

Traffic reduction during the 2024 Olympic Games has locally improved air quality in Paris

[24 January 2025] Airparif has published an assessment of the impact of the traffic reduction imposed during the Olympic and Paralympic Games on air quality. This reduction resulted in lower concentrations of nitrogen dioxide (NO₂) in the immediate vicinity of some Parisian traffic arteries.

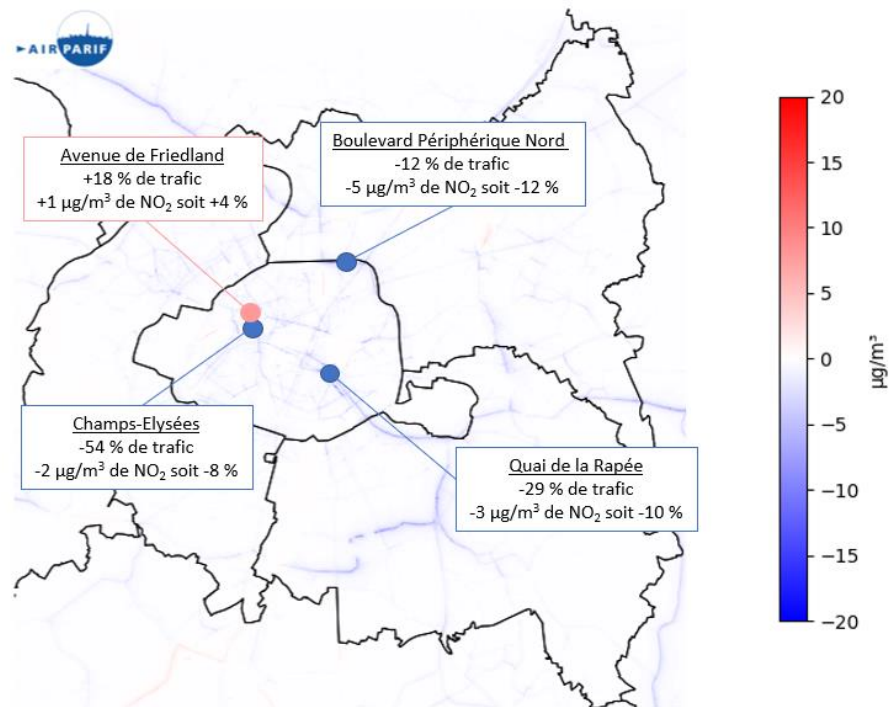
During the Paris 2024 Olympic and Paralympic Games, many major roads and thoroughfares were closed to traffic to ensure the smooth running of the Games, resulting in a temporary drop in road traffic. Airparif assessed the impact of these traffic restrictions on air quality during the Games.

Impact during the 2024 Olympic Games

During the Olympic Games, traffic reduction led to an average 18% drop in the volume of vehicles on the roads in Paris compared with previous years, over the same period, with major disparities from one traffic artery to another.

Nitrogen dioxide is mainly emitted by road traffic (on average over the year, 50% of nitrogen oxide emissions - NO_x, and 20% of fine particle emissions - PM_{2.5}). It is a gaseous air pollutant that increases the risk of occurrence and severity of respiratory pathologies and diabetes. The assessment shows that for this pollutant, the most significant reductions have been achieved where traffic has been reduced, over an area of a few dozen metres along the roads. These reductions were particularly noticeable around the main Paris traffic arteries, and especially along the River Seine, where traffic restrictions were most severe. The maximum drop was -12 µg/m³ in nitrogen dioxide (or -33% compared with normal traffic levels) along the Seine. Along the Paris ring road ("Boulevard Périphérique"), the reduction in traffic led to average reductions of -2 µg/m³ in nitrogen dioxide levels, with a greater impact in the north-east of Paris and less in the west. Slight shifts in traffic very occasionally led to increases in concentrations of air pollutants along certain traffic routes, reaching a maximum of +3 µg/m³ (+12%) for nitrogen dioxide in the immediate vicinity of the routes.

Impact des limitations de circulation sur les concentrations de dioxyde d'azote (NO₂) pendant les Jeux Olympiques de Paris 2024 (du 26/07/2024 au 11/08/2024) en petite couronne et zoom sur quelques axes



Further away from the main roads, the reductions in nitrogen dioxide concentrations are not precisely quantified due to the particularly low levels of nitrogen dioxide measured throughout the Olympic period.

The assessment shows that outside Paris, more limited reductions in nitrogen dioxide levels can also be seen along almost all the major traffic arteries in the inner suburbs, so air pollution has not been displaced outside Paris.

As for fine particles (PM_{2.5}), another particularly important pollutant in the Paris region, the impact of traffic restrictions on their concentrations was negligible, as the sources of this pollutant are more numerous and partly depend on chemical reactions between gaseous pollutants in the atmosphere.

The most significant decrease occurred during the opening ceremony on 26 July. Tightened traffic restrictions led to an estimated 33% drop in average traffic levels in Paris. Nitrogen dioxide concentrations then fell more sharply along the main traffic routes, with concentrations as low as -22 µg/m³ (-34%) along the Seine. Along the Paris ring road, nitrogen dioxide levels also fell significantly, by an average of -5 µg/m³ (-15%).

An assessment based on observations and scenario-building tools for the people of the Paris Region

Airparif's assessment was carried out all other things being equal in order to quantify the specific impact of traffic restrictions on air quality. The mere study of stations measurements (by comparing two different periods, for example) would not have made it possible to disregard the influence of variations in meteorology and other sources of pollution on the observed air quality. The assessment therefore required the use of scenario models to quantify the reduction specifically linked to the traffic restriction measures, by comparing two scenarios: on the one hand, a reference road traffic during this period, and on the other, the actual traffic observed during the period thanks to the counting loops distributed throughout Paris and its Region.

In addition, Airparif compared changes in concentrations measured at stations located along traffic arteries in Paris and in the inner and outer suburbs. This observation confirms that it was indeed the traffic restriction measures that led to a drop in air pollution levels: concentrations of nitrogen dioxide near road traffic were lower than usual in Paris, where traffic was restricted, while they were proportionally closer to the average in the rest of the Region, where traffic was similar to previous years.

As a reminder, to coincide with the Paris 2024 Olympic and Paralympic Games, Airparif has launched a new hourly air quality forecasting tool for each street and for the whole Paris Region, accessible on the Airparif website (<http://www.airparif.fr>) and mobile application, to help spectators and all residents of Paris Region reduce their exposure to pollution. This is a legacy for the people of Ile-de-France, as this information will continue to be available after the Games. All these developments and the impact assessment of the traffic restrictions imposed during the Olympic and Paralympic Games on air quality have been financed through the fine imposed by the State Council ("Conseil d'Etat"), in the context of France's conviction for non-compliance with regulatory air quality limit values.

Access the note : ***Impact des limitations de circulation pendant les JOP 2024 sur la qualité de l'air en Île-de-France (Impact of traffic limitations during the 2024 Paris Olympics on air quality in the Paris Region)***. Airparif (2025) [[lien](#)]

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