



# Madrid 360: « An environmental Sustainability Strategy »

**Maria Dolores Jiménez Mateos**

Service Manager in the Directorate General of Planning and Mobility Infrastructure. City of Madrid (Spain)

Road mobility projects in urban regions and their Impact on the environment

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- Annual Limit Value (VLA)
- Hourly Limit Value (VLH)





# 01. Introduction: Madrid 360: “Environmental Sustainability Strategy”

Capital and largest city of Spain (3,2 million inhabitants).

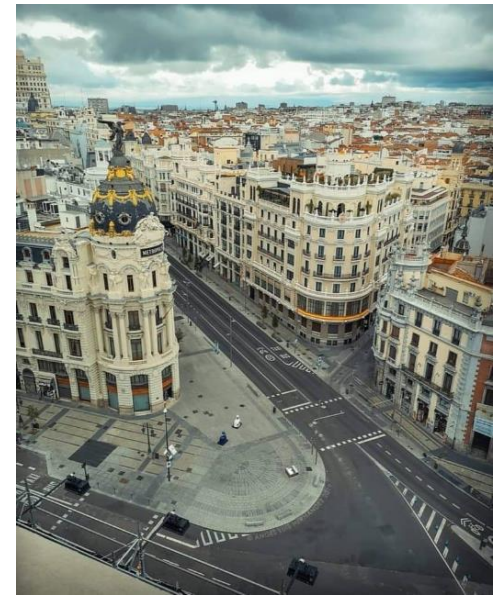
Third most populated Functional Urban area in the European Union (7 % of total Spain population, more than 6,8 million at a regional level)

Commuters: 1,5 million

Key role in the economy of the country (12% of the total GDP of the country, up to 19,3% at metropolitan level)

- ❑ Madrid is one of the 10 cities in the world most interesting for businessmen
- ❑ 4th most important in the European financial Sector
- ❑ 18th at a Global level

605.77 km<sup>2</sup> / 21 districts (128 neighbourhoods)



# 01. Introduction: Madrid 360: “Environmental Sustainability Strategy”

In **2019**, Madrid City Council designed and launched the Madrid 360 Environmental Sustainability Strategy. An alive strategy, that has evolved to account for new demands from its citizens and that as of today encompasses more than 200 initiatives.



- In 2019, the Madrid 360 Environmental Sustainability Strategy is designed and launched
- Madrid 360 is an alive strategy, that encompasses more than 200 initiatives
- The Strategy has evolved to account for the new demands from its citizens

## *Madrid 360 transforming vectors*



### **City**

It has as an objective, among others, to increase energy efficiency and support electrification, improve infrastructure management and promote the development of green areas.



### **Mobility**

This vector leads to the promotion of micromobility, public transport optimisation or the increase of the number of environmentally friendly vehicles in the city.



### **Administration**

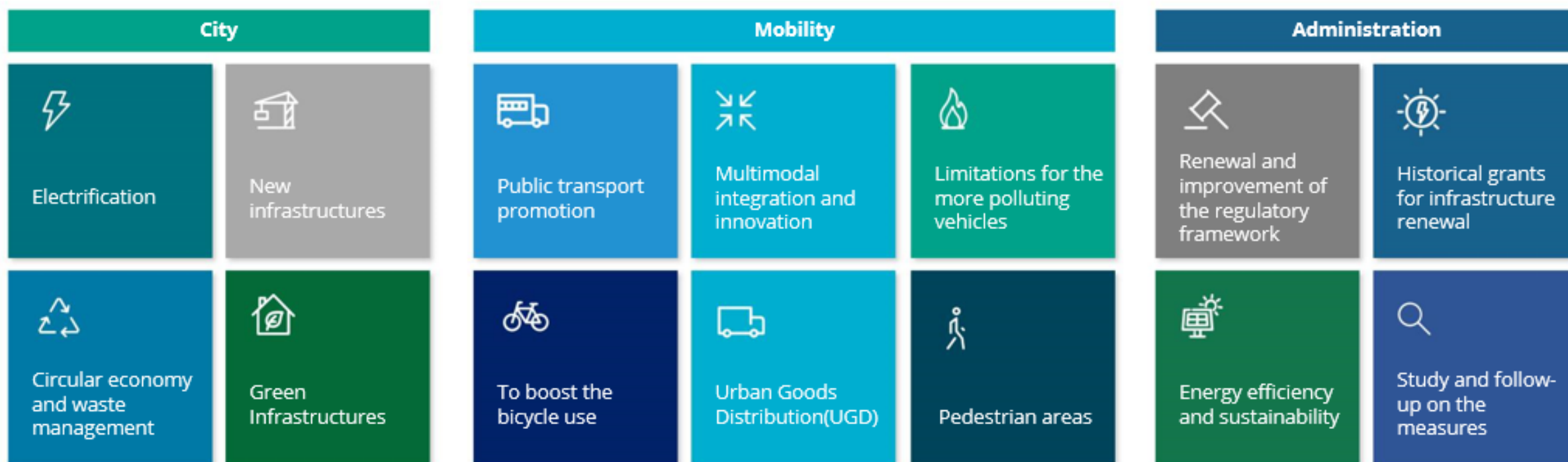
The aim is to transform the administration in an example and leader in sustainability, by adapting the regulatory framework to facilitate the Strategy implementation.

# 01. Introduction: Madrid 360: “Environmental Sustainability Strategy”

The three Madrid 360 transformation vectors (City, Mobility and Administration) aim to transform Madrid into a more sustainable city from the environmental, social, land and economic points of view.

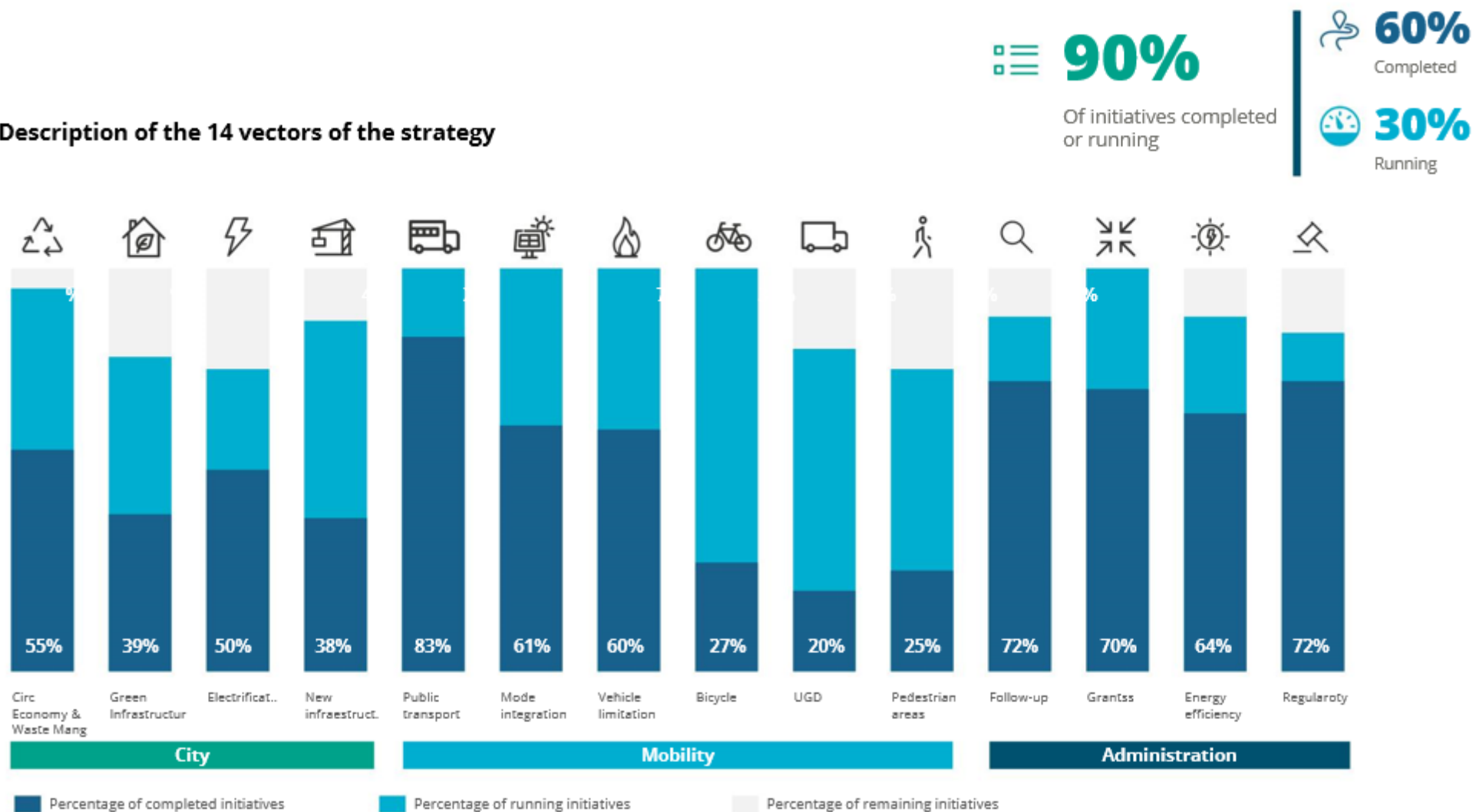
Those vectors are developed within the following strategic scopes.

**Madrid 360 Strategy vectors**



# 01. Introduction: Madrid 360: “Environmental Sustainability Strategy”

Description of the 14 vectors of the strategy





presentación del proyecto Calle 30 Natura.



## 02. Madrid 360 Strategy: Main implemented actions

## 02. Madrid 360 Strategy: Main implemented actions

### 02.1 Renewal and improvement of the regulatory framework

It has been necessary to develop a new and exhaustive regulatory framework which could hold all the initiatives launched withing the Madrid 360 Strategy.

#### City Council regulation



#### Air Quality and Sustainability Municipal Regulation

*In force since March 2021*



#### Taxi Municipal Regulation

*In force since June 2021*



#### Sustainable Mobility Municipal Regulation

*In force since September 2021*



#### Public Spaces Cleaning and Waste Management Municipal Regulation

*In force since December 2022*

#### Other relevant documents



#### Road map for Climate Neutrality

*In force since March 2021*



#### Mission City of European Commission

*In force since April 2022*



#### Sustainable Mobility Plan 360

*In force since July 2022*



#### Urban distribution of Goods Strategy

*In force since October 2022*



#### Especial Noise Protection Zone Trafalgar-Ríos Rosas

*In force since November 2022*



## 02. Madrid 360 Strategy: Main implemented actions

### 02.2 Limitations for the more polluting vehicles

In September 2021, Sustainability Municipal Regulation established the regulatory framework so the whole city could become a Low Emissions Zone (LEZ) and created the basis for the development of two especial protection LEZ in the Central District and Plaza Elíptica



#### Madrid Low Emissions Zones (LEZ)

- From the **1<sup>st</sup> of January 2022**: The **"A" vehicles registered outside Madrid** cannot circulate **within the boundaries of the M-30**
- From the **1<sup>st</sup> of January 2023**: The **"A" vehicles registered outside Madrid** cannot circulate **on the M-30**
- From the **1<sup>st</sup> of January 2024**: The **"A" vehicles registered outside Madrid** cannot circulate **within the city boundaries**.
- From the **1<sup>st</sup> of January 2025**: **All "A" vehicles** cannot circulate **within the city boundaries**
- In Madrid LEZ, the unauthorised accesses have been reduced by **59,4 %** from the prewarning period.



#### Especial Protection Low Emissions Zones (EPLEZ)

- Central District Especial Protection Low Emissions Zones (EPLEZ): In force since September 2021  
  
The unauthorised accesses to the Central District EPLEZ have been reduced by **40,6 %** from the prewarning period.
- Plaza Elíptica Especial Protection Low Emissions Zones (EPLEZ): In force since December 2021  
  
The unauthorised accesses to the Plaza Elíptica EPLEZ have been reduced by **66,5 %** from the prewarning period.

**Note:** The "A" vehicles are those petrol vehicles registered before 2000 and diesel vehicles registered before 2006

## 02. Madrid 360 Strategy: Main implemented actions

### 02.3. Public transport promotion

In its decisive promotion of the public transport, the Madrid City Council has approved a Strategic plan for the **Municipal transport Company (EMT)** that includes:



**+1.000M€** investment  
**534 M€** for **fleet renewal** and **290 M€** for the construction of **sustainable infrastructures**



#### New Infrastructures

New Operation Centre **La Elipa**, New Operation Centre **Las Tablas**, OC **Carabanchel**

#### Electromobility Hub Canalejas 360:

Hub in the city centre with 12 charging points and mobility services such as carsharing, electric motosharing, BiciPARK,



#### New bus exclusive lanes

**+66 km**

An increase of over **50%** since 2019



#### Innovation and digitalization

**App Madrid Mobility 360:** Allows for route calculation, tickets adquisition and public transport occupancy.

**Full Redesign** of the buses  
**Counting and security** technology  
**Card payments** in the whole net.



#### EMT free rides

**36 "free days"** on the EMT buses  
**+30,7 million** passengers in free zero routes and the free bus days



## 02. Madrid 360 Strategy: Main implemented actions

### 02.3. Public transport promotion-EMT sustainability



With the decommissioning of the last diesel bus, Madrid becomes the first European big city with a 100 % environmental friendly bus fleet In 2025, 25% of the EMT fleet will be electric and in 2027 at least a third of the city council buses.



Madrid has **19 100 % electric routes**, which makes the capital city **the Spanish city with more electric routes and the second in Europe, after Berlin.**



The EMT has **reduced by 45% the NOx emissions** 139,789 kg in 2021 against 76,352 kg in 2022



The EMT invests 10,8 M€ in a **hydrogen factory**, and adds **ten buses propelled by green hydrogen.**



The EMT has bought **1.291 buses**, what means a **62%** renewal of the fleet.

EMT electric fleet evolution

2022	2025	2027
8,6%	25%	35%
Of the <b>buses</b> are <b>electric</b> (Dec 2022)	Of the <b>buses</b> will be <b>electric</b>	Of the <b>buses</b> will be <b>electric</b>



## 02. Madrid 360 Strategy: Main implemented actions

## 02.4. BiciMAD expansion

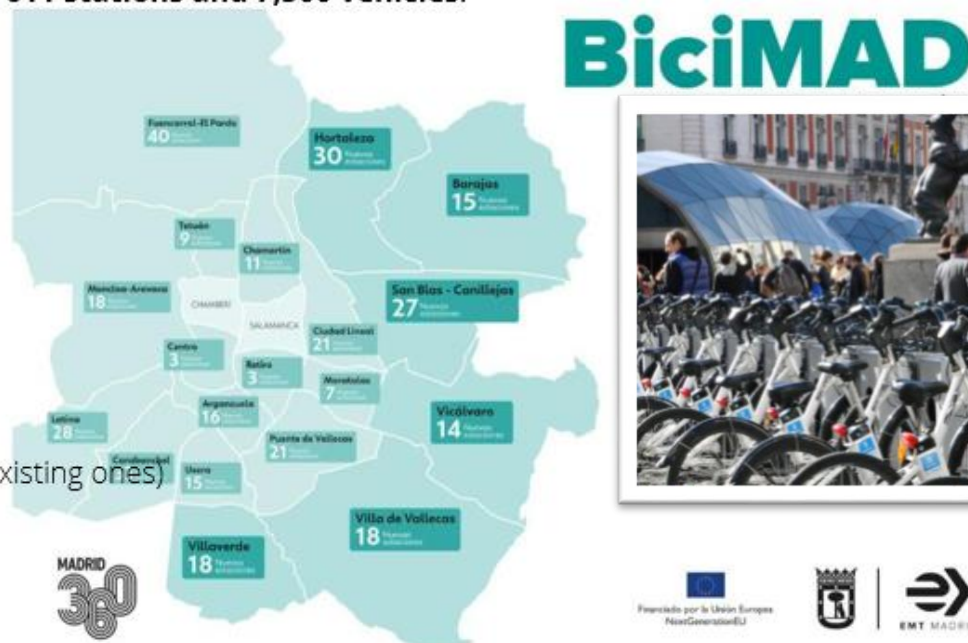


Between 2019 and 2020, BiciMAD had a historical expansion with 90 new stations. The **new expansion project** launched in 2022 aims to reach all districts by 2023, duplicating the existing system to reach **611 stations and 7,500 vehicles**.

**21** districts (+6 new: reaches all districts)

**611** stations (+347 new: more than doubling the existing ones)

**7.500** bicycles (+4.536 new: more than doubling the existing ones)



## 02. Madrid 360 Strategy: Main implemented actions

### 02.5. Bicycle promotion and other PMV



The promotion of the bicycle and other Personal Mobility Vehicles (PMV) by the city council has seen the biggest expansion of the **BiciMAD** service in its history, reaching all districts and the development and promotion of infrastructures such as bicycle lanes and parking spots for these vehicles.

**6.000**

#### Scooter authorisations

**New model** tidier, safer and integrated:  
**3 companies**

**13 km**

#### Castellana bicycle lane

**5 M€** for the first part with 4.25 km,  
in April 2023

### Regulations

#### Sustainable Mobility Ordinance

The new ordinance cover the bicycle, PMV and motorcycle parking, enhancing road safety in Madrid.

**71 km**

#### More of bicycle lanes

**24,342**

#### Municipal parking spots for bicycles + PMV + Motorbikes





## 02. Madrid 360 Strategy: Main implemented actions

### 02.6. Hubs of mobility: New car parks

Conversion of public car parks into mobility service hubs.

The use of existing public car parks is encouraged, which will become "mobility service hubs", offering individual or shared parking (car-sharing, rent-a-car, scooters, bicycles, motorbikes...) as well as recharging points for non-polluting vehicles.





## 02. Madrid 360 Strategy: Main implemented actions

### 02.7. Pedestrian areas

One of the most singled out measures included in the Madrid 360 Strategy has been development of pedestrian only areas in the 21 city districts to turn 170,000 square metres in zero emissions zones. The **Puerta del Sol and its surroundings** were the first of these pedestrian areas.

#### Puerta del Sol pedestrian only area

**16.751** square metres for pedestrians

The principal **vectors of the refurbishment** have been:

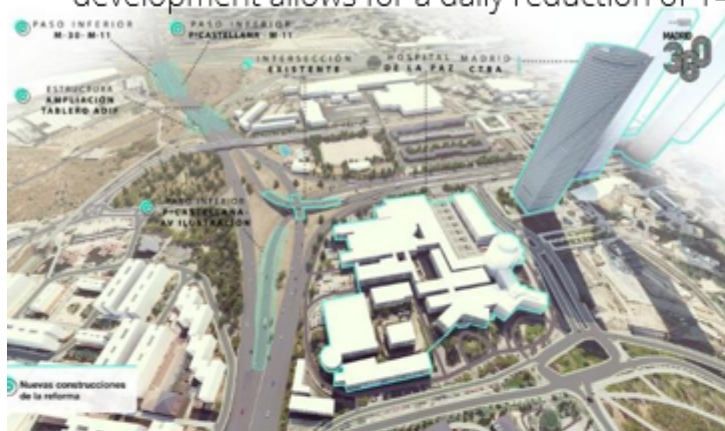
- Elimination of almost **7.000 daily trips** in private vehicle
- **New signage** specific, vertical and on the road.



## 02. Madrid 360 Strategy: Main implemented actions

### 02.8. New Infrastructures

The **M-30 Nudo Norte** improvement works, one of the most congested spots of the city, is one of key measures to reduce emissions. The development allows for a daily reduction of 14 CO<sub>2eq</sub> tons.



#### Nudo Norte



50

Millions of Euros  
Budget



14

CO<sub>2eq</sub> tons  
reduced daily.



31%

Time savings in  
standard trips.



Finished on December 2022

Greater capacity of the road

Enhancement of road safety

#### Plaza de España

Includes **pedestrianisation** of the axis Bailén-Ferraz, planting over **1,100 new trees** and implementation of three kilometres of cycling lanes.

#### Mahou-Calderón

The completion of the covering of the M-30 (Mahou-Calderón area), will allow the environmental, pedestrian and landscape continuity of the Madrid Río park, finalising one of the most important urban transformation within the city of the century.

#### Bus Rapid

New infrastructure. A bus-only lane with priority at the traffic lights of 30.9 km that will connect Valdebebas and Sanchinarro with the Ramón y Cajal Hospital.

## 02. Madrid 360 Strategy: Main implemented actions

### 02.9. Trees and green areas



Madrid is one the cities with more trees in the world. Within our commitment with the environment and the green heritage, the City Council has undergone the biggest tree planting campaign of its history and has an annual budget of 218 M€ for the cleaning and preservation of parks and other green areas.



**3.800**

**Parks and green areas**  
in the city



**1,74**

**Million trees** upkept by  
city council



**54%**

Of the **streets of the**  
**city have trees**



**3<sup>er</sup>**

Consecutive year being awarded the  
**'Ciudad arbórea del mundo'**

#### 01/ GREEN HERITAGE RECOVERY PLAN



**100.000**

Planted trees to recover those affected by the "Filomena" storm



**61.000**

Units to be planted within the wasteland recovery



**11.216**

Identified pits able to be used for tree planting

#### 02/ WORKS TO IMPROVE AND PRESERVE GREEN AREAS



**79 M€**

Budget for works to improve and preserve green areas



**85**

Expected remodelling works



**64**

Finalised works (75% of total)



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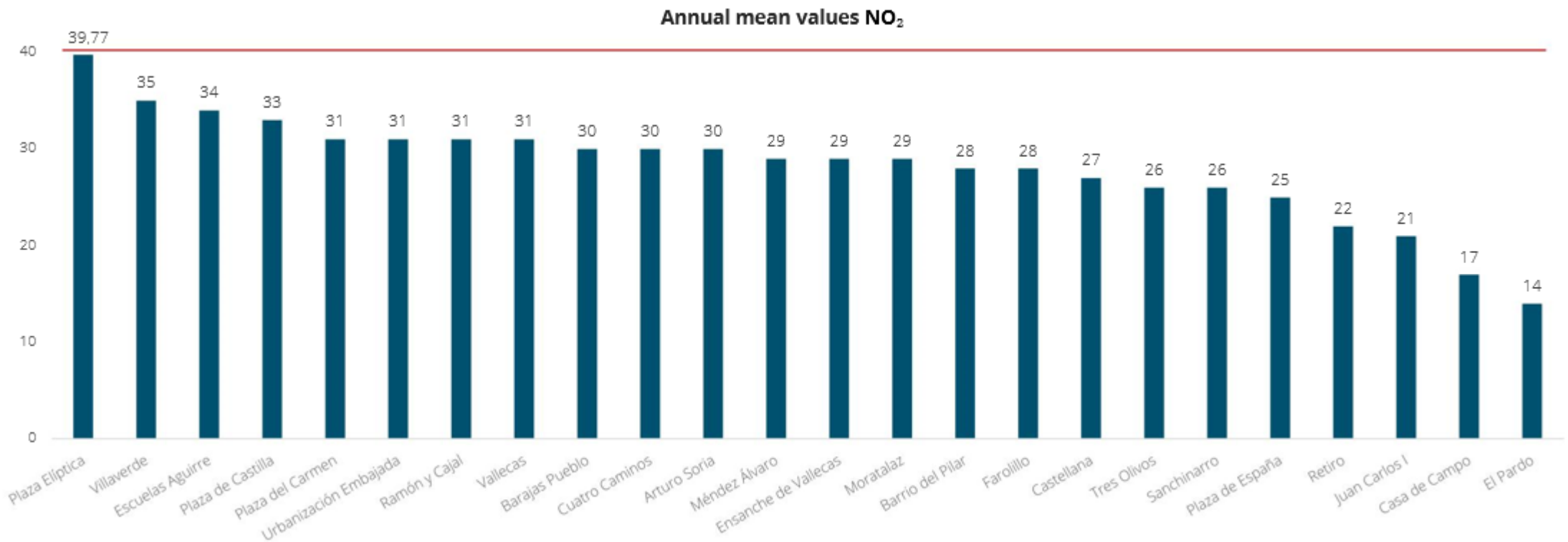
## 3. Air quality improvement

- Annual Limit Value (VLA)
- Hourly Limit Value (VLH)



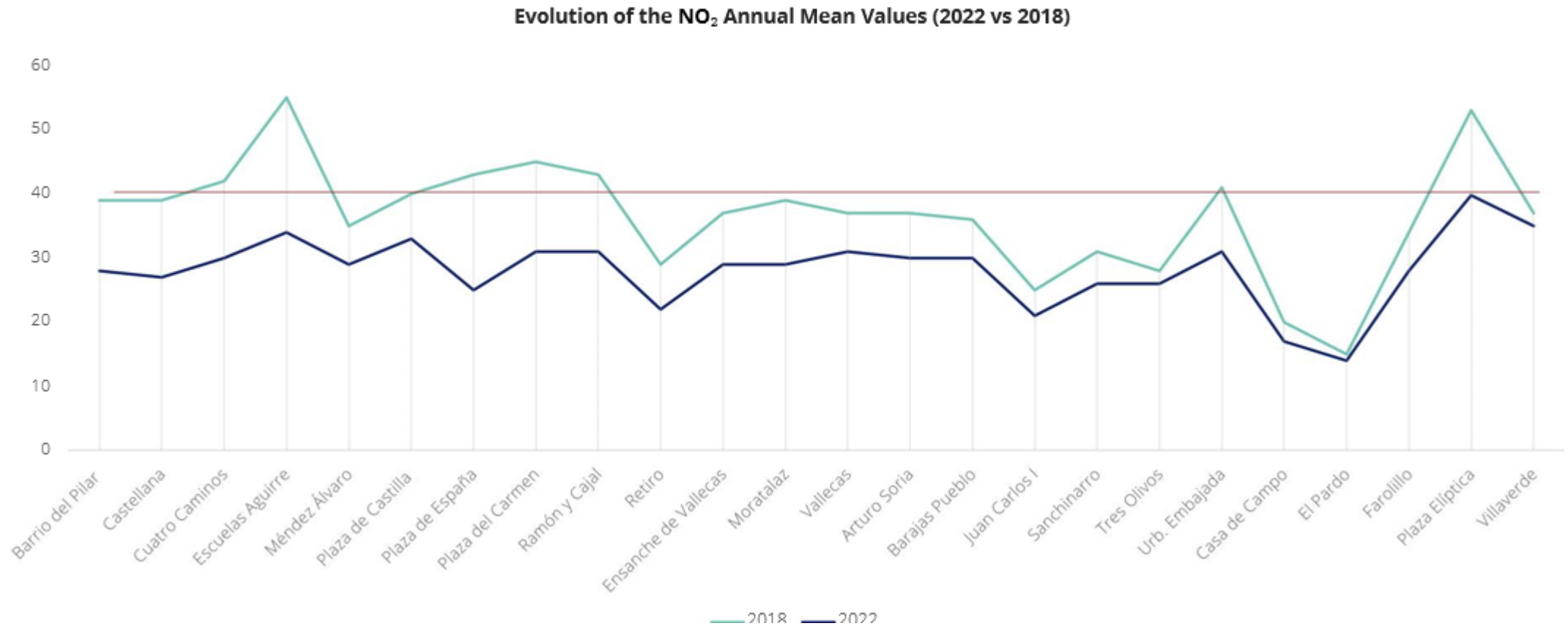
## 03. Air quality improvement

### Madrid complies for the first time with the Air Quality European Directive



## 03. Air quality improvement

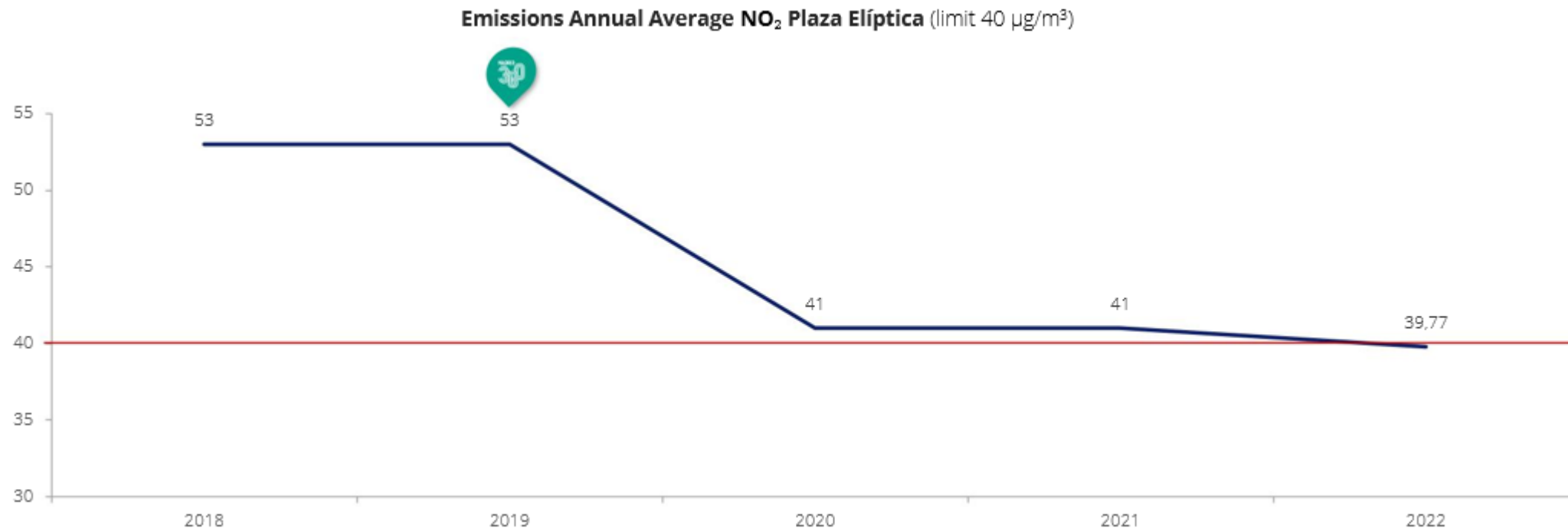
### Annual Mean Value





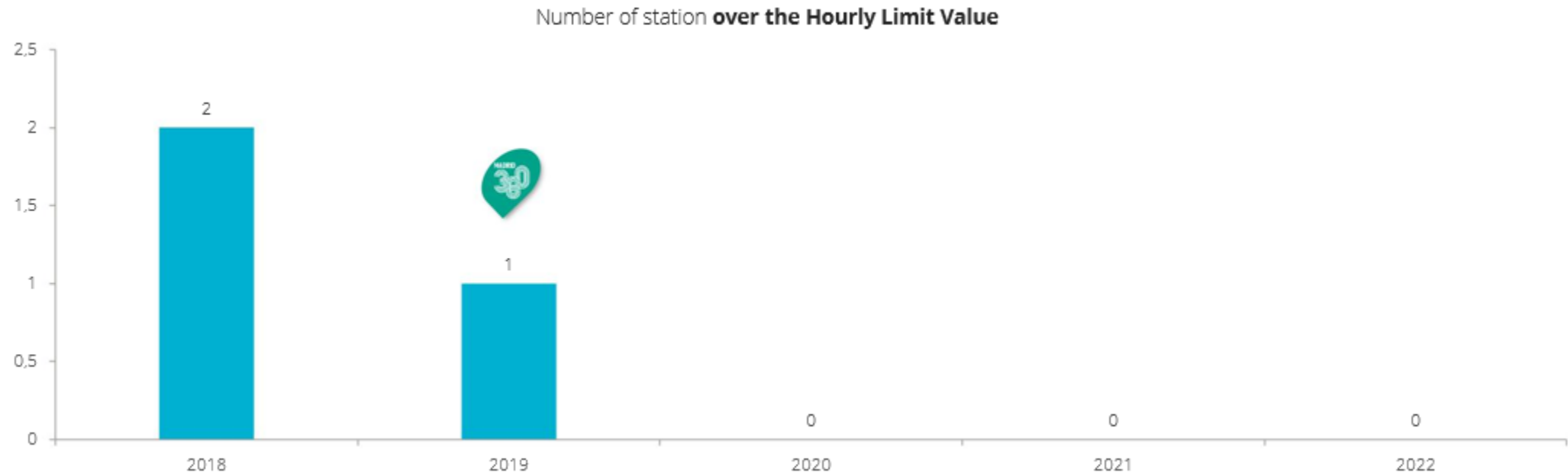
## 03. Air quality improvement

Below the detailed Plaza Elíptica station measurements, the only station that did not comply with the Annual Limit Value in 2020 and 2021, and that has finally gone under the EU Directive set limit values in 2022.



## 03. Air quality improvement

**Hourly Limit Value:** For the third year in a row, all stations are under the Hourly Limit Value (HLV) established by the 2008/50/CE Air Quality Directive, a limit that was continually breached between 2010 and 2019.



# Thank you for your attention!



## Maria Dolores Jiménez

Service Manager in the Directorate General of Planning and Mobility Infrastructure. City of Madrid (Spain)

[jimenezmmariad@madrid.es](mailto:jimenezmmariad@madrid.es)

<https://www.madrid.es/portal/site/munimadrid>

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