

## 7. Noise

Refer to Section 2.7 of the Guidance Note

### 7A. Present Situation

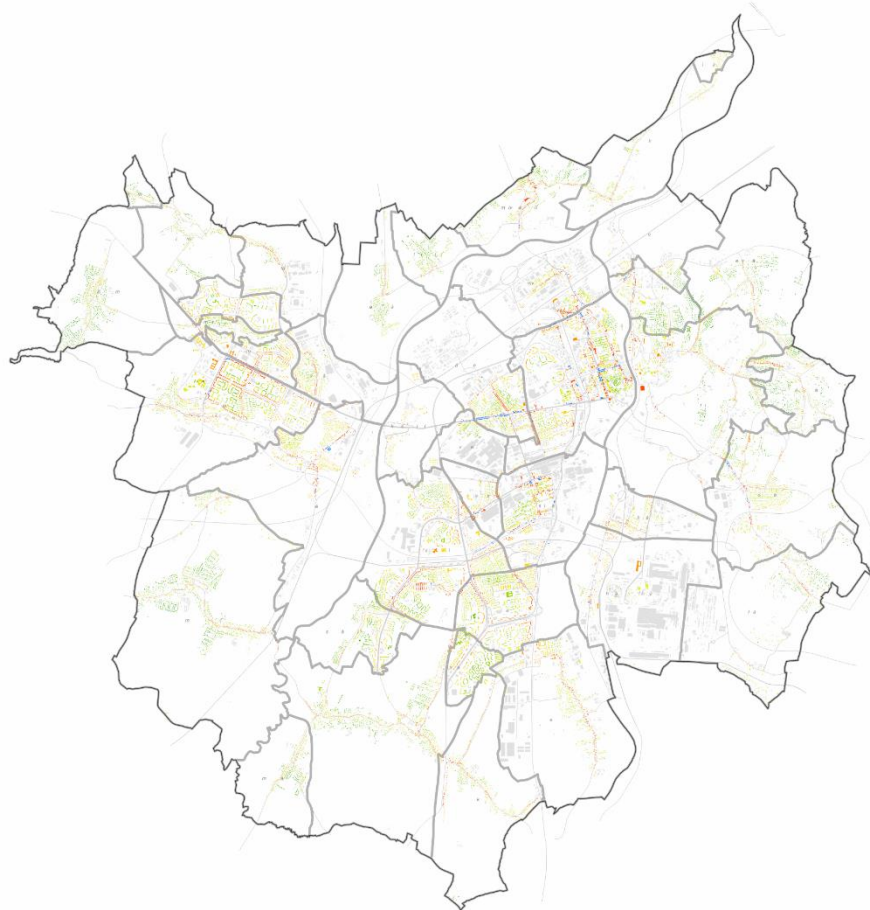
Please complete the following table providing the most recent data that is available:

Indicator		Unit	Year of Data
Share of population exposed to total noise values of $L_{den}$ above 55 dB(A)	51.35	%	2014
Share of population exposed to total noise values of $L_{den}$ above 65 dB(A)	8.79	%	2014
Share of population exposed to total noise values of $L_n$ (night noise indicator) above 45 dB(A)	76.65	%	2014
Share of population exposed to total noise values of $L_n$ (night noise indicator) above 55 dB(A)	23.40	%	2014
The percentage of citizens living within 300 m of quiet areas	*	%	

\* quiet areas have not been set because of lack legislative decision of other than City's administrative bodies

There has been a significant reduction in noise emitted by industrial facilities in Ostrava; due to the city's industrial history, this used to be a major contributor to urban noise. Currently the main focus is on reducing transport-related noise; this problem is shared by all major Czech cities.

Below is Ostrava's noise map, which shows the predominance of noise from the city's main transport arteries. Despite the existence of numerous industrial sites in the city, these are no longer a significant source of noise due to a range of anti-noise measures and the modernization of production.



Equivalent noise level - indicator L<sub>Aeq</sub> (db)



*Figure 1: Ostrava's noise map*

As defined in the currently valid implementing decree issued by the Czech Ministry of Health and stipulating day and night noise limits, the category of transport-related noise from roads/railways existing before 1 January 2001 (termed "old noise burdens") is applicable to the current situation in the vicinity of Ostrava's main roads (nos. /11, I/56, II/647, II/469 and II/470) and the other roads in the city's network. Residential areas in the vicinity of these roads are predominantly affected by noise from road transport and trams. Due to the high intensity of road traffic, noise limits are exceeded in most built-up areas near Ostrava's main roads. Road transport causes noise in excess of the stipulated limits during the day at approx. 2 000 buildings to which noise limits are applicable, affecting around 36 500 people (12% of the city's population). At night, noise limits are exceeded at approx. 3876 buildings to which noise limits are applicable (61 500 people, 20% of the population).

Excessive noise caused by trams affects approx. 1640 inhabitants during the day (0.5% of the population) and 5700 inhabitants at night (2%). Excessive noise caused by rail transport affects 2059 inhabitants during the day (0.7%) and 9691 inhabitants at night (3%).

Noise from industrial facilities is the least significant source of noise in Ostrava; the city no longer has factories which emit high levels of noise over a long distance. The most significant source of noise related to industrial facilities is transportation to and from those facilities.

Under applicable legislation, quiet areas in an agglomeration must be delineated by the appropriate Regional Authority (in the case of Ostrava, the Moravian-Silesian Region). Directive 2000/49/EC defines quiet areas as those areas not subjected to noise from any source to an extent that the noise level  $L_{den}$  (day-evening-night) or another appropriate noise indicator exceeds the limits stipulated by a member state. The purpose of delineating quiet areas is to ensure that such areas are also preserved in the future. The Czech Republic has not yet stipulated noise limits for quiet areas; nevertheless, the Noise Action Plan for the Ostrava Agglomeration contains proposals for possible quiet areas within the city.

### **7B. Past Performance**

Classification of territory with special demands on noise protection is based on the Land Use Plan. Main stakeholder is the Hygienic Service, however transport company and industry have been also involved. Public has been involved during projects preparation phases. A number of measures have been implemented in order to reduce noise, especially from road and tram transport. The most important of these measures are listed below:

#### **Reductions in transport noise – road modernizations**

Project 'Modernization of Nadrazni Street' – A number of noise reduction measures were implemented during the reconstruction of this major transport artery in the city centre. The reconstruction was one of the City's biggest investment projects during the past two years, with a total costs of 6,6 million EUR (co-funded by EU structural funds). One of the key elements of the reconstruction work was the installation of noise reduction technologies in the tram track assemblies and mountings; this significantly reduced noise and vibration caused by tram traffic. The reconstruction also included the addition of urban greenery.



*Image 1: Modernized Nadrazni street with noise-reduction tram track*

*Project 'Green Axis of Vitkovice'* – This project was motivated by the need to reduce noise and airborne dust along the main transport artery through the municipal district of Vítkovice, a major industrial area of Ostrava (Ruska St.). The project included plantings of greenery and other noise reduction measures.

### **Reductions in industrial noise**

In the past, citizens sometimes complained about noise from industrial facilities – either constant noise or noise emitted during repairs and other periodic operations. Thanks to the modernization of industrial processes and the relative distance of current industrial premises from residential areas, this problem has largely been eliminated; this has been documented by objective measurements.



*Image 2: Green circles around industrial plants*

## **Reductions in noise from other sources**

In 2010 Ostrava approved an anti-noise ordinance (i.e. a locally applicable law) restricting other sources of noise and defining activities that are the main sources of noise: the use of lawnmowers, hedge trimmers, pneumatic drills, compressors and other noisy machinery. Other activities classified as unacceptable noise in public places include the use of firearms (for recreation, sports and training) and the use of fireworks. The ordinance requires persons to refrain from the above-mentioned activities 24 hours a day on Sundays and public holidays, and between 20:00 and 06:00 on weekdays and Saturdays. Breaches of the ordinance can lead to the imposition of fines up to 1200 EUR (private citizens) or 7700 EUR (businesses).

## **7C. Future Plans**

The Noise Action Plan for the Ostrava Agglomeration (NAPOA) was drawn up in order to coordinate reductions in urban noise levels. It focuses primarily on reducing noise at critical locations where noise levels are most in excess of stipulated limits and those affecting the largest numbers of people.

For each location, the total number of inhabitants of the residential buildings was determined, as was the mean noise level. The locations were then assessed from the perspective of health risks and assigned a value for the indicator HSD (highly sleep disturbed); the HSD value expresses the total number of inhabitants likely to suffer from disturbed sleep. The locations were then classified according to their HSD values into three different levels of priority: I, II and III. The Noise Action Plan determines noise reduction measures to be applied at various locations, especially when planning transport infrastructure.

### **Other measures to reduce transport noise**

Many noise reduction measures are based in the City's support for sustainable mobility. Reductions in road traffic intensity, support for public transport, the construction of transport terminals, the replacement of diesel buses by CNG vehicles, support for pedestrian and cycle transport, telematics and other measures all combine to produce synergic effects leading to reductions in CO<sub>2</sub> and other pollutants, and also noise (see Chapter 3). These include support for cycle and pedestrian transport (which do not produce noise) and the

construction of transport terminals to reduce private car use.

Other measures to reduce transport noise are listed in Ostrava's **Sustainable Urban Mobility Plan (SUMP)**:

### **Improving quality of life and reducing environmental impacts**

- a. Eco-friendly transport (noise reductions, modernization of public transport vehicles, low-emission zones, etc.)
- b. Smart urban planning and transport planning to reduce car use (development of soft mobility, i.e. pedestrian/cycle mobility), prevention of population drain and small business closures
- c. Minimizing impacts of traffic noise on the population
- d. Improvements in barrier-free access
- e. Protection of rest areas from heavy traffic, planting of protective greenery

### ***Important activities and projects***

#### **Proposals for potential quiet areas within Ostrava**

The proposed delineation of quiet areas forms part of the NAPOA, and is the responsibility of the Moravian-Silesian Regional Authority. The proposals were based on the limit  $L_{den}$  (day-evening-night) **<55 dB**; this is considered an appropriate compromise based on the requirements stipulated by European legislation. The minimum size of a quiet area is 9 ha. It will be possible to delineate quiet areas once the necessary legislation is approved. The designation of low-emission zone will also decrease the level of noise in the centre (see chapter 6).

#### **Diversion of traffic away from residential areas – the Northern Link Road**

The City is currently preparing the completion of this important new road linking the city centre with the residential area of Poruba; it will alleviate traffic congestion along the current road corridor between these points. Diverting traffic away from residential areas will not only reduce residents' exposure to traffic noise; the reduction in traffic volumes will also reduce exposure to pollutants (and CO<sub>2</sub>). The first section of the Northern Link Road connects Mariánskohorská Rd. with the roundabout at the D1 motorway junction; it also functions as a motorway access road. The total length of the second section will be 4.17 km, with costs estimated at almost 53,8 million EUR. Work is currently underway on an Environmental Impact Assessment (EIA); documentation is being prepared and a public tender for the contractor is also at the preparatory stage. Construction is scheduled for 2019–2020.

Another important roadbuilding project is the extension of Rudna Rd.; this Class I road (dual carriageway) will link Ostrava with points to the south-west of the city, alleviating current congestion within the city itself. Currently, all westward traffic has to pass through residential areas; the congestion creates not only noise, but also air pollution and CO<sub>2</sub> emissions in these areas.

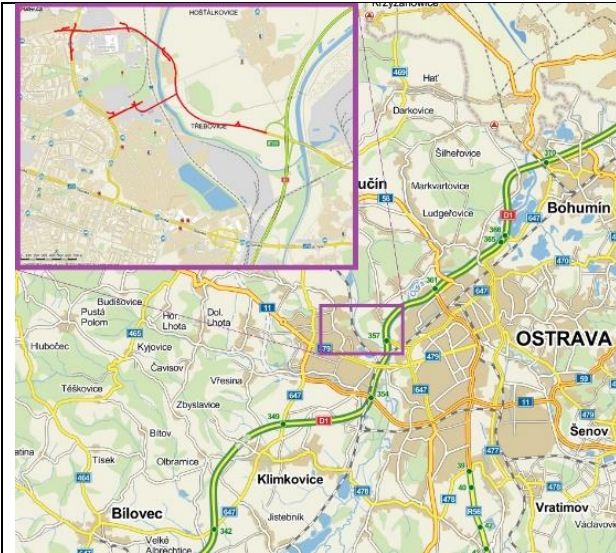


Image 3: Northern Link Road

## Pilot project – grass planting in tramline strips

Ostrava is planning to lay grass turf in the central strips of roads where tramlines are located; this will reduce noise and dust. A pilot section of 150 metres has been chosen on the eastern approach to the road/tram bridge between the Karolina and Namesti republiky tram stops; this has one of the steepest gradients in the city's tram network (and thus creates considerable noise). In this case, low-maintenance plants (stonecrops) have been used instead of standard grass turf. Currently, standard tramline strips are made of concrete panels or asphalt; this reflects noise and increases dust. The cost of the project will be approx. 192 000 EUR.



Image 4: Pilot grass planting in tramline strips

When building new tramlines, modern noise reduction technologies are used to alleviate the noise produced by this otherwise ideal form of public transport. This will enable the expansion of Ostrava's tram network, bringing electric zero-emission transport to more parts of the city (including residential areas).

## 7D. References

EGC Ostrava: <https://egc.ostrava.cz/>

Anti-noise public notice: <https://www.ostrava.cz/cs/o-meste/tiskove-zpravy/protihlukova-vyhlaska-chrani-verejny-poradek-v-ostrave>

Noise map:

<https://geoportal.gov.cz/web/guest/map?wmc=http%3A//geoportal.gov.cz/php/wmc/data/501f896c->

## Application Form for the European Green Capital Award 2020

[5218-4d14-b003-6670c0a80137.wmc&wmcaction=overwrite](https://www.ostrava.cz/cs/urad/magistrat/odbory-magistratu/odbor-dopravy/oddeleni-silnic-mostu-rozvoje-a-organizace-dopravy/dostavba-severniho-spoje)

Northern Line: <https://www.ostrava.cz/cs/urad/magistrat/odbory-magistratu/odbor-dopravy/oddeleni-silnic-mostu-rozvoje-a-organizace-dopravy/dostavba-severniho-spoje>

Northern Line: <http://www.msstavby.cz/severni-spoj-az-kolem-2020-25-06-2014/>

Noise Action Plan: [https://iszp.msk.cz/assets/temata/koncepce/akcni\\_plan\\_aglomerace\\_ostrava\\_final.pdf](https://iszp.msk.cz/assets/temata/koncepce/akcni_plan_aglomerace_ostrava_final.pdf)

Tram rail renovations – press release: [https://ostrava.idnes.cz/dpo-dopravni-podnik-ostrava-tramvaje-rozchodnik-prasnost-hluk-psd-/ostrava-zpravy.aspx?c=A170502\\_2322737\\_ostrava-zpravy\\_jog](https://ostrava.idnes.cz/dpo-dopravni-podnik-ostrava-tramvaje-rozchodnik-prasnost-hluk-psd-/ostrava-zpravy.aspx?c=A170502_2322737_ostrava-zpravy_jog)

Renovation of Nádražní street: <https://www.ostrava.cz/cs/o-meste/aktualne/na-nadrazni-ulici-se-vraci-provoz>

Tram noise absorbers: <http://www.ostrava.cz/cs/o-meste/aktualne/absorbery-snizi-hlucnost-tramvaji>

Tram noise absorbers: <https://www.ostravskycas.cz/2017/08/28/svetovy-unikat-kolejove-absorbery-ostrave-snizuji-hluk-projizdecich-tramvaji-vibrace-prasnost/>

Smart transport systems: <https://www.ostrava.cz/cs/podnikatel-investor/projekty-mesta-ostravy/projekty-mesta-ostravy/inteligentni-dopravni-systemy>

Promotion of sustainable transport: <http://zdravepostrave.cz/>

Sustainable Mobility Plan: <http://mobilita-ostrava.cz/>