

BEIJING AIR QUALITY REPORT

State of the air and progress
from 2008 to August 2019

Publication date: Sept. 12, 2019

Summary

- Beijing is on track to reduce PM2.5 by almost 20 percent this year from last year, and by almost a third from 2017
- Beijing will likely drop out of the world's top 200 most polluted cities this year
- Beijing had its best month on record in terms of air quality in August: PM2.5 levels were at their lowest since PM2.5 records began
- Beijing's air quality in 2019 will still likely be more than 4 times higher than the WHO annual mean PM2.5 concentration guideline

Findings

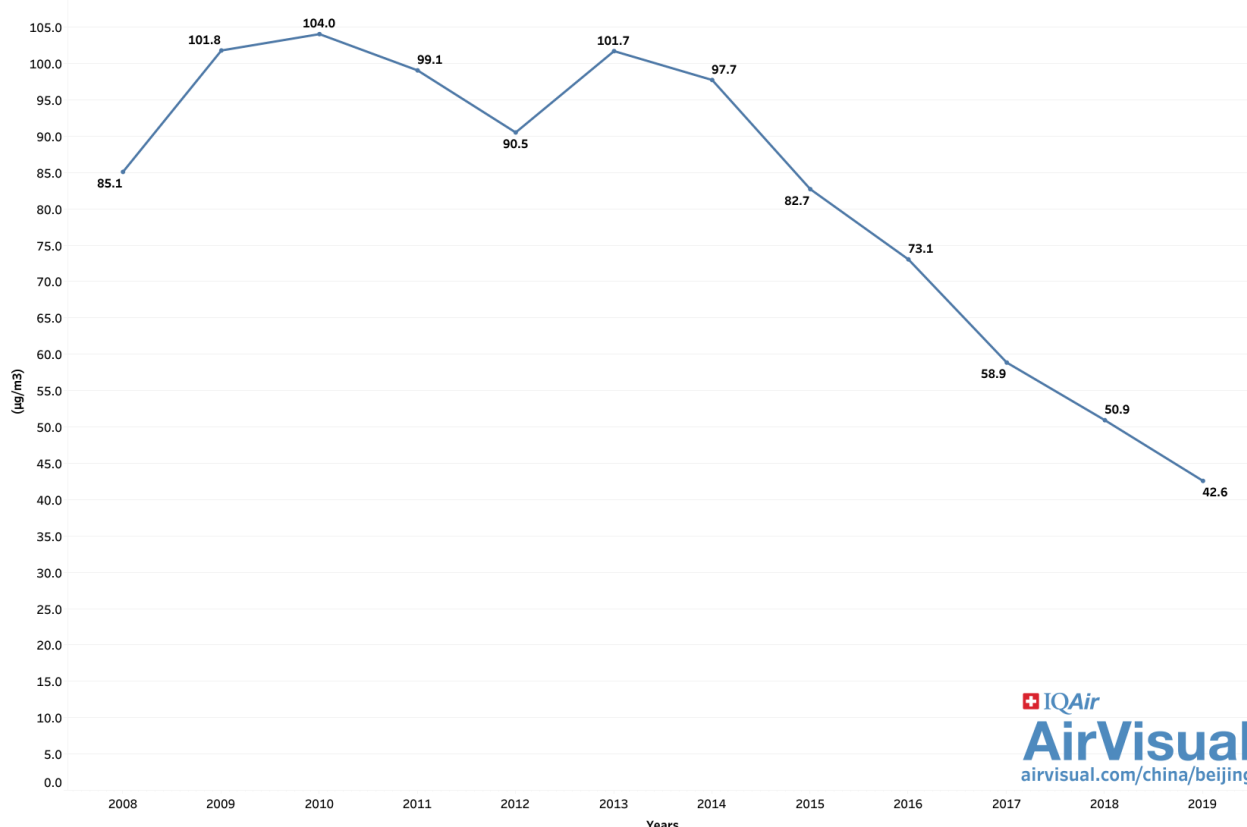
PM2.5 levels in Beijing are almost a third lower than two years ago

From January to August this year, Beijing had an average hourly PM2.5¹ concentration reading of 42.6 micrograms per cubic meter. (This equates to a U.S. AQI reading of 118, or “Unhealthy for Sensitive Groups.”)

This is **19.3 percent lower** than the same period (January – August) in 2018 (52.8 µg/m³) and **31.9 percent lower** than the same period in 2017 (62.6 µg/m³).

Compared with 10 years earlier, the difference is even more striking: the PM2.5 concentration in the first eight months of 2019 was **more than half that of the same period in 2009** (92.6 µg/m³).

Graph 1: Beijing yearly average PM2.5 concentration:



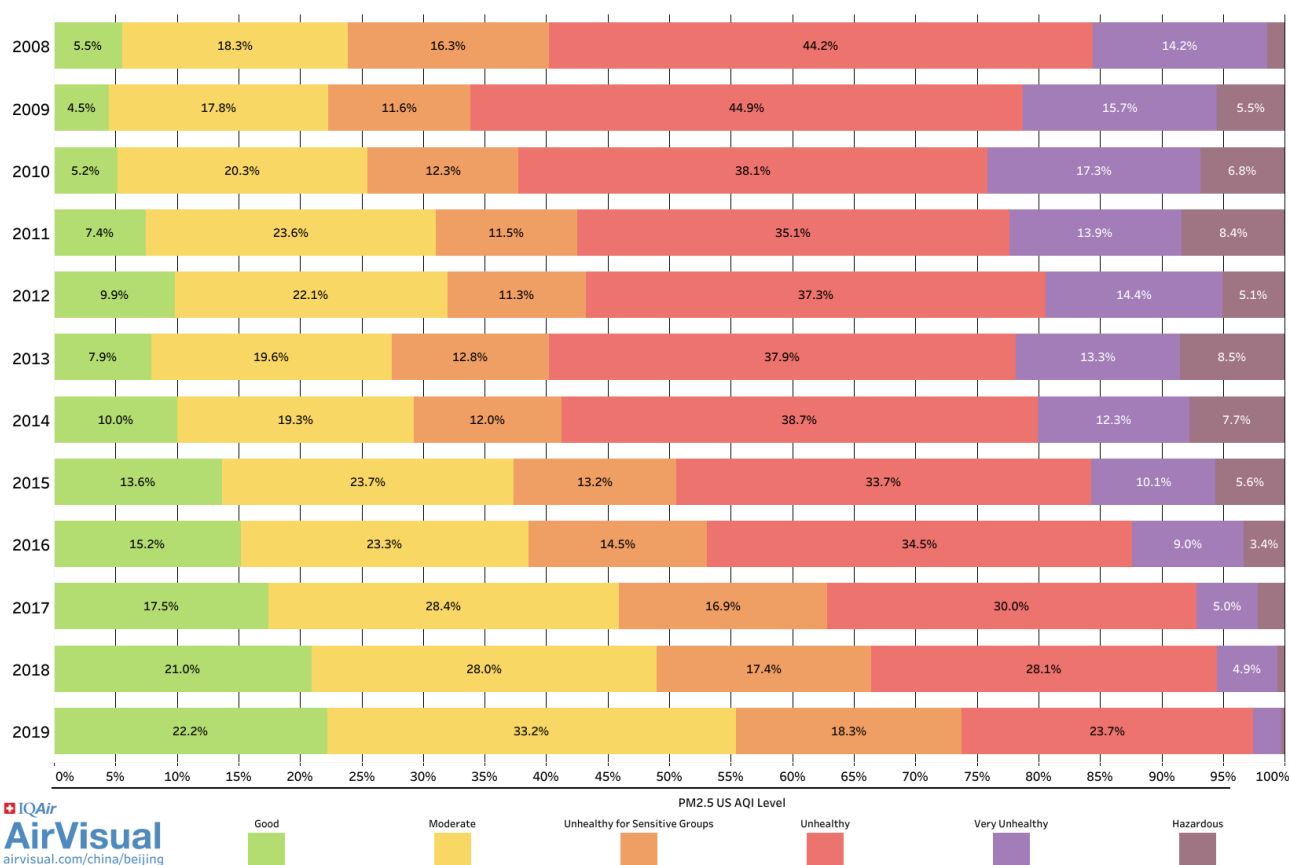
Beijing annual average PM2.5 concentrations (µg/m³) from 2009 to 2018, as well as the 2008 average from April to December, and 2019 from January to August.

¹ [PM2.5](#) (Particulate matter with a diameter of 2.5 micrometers or less) is widely regarded as the pollutant that poses the greatest threat to health of all commonly measured air pollutants. Due to its small size, PM2.5 is able to penetrate deep into the human respiratory system, and from there to the entire body, potentially causing a wide range of short- and long-term health effects.

More than 20 percent of hours in 2018 and this year so far met the standards for “Good” air quality, according to the US AQI.

Time spent in the “Good” air quality bracket has quadrupled in the last decade. 2018 saw one fifth (21 percent) of time with a PM2.5 concentration that equates to “Good” on the U.S. Air Quality Index¹, while roughly 50 percent of hours were in the “Moderate” and “Good” categories.

Graph 2: Beijing annual distribution of hourly PM2.5 concentrations, shown as US Air Quality Index categories



Colors represent US Air Quality Index categories

¹ <http://support.airvisual.com/knowledgebase/articles/1185775-what-is-aqi>

Beijing on track to drop out of world's top 200 most polluted cities


Beijing was ranked as the world's no. 122 most polluted city last year in IQAir AirVisual's 2018 [World Air Quality Report](#), released in partnership with Greenpeace¹. If the downward trend continues, Beijing will likely drop out of the world's Top 200 in 2019.

August saw Beijing's lowest PM2.5 reading on record

Beijing's average hourly PM2.5 concentration in August was 22.1 µg/m³, which equates to a "Moderate" reading on the U.S. Air Quality Index. This is the lowest monthly average since April 2008, when records began.

However, while Beijing's air quality is improving by the year, more needs to be done for the Chinese capital's annual PM2.5 levels to meet the World Health Organization's guideline of 10µg/m³. The WHO guideline stipulates that PM2.5's annual mean concentration should not exceed 10µg/m³. The WHO says the range of health effects associated with PM2.5 is broad, but are predominantly to the respiratory and cardiovascular systems. Everyone is affected, but susceptibility may vary with health or age².

Graph 3: Beijing monthly average PM2.5 concentration.

PM2.5 Legend ⓘ														Unit: µg/m³	
		WHO target	Good	Moderate	Unhealthy for sensitive groups	Unhealthy	Very unhealthy	Hazardous							
 Beijing, China YEAR	Annual AVG	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		
2008	81.5				103.9	98.4	99.8	89.7	65.4	59.3	84.2	73.1			
2009	101.8		65.4	80.4	87.1	84.0	96.8	105.8	107.4	108.7	92.8	155.1	109.0		
2010	104.0	90.4	97.2	94.1	80.1	87.1	109.0	123.4	97.7	122.8	118.8	138.4	97.1		
2011	99.1	44.9	150.3	57.5	91.7	65.1	108.8	107.4	103.7	95.0	145.6	109.4	108.7		
2012	90.5	118.9	84.4	96.5	87.8	91.0	96.6	80.6	81.2	59.8	95.0	87.4	109.2		
2013	101.7	193.4	123.6	123.4	65.8	85.2	111.5	68.8	61.9	90.9	106.6	90.7	98.5		
2014	97.7	118.8	174.6	110.5	95.1	72.2	59.0	89.6	62.8	70.3	140.7	104.2	78.6		
2015	82.7	107.9	96.7	89.1	78.9	60.1	54.4	55.1	44.6	47.1	72.8	124.8	162.0		
2016	73.1	71.2	44.2	93.0	65.1	53.5	59.3	67.1	46.2	54.4	82.5	101.1	136.8		
2017	58.9	120.2	73.1	64.4	53.3	59.0	42.3	51.1	37.3	56.8	56.6	46.5	45.8		
2018	50.9	36.0	51.6	90.4	63.0	54.5	46.7	47.2	33.3	28.0	44.6	74.4	41.5		
2019	42.6	54.1	55.8	51.4	47.6	36.8	38.4	35.8	22.1						

1 Among global cities with air quality monitoring stations, Beijing ranked 122nd for the [world's worst air quality](#), and 72nd among Chinese cities, in 2018.

2 https://apps.who.int/iris/bitstream/handle/10665/69477/WHO_SDE_PHE_OEH_06.02_eng.pdf

How data is collected

This analysis uses PM2.5 readings recorded by the U.S. Embassy in Beijing, and 34 Chinese government monitoring stations located around the capital (all locations are visible on the IQAir AirVisual [app](#) and website: <https://www.airvisual.com/china/beijing>). The measurements reported by Chinese government stations are in line with U.S. Embassy data.

The data is collected from the websites of the U.S. State Department, China National Environment Monitoring Center and Beijing Municipal Environment Monitoring Center.

About IQAir AirVisual

IQAir is a Swiss-based air quality technology company that empowers the world to breathe cleaner air through information, collaboration and technology solutions. With the vision of a world where everyone breathes clean air, IQAir provides individuals, organizations and communities with tools to improve air quality. Since 1963, IQAir has pioneered air quality solutions that include air quality data, sensors, monitoring systems, air purification and expert services.

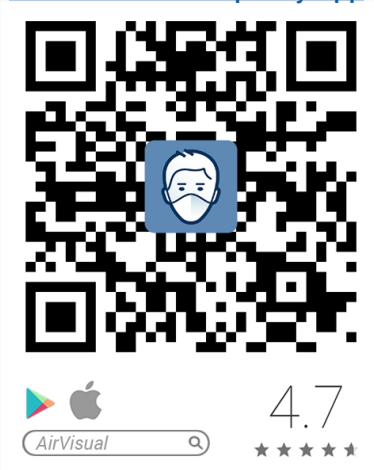
AirVisual is IQAir's air quality data platform, which offers the world's largest set of real-time and historical global air quality data. The platform processes billions of data points each day, reporting from a range of sources including government monitoring stations, satellite data and privately-operated monitors.

For Media Inquiries

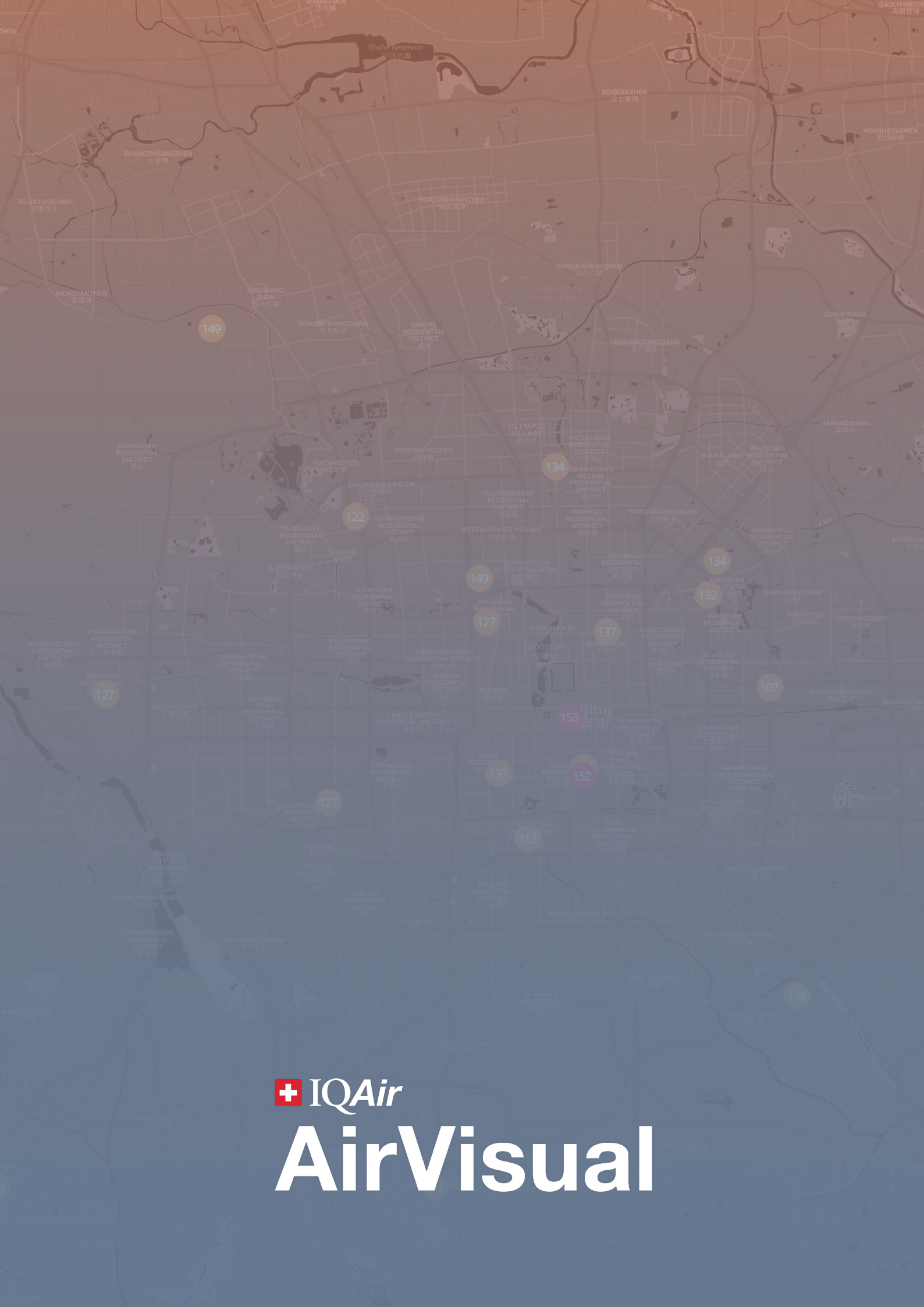
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Beijing City Report V1.5



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