







vicealcaldía, portavoz, seguridad y emergencias

# MADRID

# **FIRE DEPARTMENT** ANNUAL **REPORT** 2023

FIRE DEPARTMENT HEADQUARTERS

General Directorate of Fire Services





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# **Presentation (vocation)**

We, Madrid City Council Firefighters, are a high vocation sense collective. Our values come from a very long tradition heritage to serve our citizens (since year 1577). We dedicate to a wide mission, that lay mainly on preventing and extinguishing fires, but also includes a great response capability in emergencies and in those risky situations for people, animals and goods.

The Fire Department is composed of professional personnel, highly prepared, with a good balance between specialization and versatility, that give value to our members capability and their real experience in fire for promotion purposes to become our officers.

It is our task: anticipating catastrophes, being plainly aware of the effect of a painstaking prevention work in the activities and facilities of our city, and it results in a higher safety for our neighbours and the economical activities.

With that aim, we keep in continuous contact with the managers of critical facilities and certain special characteristics buildings. It let us acquaint with them, their possible risks and their safety systems. This big investment of our resources, very specialized experts and attitudes we try to promote, reduce the disasters number and their consequences, generating important savings that are difficult to assess.





# **Efficacy and Capacity**

Our work methodology is a value in our Department personality, and has a checked efficacy, using an special "first attack convoy" configuration, very powerful, that let us face at the same time the extinguishing, rescue and risk control tasks.

Due to the significant relationship between the pass of time and the intervention success, our first rule is "arriving as fast as we could with the right means".

From this City Council, we highlight too the big effort we do to get back to normal in the action zone, not only doing our normal intervention but also going beyond. We do not only protect people and goods, but also restore the life and commercial activity in the district.

The individual and collective technical means we use are the result of a very careful selection by an expert technical committee. They increase the efficacy and reduce significantly our accident rate. It has become the reference for many other fire departments.

Furthermore, due to the previous evaluation and our response capability dimension, we can increase extremely the presence of forces in a great dimension disaster in a coordinate and effective way.

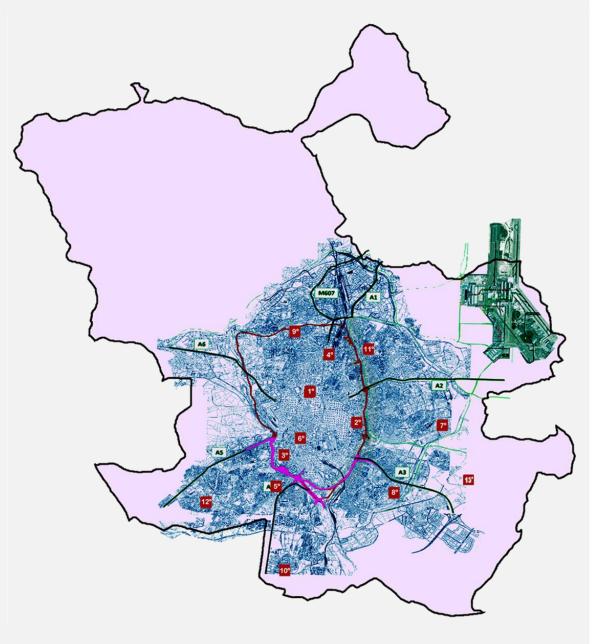


# Coordination and Citizenship

The Fire Department coordinates perfectly with the other security and emergency services with which it works in the city, not only in complex incidents, but also by participating in preparations for all kinds of presences, as well as in the appropriate specialised forums at municipal, regional and national level. As part of this coordination, advisory, training and awareness-raising tasks are also carried out for various professional groups that result in the improvement of the interventions and the service provided to the public.

On the other hand, the integration of the Fire Department into Madrid society is total, as they are our main allies and our raison d'être. This makes us one of the most highly valued municipal services. Numerous activities are carried out with all groups to raise awareness and educate about prevention: through social networks and the website, as well as directly at events, conferences, hospitals, visits to the Fire Department Museum, etc. We try to reach all sectors of the population through campaigns and our regular educational activities, especially in the case of elderly people and children.





### Our scene:

## Madrid is too much Madrid

3.32 M registered inhabitantes (5,479 inhab/km²)

+ 1.4 M floating population

+10 M tourists/year

- ✓ 62.40 Km<sup>2</sup> Green Zones (205 Parks) / 51.75 Km<sup>2</sup> Regional Park
- √ 6 Electricity Corridors / Pipelines / Gas Pipelines / +150 km. underground GALLERIES
- ✓ 5,000 km. Collectors / 37 STORM STORAGE PONDS
- ✓ 2 AIRPORTS + 5 Heliports
- ✓ 2 Large RAILWAY STATIONS / 11 Hubs +11Intermodal Areas + Teleferic / Bus Station
- ✓ **225 km. RAILWAYS** (9L/39E/+15T) / **250 km. UNDERGROUND** (12L/283E) / 6.5 km. Tramway (3L/11E)
- ✓ 261 km. HIGHWAYS / +9,000 km. streets (348 structures) / +100 km. TUNNELS
- ✓ 16 Public HOSPITALS / 35 Private Hospitals-Clinics / 119 Health Centres / 19 Specialty Centres-/ +160 Old People's HOMES
- ✓ 8 Universities / 21 Laboratories / +1,700 Education Centres
- ✓ **85** MUSEUMS / 54 Libraries / **4** Convention Centres / 3 Theme Parks
- ✓ UNESCO Heritage (Pº Prado-Jardines Buen Retiro) / 182 Cultural Heritage Goods
- ✓ +800 HOTELS / +60 Theatres / +230 Cinemas/ +17,200 Hotel Establishments
- ✓ +35 Large COMMERCIAL CENTRES / +60 Public Car Parks
- ✓ 3 Corporative Cities (BBVA / REPSOL / Telefónica)
- ✓ 6 STADIUMS / 4 Multipurpose Venues / 74 Sports Centres/ 47 Pavilions/ 53 Covered **Swimming Pools**
- √ +550 Temples / 14 Cemeteries 7 Funeral Homes 2 Crematoriums
- ✓ **76 INDUSTRIAL ZONES**> 2 Car Factories + 2 Aircraft Bases + 5 Train Bases
- ✓ Mercamadrid Logistics Platform
- √ Valdemingómez Technological Park
- ✓ Etc.



# BOMBEROS



# **Management Evaluation**

2023

The city of Madrid increases its activity every year. This fact, which is directly reflected in the number of interventions, has led to an increase of more than 10% in 2023 compared to the previous year, which represents a significant effort for the staff. Even so, the average response times have been maintained, as well as the intense work on prevention, with inspections, project reviews, self-protection plans and drills.

85 new specialist firefighters have been recruited and the selection process duration has been reduced without reducing the quality of their training. The administrative area has also been strengthened with 29 new employees.

With regard to logistics, investment has been made in the refurbishment of 4 fire stations (1st, 2nd, 5th and 9th) and the development of what will be the Firefighters' Logistics Complex has begun. Also, the wardrobe has been renovated and new individual protection elements have been incorporated.

Investment in the improvement of communications and management systems has been maintained, as this is essential for the operation of the Fire Department.

Our public service vocation extends beyond the municipality of Madrid, participating in international missions, such as the earthquakes in Turkey and Morocco, as well as in European Civil Protection Mechanism drills.

Finally, it has also been a year of improving public outreach and awareness.





We, Fire Department, are working in the following lines:

- Development and improvement of the dynamic response system, to further adapt and optimise the means used in interventions. Work is being carried out to revise the catalogue of events to better adapt it to the city's risks and to make optimal use of the closest resources.
- Implementation of the New Emergency Management System (SIGEM) as the main IT support tool to facilitate emergency management and administration.
- Incorporation of 126 new specialist firefighters.
- Improvement of contingency plans for special coverage, critical infrastructures, high concentration of people, etc.
- Progress in the Fire Logistics Centre, with the warehouse and preliminary project for the 2nd phase and the beginning of the installation of corporate WIFI in the fire stations.
- Improvement of management and organisational tools.
- Special focus on emerging issues, such as high-capacity electric batteries.



## **About us**

Being a firefighter is above all a vocation of service to your neighbours. We experience the worst moments in the lives of many people, sometimes dramatic circumstances, which we overcome thanks to the passion we feel for our profession and the meticulous training we receive.

We are aware that it is a dangerous job, with accident figures comparable only to those of groups such as the Security Forces and Corps, in their most exposed specialities. Our involvement, training and material resources are the tools we need to face this reality.

On the other hand, it is an exciting job, with specialisation and management of unique equipment, with a high level of comradeship and it is the most highly valued of all public services by the community, year after year.



## What we do?

We take part in disasters, mainly fires and rescues, but also...

We work in floods, tree falls, buildings at risk of collapse or detachments, victim location, debris removal, in crowded facilities, with dangerous animals, rescues in water, at heights, in adverse biological and chemical conditions, in traffic accidents, we help other national or international public services, etc. A huge jumble...

We devote a large part of our efforts to fire prevention and to raise public awareness.

With this policy of prevention and facilitating the response to emergencies, we work with institutions, companies and individuals. This allows us to adapt our response and familiarise ourselves with the facilities, thus making the people of Madrid a true ally.



# How to become a firefighter?

To enter this exciting profession, it is essential to pass a **competitive public examination** with minimum requirements: baccalaureate and driving licence B, as well as passing various technical, theoretical, psychotechnical and physical skills tests.

To become an officer of the Corps, it is also a minimum requirement to have a degree in the field of Engineering or Architecture.

These requirements, plus the **training courses** of 600 and 1,000 hours, respectively, together with the numerous specialisation training courses, mean that there are professionals trained in the most commonly used disciplines and also in the less common ones.





Warrant

Officer

Sergeant

**Firefighter** 

**Group Leader** 

Chief

on duty

**Supervisor** 

on duty

Manager

on duty

# Our organization and professional ranks

We are **1,478 firefighters** and **176 professionals** working on the management, administrative and technical side, so that we have everything we need to provide a quality service. All the activity is carried out by 5 different inspectorates.

Our professional categories as **Firefighters** are as follows: Firefighter Driver Specialist, Firefighter Specialist, Group Leader Driver, Group Leader, Sergeant Driver, Sergeant, Warrant Officer and Officer. We provide the service in 2 ways:

- Direct Attention to Disaster
- Technical Support and Reserve Personnel



support, logistics, etc.

## **Our Fire Stations**

We have a distribution of fire stations in Madrid based on 'isochrone' calculations. The location of our 13 parks is designed to minimise our response time.

All fire stations have a minimum number of vehicles: 1 Heavy Urban Pump Vehicle; 1 Light Urban Pump Vehicle(Car) and 1 Ladder vehicle.

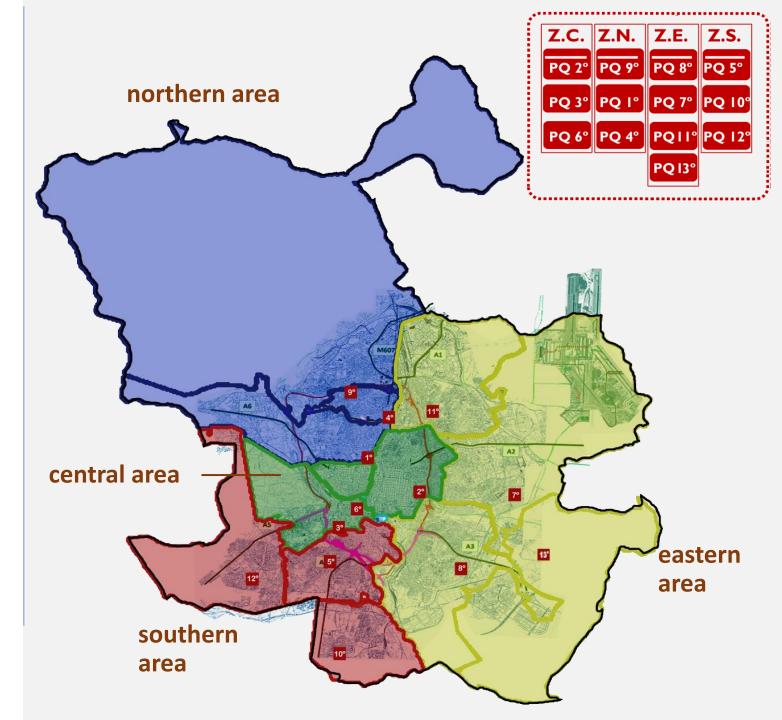
In turn, organisationally, we 'divide' the city into 4 zones: the central area, northern, southern and eastern ones.

In each zone there is a head fire station (we have 4) which has a greater response capacity in terms of both personnel and vehicles. Some of the fire stations have special vehicles for interventions that require specialised equipment and personnel.









# Operative organigram 24h/365 days

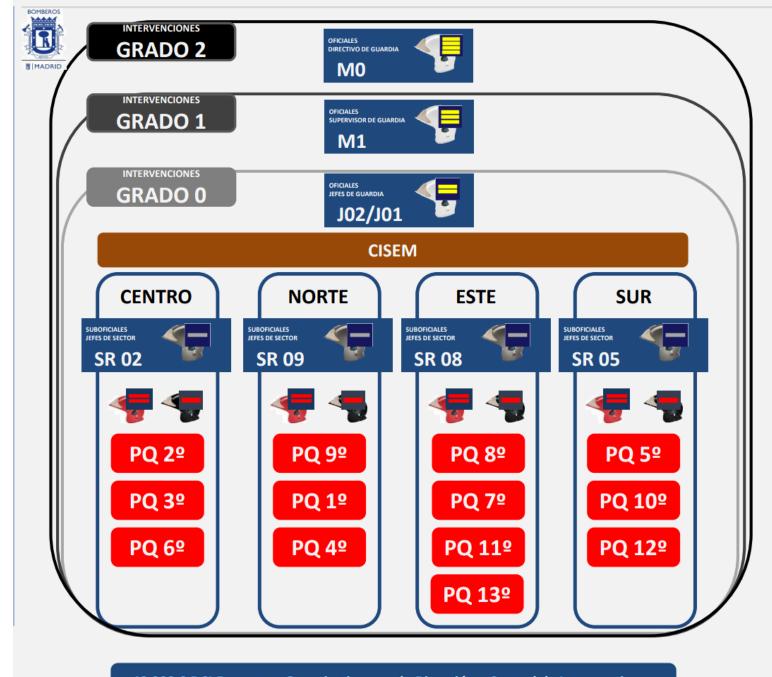
The response to disasters is staggered in **3 Grades** (G0 to G2), which allows immediacy in the activation and adequate sizing of resources.

The fire stations are activated under **level 0**.

At the head of each zone, there is a Sector Chief, who is activated for the coordination of interventions with several resources.

The Communications Centre is the nerve hub of information for the emergency, from where all the resources are coordinated by the Management on duty, in charge of 2 Chiefs on duty, also activated for the coordination of operations and technical evaluation of particularly complex emergencies.

The technical and management coverage of the daily management is completed by the Supervisor on duty and Manager on duty. They are activated in grade 1 and 2 emergencies, corresponding to large-scale disasters with a large mobilisation of resources.



42 002.0 DCI Estructura Organizativa para la Dirección y Control de Intervenciones

## Our means

Firefighters' uniforms and personal protective equipment are the result of rigorous prior studies and the latest technical advances in the field. In a certain way, they are co-designed between the Corps and expert suppliers, which results in improved safety and ergonomics.

We have a fleet of heavy and light vehicles, especially those dedicated to the following uses:

- Fire (pump vehicles, cars, forestry)
- Rescue (emergencies and ladder vehicles)
- Water (tanks)
- Special (RBQ, drainage, scaffolding, water rescue, debris removal, articulated arm, hives, mattress van, etc.)
- Towing vehicle
- Transport (command vehicle, van and bus)

Finally, we have management applications that allow us to properly exploit our resources and optimise our coordination, as well as to draw conclusions from our activity in order to improve our performance every day.





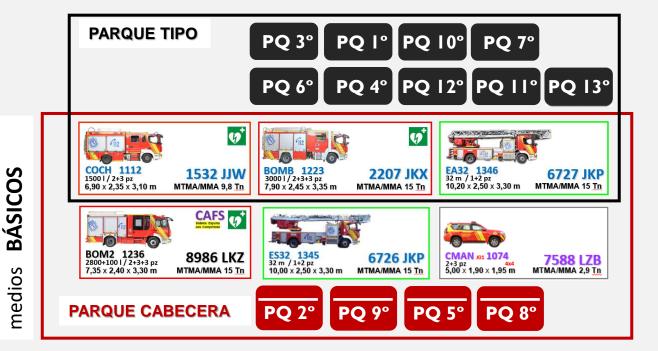




























# **Every second counts**

In just a couple of minutes, in a single careless moment, an outbreak can develop into a serious fire. The evolution of the problem is exponential, and can affect people and property with serious risk to them.

That is why the first premise in firefighting is to arrive as soon as possible and solve the problem in the most effective way, having the possibility of giving a growing and coordinated response with more forces.

Everything in the Fire Department, the distribution of the fire stations, the personnel training, the quality of the resources, converge in the **objective of minimising the response time**.

To this end, the response is rationalised by distinguishing between urgent interventions (with people or animals at risk) and non-urgent interventions. The average response time (A.R.T.) for urgent interventions in Madrid is less than 7.5 minutes.

**A.R.T.** urgent = **6.48** min

A.R.T. all (29,071) = 8.19 min



# **Back to normal**

One of the requirements of a modern and complex city like Madrid is that our work must be geared towards restoring normal operating conditions for the city.

In our interventions, it is not enough to eliminate the danger to people and property, we have to re-establish the economic and social fabric of the city, leaving it in the best conditions to allow the resumption of activity as quickly as possible.

To this end, using the resources available, our intervention does not end until normality is restored.



# **Significant Incidents**

## **FEBRUARY**

A lorry trailer that was travelling along the M-45 road plunged from a height of about ten metres, until it ran aground in a tunnel on the R-3 radial road.

The driver managed to get out of the cab on his own. while his pregnant passenger had to be rescued by the fire brigade after a great effort due to the deformation of the vehicle. Hydrocarbons and the load of spilled paint were collected.





#### **MARCH**

A fire broke out in Alcalá St. The stairwell was flooded with smoke, preventing residents from leaving the building. One person died, trapped in his room on the ground floor, and the window grille had to be cut in order to rescue him.

We extinguished the fire and 11 people were rescued, 6 of whom were taken to hospital. One of them was an 80 year old man who lived in the only inhabited flat on the 5th floor, suffering from smoke poisoning and burns.

#### **APRIL**

A fire broke out in the Madrid restaurant 'Burro Canaglia' on the night of Saturday 21 April, with flames seen from the façade and spreading rapidly inside.

The proximity of the fire station allowed us to act quickly.

We rescued 12 people, 3 of whom died, despite the CPR manoeuvres performed by the Fire Brigade, Police and SAMUR - PC.





#### **APRIL**

A fire broke out in the Valdemingómez Waste Recycling Plant, in a building of more than 1,000 m<sup>2</sup>. It was a warehouse with a huge fire load and the intervention had to be divided into 3 different sectors. The fire became very virulent and required the mobilisation of 32 fire crews. We managed to extinguish it after more than 20 hours of intervention.



# **Significant incidents**

#### **APRIL**

An industrial building with electric motorbike batteries caught fire in Vallecas. The fire started at around 6 a.m., possibly originated in the basement of the building (about 2,700 m<sup>2</sup>), and spread to adjoining buildings. The extinguishing work was complex (fire below ground level, high heat, large generation of combustion gases, propagation, toxicity, ...).

Throughout the intervention, we worked with more than 36 crews with several relays. The Municipal Police provided aerial support with their drones.





#### **MAY**

A fire broke out in a room on the 5<sup>th</sup> floor of the 'Hospital Clínico San Carlos'.

We evacuated the people from the surrounding rooms and one person was found dead. A head count of the patients and staff evacuated was carried out to secure the area.

Given the seriousness of the situation, due to the number of people who could be affected, it was necessary to extend the 1st attack convoy with more forces.

#### **SEPTEMBER**

A fire broke out in the Palomeras neighbourhood, in a 13 stages building, with the stairwell full of smoke. On accessing the interior, with zero visibility, the area was searched using the 'smoke diving' technique and 2 people were found lying on the floor. We performed resuscitation manoeuvres from the first moment, but after the arrival of SAMUR-PC, one of the victims had already died and the second died in hospital. They were two workers from a painting company who lost consciousness due to smoke inhalation.





#### **SEPTEMBER**

We received notification of a break in a large pipe of water main circuit that was causing flooding in the emergency area of the 'La Paz' Hospital, with serious damage to the activity, being flooded, without lifts and with the need to redirect patients and doctors to other areas of the hospital. managed to turn off the water, drainage work was carried out and we organised a checkpoint for the possible transfer of patients within the facilities. The service was withdrawn when the lifts were operational.



# **Significant incidents**

#### **OCTOBER**

There was a gas explosion in Ramiro de Maeztu Street, affecting neighbouring buildings (school) and urban trees. The gas was shut off and we evacuated the building and carried out a survey of the most affected areas. The Complex Incidents Protocol (CIP) was activated for better coordination of all the municipal involved the services emergency. We cleaned up the facade that was damaged by the reached temperature and accompanied the residents to collect their belongings.





#### **OCTOBER**

A warehouse with more than 900 electric bicycle batteries (BICIMAD) caught fire inside the Public Bus Madrid Company facilities in Fuencarral. The batteries melted and joined together and had to be divided smaller groups for immersion in water extinguishing. Due to the nature of the batteries, when trying to divide the group into smaller fragments, there was constant re-ignition and small explosions. This type of battery has the particularity of not needing oxygen for combustion.

#### **NOVEMBER**

Rescue of a deceased person in a residential building under construction due to the collapse of the vault of a drainage gallery. We proceeded to shore up and reinforce the area in order to be able to rescue the victim. Subsequently, a review of the gallery was carried out with a drone (Municipal Police) and we proceeded to assess the building, on the ground floor, without identifying any damage to its structure.



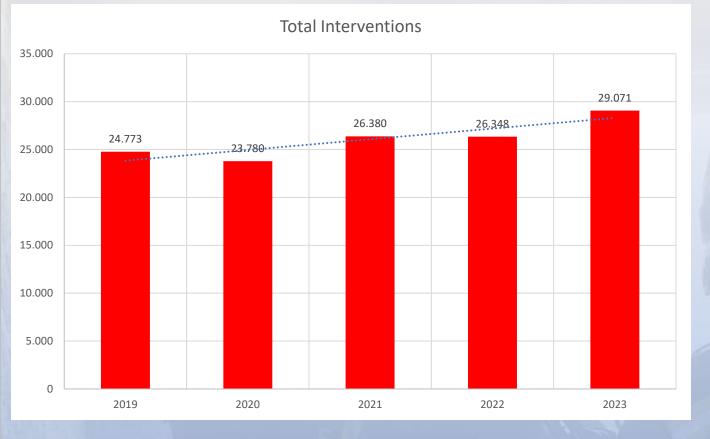


#### **DECEMBER**

A private helicopter crashed on the M-40 Highway at 'Campo de las Naciones' with a heavy traffic flow. The pilot managed to make a forced landing in a median area, without being hit by the traffic, which was very dense at that time. Three people were slightly injured, a driver of a vehicle hit by the rotor and the two occupants of helicopter. Firefighters rescued one of the crew members who was trapped in the wreckage.



# **Our performance**



**INTERVENTIONS DAILY AVERAGE** 

79.65

**AVERAGE RESPONSE TIME** (ART)

8'19\*

Total interventions of the Service are taken on account (even no urgent ones too).

**PERCENTAJE OF INTERVENTIONS SOLVED WITH 1St ATTACK CONVOY** 

87.43 %

**AVALANCHE INTERVENTIONS DAYS** 

11 \*

Those days with more than 150 interventions: strong gusts of wind, floods, torrential rains, etc.

**OTHERS INSTITUTIONS DRILLS** 

34

# PUNDAL REPORT 2023

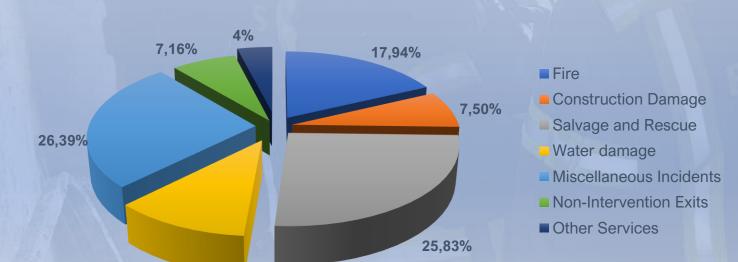
#### **INTERVENTIONS KEY/ TYPE**

KEY	TYPE	INTERVENTION NO.	A.R.T.* (min.)
1	Fire	5.214	7,58
2	Construction Damage	2.180	8,32
3	Salvage and Rescue	7.510	8,06
4	Water damage	3.266	8,48
5	Miscellaneous Incidents	7.672	8,42
6	Non-Intervention Exits	2.082	7,41
7	Other Services	1.147	-
Total amount		29.071	

\* A.R.T. Average Response Time

#### **ANNUAL PERCENTAGE INTERVENTION TYPE**

11,23%



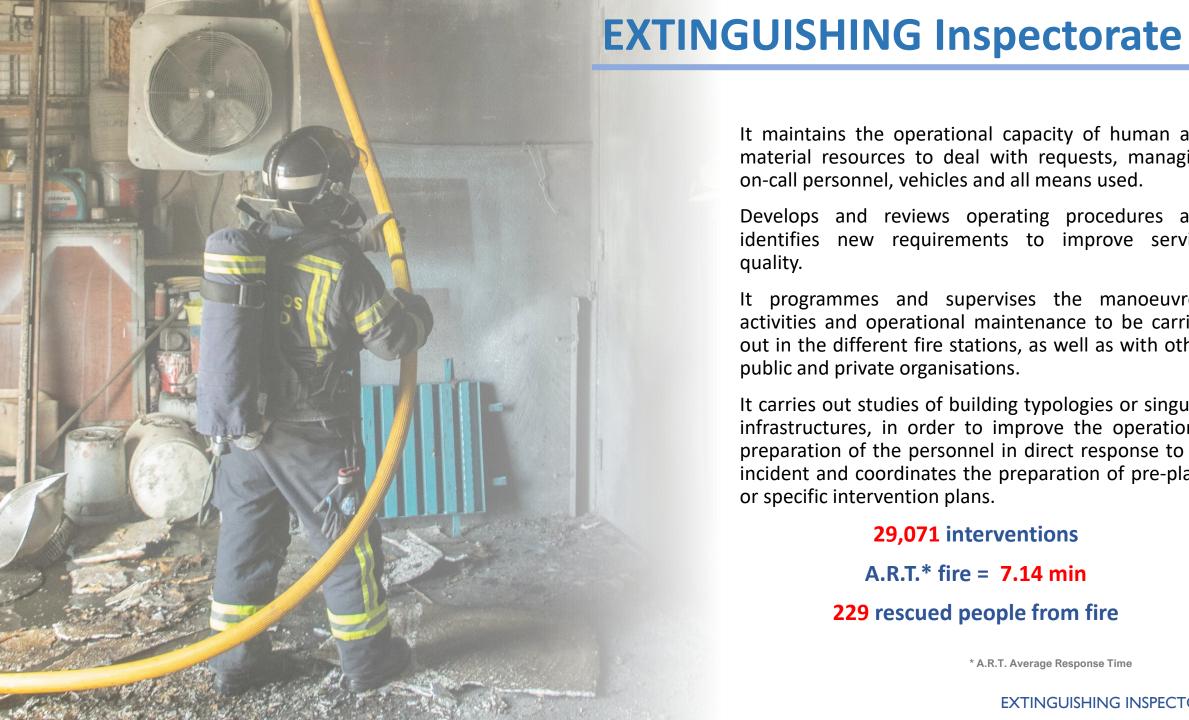
# **Our performance**

**MADRID CITIZENSHIP EVALUATION** 



Madrid Quality of Life and Citizenship Satisfaction Survey scoring. Up to 10.





It maintains the operational capacity of human and material resources to deal with requests, managing on-call personnel, vehicles and all means used.

Develops and reviews operating procedures and identifies new requirements to improve service quality.

It programmes and supervises the manoeuvres, activities and operational maintenance to be carried out in the different fire stations, as well as with other public and private organisations.

It carries out studies of building typologies or singular infrastructures, in order to improve the operational preparation of the personnel in direct response to an incident and coordinates the preparation of pre-plans or specific intervention plans.

29,071 interventions

A.R.T.\* fire = 7.14 min

**229** rescued people from fire

\* A.R.T. Average Response Time

# **PREVENTION Inspectorate**

The Prevention Inspectorate is responsible for fire prevention policy, so that it intervenes in the development of regulations and reports on refurbishment and new construction projects in relation to the application of current fire regulations.

In addition, it plans and organises inspections related to opening and operating licences and organises the reporting of new construction projects.

Finally, it manages the report on self-protection plans.

**1,263** official inspections

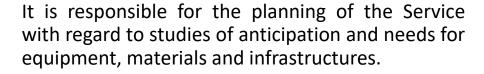
795 C.F.P.\* projects inspected

**902** self-protection plans

\*C.F.P.: Counter Fire Protection



# **PLANNING Inspectorate**



Carries out studies of specific applicable legislation on safety, health and workplace hazard prevention.

It is responsible for the supervision and general control of all goods and equipment.

It makes technical proposals for the acquisition of materials, equipment and vehicles and participates in the preparation of technical specifications.

also plans and reviews the installations necessary for the performance of the Service, remodelling and adapting them when necessary.

195 corrected incidents

1.269 vehicles maintenance

**8** improved facilities



# 11 TRAINING Inspectorate

It is responsible for the training of the Fire Department personnel in terms of entry courses, retraining, promotion, etc., as well as courses aimed at other groups in relation to fire prevention and our work.

To this end, it develops and proposes the content of training courses and related manuals, in accordance with the needs of the service and the requirements of the self-protection plans.

In general, it is an eminently practical training with a very low student-teacher ratio to ensure optimal learning and extreme care for safety.

**69** different training subjects

**85** Firefighter Specialists trained

**74** promoted professionals





COORDINATION AND COMMUNITY SERVICES INSPECTORATE

It is responsible for coordination tasks such as:

- Management of the agenda of non-urgent activities and related documentation.
- ✓ Processing, control and exploitation of all the documentation derived from the interventions (mainly the intervention reports).
- ✓ Issuing internal reports and other sort of requested ones by external organizations.
- ✓ Introduction improvements service in management quality and auditing.
- Management of the Fire Museum.

4,418 issued reports

1,028 programmed activities

9,119 Fire Department Museum visitors





Citizens are our raison d'être and we are always looking out for their safety at all times. Moreover, thanks to the relationships that we are establishing with our neighbours, they are becoming our great allies in terms of intervention, so that the efficiency and quality in our resolution is in a continuous process of improvement.

Every day it is more common to find citizens and professionals who have behaved appropriately in a risky situation, facilitating our intervention and minimising the damage caused by the incident.

Our informative activity has a lot to do with this. We have a very important collaborative activity with the rest of the services and with the main companies, owners of singular buildings or organisers of large events, so that we become familiar with their facilities and protocols in order to be able to improve our response.



# Fire Department and Citizenship

We train and raise awareness among citizens, with a special effort towards children (the future) and towards the most disadvantaged and risk-sensitive groups.

We participate in the appropriate forums and congresses to acquire new knowledge, techniques and means that we then apply.

118 citizenship activities

39,493 participants

9 international and national congresses

**5** Technical conferences

**27** Institutional ceremonies



