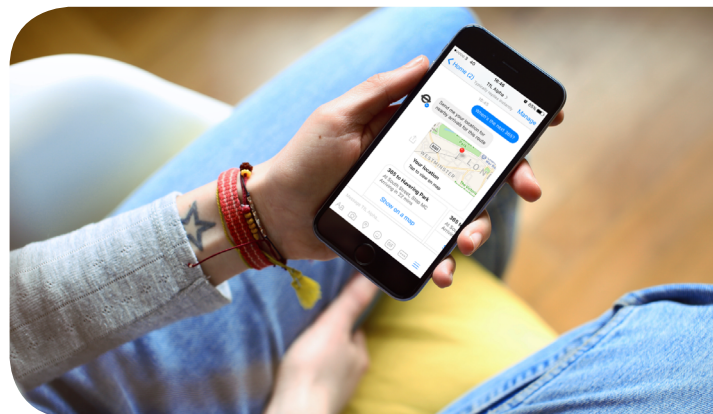
- Leverages value and savings from partnerships with major customer facing technology platform owners allowing TfL to receive back significant data on areas it does not itself collect data (e.g. crowdsourced traffic data)

The research shows the full power of open data and how it can be embraced to improve our city to meet the needs of Londoners. The provision of open data forms a key part of TfL's wider customer information strategy of providing more helpful, real-time information using new technology and innovation, to improve journeys. Other initiatives already in place include using Twitter travel alerts for service updates, the new 'TravelBot' Facebook Messenger tool that provides direct answers to travel queries on Tube, rail and bus services, and equipping staff with smart phones and tablets to help customers with their journeys.

Earlier this year, TfL also hosted a digital accessibility summit to bring together digital innovators and accessibility stakeholders to discuss how technology can help our customers get around. The summit has led to a number of developers now working proactively with TfL to improve how accessibility information, such as step-free access at stations and whether bus stops are correctly reflected as accessible or inaccessible to wheelchair users, is made available through apps and on websites.

For more information on TfL's open data policy, please visit tfl.gov.uk/open-data

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Bus arrival information © Transport for London

Greater Manchester celebrate success of new cycleway



In November, Greater Manchester celebrated more than one million cycle journeys on a key new cycleway.

The Oxford Road and Wilmslow Road Cycleway is a 7km route designed to make cycling safer and easier for people wanting to travel from the south of the region to the centre. It includes features such as physical kerbing that separates cyclists from other traffic, bus stop bypasses to crossing points and advance stop lines for bikes. The improvements to the Oxford Road section were captured in this [video](#).

The journeys were recorded between September 2016 and November 2017 by digital cycle counters placed along the route. One million cycle journeys along Oxford Road equate to around 621,000 car journeys, accounting for a potential reduction of 1.9 tonnes of nitrogen dioxide (one of the most harmful air pollutants) and 873.5 tonnes of carbon dioxide. Increasing cycling to reduce air pollution and help tackle climate change is one of the key elements of [Greater Manchester's transport strategy](#).

In November 2017 the counters also captured 5,000 two-way cycle journeys on a single day, the most ever recorded. The data from the digital display counters on Oxford Road can be checked on [the Eco Counters website](#), where it can be compared to other cities with similar counters across the world. The counters, which are the first of their kind in Greater Manchester, were unveiled last year as part of Transport for Greater



Manchester's (TfGM's) Cycle City programme in partnership with Manchester City Council. The project was funded by the Department for Transport.

In July 2017 Greater Manchester appointed Chris Boardman, the former Olympic champion as its first cycling and walking commissioner. The cycling legend will spearhead efforts to build a high-quality cycling network and improve health across the region. On the cycleway Chris Boardman said:

- *"I'm not surprised that the Wilmslow Road and Oxford Road cycleway has been a huge success.*
- *"It proves that, if you build high-quality cycle lanes that are separated from other traffic, people will use them.*



- *"It may sound strange, but bike lanes aren't for cyclists – they're for motorists. They're the people we need to get to change if we're to make a major shift in the way we travel around our towns and cities.*
- *"More than 30% of journeys in Greater Manchester under 1km are made by car, so the potential here is absolutely enormous. One million cycle journeys counted on Oxford Road in 14 months is a fantastic figure, and I hope we reach the second million in even quicker time."*

Manchester City Council's Executive Member for the Environment and Skills, Councillor Angeliki Stogia, said: "The Oxford Road and Wilmslow Road Cycleway has helped to encourage many more Mancunians to get on their bikes and we're heartened by the evident success of this scheme.

"Investing in high-quality infrastructure of this kind is just one of the ways in which we're helping to promote cycling in Manchester and, while there's more work to be done, passing the milestone of one million cycle journeys in just over a year is an impressive start. We are determined to build on this success."

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Stockholm PTA spurs data driven track maintenance



Is it possible to increase vehicle availability, reduce noise and reduce maintenance cost by combined actions?
By purchasing the service of providing high quality real time

track data the Public transport administration of Stockholm foresees great opportunities.

In March 2017 the Public transport administration signed a contract for providing the service of real time track monitoring with the supplier Tyréns. The service includes full responsibility for providing high quality data, including installation of the system called QTMS, data analysis, maintenance of the system and providing a user interface. The purchase was performed as a fully commercial tender process based on functional requirements focusing on the performance of the service. The Transport administration has received funding from Infra Sweden 2030, for the commercial introduction of track maintenance.

The system is mounted on seven ordinary vehicles used in the daily traffic operation; hence there is no need for additional measurement vehicles or special measurement routes. The service is now operational for the whole Stockholm metro-system, providing daily updates of the track status for a number of parameters indicating the track maintenance status:

- Track roughness
- Wheel slip
- Severe wear
- Curve squeal
- Pad stiffness
- Rail defects

All parameters can be monitored in a viewer showing the whole system, with possibility to zoom in to a resolution of 25 m long track sections. Each position and parameter may be shown by a time history, day by day, to overview changes and thereby plan maintenance activities. The system may also trigger alarms based on thresholds for each parameter, for the case sudden changes appear.



Figure 1, QTMS viewer showing the status of curve squeal

Based on the data the Public transport administration, in close cooperation with its main subcontractors for track and vehicle maintenance, MTR and Strukton, will now focus on increasing maintenance quality. One example is to reduce the risk of “wheel flats” caused by wheel slip by e.g. reducing vehicle speed and using a longer distance for braking. Further preventive maintenance of the track may reduce the risk of occurrence for slippery rails. Reduced risk of wheel flats may increase vehicle availability and extend the life time of wheels. The information about slip, squeal and wear will also provide a good base for optimization of track lubrication leading to both lower wear of wheel and rail and reduced noise. By using information about track roughness in combination with improved track maintenance, like acoustic grinding, it will also be possible to reduce the rolling noise from the metro.

The data-driven work methodology is also foreseen to provide eased cooperation between the Public transport administration and its contractors and between the contractors, as contractual requirements may be set based parameters that are possible to monitor instead of subjective criteria as “reduced noise” or “well maintained”. The possibility to plan maintenance activities in advance is also foreseen to provide substantial possibilities for cost reduction in maintenance when fully implemented.



To decide for a new mass transit ticketing system

Now is the time for Stockholm County Public Transport to see what the next generation ticket- and payment system will be.

In Stockholm, a system based on so called smart cards is used essentially, supplemented with a mobile ticket system for single tickets. The smart card is a “truth on card based system” while the mobile ticketing system is an on-line system. The card based system – SL Access – has been in operation since 2010.

The life cycle of the system is not endless while our customers are setting new requirements and expectations for a ticket and payment system, coupled with the mobile and card market offering new services that may be useful in a future ticket and payment system.



The development in the market for ticket and payment systems is very fast today. New opportunities are constantly being presented around the world, the mobile phone has a more prominent role. The desire to buy, handle and use its ticket in new ways develops continuously. However, many new solutions presented on the market are in the early stages and need time to mature and become mainstream.

Stockholm public transport has decided to initiate the program “Next Ticket System”. The overall objective of the program is to create conditions for securing the ticket revenues, now and in the future.

Targets towards effectiveness show what Stockholm wants to achieve with IT systems to meet customer expectations concerning ticket purchase and validation. In our vision and business plans in the regional traffic management program particular emphasis is placed on the expectations that the customer has from a ticket system. The IT system for ticket and payment solutions ensures that users can easily purchase, receive and validate a ticket.



It should be user friendly for all and efficient to manage, whilst ensuring that sales costs per sold ticket are reduced. Furthermore, that system should be interoperable with other traffic operators and enable integration with other actors, for example, contributing to increased public transport, like MaaS operators.

The effective goals are developed with a customer centric focus. Quantitative and qualitative customer surveys, trend analyzes, world-wide surveillance of payment and ticket solutions and knowledge of how other companies conduct business shape the baseline of our ticketing and payment strategy.

A well-functioning IT support for ticket and “pay-as you go” solutions contributes to satisfied travelers and increased use of public transport. The ticket system should be intuitive and easy to understand. The system will support a high level of self-service. For those traveling with other operators, the ticket system will support interoperable travel.

The IT solution is characterized by high availability when purchasing and validating tickets both physically and functionally. The traveler himself must be able to handle his ticket easily, regardless of the choice

of sales channel or ticket carrier. A ticket system that is available, uniform, intuitive and user-friendly throughout traffic contributes to the expected increased market shares in Stockholm County's public transport.

The IT solution will offer a mechanical validation of all tickets. A secure and accessible machine validation solution throughout the public transport system entails a high level of revenue hedging, which in itself minimizes mishandling and dodging. Traffic staffs do not need to make their own assessments regarding the authenticity of a ticket, which also ensures that all travelers are treated in the same way throughout the traffic-system.

Cost effectiveness is measured by cost per revenue. Effective revenue hedging contributes to resource efficiency and a well-functioning ticketing system is the basis for cost-effective development and management.

A well-functioning ticket system means that a ticket purchase should not be a threshold for travelling with public transport. It is important that a ticket system both within and outside the county through so-called interoperable ticket solutions supports the traffic offered to passengers.

The system is built with an architecture that allows for further development of processes and IT systems in areas such as purchase, validation, control and follow-up of a ticket, as well as adjacent areas, such as financial monitoring.

The New Ticket System program now is in the start up phase. The first decisions are expected to be made in 2018. One of the first will be about the selection of the path for the ticket system architecture and the business model.

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Warsaw: a capital investing in tram connectivity

Tramway systems and light rail gain popularity worldwide. After many years of



PUBLIC TRANSPORT AUTHORITY
OF WARSAW

stagnation light rail is on regress. Poland as the largest beneficiary of the European funds is no different: Polish cities heavily invest in tramway infrastructure, in particular in Warsaw, which has been investing in rail connectivity for many years.

Rail transport has always been particularly well developed in Central and Eastern Europe, where cities usually have expanded tramway networks. Their residents are accustomed to this type of connectivity. Tramways define the city structures and extensions, agglomerative rail or subway networks have become common. Upon entering the European Union, it enabled the government to get financial support for the development of public transport from EU funding, thus spurring ecological transport modes and tramway in particular. This contributed a lot to the increase in popularity of public transport in Warsaw, that has unveiled ambitious plans for expansion in this field. Warsaw is leading in the procurement of trams in Europe. The value of contracts for new vehicles is unique to the entire rolling stock industry in Europe. Emblematic is the "contract of the century" – an agreement entered into force in 2009 with Pesa, covering the delivery of 186 trams of 120Na Swing type worth nearly PLN 1.5 billion.



trams at Młociny Transport Node

This venture was implemented in the years 2010-2013. It marked the replacement of significant parts of the rolling stock in Warsaw's tram network, including withdrawal of old train units.

Another large purchase will be procured in near future. The contract covers purchase of up to 213 new trams (123 as a part of the main contract and 90 as an option), which results from infrastructure projects aimed at the improvement of connections from the city centre to developing peripheral districts.

Within the last decade, a total of 16.2 km of new lines were constructed in Warsaw providing the connection to the Bielany district with Tarchomin housing estate (the route passes through newly built Maria Skłodowska-Curie bridge on the Vistula river). Also, sections of the network in Bemowo were connected. In the first case, the line has been extended - in February 2017 its another 1.5-kilometre section has been opened. Another 0.8-kilometre long section is completed by the end of 2019. This investment is of a great significance for Białołęka - an intensely developing young district located on the right bank of Vistula river. Construction of tramway infrastructure provides residents a convenient link to the 1st subway line and will reduce travel time to the city centre significantly.



Future tramway infrastructure is planned in Białołęka - 6 km route, 9 pairs of tram stops with a tram terminal. This line will be completed in 2022, where 25 low-floor trams will be needed to service it. This rolling stock is part of the afore mentioned tender for the overall purchase of 213 train units.

Moreover, the plans cover construction of a route that will connect Warsaw Śródmieście with housing estates

located by the right bank of the Vistula river - Saska Kępa and Gośćów (both constitute a part of Praga-Południe district). These places are characterised by large connectivity needs, as the number of their residents is rapidly growing. Construction should be completed by 2021.

Additionally, a corridor to connect Wola, Ochota, Mokotów and Wilanów should be mentioned here. The first three districts have an appropriate infrastructure. Except for Wilanów, a particularly quickly developing peri-urban boroughs, inhabited mostly by young people who work in the centre of Warsaw and tend to use their car to go to work. As a part of this investment, six sections of the route will be constructed, including a tunnel under the Western Railway Station with a total length of 20 km. A multimodal interchange node will be put up there.



tram at Bank Square

The route will also run near the 1st subway line station (Metro Pole Mokotowskie) providing a link to tramway investment with other types of rail. Construction will take place in the years 2019-2021.

In the last decade, the capital of Poland renovated the most important tramway lines, which pass through the key community areas (Aleje Jerozolimskie, Trasa W-Z, Aleje Jana Pawła II, Marszałkowska street). In total, 58.5 km of routes were renovated and modernized.

Furthermore, a new modern tram depot in Anopol housing estate will be completed soon, allowing the servicing and repair of 150 multi-segment trams of 33 metres length. The object will have nearly 11.76 ha surface and 55 tracks with a total length of 14.25 km. Its construction will involve the use of cutting-

edge and environmental friendly technologies such as heat pumps, photovoltaic installation, closed water circulation in tram washes or acoustic screens that will separate residents from the rolling stock traffic and the noise.

Warsaw spent over PLN 2.5 billion on all tramway investments. Further ventures will be implemented using European funds. Completion will not only lead to increase of the significance of tramway connectivity in urban public transport, but is expected to contribute to the reduction of individual car use. Last year, tramway use stood for some 24 percent of travels in the city's public transport system, an excellent result compared to other large European cities. Further developments are still to come.



tram at Młociny Transport Node

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Calendar of events and conferences

(January – July, 2018)

18 January 2018
EMTA workgroup Data Digitalisation, Amsterdam

24 January 2018
The Midlands Intelligent Mobility Conference 2018

24 January 2018
Transport Ticketing Global, Old Billingsgate London.

16-19 April 2018
Transport Research Arena (TRA) - Vienna, Austria

SAVE THE DATE:
24 April 2018
CIPTec Final conference, Brussels, Belgium

14-16 May 2018
E5th European SUMP conference - Nicosia, Cyprus

23-25 May 2018
International Transport Forum: Summit "Transport Safety and Security", Leipzig, Germany

30-31 May - 1 June 2018
ECOMM 2018 - Uppsala, Sweden

6-8 June 2018
EMTA 20th Anniversary General meeting, Paris

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