

Introduction of speed limit 30 km/h in large zones and entire cities to achieve the goal of sustainable urban development

Processes, discussions, implementation and effects

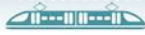
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We have collected, analysed and presented experiences from European cities that have introduced a speed limit of 30 km/h or 20 mph in large zones or entire cities to achieve the goal of more sustainable urban development. The purpose was to lay the foundation for more knowledge-based discussions related to the use of a speed limit of 30 km/h in large zones, entire cities or as a general speed limit in densely populated areas in Norway. We found that the measure contributed to a reduction in speeds and significant reductions in the number of traffic accidents in all the cities for which we found results, as well as to a number of factors that contribute to more sustainable urban development. The inhabitants were positive before the implementation and even more positive after. The cities normally initiate the speed limit reductions. Whether the measure is implemented depends mainly on whether the superior authorities can and will prevent the cities from doing so.

Background and implementation

The purpose of this project was to collect, systematize, analyse and present knowledge and experiences from European cities and countries that have introduced 30 km/h and 20 mph as a speed limit in large zones, throughout the entire city or as a general speed limit, which can provide a basis for more knowledge-based discussions and decisions related to the use of a speed limit of 30 km/h in Norwegian cities.

The background is that in recent years, a large number of European cities have introduced speed limits of 30 km/h and 20 mph in large zones or the entire city, such as Paris, London, Amsterdam, Edinburgh, Grenoble, Glasgow, Bilbao, Bristol, Brussels and Bologna, and a number of other cities are in the process of doing the same. Wales has introduced a general speed limit of 20 mph in densely populated areas, and Spain has introduced a general speed limit of 30 km/h in two-lane streets in urban areas. The goals of introducing a speed limit of 30 km/h in large zones, entire cities and as a general speed limit are typically that it will contribute to a more sustainable urban development. This means that cities will become more pleasant, livelier and comfortable to be in for residents and visitors, that it will be more efficient and comfortable to walk, cycle and travel by public transport in the cities so that more people choose these means of transport instead of cars, that public health will be improved and that



the number and severity of traffic accidents will be reduced. In parallel with this development, a number of international organisations, such as the UN, the EU, the OECD, the WHO and the International Transport Forum, have advocated the use of a speed limit of 30 km/h in areas where pedestrians, cyclists and car traffic mix, or the introduction of 30 km/h as a general speed limit in cities and towns. In some cases, discussions arise when such measures are proposed. Protests against the measure sometimes come from national authorities and sometimes from groups in the population. There are also many examples of a peaceful introduction of this measure.

In Norway, as well, many cities have introduced 30 km/h in larger zones, and several cities have plans or are in the process of expanding their use of this speed limit. Discussions with regional or national authorities often arise when cities want to extend the use of the speed limit of 30 km/h. In seminars in the Forum for Urban Development and Urban Transport and in the Public Transport Forum in 2024, it became clear that there are uncertainties and disagreements in the Norwegian professional communities regarding the positive and negative effects of expanding the use of 30 km/h as a speed limit. The Norwegian Public Roads Administration is now in the process of reviewing the regulations related to speed signage in cities and the use of the regulations, as well as assessing whether the general speed limit in densely populated areas should be lowered from 50 to 30 km/h. The purpose of this project and report is thus to gather knowledge that can contribute to more knowledge-based discussions about the use of the speed limit of 30 km/h in Norwegian cities.

In the report, we have presented an overview of the development and discussions regarding the use of a speed limit of 30 km/h in larger zones and entire cities internationally and in Norway (Chapter 1), theoretical frameworks related to how the use of a speed limit of 30 km/h in large zones and entire cities can contribute to a more sustainable urban development, and how the actors' objectives, knowledge and power can influence processes, discussions and decisions related to this (Chapter 2), research design and methods (Chapter 3), how various cities have implemented 30 km/h in large zones and entire cities and which streets are exempt (Chapter 4), information about, control and enforcement of the speed limit (Chapter 5), the processes related to the introduction of the measure and what have been the most important arguments for and against (Chapter 6), what effects the measure has had in European cities that have implemented it and whether it has contributed to a more sustainable urban development (Chapter 7), discussion of how robust the results are, how transferable they are to Norwegian cities, what Norway can learn from the experiences of other European cities and countries, and proposals for further studies (Chapter 8).

In our study, we have understood the problems investigated as being of the type 'organised complexity'. This provides guidelines for the choice of research design. We have studied all the issues using multiple case studies. We collected data from case studies conducted by others, documents produced by relevant authorities and conducted interviews with relevant professionals.

Results: Whether the measure has contributed to a more sustainable urban development

Our conclusion, across cases, studies and variables, is that the reduction of speed limits to 30 km/h and 20 mph in large areas and entire cities has produced effects that have contributed to a more sustainable urban development in the cities, see summary of the results in Table S1. Our assessment is that the measure can be expected to have effects that contribute to more sustainable urban development also in other cities that implement it.

In all cases, it has been found that reducing the speed limit to 30 km/h in large areas and entire cities, without at the same time introducing physical speed reduction measures, has

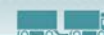
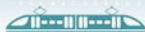
contributed to reduced speeds for car traffic and fewer traffic accidents. This applies in particular to serious accidents and accidents involving pedestrians.

This applied both to streets where the speed limit was reduced and to surrounding streets. The number of accidents was reduced significantly more than the speed. Researchers discuss that this is probably due to the fact that the highest speeds are reduced the most, and that the number of motorists driving at high speeds is significantly reduced. This is also an explanation for the greatest reduction in the number of accidents when the speed limit is also reduced to 30 km/h or 20 mph on main streets with much traffic and higher speeds, and not just residential streets. Two cities had calculated costs saved due to the reduction in the number of accidents and found that it amounted to about £13-15 million per year.

Across cases, it also appears that the measure has contributed to reduced noise and fewer nuisances due to noise, while it is uncertain whether it has resulted in reduced local air pollution. The measure may result in increased travel time for car and bus traffic, but it appears that the perceived consequences of this are less than expected before the implementation of the measure. The results also show that lower speed limits in larger areas have contributed to making it more pleasant and safer to walk and cycle in streets and areas, and that it can contribute to the transition from cars to other means of transport and reduced traffic volumes. Lower speed limits have also contributed to streets and areas being perceived as more pleasant, safer for children and to a better experience of the environment. The results also show that residents were positive to the introduction of 30 km/h and 20 mph in their own areas and cities, that support increased after the measure was implemented and that few wanted to reverse the measure. Several of the effects described above contribute to improve public health.

Table S1: Summary of whether the introduction of a speed limit of 30 km/h in large zones and entire cities has had effects that contribute to sustainable urban development.

Variable	Effects and tendencies	Number of studies, whether the results are robust
Speeds	The average speeds were reduced in all cases, the tendency is unambiguous. The reductions ranged from 3-6 km/h or 5-16%.	Many studies, unambiguous tendency. We consider the results robust. The same tendency across contexts and interventions increases robustness.
Traffic accidents	The number of accidents was reduced in all cases, the tendency is strong and unambiguous. The reduction in the total number of accidents in entire cities ranged from 15-40%, the number of fatal accidents in entire cities from 32-63%, the number of accidents only in areas and streets where the speed limit has been reduced from 13-43%, and the number of accidents involving pedestrians in such areas from 16-63%.	Many studies, unambiguous tendency. We consider the results robust. The same tendency across contexts and interventions increases robustness.
Noise	Noise and noise nuisance were reduced in all cases where this was investigated. The tendency is unambiguous: Calculated and measured reduced noise, especially at night. Fewer people are disturbed by traffic noise, especially at night.	Few and different studies, unambiguous tendency. Due to few studies, we consider the results to be robust to some extent.
Local pollution	The results of the surveys vary, we do not find an unambiguous tendency. Some cities that have measured changes in air pollution do not find significant changes, while some cities find significant changes. No one finds an increase.	Few and different studies, not entirely unambiguous tendency. We consider that we have not found robust answers to this.
Change in driving time, public transport	It has been measured or experienced that the driving time for public transport is increasing somewhat, but less than expected, and that this has only had marginal consequences. The tendency is unambiguous across the cases.	Few and different studies, in some cases statements in evaluations. Unambiguous tendency. Due to few and different studies and sources, we consider the results to be robust to some extent.

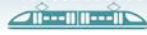


Variable	Effects and tendencies	Number of studies, whether the results are robust
Change in driving time, car traffic	It has been measured or experienced that the driving time for car traffic has increased somewhat, in some cases less than expected, and that this has only had marginal consequences. The tendency is unambiguous across the cases.	Few and different studies, in some cases consultative statements. Due to few and different studies and sources, we consider the results to be robust to some extent.
Change in travel time, walking and cycling	We have not found any studies of this.	No studies.
Change in travel behavior and traffic	With the exception of one study, the tendency is unambiguous, the results indicate that reduced speed limits have contributed to the transition from private car to other means of transport. People state that lower speeds make it more attractive to walk and cycle and that they do it more. One city measured and found a reduction in car traffic and an increase in cycling.	Few and different studies. Mainly unambiguous tendency. Due to few and different studies, as well as one discrepancy, we consider the results to be robust to some extent.
Experience of streets and areas	The tendency is unambiguous: The studies find that lower speed limits contribute to making it more pleasant, safer, etc. to walk, cycle and spend time in streets and areas, also for children, and especially when the measure is implemented in a larger area.	Few and different studies. Unambiguous tendency. Due to few and different studies, we consider the results to be robust to some extent.
The populations' attitudes to the measure	In the cities and areas where surveys have been conducted, the tendency is unambiguous across the cases: Residents support the measure in their own area and city, support increases after implementation and a low proportion want to reverse the measure. An important exception is Wales, where a nationwide survey showed that a large majority were negative to changing the general speed limit.	Several of studies, an unambiguous tendency when it comes to one's own city. We consider the results to be robust when it comes to the introduction of the measure in our own area and city.
Public health	The measure contributes to reduced noise, more walking and cycling, safer and more pleasant streets and areas, and fewer and less serious traffic accidents, and thus to better public health.	Composite variable. We consider the results robust.

Discussion of the results

The report includes a thorough discussion of how robust the results are. We concluded that the results showing that the introduction of speed limits of 30 km/h and 20 mph in large zones and entire cities results in reduced speeds and fewer traffic accidents are robust. We have found the most studies related to these variables. In most cases, analyses have been carried out where background trends, natural variations and other factors have not been corrected or controlled against control cases, as Elvik (2012, 2002) recommends for investigations of the effects of speed reduction measures on traffic accidents. Nevertheless, our assessment is that the cases have been investigated and analysed in a sound manner, because data used have been collected by the responsible authorities, and data from a defined pre-period have been compared with data from a similar post-period. In the two cases where the analyses have been carried out to the greatest extent in accordance with the Elvik's recommendations, the results show a reduction in speeds and significant reductions in the number of accidents. This has also been found in all other cases. Despite differences in context, how the measure has been implemented and how the analyses have been conducted, the same tendency can be found in all the cases: Reducing speed limits to 30 km/h or 20 mph in large zones and entire cities has contributed to reduced speed and to a significant reduction in the number of traffic accidents. We therefore consider these results to be robust.

When it comes to investigations of changes with respect to noise, local air pollution, time spent by different road user groups, how pleasant and safe it is to walk, cycle and be in streets and areas, whether it contributes to the transition from cars to other means of transport, reduced traffic volumes and better public health, there are fewer studies for each factor and for several of the factors these are done in different ways. The studies have been carried out in



sound ways, mainly through counts and measurements in the before and after situation and surveys. In some cases, data are statements in evaluations of the intervention. For the factors where the results showed the same tendency across studies, we have assessed that the results provide to some extent robust indications that a reduced speed limit has contributed to changes in the investigated factor. It is mainly the lower number of studies that reduces the robustness of the results.

Implementation and delimitations of the measure

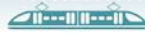
The decisions concerning to implement the speed limit of 30 km/h and 20 mph to large zones and entire cities are made at different levels. In Wales and Spain, national authorities made the decision to change the general speed limits in densely populated areas. In most cases described in the report, the city authorities made the decision to introduce a speed limit of 30 km/h in large zones or the entire city, in some cases in dialogue with and in other cases in conflict with national authorities. In some cases, a new speed limit was introduced throughout the city on a given date, while in other cities it was introduced gradually, in some cases after pilots had first been carried out. In some cities, a general speed limit of 30 km/h or 20 mph applies throughout the city while streets with higher speed limits are signposted. In other cities, most streets have been signposted with a speed limit or zone of 30 km/h. In British cities, they distinguish between 20 mph zones (zone signs) where physical speed reduction measures have been used and 20 mph limits (speed limit signs) where they do not have physical speed reduction measures. In almost all cities national highways and some main streets and connecting arteries have speed limits higher than 30 km/h or 20 mph. All the cities used speed limits of 30 km/h or 20 mph in parts of the city before the changes discussed here were implemented, it varied from 15% to 87% in the cities we have found figures for.

Information, awareness campaigns, control and enforcement

Most cities carried out information campaigns in connection with the introduction of speed limits of 30 km/h or 20 mph in large zones or the entire city, and many cities followed up with awareness campaigns. Several cities also used awareness-raising measures such as radar screens that show speed (without fines), new types of road markings and figures of police officers measuring speed. In most cities, plans have been drawn up and implemented to intensify the monitoring and control of the new speed limits, and in some cities, citizens have been actively involved in reporting where people are speeding. Several cities are using automatic traffic control (ATK) to control and enforce speed limits 30 km/h and 20 mph. In some cities, the police do not appear to have changed the way they control and enforce speed limits, and here the municipalities say that they will monitor the speeds in the streets and consider measures if necessary.

Processes, discussions and decisions

In more thorough investigations of planning and decision-making processes in five cities, we found that it was typically the city authorities that initiated the introduction of speed limit 30 km/h or 20 mph in large areas or the entire city. Common to the cases is that the introduction of a speed limit of 30 km/h in large areas or the entire city is rooted in and/or part of a larger plan or strategy, and that the measure is supposed to contribute to attaining several goals. The measure is typically intended to contribute to a more pleasant and attractive city, more people walking and cycling, less car traffic, reduced noise and pollution and better public health, as well as to fewer and less serious traffic accidents, see Table S2. To varying degrees, the cities applied a clear knowledge base for the decision. All assumed that reduced speed limits would result in fewer and less serious accidents. Several also assumed that lower speeds will make it



more attractive to walk and cycle, that it will contribute to a better experience when walking and cycling, and that it will contribute to more people wanting to walk and cycle instead of driving. Most referred to documentation from various sources and to experiences from other cities, especially when it came to accidents, where most also referred to research-based knowledge. As described, we concluded that the studies we have reviewed show that one can expect the measure to contribute to the aforementioned goals, although the results related to local air pollution are uncertain.

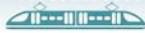
We found that the proposals were met with counterarguments in all the cities, and that they mainly can be summarised as: Concerns about increased driving time for bus traffic and in some cases for passenger car traffic; Doubts about whether motorists will comply with the speed limits and thus whether the measure will have the desired effects; Whether the proposals for the use of 30 km/h or 20 mph are in line with the regulations, see Table S2.

Table S2: Common arguments for and against reducing speed limits to 30 km/h or 20 mph in large zones and entire cities found in discussions about the introduction of the measure.

Arguments for implementing the measure	Arguments against implementing the measure
Reduced speeds	Doubts about whether motorists will comply with the speed limit and thus whether the measure will have the desired effects
Fewer and less serious traffic accidents	Increased driving time for bus traffic and in some cases for car traffic
Less noise and local pollution	Not in line with the regulations
More attractive walking and cycling, transition from car to other means of transport	
More pleasant, safer, etc. to stay in streets and areas	
Improved public health	
The citizens want it	
Some increase in driving time for bus traffic, but marginal consequences	

In principle, the distribution of power is quite similar across the cases. The municipalities typically (but not always) have the authority to define speed limits other than the general ones on local streets, while national and regional road authorities have the authority to do so on the roads for which they are responsible, within a defined set of regulations. The national transport authorities (or the Police, in Denmark) have, to a somewhat varying extent, the authority to decide whether the municipalities' proposals are in accordance with the regulations. It varies whether, how and to what extent the authorities who have the power to decide whether the speed limit can be reduced to 30 km/h or 20 mph have responded to the municipalities' initiative. In one case, cooperation between local and national authorities, including the implementation and evaluation of a pilot, resulted in national authorities changing their guidance.

In the three cities where we examined planning and decision-making processes and where the measure has been introduced, the municipality's initiative and the fact that the superior authorities took a positive view of the proposals were crucial for the measures to be implemented. Knowledge that reduced speed contributes to fewer and less serious accidents, as well as to other desired effects, was important for the initiatives and decisions. In two of these cities, pilots and surveys were carried out, and the strong support in the population contributed to the adoption of the measure. In two cities, where the processes are ongoing, the municipalities have taken clear initiatives, but met resistance from the superior authority, and the implementation depends on the decisions made by the superior authorities.



Discussion: Transferability to the Norwegian context

We have also discussed **the transferability of the results to Norwegian conditions**. We conclude that because the results are robust across different contexts and ways of implementing the measure, one can also expect that the measure will have the same types of effects in Norwegian cities. It has been objected that Norwegian cities already have large proportions of streets with a speed limit of 30 km/h, and that one therefore cannot expect the same effects here. Against this, it can be objected that many of the case cities also had relatively large proportions of streets with a speed limit of 30 km/h (15-87% in the cities we have found figures for), and that they still achieved the desired results. Furthermore, the proportion of the street network in Norwegian cities that have a speed limit of 30 km/h varies, especially when it comes to streets other than residential streets.

A related objection is that road safety is so much better in Norway than in the cities and countries from which we have presented results in the report, and that it therefore is significantly less potential for reducing the number of accidents and casualties in Norwegian cities. To this, one can object that even though Norway is at the top in the world when it comes to road safety, several of the countries in which the cities studied are located are also quite high on this list, and they have nevertheless experienced significant reductions in the number of accidents.

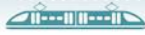
A third objection is that Norwegian cities, towns and streets are different from those found in other cities and countries, and that it is therefore less likely that speeds will be reduced and that the same effects will be seen in Norwegian cities and towns as we have seen elsewhere. Again, it is important to point out that the cities from which we have reported results are different and that they have nevertheless achieved the desired results, and that Norwegian cities and towns are also different.

A fourth objection, that has been presented in discussions amongst professionals in Norway is that the expansion of stretches and zones with a speed limit of 30 km/h will contribute to the speed limit not being respected by car drivers, which will result in lower respect for traffic regulation in general, which in turn will result in more accidents. If this were the case, it should have been found that speeds increased on other streets in urban areas and/or that drivers broke traffic rules in other ways and that the number of traffic accidents increased in cities that had reduced speed limits to 30 km/h or 20 mph in large zones or entire cities. That has not been found. On the contrary, the results show that reduced speed limits in large zones and entire cities 'spillover' to other streets and areas, so that speeds also decrease in streets where the speed limit has not been reduced, and that the number of traffic accidents in the entire cities are reduced.

Discussion: What Norway can learn from the experiences

In the discussions about **what Norway can learn from the experiences of other cities and countries**, we point out, among other things, that results show that the introduction of speed limits of 30 km/h and 20 mph in large areas and entire cities has contributed to effects and results that Norwegian cities also want to achieve by introducing similar measures. These results could, among other things, be useful in discussions about how to achieve both the zero-growth objective and the vision zero in Norwegian urban areas.

In most cases in the study, efforts have been made related to information and awareness campaigns, and efforts related to control and enforcement have been intensified. Automatic traffic control (ATK) is used to monitor and enforce speed limits of 30 km/h and 20 mph in several cases. Norway and Norwegian cities can learn from other cities and countries when it comes to how to ensure that the speed limits are respected. It is also pointed out that an



advantage of introducing *a general* speed limit of 30 km/h is a need for fewer signs in the city streets, which is also desired in Norwegian cities.

In studies of planning and decision-making processes related to the introduction of a speed limit of 30 km/h or 20 mph in large zones or entire cities, we found many of the same uncertainties, objections and concerns that we have heard about in dialogue on the topic with professionals in Norway. The experience of the European cities that have implemented the measure is mainly that the concerns were unfounded or exaggerated.

Suggestions for further studies

The proposals for further studies mainly concern four types of studies. One type concerns studies that provide better knowledge about the current use and effects of the speed limit of 30 km/h in Norwegian cities, including evaluations of the introduction of the measure in large zones, entire cities or as a general speed limit of 30 km/h in densely populated areas. Another type of concerns to develop and agree on methods for calculation effects on travel time for bus traffic and the number of signs in the city streets. A third type concerns discussions of whether and how measures used in other countries to help ensure that the speed limit of 30 km/h is enforced and complied with can also be used in Norway. Finally, we point out that the discussions about increased use of the speed limit of 30 km/h in large zones, entire cities or as a general speed limit in densely populated areas are also part of larger and more fundamental discussions about sustainable urban development and social justice. We therefore propose that a systematic review be carried out of how the use of a speed limit of 30 km/h in large areas, entire cities or as a general speed limit in densely populated areas can contribute to sustainable urban development and social justice.