

# 2018 Management Report

Barcelona Fire Brigade



Ajuntament de  
Barcelona



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**62**

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# 1. Department

1.1 Communication

1.2 Mapping



## 1.1 Communication

This year, for the first time, the Fire Brigade has taken part in the Municipal Services Survey. It is coordinated by the City Council's Municipal Data Office and is carried out during the last quarter of the year. This survey, which is based on 6,000 personal interviews, is an essential tool for finding out how the general public rates the public services available to them.

The result obtained by the Barcelona Fire Brigade (8.3 out of 10) shows the high regard that city residents have for the service, with notable aspects that include trust and proximity. This is the highest score out of the 26 services that were evaluated, coming ahead of public

libraries (8.0) and civic centres (7.7). Furthermore, 32.3% of the people who evaluated the brigade's work stated that, according to their experience and perception, the service offered by Barcelona Fire Brigade has improved.

In order to continue with this trend, the internal communication system is being improved to centralise all service information, thereby presenting a single corporate image, unifying prevention and awareness-raising messages. It is therefore hoped to make the service more transparent while better showcasing our values, as well as the events we take part in and/or organise and other activities.

## 1.2 Mapping

During 2018, the mapping service focused its efforts on preparing the launch of geographical information on our new digital devices (tablets). This included the preparation and testing of the Karta navigation app, along with the other cartographic applications being created for the tablets.

The objectives for 2018 were a continuation of those set in 2017, in terms of improving graphic information through consultative applications such as Cartoteca and the realtime updating of data in order to create "live" maps that are useful for the operational and technical staff of the Prevention, Extinction and Rescue Service (SPEIS).

Some of the projects the SPEIS Mapping Service has taken part in, or continued to take part in, include:

- Maintaining, monitoring and updating the emergency routing system so that it includes public works, changes in traffic directions and the various events or sports activities that affect the city's roads.

- The real-time introduction of vehicles and services to the Cartoteca/CartoCGE application.

- Transferring mapping information in the cloud to SPEIS own servers.

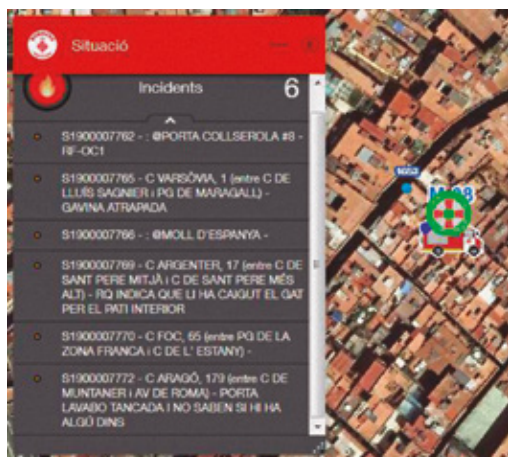
- Creating basic tilemaps and maintaining offline maps that are stored in tablets and used as support in areas with a poor internet connection, mainly in Collserola.

- Maintaining the geo-services that the Barcelona Fire Brigade uses in various apps.

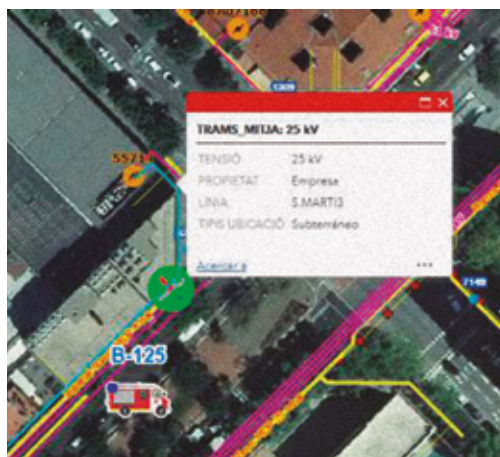
- Maintaining the app for reviewing fire hydrants in the city, the Collserola mountain range and the port. This app is used for improving data collection on the state and operating capacity of fire hydrants, facilitating the rapid reporting of incidents and thereby helping to maintain the network of fire hydrants in good working order.

- The introduction of notifications into the hydrant layers and other incident

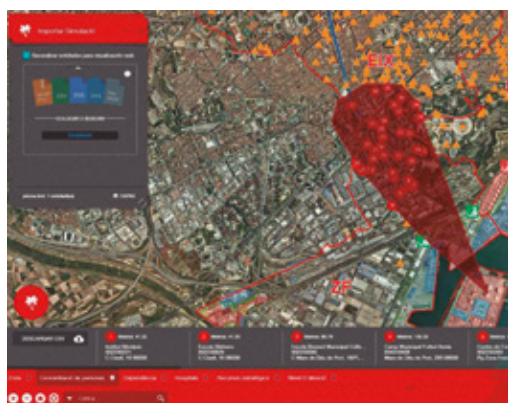




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1. Cartoteca cutting that shows services in real time and a vehicle taking part in a non-urgent rescue.
2. Screenshot of gas and electric supplies on CartoCGE
3. Importing an Aloha simulation to Cartoteca and determining vulnerable elements
4. Screenshot of the "Karta" Fire Brigade browser

layers, so that they automatically provide real-time notification of their state when they are in need of repair and/or notification.

- Preparation of services for the real-time monitoring of the position of tablets on SPEIS maps and mapping applications.
- Introducing into Cartoteca the ability to import Aloha simulations and determine vulnerable elements.
- Administering the ArcGis Online/Server platform, which enables the creation of 2D and 3D web maps and apps adapted to the specific needs of each campaign, as well as sharing these maps on different levels of privileges depending on who they are for: in private mode (SPEIS staff) or open mode (general public).
- Maintaining the Fire Brigade's Map Library, a platform for displaying all the-

Barcelona Fire Brigade's web mapping apps.

- Introducing supply networks to Cartoteca and other Fire Brigade mapping applications, as well as the listed transformers.
- Production/maintenance of operational files.
- Pilot tests for the Karta browser.

# 2. Prevention

2.1 Civil Protection

2.2 Fire prevention





## 2.1 Civil Protection

2018 has been marked by the country's political and social situation. The city's recovery after the unfortunate events of 17 August 2017, coupled with the political situation throughout the year, meant the continuation of the upward trend in activating emergency municipal plans for dealing with these situations. Furthermore, extreme climatic conditions, compared to the city's normal values, including three snowfalls in winter, one of which was especially serious, and the heatwave at the end of July and the beginning of August, also made good coordination between the municipal services necessary, in order to ensure the response required by the general public.

Meanwhile, the Civil Protection Unit's normal activities continued along the operational lines of previous years. The drafting of mandatory standardisation reports for self-protection plans of interest to Barcelona City Council's Civil Protection Unit, as well as the revision and presentation of the corresponding submissions for those of interest to the Generalitat of Catalonia's Civil Protection Unit, and the review of the city's main events, such as the La Mercè festivities or the King's Day Parade, are all part of the Civil Protection Unit's day to day work.

More work has been done on the effective coordination of drills between the Civil Protection and Prevention Division with the Operations Division, especially in companies that have the highest risks and in places such as Vall d'Hebron Hospital and FC Barcelona's facilities, with the aim of continually improving Barcelona Fire Brigade as a comprehensive emergency service, which interprets safety as the sum of civil protection planning, fire prevention and intervention.

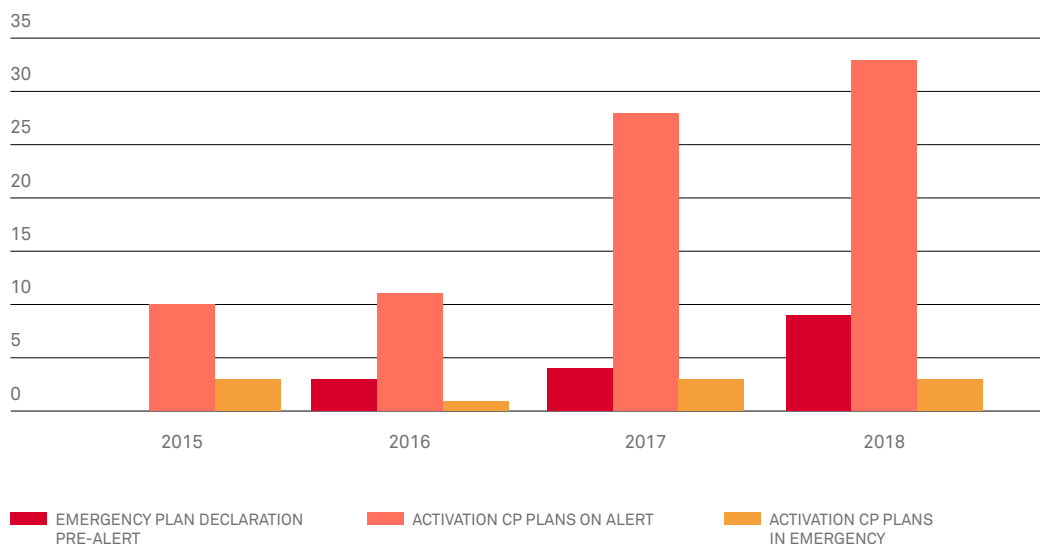
Lastly, work continues to be done on reviewing all municipal emergency planning, with the aim of complementing the Single Civil Protection Document, adapting, simplifying and updating all existing planning instruments and arranging content distribution in accordance with Decree 155/2014, but without losing the existing operational capacity, with the aim of improving operability in the activation of the city's emergency planning.

### Initiatives in the area of civil protection and self-defence plans (PAUs)

The following initiatives relating to regulation and prevention were carried out over the course of the year:

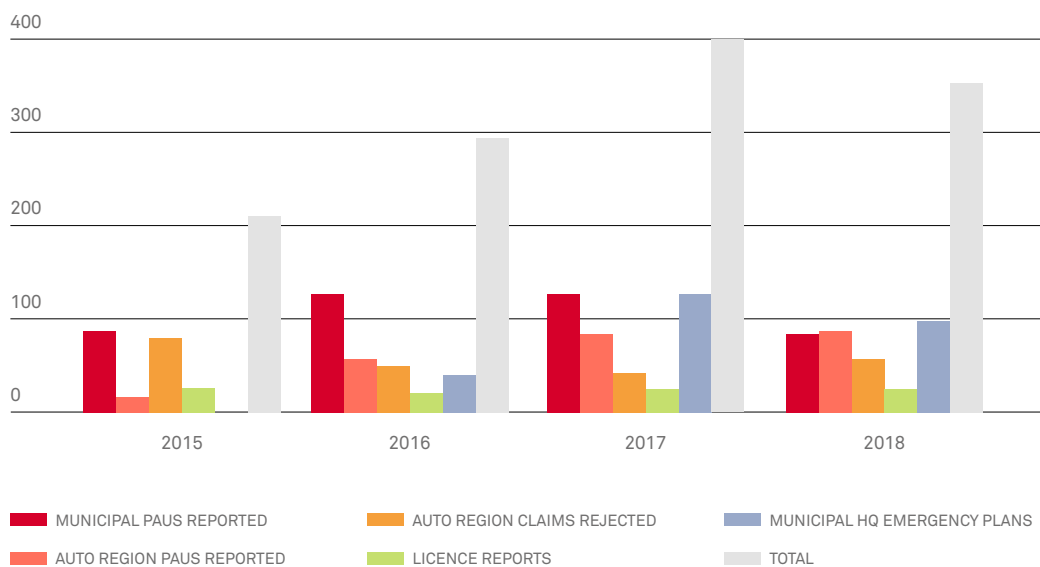
<b>Self-Protection Plans</b>	<b>231</b>
– PAUs under City Council jurisdiction (report)	85
– PAUs under Catalan government jurisdiction (reports and submissions)	88
– PAUs under Catalan regional government jurisdiction (without submissions)	58
<b>Reports on projects and events</b>	<b>24</b>
<b>CECORS</b>	<b>10</b>
<b>Fire drills attended</b>	<b>30</b>
<b>Municipal Civil Protection Commission meetings</b>	<b>0</b>
<b>Civil Protection Executive Commission meetings</b>	<b>1</b>

### Emergency plan activations



11

### Self-protection plan and activity licence reports



## 2.2 Fire prevention

This year, the drafting of mandatory reports verifying compliance with regulations concerning fire-protection conditions has confirmed a change in trend in terms of the subject of the reports and their three determining vectors, which are the creation of new public areas, improving mobility and adapting buildings to achieve better energy-efficiency indicators.

- The change in city model promoted by the municipal government, through the creation of new superblocks and the redevelopment of streets in order to improve the quality of pedestrian spaces, requires the intervention of the Fire Brigade in order to ensure that accessibility is maintained.
- However, the need to improve mobility, with the inclusion of new transport infrastructures, such as the Les Glòries tunnels and the La Sagrera railway station, require a very specialised evaluation of

compliance with the basic demands of fire protection and prevention, in order to guarantee reasonable safety indicators for the people using them.

- The percentage of new construction work is decreasing, while the extension and renovation of existing buildings, with the aim of improving energy-efficiency conditions, is increasing.

The joint work of the Regulations Unit and the Civil Protection Unit on monitoring the large railway-transport infrastructure projects makes it possible for the Fire Brigade to retain its role as a benchmark for safety conditions for the City Council and for the organisations that run the large public-transport infrastructures, such as Adif and TMB. This role is repeated in the execution of road-transport infrastructures, in coordination with BIMSA and Barcelona City Council's Area of Infrastructures.





### Initiatives on regulations and prevention

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<b>Advice</b>	<b>2.184</b>
– Visits arranged	687
– Telephone queries	1.497
<b>Reports on work projects, activities and events</b>	<b>583</b>
– Project planning reports	490
– Projects reported to the Environment Committee	30
– Reports on events: concerts, “fire runs”, firework displays, pyrotechnics, etc.	63
<b>Prevention inspections</b>	<b>236</b>
– Inspection of fireworks and bonfire projects	123
– Preliminary checks supervised by the Environment Committee	35
– Inspections at the request of the Operations Division, the municipal authorities (districts, manager’s offices, Irregular Settlements Plan, etc.) and the Generalitat of Catalonia’s Administration	78

### Fire Prevention Classroom

The Barcelona Fire Brigade has always been an organisation at the service of the public, and it enjoys showing them its day-to-day work geared towards ensuring people's safety in risk situations. In that regard, the Vall d'Hebron station and other fire stations are proving an ideal complement to the Prevention Classroom, in terms of showcasing facilities, the profession, the vehicles and equipment that are used.

The year saw the consolidation of the Prevention Classroom as a benchmark venue

for teaching prevention and self-protection in fire situations.

The highest demand for fire-prevention training initiatives comes from schools, under the School Activities Programme (PAE), as well as senior citizen groups, other public authorities and associations, who also request advice.

Prevention and self-protection training sessions	288
Primary schools	228
Special needs schools	19
Groups of adults and senior citizens	21
Other institutions	29
<b>Total number of training-initiative attendees</b>	<b>8.118</b>

In addition to this data, there is also the dissemination of prevention concepts and how fire stations work, which have been covered in the 57 school visits to the various fire stations (schools, summer camps, reception centres, etc.). In this case, there were a total of 1,895 visitors.

Furthermore, during the two open days held this year, 400 people visited the Eixample fire station while 900 went to the Llevant fire station.





### Espai Bombers

Since it first opened in the last quarter of 2016, the Espai Bombers has steadily consolidated its position as a reference point for the general public concerning fire prevention. As well as being a museum, it has made a name for itself as a venue for a series of activities relating to firefighters, fire prevention and self-protection.

The short-term objective is to further all those activities that help to identify Espai Bombers as a knowledge hub for fire pre-

vention and self-protection. This includes organising conferences, taking part in the development of European projects, providing continuity at regulation interpretation committees with professional associations and, of course, informing the general public about the history and values of the Fire Brigade, through the dissemination of the Barcelona Fire Brigade's historic heritage.

The Espai Bombers has therefore become an ideal complement to the Prevention

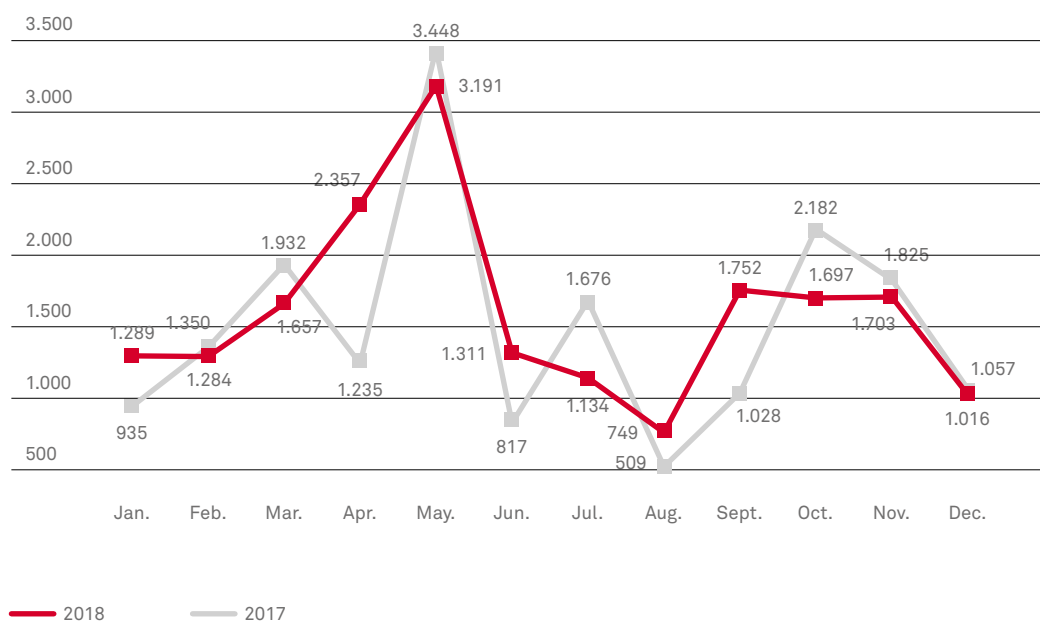


Classroom and it has gradually taken on the subjects of prevention associated with education in secondary schools, universities and other areas, aimed at fire-prevention professionals.

The indicators show an increase in the number of visitors, and in 2018, this figure rose to 19,140, which is 6% higher than for the previous year. This positive trend is based on the increase in the number of professional days and in the two tem-

porary exhibitions that showcased significant aspects, such as the recognition of Agustí Pech's model-building work, or the exhibition of steam fire engines used in Barcelona during the 19th and early 20th centuries, a city undergoing constant transformation.

### Visitors



### Inter-annual visitors evolution

2016	2017	2018	
1.976	17.994	19.140	6,37%

The two temporary exhibitions attracted a total of 12,891 visitors. Providing space for organising a whole series of events related to the Fire Brigade, fire prevention and safety involved a number of major training activities, attended by a significant number of people. In 2018, 2,506 people attended a total of 125 training activities.

The work currently carried out by Espai Bombers aims to consolidate the role of Barcelona Fire Brigade as a reference point for the general public in terms of fire prevention. The aim is to make Espai Bombers a meeting and information point with tools that facilitate access to all the

service's documentary heritage. Furthermore, the project currently under way in the Media Library will make it possible to obtain the most relevant data about the history of the Barcelona Fire Brigade and everything related to the world of fire prevention and self-protection.

The objective is therefore to consolidate the venue as a knowledge hub staffed by professionals and experts, with the aim of leading projects beyond the municipal level and which involve leadership from the Barcelona Fire Brigade's technical staff in projects associated with the field of emergencies and fire prevention and self-protection.

### Visitors

	Temporary exhibitions		Provision of space	
	"Agustí Pech Miniatures"	"Firefighters and Steam Fire Engines 1826-1920"	Users	Sessions
January	961	0	55	5
February	1.049	0	73	6
March	965	0	251	13
April	0	178	593	21
May	0	2.682	293	12
June	0	672	274	19
July	0	794	69	4
August	0	628	0	0
September	0	1.532	20	3
October	0	1.697	256	14
November	0	1.041	423	19
December	0	692	199	9
	<b>2.975</b>	<b>9.916</b>	<b>2.506</b>	<b>125</b>



# 3. Planning

3.1 Technical Support Unit

3.2 Procedures Unit

3.3 Training Area





The Planning Division is split into three units aimed at strengthening the service's internal organisation: the Technical Support Unit, the Procedures Unit and the Training Area.

The Technical Support Unit is involved in defining the technical conditions and monitoring the acquisition of materials and intervention equipment: vehicles, protective equipment, tools, etc. It evaluates their risks and plans their incorporation as part of a continuous improvement process in maintenance. It also ensures proper, safe, sustainable and responsible use.

The Procedures Unit drafts the protocols adapted to the city's risk scenarios, taking into account the incorporation of new

equipment and technologies and by coordinating deployment through training and the acquisition of the necessary equipment.

The Training Area identifies and proposes training priorities, ensures knowledge is recycled and incorporates new training initiatives according to technological and organisational requirements or the need for incorporating new equipment, vehicles and materials.

The investment of the three units is structured according to the guidelines of the SPEIS Master Plan initially approved in 2014, and training initiatives have been planned in line with the Training Action Plan for 2016-2020.





### 3.1 Technical Support Unit

The forecasts for 2018 were achieved and the indicators concerning the service's resources were maintained at appropriate levels. A large number of new projects were carried out while maintaining the quality standards of the service's materials, vehicles and equipment.

#### Maintenance contracts

As regards the more important maintenance contracts, the following actions were carried out:

- Preventative inspection of 2 km of large-diameter 6" hoses.
- Preventative inspection of all the service's lever blocks.
- The drafting of specifications for the supply, maintenance and inspection of medicinal oxygen, and oxygen and acetylene bottles (cutting tools).
- Monitoring the large maintenance contracts for personal protective equipment (PPE) and collective equipment:
  - The cleaning, inspection and maintenance of personal protective clothing and equipment.
  - The recharging and inspection of air bottles.
- The production, processing and bidding process of the tender for cleaning, inspection and maintenance of self-contained breathing apparatus (SCBA), protective chemical suits and helmets, and the temporary transition contracts.
- Monitoring of operational contracts concerning:
  - Hardware
  - Foam supplies
  - Recharging and inspection of extinguishers

### Investment in vehicles

- Vehicle investment projects (Chapter VI), include the following:
- Reception and putting into service of two advanced life-support ambulances.
  - Reception and putting into service of two 20 m telescopic ladder appliances.
  - Reception and putting into service of an equipment vehicle for resolving pathologies.
  - Organising the replacement of the AEA-E21 telescopic ladder appliance due to accident and monitoring of the informative report.
  - Reception and putting into service of a vehicle for transporting diesel.
  - Acquisition of a workshop van for mobile repairs.
  - Acquisition of a trailer for the transportation of sepiolite and a trailer for the transportation of the BRS boat.
  - Adjudication and constructive monitoring of B41 0 large-fire foam pump acquired through an agreement with the APB (Barcelona Port Authority).

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### Vehicle investment in 2018

	Budget for 2018	Total budget
Two 20-m telescopic ladder appliances	350.000 €	1.299.540 €
One pathology vehicle	130.000 €	201.289 €
One diesel transport vehicle	32.000 €	64.000 €
Two ambulances	253.727 €	300.000 €
One van for mobile workshop	21.000 €	
One trailer for transporting sepiolite	1.181 €	
One trailer for transporting BR5	1.625 €	

### Investment in equipment and materials

This has been a decisive year for pressing ahead with the project for new tablets, which will carry out routing functions during interventions and also be used as an invehicle computer to enable online or local-network consultations.

The acquisition of other equipment included:

- 4 multi-gas detectors.
- Various pieces of equipment for the group of divers.





- The acquisition of various stretchers for transporting injured people; stretcher for confined spaces, rescue baskets and wheeled stretchers for transporting obese bariatric people.
  - Production of the tender for 1 2 m<sup>3</sup> of foam for the APB.
  - Acquisition of radiological measuring equipment; pole, radiometer and probe.
  - Energy dissipaters for the lever blocks.
  - Cases for managing incidents in situ (SITAC).
  - Acquisition of a rescue mattress.
- Regarding personal protection equipment (PPE), during the year the tender which will
- involve the supply of most of the clothing and PPE equipment has been organised.
  - Until it is operational, in 2020, various acquisitions have been made, including the following:
    - Acquisition of 82 pairs of intervention boots and 200 pairs of station shoes.
    - Acquisition of 1 70 pairs of fire gloves with improved features as compared to the present ones, especially for cleaning and disinfection procedures.
    - Acquisition of 228 polar jackets, 1 68 pairs of office trousers and 37 dress uniforms.
  - Extraordinary acquisition of 508 pairs of station trousers.



### 3.2 Procedures Unit

The Procedures Unit drafts the protocols adapted to the city's risk scenarios, taking into account the incorporation of new equipment and technologies and by coordinating deployment through training and acquisition of the necessary materials.

The Procedures Unit continued to draft new procedures while revising and amending the existing ones.

These revisions are conditioned by the operational needs of response personnel, training needs that require the creation of new training materials that are compatible with the operational work systems, changes in equipment and response vehicles and other technological innovations that require the ongoing revision of work methods.

In line with previous years, the unit has three strategic goals in terms of procedures:

- New procedures in multimedia flash and summary tab formats.
- Multimedia procedures approved in previous years and the incorporation of explanatory videos into the document database.
- Introducing manoeuvre formats into procedures for operational prevention practices carried out at fire stations.

A significant new development, as a result of the work carried out during the previous year, is that the Procedures Unit obtained the ISO 9001 certification in 2018.



**ISO 9001 standard implementation project**

On 25 June, the external audit by AENOR was carried out. As a result of this, the ISO 9001 -201 5 standard quality management system certificate was obtained for management activities concerning the drafting of SPEIS operational procedures and the management of related training procedures.

This certification involved the definition of work processes, quality standards, indicators and strategic and improvement objectives, as well as management procedures, and provided a similar methodology and document database for all the procedures.

Quality control mechanisms were used throughout the year, including surveys of the whole workforce to evaluate the implementation of the various procedures (six

months after each one came into force) and to measure the level of satisfaction with the Procedures Unit (every two years). A quality-control system has also been introduced for both the teams drafting the procedures and the training given to the staff.

This work involved defining the quality policy and modifying the application of reports with the aim of being able to compile incidents and contributions based on the knowledge that makes it possible to establish areas for improvement in management.



### Procedures approved in 2018

#### “Ventilation techniques” PROCOP 4.10

This procedure came into force on 12 January 2018, after all the personnel received training in ventilation techniques in 2017. It includes methodology, manoeuvres and a list of suitable equipment for the various types of situations.

On 21 May 2018, a modification to the procedure was approved, caused by the inclusion of new vehicles, new equipment and their distribution.

#### “Communications during interventions” PROCOP 4.11

This has been in force since 20 January 2018. It adapts communications to the control sections described in SISCO (Incident Command System), it describes the new code system for vehicles and personnel, redefines a new numbering system for communication channels and establishes the channel that must be used during interventions, including the double walkie-talkie for commanding officers.

#### “Attempted suicide jump” PROCOP 2.02

Once training had been given to all personnel, this procedure came into force on 15 January 2018. It establishes the criteria and guidelines for intervening in services concerning attempted suicides in places which involve a risk of falling from a height.

#### “Procedures framework document” PROCOP 0.01

Procedural modification dated 21 May 2018, which includes the incorporation of the type of format used for procedures (PDF, summary file and flash multimedia), the current numeration and classification of procedures is updated and definitions are adapted to the current structure.

#### “Operational information procedure” PROCOP 4.05

Modification to the procedure dated 21 May 2018, for the inclusion of radio-channel compatibility established in PROCOP 4.1.1, concerning communications during interventions and in Point 4.2, which indicates that on arrival at the place of service, the commanding officer must inform the CGE about the situation, providing the information required to identify the following concepts: “I’m here, I see, I foresee, I am doing, and I request”. As before, the updating of obsolete terminology.

#### “Forest fires” PROCOP 1.04

Modification of the procedure, dated 21 May 2018, for the inclusion of new call-out convoys originating from the incorporation of new vehicles, personnel changes and the rationalisation of resources.

### Results for staff satisfaction surveys

	All personnel	Officers
Procedures Unit	7,55	7,63
Chemical-risk procedure’s implementation	7,55	7,63
Training for the suicide-attempt procedure	7,13	–
Intervention-communications procedure’s implementation	7,00	–



### New working groups

Several working groups were created for various procedures at the drafting stage, following the circuit provided for under the ISO 9001 standard. The composition of the following groups was approved in 2018:

- Working procedure in collapsed structures
- Fire procedure in recreational ports

### Situation with other procedures

#### Residential fires:

Procedure that integrates three different perspectives for responses: objectives, sectors and tasks. It includes an information leaflet for those affected and proposes guidelines for the arrival of vehicles at the service location. In 2018, tests were carried out with the new methodology, so that a procedure verified by the organisation could

be implemented. The tests were delayed excessively and generated some problems when personnel from different stations intervened. Its approval is scheduled for 2019.

#### Fires in underground car parks:

Procedure with finalised document. Approval of the residential fire procedure will determine when it comes into force, as it will incorporate the same actions and the same order of outgoing vehicles.

#### Location of vehicles during interventions (General Operations Area):

Multi-force working group created by the General Operations Area (AGO) to regulate responses and organise the occupation of public highways with vehicles from the various forces, irrespective of their order of arrival at the service location. Its approval is also linked to the approval of the residential-fire procedure.



In addition to the above, work is also being carried out on other procedures, which are currently at different stages of development:

- Multiple-victim accidents
- Fires at recreational ports
- Water and foam installations
- Responses in aquatic environments
- Responses with biological risk
- Responses with radiation risk
- Medical care interventions at stations
- Responses outside municipal boundaries
- Responses in confined spaces
- Responses at collapsed structures
- Gas leaks

From June onwards, due to the needs of the service, the two Watch Officers allocated to the Procedures Unit had to join other departments, which led to a deceleration in procedure management. In October, a new Watch Officer was appointed, and an increase in results is now expected.

#### **The Unit's other work**

##### **Sharepoint**

In 2018, the new document database came online through the Sharepoint IT application, although two aspects scheduled for the first phase of the project have yet to be completed. These are being able to

consult the documents from outside the municipal IT network, and the inclusion of multi-media materials in the document database. For the moment, not having been able to externalise access makes it impossible to integrate the calendar and the blog into the same tool.

Sharepoint's coming into operation has meant a major improvement in the functionality of DOCU, the document database created in 2017 which has made it possible to bring together all of the service's information.

##### **Training**

At the end of the year, work was being done to integrate the Procedures Unit with the Training Department, something that has made it necessary to review the circuits for generating procedures. This merger makes it possible to integrate the two sections so that continual training materials constitute the main part of the procedures, drafted by the trainers themselves, and at the same time, breaks down the most characteristic manoeuvres in this field. This facilitates the formation of procedures and enables the design of a schedule for station practice sessions linked to the manoeuvres.

This design will be developed throughout 2019.



### 3.3 Training Area

The planning process for 2018 began in September 2017, following the line set out in the 2016-2020 Training Plan, detecting the training needs of operational staff through meetings with the commanding officers responsible for the various fire stations.

Furthermore, the impact of previous initiatives was analysed, detecting aspects to be worked on and improved.

At the same time, the various SPEIS units also presented their specific training needs (either due to the acquisition of new tools and vehicles or due to the

application of new training procedures). A study was also carried out on accident rates for operational staff.

#### Training initiatives

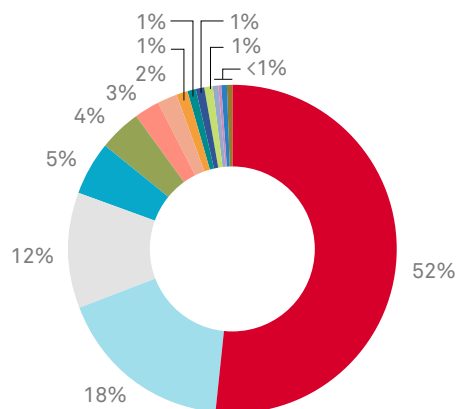
In 2018, 52 training activities were carried out with a total of 234 courses, involving 2,856 hours of training and 3,137 participants. As a whole, the total impact of all the training activities on SPEIS staff was 36,332 hours of training for the participants.

The breakdown of SPEIS training, covering all subject areas, is as follows:

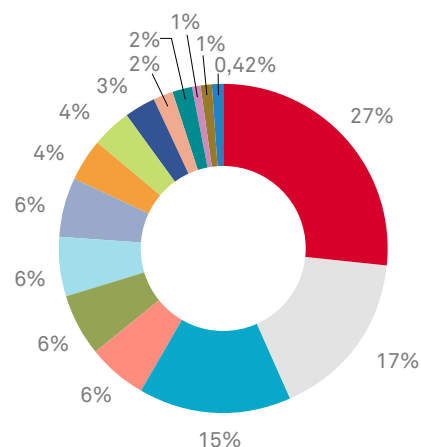
AREA	Actions	Participants	Courses	Hours
Command	7	94	12	435
Construction	2	540	27	486
Emergencies	1	7	1	155
Extraction	1	3	1	20
Extinguishing	2	15	2	53
Woodland	6	635	41	176
Fires	1	22	2	96
Facilities	1	24	1	12
Rescue	2	25	3	126
Chemical risk	3	53	4	48
Seismic risk	1	4	1	16
Medical services	7	83	10	172
Divers	5	30	6	179
Vehicles	11	1,577	121	780
Other	2	25	2	102
<b>TOTAL</b>	<b>52</b>	<b>3,137</b>	<b>234</b>	<b>2,856</b>

The distribution by subject area was as follows:

**N° of courses**



**Hours**



**Ongoing training (compulsory)**

**Course on fire extinction vehicles, installations and high pressure**

The aim of this course was to provide the students with the knowledge needed to manage the service’s fire engines: use and characteristics, water and foam installations, their characteristics, determination of the most appropriate installations for each case and high pressure. This training initiative included a series of drills that were made possible by the collaboration of various companies in Zona Franca.

**Course on construction pathologies and interventions in collapsed structures**

The aim of this course was to provide the knowledge needed for responses in collapsed buildings and structures, and to improve organisation and intervention in

the case of a possible collapsed structure with victims. This course used geophones and cameras as technological devices that improve the effectiveness of rescue work.

The course was carried out at the Catalan Institute of Public Safety (ISPC). The field work, the workshops, the practical sessions and drills were carried out in the rubble enclosure built by the SPEIS construction-pathology trainers. This construction received a distinction from the ISPC.

**Training at fire stations (when on call)**

Various short training initiatives on specific subjects (2-3 hours long) were carried out, mainly in response to the acquisition of new vehicles and tools. Training was also provided on procedures for suicide-attempt situations.



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The courses carried out were as follows:

- New air and ventilation van (AVV)
- Forestry training for the Summer 2018 pre-campaign
- New small telescopic ladder appliances (AEA - E-23 and E-24) – Basic
- New small telescopic ladder appliances (AEA - E-23 and E-24) – Advanced
- J-23 vehicle for shoring operations (trench shoring and construction pathologies)
- Forest-fire extinction kit (VIR) (M14 i M15 vehicles) SA and VH stations
- J-11 vehicle, fuel transport
- New ambulances S-28 and S-29
- Handling of E-21 B telescopic ladder chassis
- ERA AirMaxx Extreme SLS
- Communication and suicide-attempt procedures

- Updating healthcare procedures
- Advanced technical assistance Opening doors
- Actions in cisterns and storage tanks for hazardous materials
- Responses to fires in ships

#### **Divers**

- Underwater rescue (various levels)
- Navigation licences
- Equipment maintenance
- Rescue Diving Operations for professional diving organisation

#### **Medical services**

- Airway management
- Basic life support (BLS) and Automated External Defibrillators (AED)
- BLS-AED instructors

### **Voluntary training**

Regarding voluntary training, work has been carried out in various areas, including healthcare, instruments, hazardous materials and fires in ships. The main courses carried out included:



**Financial resources**

The financial resources for implementing the SPEIS training plan were as follows:

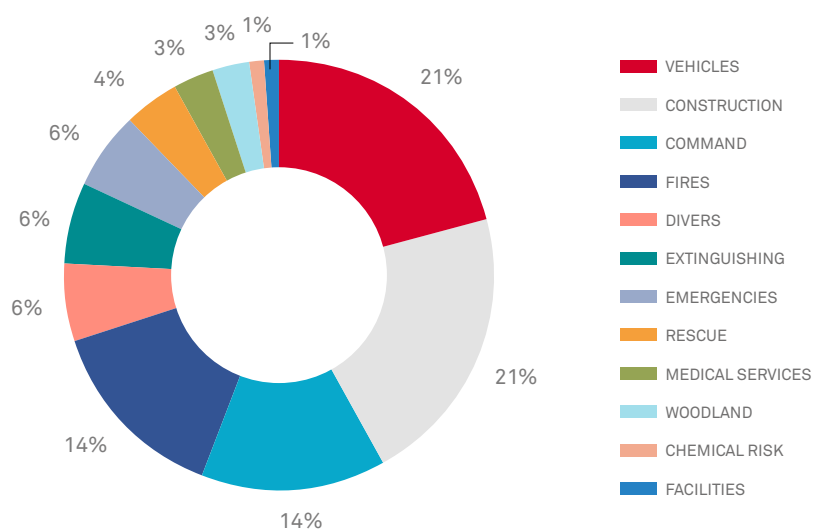
AREA	Actions	Nº of courses	Hours/course	total cost (€)	GSiP* (€)	APB** (€)
Command	7	12	1	55.895,08	42.388,64	13.506,44
Construction	2	27	18	83.664,00	83.664,00	0,00
Emergencies	1	1	155	24.180,00	24.180,00	0,00
Extraction	1	1	20	1.200,00	1.200,00	0,00
Extinguishing	2	2	18	24.849,71	0,00	24.849,71
Forestal	6	41	2	12.617,28	12.617,28	0,00
Woodland	1	2	48	54.073,46	0,00	54.073,46
Facilities	1	1	12	3.600,00	3.600,00	0,00
Rescue	2	3	30	18.023,00	18.023,00	0,00
Chemical risk	3	4	3	3.126,84	3.126,84	0,00
Seismic risk	1	1	16	100,00	100,00	0,00
Medical services	7	10	6	10.984,32	10.984,32	0,00
Divers	5	6	6	23.889,16	4.142,44	19.746,72
Vehicles	11	121	1	81.874,00	81.874,00	0,00
Other	2	2	3	198,18	198,18	0,00
<b>Total</b>	<b>52</b>	<b>234</b>		<b>398.275,03</b>	<b>286.098,70</b>	<b>112.176,33</b>

\* Manager's Office for Safety and Prevention (Gerència de Seguretat i Prevenció)

\*\* Barcelona Port Authority (Autoritat Portuària de Barcelona)

Financial resources for implementing training were divided between the various areas as follows:

**Total cost**



# 4. Responses

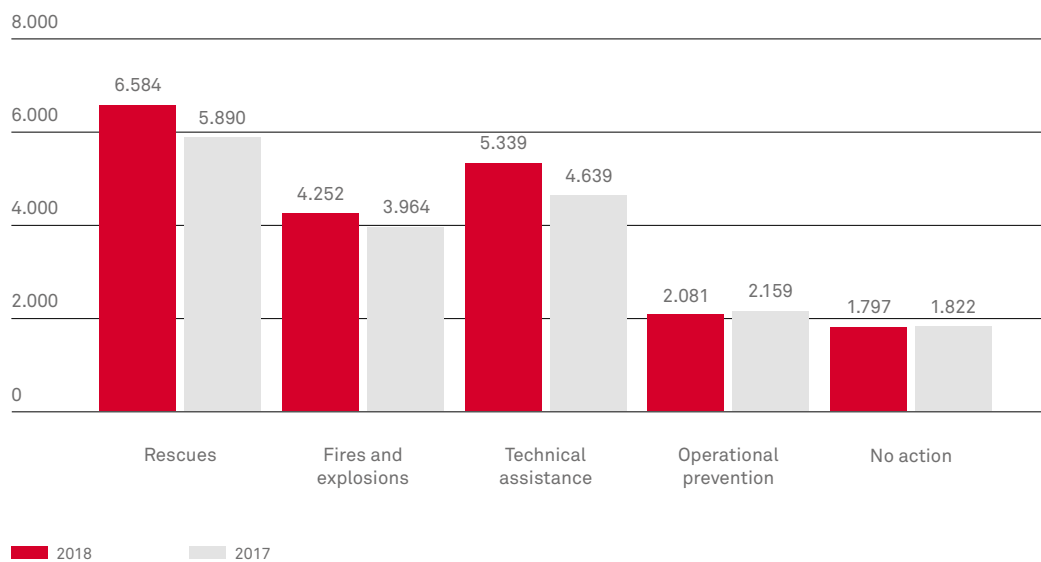
- 4.1 Rescues
- 4.2 Extinguishing fires and explosions
- 4.3 Technical assistance
- 4.4 Operational prevention
- 4.5 Notable services



The Barcelona Fire Brigade carried out a total of 20,053 interventions in 2018. This figure represents an increase of 1,579 services compared to the 18,474 performed in 2017, a 8.55% increase.

The response service figures were as follows:

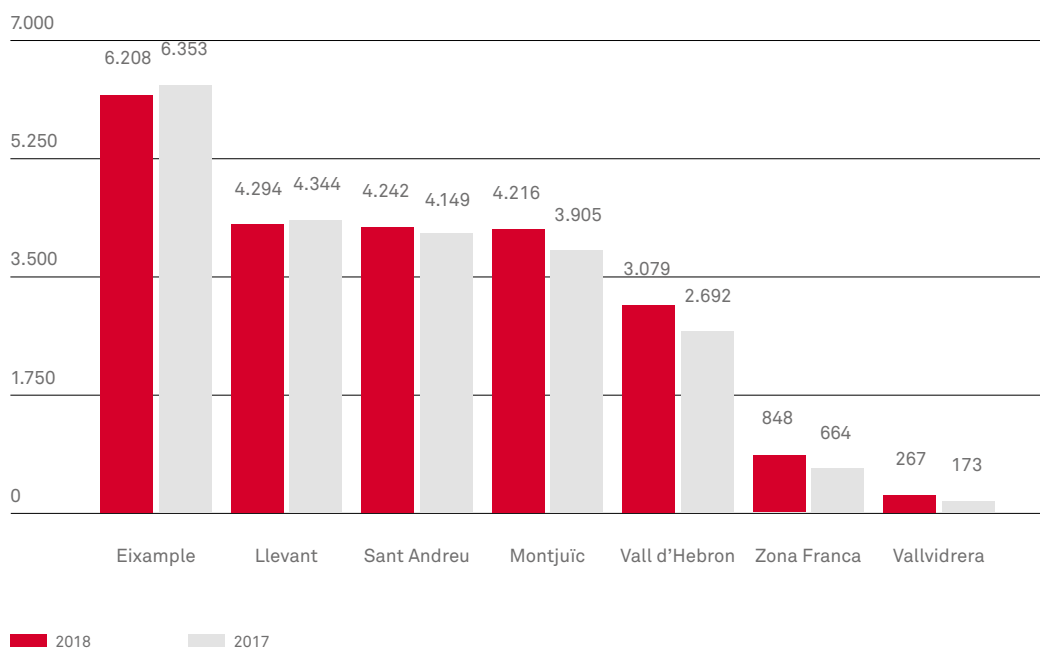
**Intervention services**



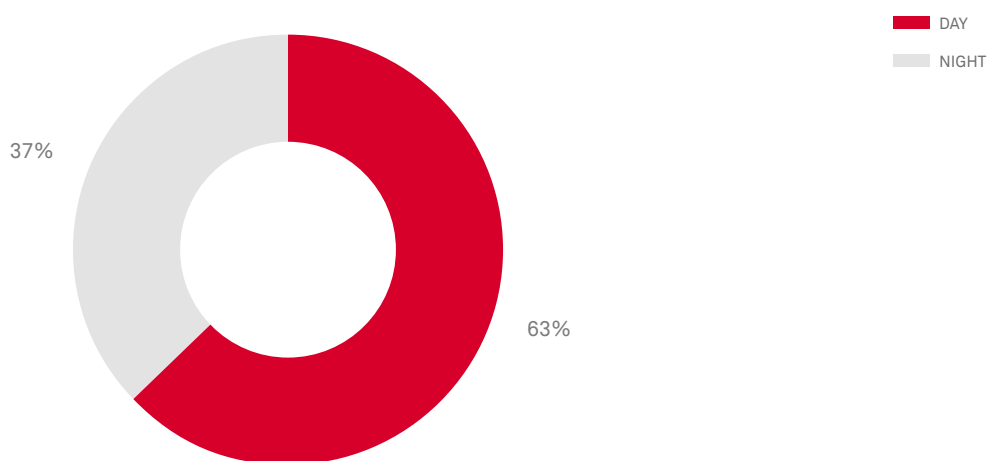
38

	Day		Night		TOTAL 2018		TOTAL 2017	
L'Eixample	3.767	25,71%	2.441	28,71%	<b>6.208</b>	26,81%	<b>6.353</b>	28,51%
Llevant	2.594	17,70%	1.700	20,00%	<b>4.294</b>	18,55%	<b>4.344</b>	19,50%
Sant Andreu	2.649	18,08%	1.593	18,74%	<b>4.242</b>	18,32%	<b>4.149</b>	18,62%
Montjuïc	2.810	19,18%	1.406	16,54%	<b>4.216</b>	18,21%	<b>3.905</b>	17,53%
Vall d'Hebron	1.995	13,62%	1.084	12,75%	<b>3.079</b>	13,30%	<b>2.692</b>	12,08%
Zona Franca	590	4,03%	258	3,03%	<b>848</b>	3,66%	<b>664</b>	2,98%
Vallvidrera	247	1,69%	20	0,24%	<b>267</b>	1,15%	<b>173</b>	0,78%
	<b>14.652</b>		<b>8.502</b>		<b>23.154</b>		<b>22.280</b>	

### Number of call-outs per station



### Time distribution of the call-outs





4.1 Rescues

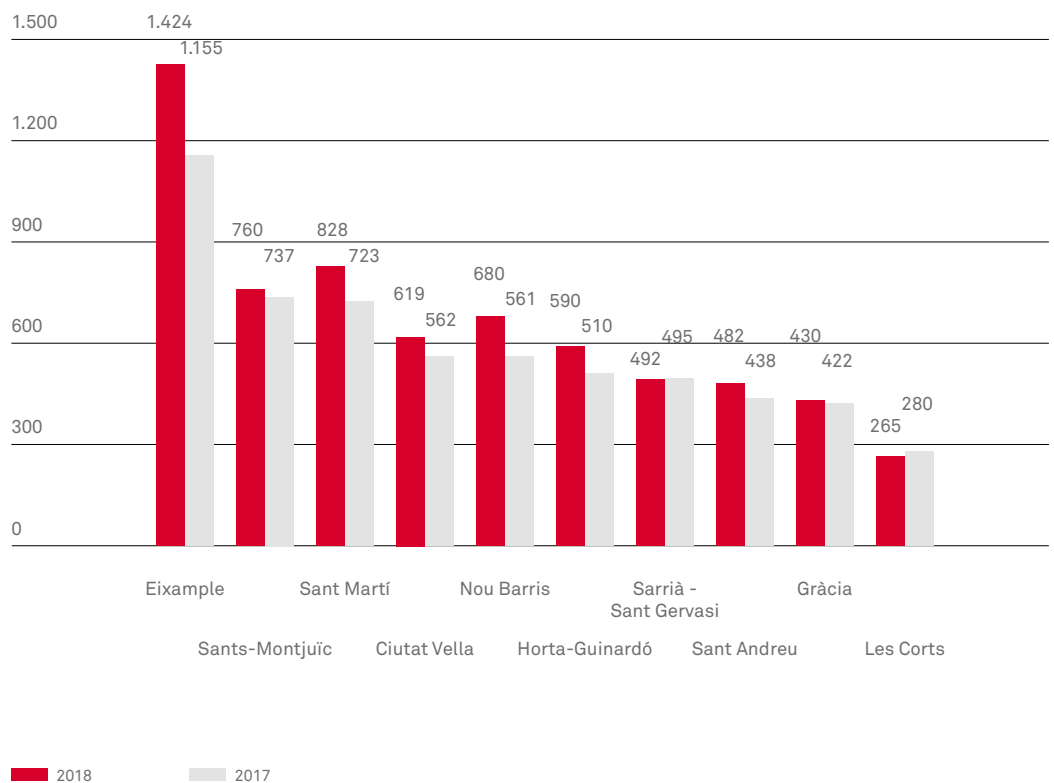
There were 6,570 rescue operations in 2018 (not including fourteen outside the municipal boundaries), in other words 694 more interventions than in the previous year, which represents 32.83% of the total number of operations. There were 5,890 rescue operations in 2017, representing 31.88% of the total. Out of the total number of rescues, 337 were non-emergencies.

62.03% of the total were to attend to or assist individuals (4,084 responses). 25.35% were to rescue people in lifts (1,669 responses). The other rescue operations included 494 false alarms, 332 for rescuing or capturing live animals and six were to recover dead bodies.

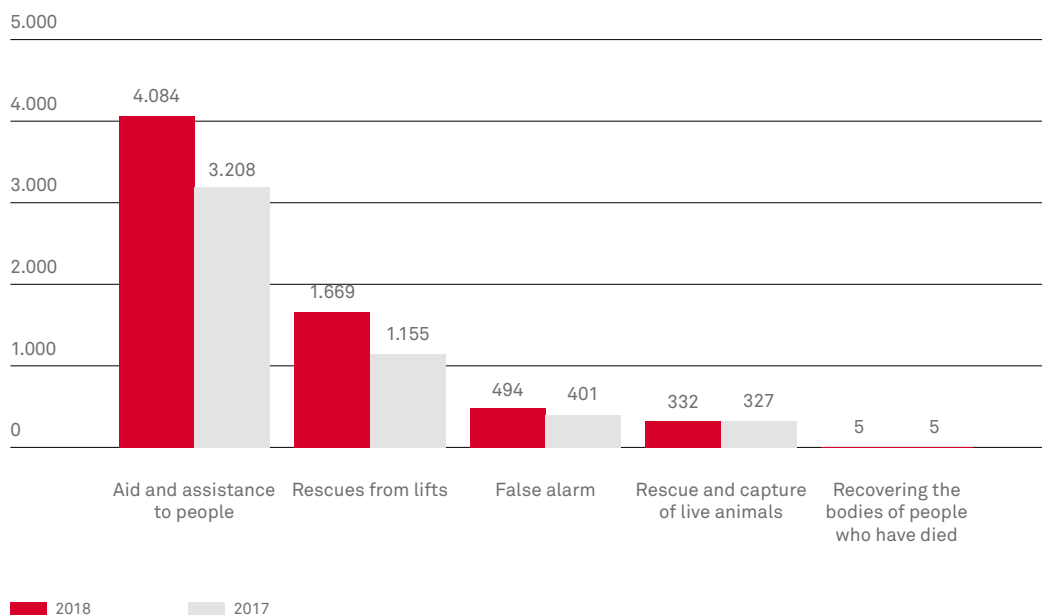
Medical assistance was given in 3,306 occasions and the Fire Brigade's medical teams took 723 people to hospital. Medical Emergency System (SEM) staff took all the other cases.

As regards the weekly spread of rescue operations, Thursdays are the least busy day (13.26%) while Saturdays are the busiest (15.55%). In fact, weekend rescues (Fridays to Sundays) continue to increase compared to the rest of the week.

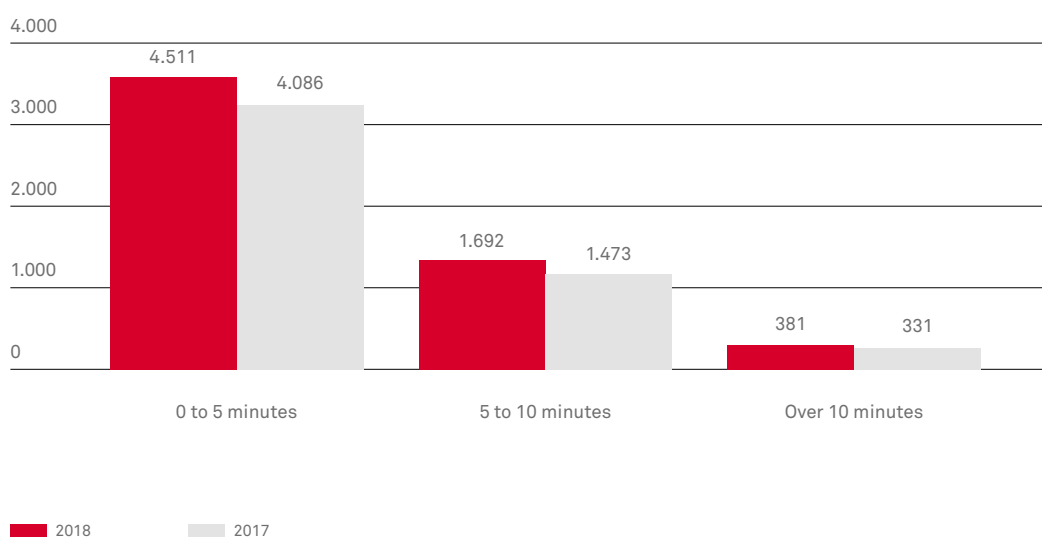
Rescue operations per district



### Type of rescue



### Urgent rescue-operation response times



The figures show that the charter’s pledged target of service arrivals in under 10 minutes for 90% of emergencies was exceeded by 4.2 percentage points, as the actual figure was 94.21%. (In 2017 it was 94.38%.) Services arrived in under 5 minutes in 68.51% of rescue operations within Bar-

celona’s municipal boundaries (69.37% in 2017).

Day-time rescue operations accounted for 61.74% of the total, while 38.26% were carried out at night, compared to 61.24% and 38.76%, respectively, in 2017.

**Rescue operation time bands**

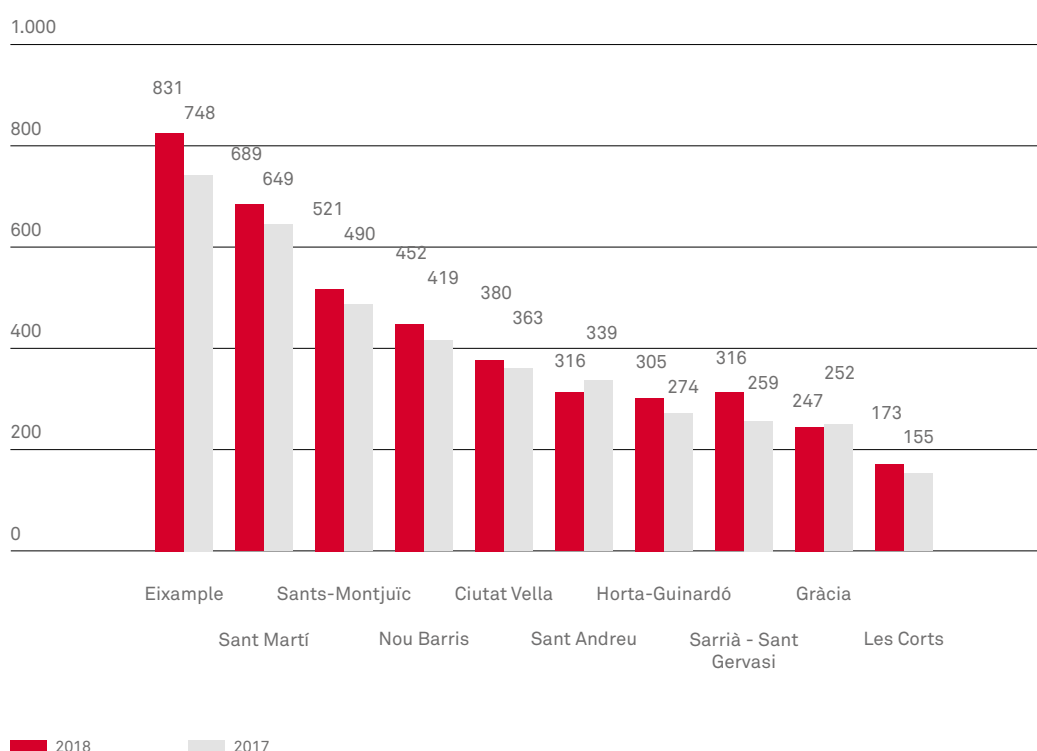


## 4.2 Extinguishing fires and explosions

There were 4,252 responses to fires and explosions in 2018, a figure corresponding to 21.20% of all services. In absolute terms, there were 288 more services of this type in

2018 than in the previous year. Excluding the 22 services performed outside municipal boundaries, the responses were distributed as follows:

### Number of fire and explosion operations

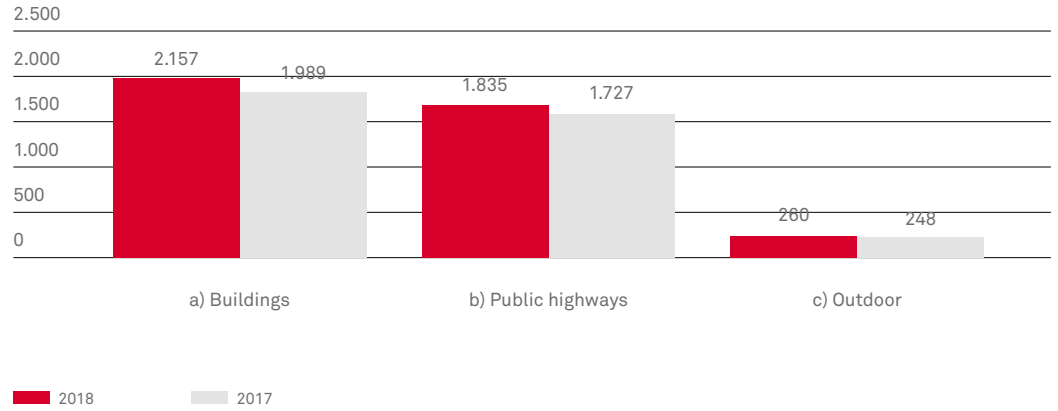


Of these, there has been an increase in fires in buildings as well as those occurring in public highways, while those in forest areas have decreased. 22 of these responses were located outside municipal boundaries.

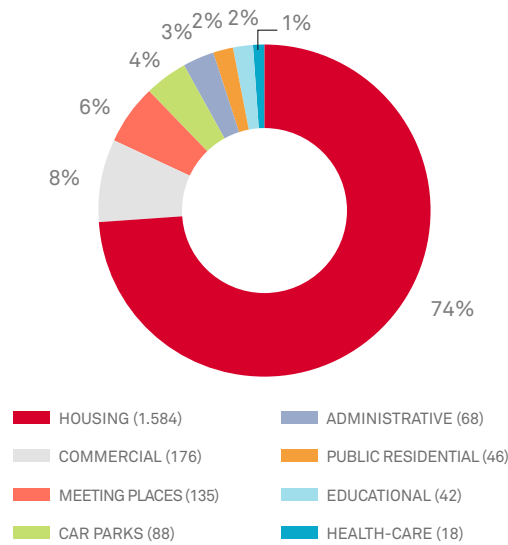
Interventions were required for 49 forest fires, compared to 62 in 2017. The 21% drop was the result of more favourable weather conditions. This type of intervention represented 1.15% of fire-fighting operations.

Out of a total of 4,252 fire responses, 1,835 were public highways, a higher figure than the 1,727 recorded in 2017. In addition, responses included putting out 2,157 fires in buildings (1,584 of which started in homes), representing 37.25% of fire-related interventions.

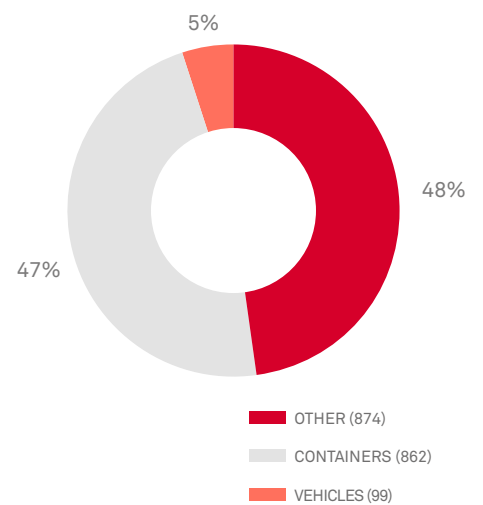
**Location of fires and explosions**



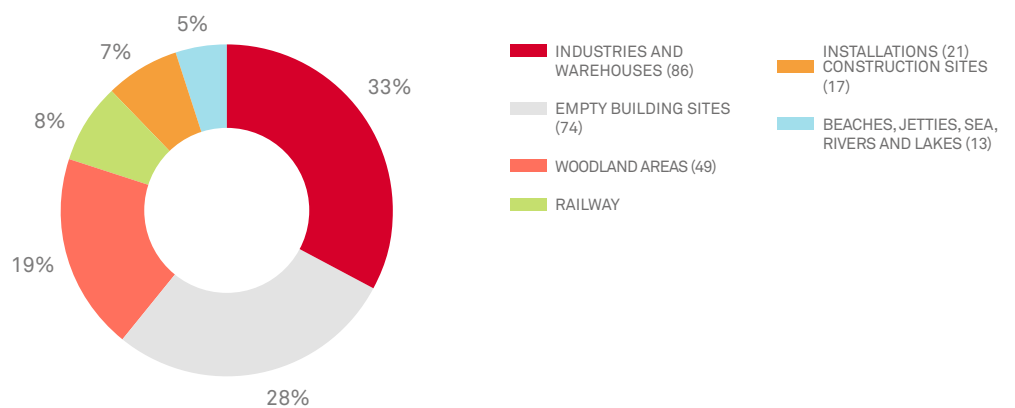
**a) Buildings**



**b) Public highways**



**c) Outdoor**



As regards days of the week, Mondays were the quietest (with 12.54%) and Saturdays the busiest (with 16.37%).

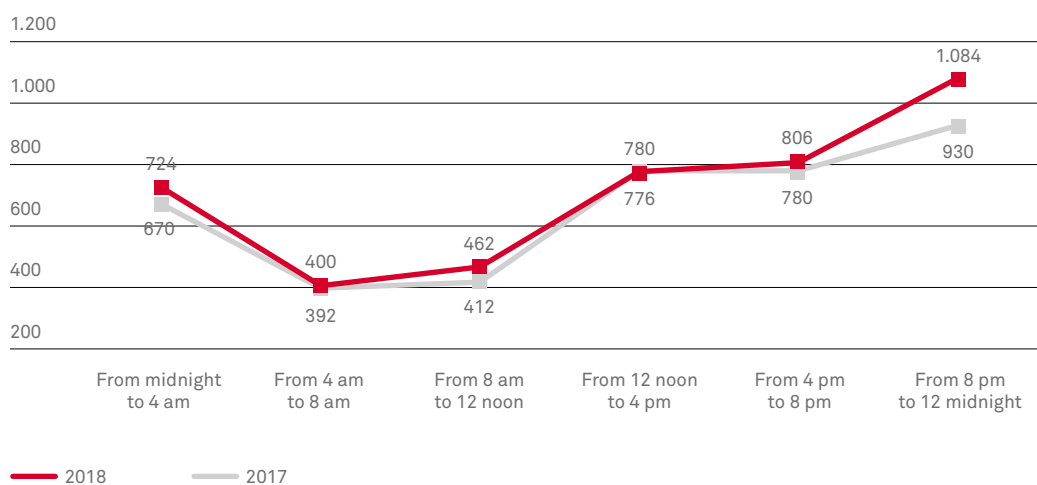
And 48.07% of fire-related services were performed during the day while 51.93% were carried out at night (between 8 pm and 8 am).

With regard to fire-operation response times, the Service Charter's pledged target (to arrive in under 10 minutes in 90% of emergency cases) was exceeded by over seven percent, as the actual

figure was 97.37%, compared to 96.75% in 2017. In 76.46% of emergency fire call-outs within the Barcelona municipal area, the response time was under 5 minutes (75.33% in 2017).

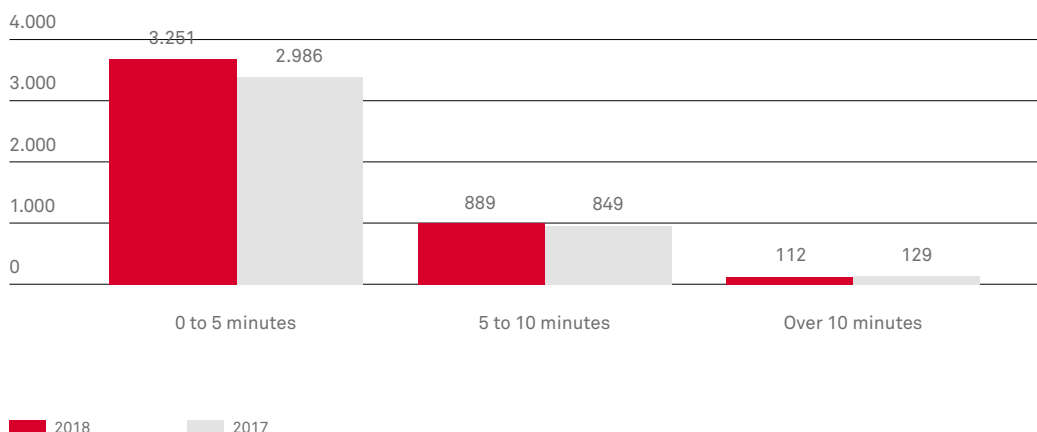
The average response time for emergencies (fires/explosions and emergency rescues) was 4 minutes and 2 seconds, compared to 3 minutes and 59 seconds in 2017.

### Fire and explosion time bands



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### Response times for fire and explosion interventions

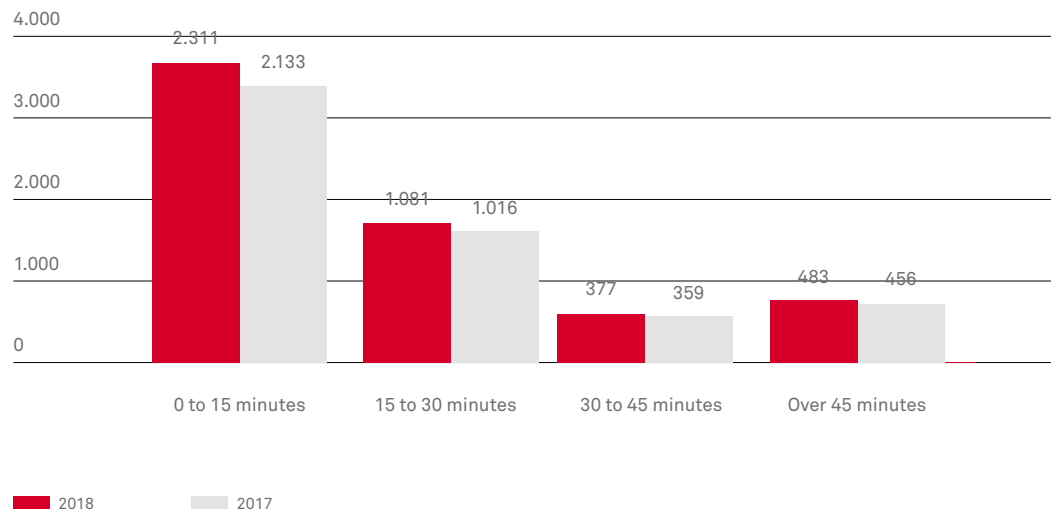






Finally, the extinction times were distributed as follows:

**Response times for fire and explosion interventions**



### 4.3 Technical assistance

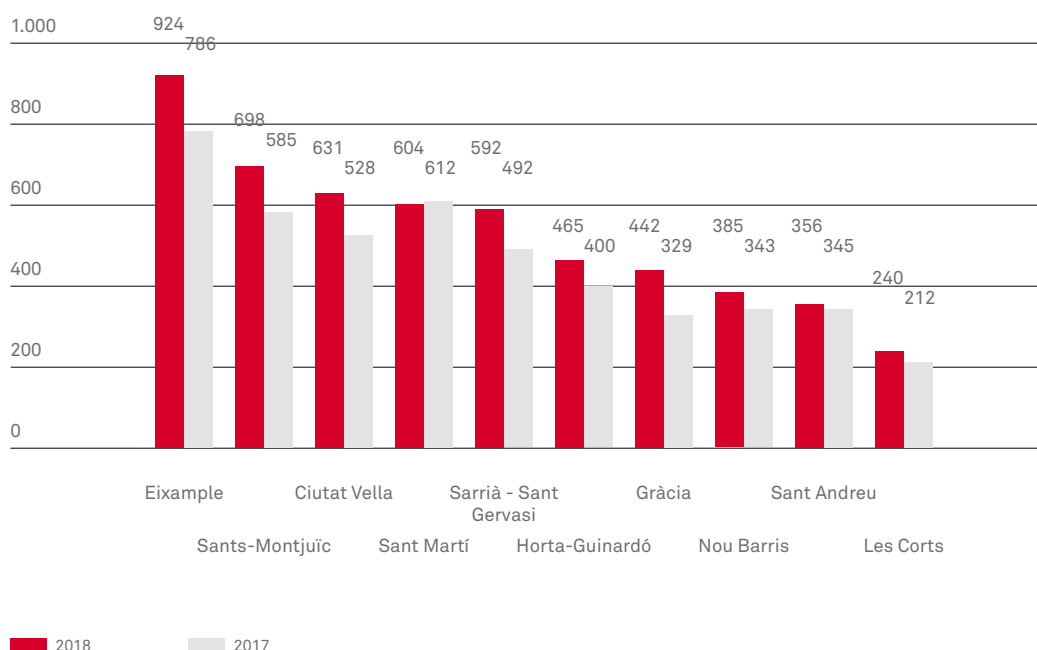
Fire fighters perform a large number of highly varied services; these are “none-emergency” help services for the public which are classed as technical assistance.

2018 (compared to 4,639 in 2017), representing 26.62% of all responses. Excluding the eight services performed outside municipal boundaries, the responses were distributed as follows:

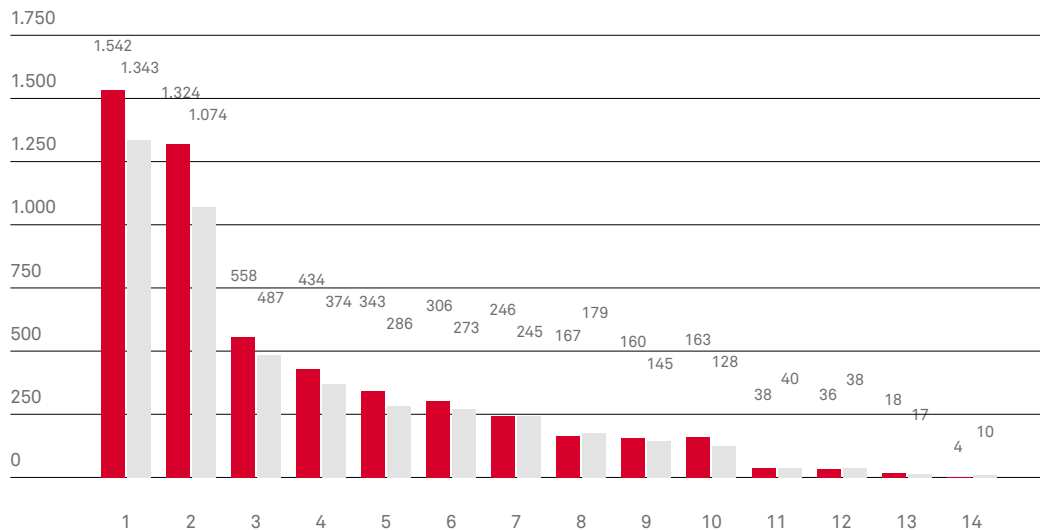
A total of 5,339 operational technical assistance services were performed in



#### Number of technical assistance operations



**Types of technical assistance**

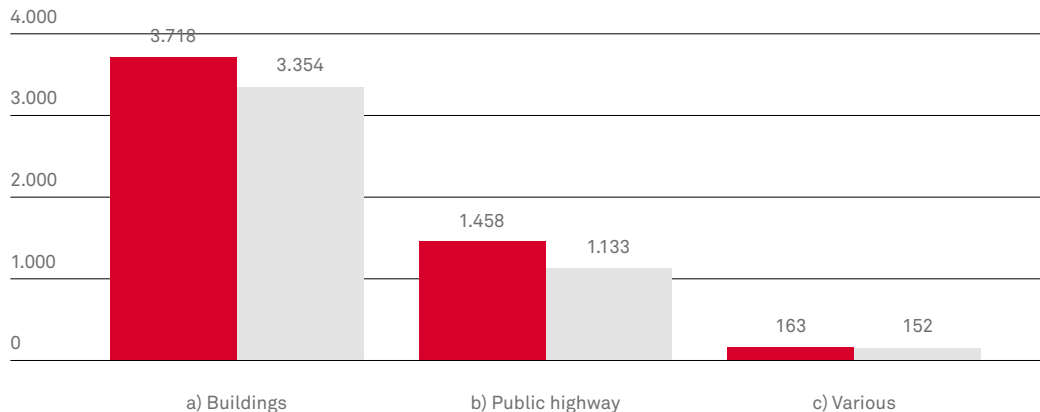


- 1 Heavy rain and water leakage
- 2 Strengthening, removing objects and trees
- 3 Building inspections and checks
- 4 Builder sanitation
- 5 False alarm
- 6 Gas leaks
- 7 Inspecting and checking products
- 8 Collaboration with institutions
- 9 Electricity supply
- 10 Disconnecting alarms
- 11 Liquid spillages
- 12 Removal of vehicles
- 13 Shoring up constructions
- 14 Road cleaning

■ 2018    ■ 2017

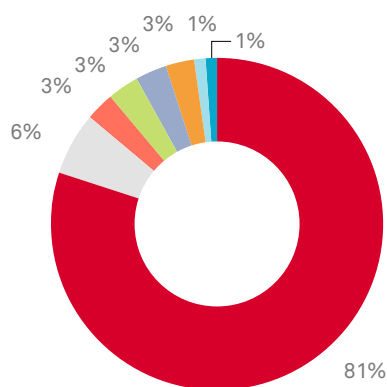
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**Location of technical assistance**

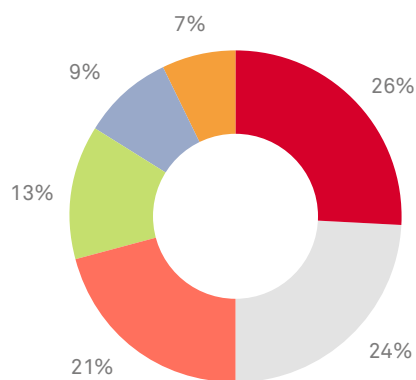


■ 2018    ■ 2017

### Buildings



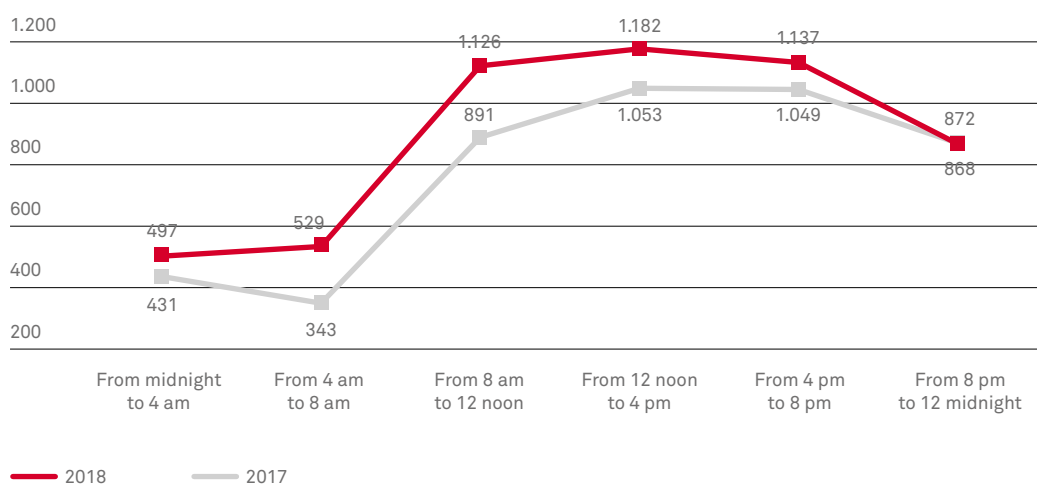
### Various



- HOUSING (3.021)
- COMMERCIAL (211)
- MEETING PLACES (125)
- CAR PARKS (112)
- ADMINISTRATIVE (94)
- EDUCATIONAL (92)
- PUBLIC RESIDENTIAL (47)
- HEALTH-CARE (42)
- EMPTY BUILDING SITES (42)
- WOODLAND AREAS (39)
- INDUSTRIES AND WAREHOUSES (35)
- CONSTRUCTION SITES (21)
- BEACHES, JETTIES, SEA, RIVERS AND LAKES (14)
- RAILWAY INSTALLATIONS (12)

64.53% of the technical assistance operations occurred during the day and 35.47% at night.

### Times of technical assistance



Lastly, we should mention the 150 school visits (84 in 2017) and two open days carried out as part of the 48h Open House BCN and the Esquerra de l'Eixample's big annual festival, or festa major (also carried

out on two occasions in 2017). There were also 56 visits to the Eixample, Llevant and Montjuïc fire stations, with a total of nearly 1,500 visitors.

#### 4.4 Operational prevention

Under the generic name of “operational prevention”, SPEIS includes every initiative that enables a better understanding of intervention environments, including roads and access points, as well as buildings and special features. Environmental and activity monitoring services are also counted as preventive measures. In both cases, these activities lead to greater effectiveness and safety.

There were 2,081 environmental knowledge and monitoring operations carried out in 2018, representing 10.38% of the total services. In absolute terms, that means 78 fewer environmental knowledge and monitoring services were carried out than in the previous year. Of these operations and monitoring activities, 90.82% were performed during the day and 9.18% at night.

#### 4.5 Notable services

##### Carbon monoxide poisoning

On **1 January**, firefighters were called to Carrer del **Comte Borrell** to rescue two people suffering from CO (carbon monoxide) poisoning, due to what seemed to be a faulty gas heater. The affected people were taken to the hyperbaric chamber in Hospital Moisès Broggi.

##### Windy January

January 2018 was characterised by major wind episodes, including those of **3 and 17 January**, during which 45 and 44 services were carried out respectively, all linked to the stormy weather.

##### Fire in a flat on Reina Amàlia

A major fire started in a flat in **Carrer Reina Amàlia** on **4 January**, specifically in a five-storey building. The flat had load-bearing walls, floors made of wooden beams and ceramic vaults. The flat where the fire started was completely gutted by the fire and some wooden beams were badly damaged. Four other flats and the stairwell were also affected and the fourth-storey floor had to be shored up. A total of eleven people were attended by medical services due to smoke inhalation, and social services had to rehouse some of the building's occupants.

##### Two cleaning vehicles burnt

On **7 January**, firefighters were called to a fire at the premises of a cleaning company on **Avinguda del Litoral**. The premises was a garage for municipal cleaning vehicles, and it was observed that two electric vehicles were burning inside. Other nearby vehicles were also affected by the high temperatures.

##### Cracks in the CUESB building

On **12 January** the Fire Brigade was called, due to the appearance of cracks in the central offices of the **Barcelona Municipal Emergency Centre (CUESB)**, on Carrer de la **Llacuna**. A structural inspection was carried out. The building, with an old structure of pillars and supporting walls and one-way beams, reinforced with metallic beams, presented cracks due to the movement of earth concerning a retaining wall in an adjacent site, where they were building a reinforced retaining wall on land where the water table was at a level approaching zero. In coordination with the facultative management of the construction work, markers and struts were put in place, the earth was partially replaced, the evolution of the situation was monitored in order to guarantee the safety of the executed construction work.





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### Fire in a six-storey car park

On **15 January**, there was fire in a building on Carrer de **Còrsega**, on the second of six underground floors. On arrival at the scene of the fire, the firefighters were told that there was someone still inside. A search was conducted and the fire extinguished. Once it had been ventilated, it was confirmed that there was no one inside. One vehicle was totally destroyed.

### Fire on a bus inside a tunnel

On **18 January**, firefighters were called to a fire on a bus on **Ronda del Litoral**, inside a tunnel. A dense column of smoke was coming out of both mouths of the tunnel in the Vila Olímpica. Communications were sectorised, establishing one sector for extinguishing the fire and another sector for rescuing people. The driver was trapped in the vehicle and had to be evacuated with a rescue hood. He was attended by med-

ical services and taken to Hospital Moisès Broggi suffering from smoke inhalation.

Once the tunnel had been ventilated and checked for safety, TMB and road workers were left to take away the vehicle and make the repairs needed in order to reopen the roadway to traffic..

### Company procedure for a water leak in Gal·la Placídia

On **9 February**, the company procedure was activated, due to a major water leak on a public highway. This leak, next to an electric transformer centre, spewed up earth around the pavement of **Gal·la Placídia** and the roadway of **Travessera de Gràcia**, sweeping stones and earth down Carrer de Neptú. In the end, there was damage to around 10 m<sup>2</sup> of pavement, 60 m<sup>2</sup> of roadway; the transformer was flooded, with a consequent short circuit; earth, sand and stones were washed down the



drainage system and two trees were seriously damaged.

#### Gas leak at the Port of Barcelona

On **14 February**, firefighters responded to a strong smell of gas in the **Port of Barcelona**, which was verified at the service location. Once various measurements had been taken, a negative result was confirmed. Through the CGE, the firefighters contacted the Enagás installations on Moll de l'Energia to enquire whether there had been any leak of TFT, the odorant added to gas to give it a noticeable smell, and Enagás confirmed that this was so.

#### Partial collapse of buildings on Carrer de l'Arc del Teatre

On **17 February** a service was carried out at a building on **Carrer de l'Arc del Teatre**. A resident had heard a loud noise and seen a lot of dust on the street. It could be seen that the roof of the unoccupied building had partially collapsed taking with it some of the floors underneath, and leaving some structural elements in an unstable condition.

At the request of the Ciutat Vella Technical Services, an inspection of other buildings in the area was carried out on **21 February**, leading to the partial evacuation of some adjacent buildings on the same street and on **Carrer de Montserrat**.

#### Fire at the El Nacional restaurant

On **11 March**, many calls were received from people who had seen smoke coming from inside a city block in Passeig de Gràcia. On arrival at the scene, the incident was located inside the El Nacional restaurant, with access from **Pau Claris and Passeig de Gràcia, 24**. Due to the dense smoke inside the establishment, its customers and workers were being evacuated. The fire started in an extractor hood and then spread to the machinery room. Once the fire had been tackled from three work sectors, the firefighters managed to extinguish it and then ventilate the establishment. After

taking the corresponding measures, the restaurant workers were allowed to re-enter once the intervention had concluded.

#### Fire in a flat on Carrer de València

On **17 March**, firefighters were called to a fire in a flat at Carrer de **València, 630**. On arrival, it was observed that flames were coming out of a second floor window, with a fully developed fire and signs that gas was present, due to the virulence of the flames and the temperature in the room. The residents of neighbouring flats were evacuated and the fire was extinguished. The whole flat was affected. Two people were taken to Hospital Moisès Broggi.

#### Snowstorm

On **20 March** firefighters were called to **20 services** involving the removal of trees and branches that were at risk of falling onto the streets, due to the snow that had fallen the night before, overloading the branches with the extra weight. The vehicles were also prepared so that they could operate in snowy environments.

#### Landslide on Carretera de les Aigües

On **21 March**, as a consequence of the snow and rain that had fallen on previous days, firefighters were alerted about a landslide, which involved the collapse of a retaining wall on a property located on **Carretera de les Aigües**. A detailed inspection of the building showed that the foundations of the buildings had not been damaged and that there were no settling problems. Access to the affected area was restricted due to the gradient and the landslide. There were also some trees in contact with the overhead electric power lines.

#### Evacuation of a building in El Raval

On **22 March**, firefighters were called to **Carrer de la Riereta**, to carry out an inspection. It was in a terraced building, in which the main structures are the load-



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bearing walls and wooden beam floors with ceramic vaults. The section of stairwell between the first and second floors had collapsed, making it impossible to gain access to the upper floors, some of which were occupied by tenants. It was decided to evacuate the building and many of the occupants were lowered down the façade. 21 people were affected, 4 of whom were rehoused by the CUESB.

#### **Fire at the Expo Hotel Barcelona**

On **4 April**, a large column of smoke signalled a fire at the Expo Hotel Barcelona,

located at **Carrer de Mallorca, 1-23**. This was a fire in some cooling towers on the roof of the building. It was caused by a spark from some welding work undertaken by some workers. Fortunately, the fire did not affect the interior of the building.

#### **Evacuation of a building in Carmel**

On **8 April**, the Fire Brigade was called by the Mossos d'Esquadra police force, alerting them to the fact that a resident of a building on **Carrer del Passerell** was carrying out an excavation in the prop-

erty and that this might have caused structural damage. An inspection of the building was carried out and it was confirmed that there was an underground cavity in the building, that earth from the excavation had accumulated inside the flat and that the foundation of the load-bearing wall had suffered damage. The three-storey building was completely evacuated, steps were taken to guarantee the safety of the building and SEM took charge of the ground-floor resident.

#### Fire in some bank offices

On **9 April**, firefighters responded to a fire in an establishment on **Carrer de Mallorca**. This was at the offices of Ibercaja, where a fire had started in one of the meeting rooms and had rapidly spread in the interior, becoming fully developed in two meeting rooms. The rest of the floor was affected by the smoke and high temperatures. The building consisted of the ground floor and eight more storeys, all of which were offices.

#### Fire in a flat in Horta-Guinardó

On **14 April**, firefighters were called to a fire on the first floor of a four-storey residential building in Carrer de **Sales i Ferré**. The fire was extinguished and then the flat was ventilated. The whole flat was affected. Two people were treated and taken to hospital for smoke inhalation along with eight firefighters for hyperthermia, which indicates the intensity of the fire. All the firefighters continued with the service and alerted the CUESB, for the rehousing of two people.

#### Fatality in El Raval

On **27 April**, firefighters intervened in the extinction of a fire in a flat in **Plaça del Pedró**, an eight-storey building. The raging fire, located on the second floor, made it

necessary to confine many of the building's residents. During the extinguishing process, a victim was located on the stairs

above the sixth floor. The victim did not respond to resuscitation procedures and the SEM doctor confirmed the death. In addition to the affected flat, the property suffered damage in communal areas and five other people were attended to, four of whom were then taken to hospital.

#### Fire at the university

On **5 May**, firefighters were called to a fire that started on the top floor of the Barcelona School of Architecture, at **Avinguda Diagonal, 649-651**, where flames were coming out of the window and there were burning plastic elements on the street. In order to extinguish the seventh-floor fire, the building's fixed installations were used.

Once the fire had been extinguished and ventilated, the façade was stabilized and the service concluded, with no significant victims.

#### Traffic accident on Ronda del Litoral

On the morning of **9 May**, there was an accident between two vehicles on **Ronda del Litoral**, near Exit 21, causing a fire in one of them. The fire in the vehicle was extinguished and medical care given to its occupants, who did not need to be extracted. The two cars were damaged by the collision and by the high temperatures. Two of the four people attended were taken to medical centres.

#### Backup for the Generalitat of Catalonia Fire Brigade

The Generalitat Fire Brigade requested backup in order to extinguish a fire in a flat on **Gran via de les Corts Catalanes**, in the municipality of **Sant Adrià de Besòs**, on **9 May**. The fire started on the fourth floor of an eight-storey building. When the Barcelona Fire Brigade arrived, many residents had been confined in the upper flats. The work basically consisted of carrying out an inspection of the flats, attending to people and carrying out the subsequent



ventilation. Eight people were attended to, one of whom was taken to hospital suffering from smoke inhalation.

### Fire in a ship

On **22 May**, firefighters were called to the **Moll de Barcelona**, where a fire had started in a refrigerated lorry on Deck 2 of the Martí y Soler ferry. Foam was applied during the intervention, suffocating the fire, during which time the sprinkler system functioned correctly. The captain ordered the evacuation of the vessel while the extinction work was carried out. The smoke was cleared using the ship's forced air extraction installation. Nine people were attended, but none of them were suffering from serious pathologies.

### Sant Joan Celebrations

The Revetlla de Sant Joan celebrations ended with a total of 1 31 fire responses, most of which occurred between 8 pm and 4 am, coinciding with the revetlla celebrations. The types of service included: 53 fires in rubbish containers, 1 5 scrub fires (on public highways and in woodland areas) and 1 2 fires in trees. None of the services were especially difficult or had serious consequences.

### Forest fires

On 24 June, the day after the Sant Joan Revetlla celebrations, there were three forest fires in Barcelona, the most significant of which was the one that started at





11 :35 pm at Carrer de Santa Rosa, 33, just behind Hospital Sant Joan de Déu. The Fire brigade worked with the Generalitat Fire Brigade to encircle the fire perimeter, which in the end affected 9,000 m<sup>2</sup> of woodland, mostly scrub.

### Fire in a flat in Gràcia

On **6 July**, a private individual called the Fire Brigade to a fire in a flat on **Carrer de la Providència**. The fire was in a diaphanous space which served as a bedroom and a living room, and a major fire was fully developed on arrival, making progress very difficult.

The tenant showed obvious signs of self-harm and was given medical attention in the hot zone, before being taken to a hospital. One flat on the third floor was totally affected, along with one on the fourth floor that was partially affected and those in the floors below, which suffered damage from water leakage, along with the building's utility supplies.

### Fire in a flat in Sant Adrià de Besòs

The Generalitat Fire Brigade requested collaboration in the extinction of a fire that started at 6:55 pm in a flat on **Carrer de Goya, in Sant Adrià de Besòs**; in a nine-storey building. The Fire Brigade took part in the creation of an evaluation unit, the Advanced Command Centre as well as in the extinction, checking the stairwell, inspecting flats and attending to victims. A total of 26 people were attended to and 2 of them were taken to a hospital.

### Industrial fire in Zona Franca

The Port Police requested assistance on **2 August**, at 2:40 pm, having observed a large column of smoke near **Moll de l'Energia**. This was a fire in a company located inside the port which manages waste products from ships. A surface area of around 300 m<sup>2</sup>, containing a variety of waste products stored outside, was burnt

(stored plastic, gas cylinders, wooden pallets, etc.) and it was extinguished using 45 mm lines, CAF (compressed air foam) and the water cannon on E 22. There is no record of affected people.

### Articulated lorry fallen into the sea

On **7 August**, at 8:52 am, the Fire Brigade responded to an incident where an articulated lorry had fallen into the sea from a Transmediterrània ferry at **Moll de Sant Bertran**. Two divers went down to see if the lorry was occupied and to check on the vehicle's cargo. They confirmed that the tractor and the trailer were empty; the vehicle did not have a driver or a cargo. The Port's cleaning company was called upon to take care of the diesel spill from the vehicle's fuel tank, and a company specialising in extracting submerged vehicles was put in place.

### Rain and wind storm

On **9 October**, Barcelona suffered an episode of strong winds and rain. A total of 95 services related to this storm were carried out (draining water, removing elements that presented a risk of falling onto public highways, cutting down branches and trees and dealing with landslides). There was also a response to flooding in the Badal metro station, where service was halted, and another in the Ronda del Litoral, where five vehicles were affected by the accumulation of water.

### Fire in a flat on Carrer d'Aragó

On the morning of **15 October**, firefighters were called to a flat on **Carrer d'Aragó**, where a major fire had started in the mezzanine (entresol) floor, and where the stairwell was full of smoke. There were eight people suffering from smoke inhalation, one of whom subsequently died. During the intervention, four firefighters were injured to varying degrees when a hole opened up in the floor, causing one of them to take sick leave.





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#### Fire in a hotel in the old quarter

A call received on **29 October** at 9:28 am took firefighters to a fire at Carrer de **Pelai, 28**, where maintenance work had caused a fire to spread through a ventilated façade in the interior courtyard of the hotel. All the hotel staff and guests were evacuated. Once the intervention had been carried out, it was confirmed that the fire had been properly extinguished from the upper part of the façade and through recesses in the windows on the buildings various floors. One person suffering from bruising was attended.

#### Accident in the Port involving a ferry and a crane

On **31 October**, a ship collided with a port crane in the APM container terminal at the **Moll del Sud in the Port of Barcelona**. The accident, which happened at 8:03 am and was widely covered by the media, caused the crane to fall onto a stack of containers at the terminal, which contained various chemical products that were mainly inflammable and corrosive. 18 Fire Brigade crews went to the acci-

dent site, with a total of 57 firefighters, who carried out extinction work together, on land with fixed firefighting installations and on the water using four tugs. Containment work was also carried out on product spillage and the water used in the extinction work.

Nobody was hurt in the accident, although SEM attended two people for panic attacks. In addition to personnel from the Barcelona Fire Brigade, nine SEM crews, five Guàrdia Civil, one Policia Nacional, and two Mossos d'Esquadra police patrols, seventeen Port Police patrols and four tugs were also involved in the response.

The following plans were all activated during the process: Barcelona City Council activated the Municipal Action Plan (PAM) for serious accidents in companies with chemical risk, in the alert phase; the Directorate-General for Civil Protection activated the PLASEQCAT in alert phase and the CAMCAT in pre-alert phase; the Port of Barcelona activated the Port Self-Protection Plan in phase 2.





### Rescue of a person through a façade in Sant Martí

On **2 November**, Barcelona Fire Brigade was called by SEM to a rescue intervention on Carrer del **Concili de Trento**, in a building with 18 storeys plus the roof terrace, which did not have any central well in the stairway and only narrow landings. The occupant on the 15th floor was a 48-year-old man who weighed 120 kg, with a possible spinal injury which required taking him to hospital using horizontal immobilisation. After the SAS had been set up on the roof terrace, the ropes were passed through the lift machinery room. Once the victim had been extracted through his flat window, two firefighters descended with the Titan stretcher to keep it away from the façade and prevent any involuntary movement of the stretcher. Once at street level, the SEM ambulance took the patient to Hospital del Mar.

### Fire on a ship at Moll de Marina

On **5 November**, firefighters were called by the security guard at **Moll de Marina** because of a fire in a ship that had docked there. On arrival, there were no visible

flames, but there was a lot of smoke coming out of the ship's main door and a column of smoke was seen coming out of a porthole in a lower cabin on the starboard side.

In parallel to the extinction, in order to prevent a domino effect, one of the operation's priorities was to remove the other ships surrounding the stricken vessel. Together with the Harbour Master and the Barcelona Fire Brigade divers (with B52), two ships on the starboard side and two ships on the port side were moved away. The Harbour Master was also required to put containment barriers in place, in order to avoid any possible pollution of sea water, either from products used during the extinction process or any possible fuel spillage.

Once the fire had been extinguished, a standby crew was kept in place, with the end of the service being declared three hours later.

### Collapse of a retaining wall in Horta

Firefighters were called to **Carrer de Saldes, 25**, on **15 November**, due to the collapse of a retaining wall on a steep



slope. Given the weather conditions, with heavy rain, this may have damaged the foundations of the nearby four-storey building containing five flats.

Once the collapsed retaining wall and its possible consequences had been inspected, it was decided to evacuate the flats. The access points were then sealed off with tape and social services were contacted to provide assistance to the tenants.

#### **Train accident in Zona Franca**

On 3 December, the Barcelona Fire Brigade was called to a collision between a freight train and a lorry at the central roundabout on **Carrer E - Carrer N° 4 in Zona Franca**. On arrival at the accident, the impact of a diesel goods-train locomotive with a lorry transporting non-hazardous materials (paint, alcoholic drinks and LED lighting) was confirmed.

Once the lorry driver had been examined by the head of the medical sector, the electric current had been cut from the street lighting and the lorry's cargo had been stabilised, the operation focused on three aspects: cutting the base of the lamp post with a cutter, the preventative refrigeration of the alcoholic beverages spilled on the roadway and, lastly, freeing the lorry from the locomotive.

Due to the difficulty involved in separating the two vehicles, the train was towed by a second locomotive, in a coordinated operation. The resulting movement managed to separate the vehicles. Once the initial risks had been removed, the insurance company personnel took charge of moving the vehicle.

# 5. People

5.1 Organisational Chart

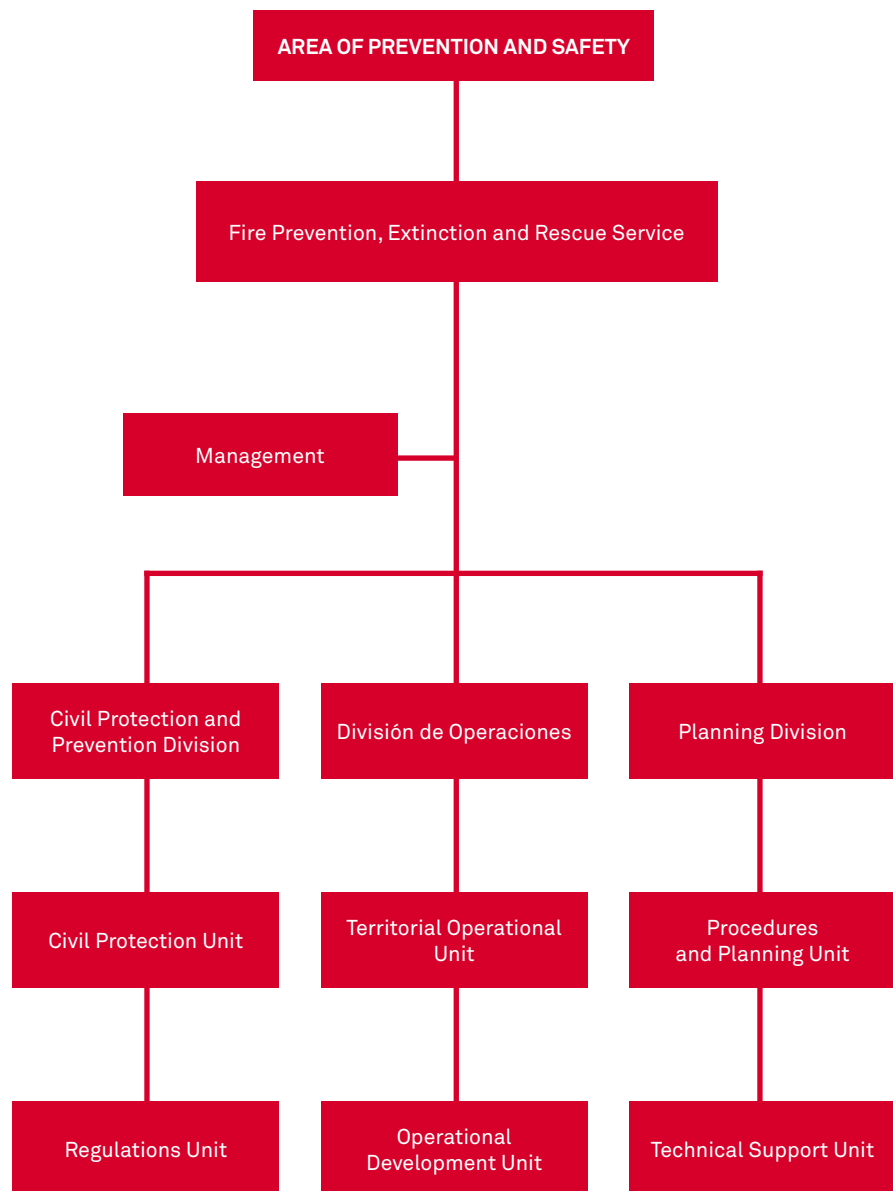
5.2 Breakdown of staff

5.3 Women in the Barcelona Fire Brigade

5.4 Staff management



### 5.1 Organisational Chart



## 5.2 Breakdown of staff

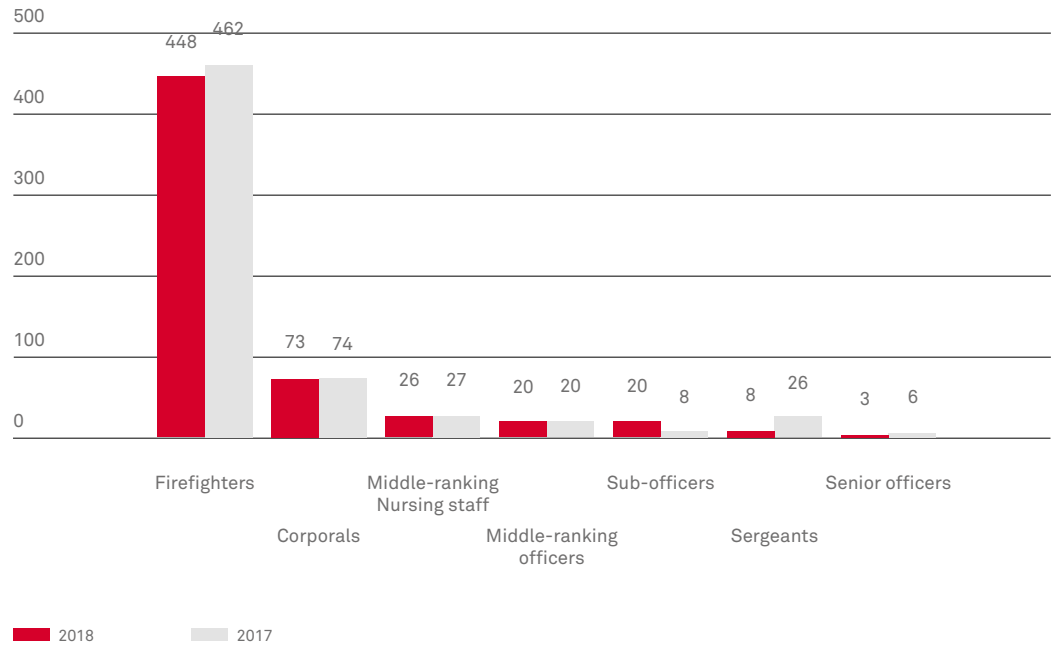
Compared to the previous year, SPEIS had 24 fewer members of staff, due to people retiring.

### Professional categories

a) Operational staff		Men		Women	TOTAL 2018	TOTAL 2017
Senior officers	3	0,5%	0	0%	3	6
Middle-ranking officers	17	2,9%	3	17,6%	20	20
Middle-ranking nursing officers	18	3,1%	8	47,1%	26	27
Sub-officers	20	3,4%	0	0,0%	20	8
Sergeants	8	1,4%	0	0,0%	8	26
Corporals	73	12,6%	0	0,0%	73	74
Firefighters	442	76,1%	6	35,3%	448	462
<b>TOTAL Operational staff</b>	<b>581</b>	<b>100%</b>	<b>17</b>	<b>100%</b>	<b>598</b>	<b>623</b>
<b>b) Non-operational staff</b>						
Senior officers	9	40,9%	3	21,4%	12	15
Middle management technical staff	4	18,2%	3	21,4%	7	2
Administrative staff	3	13,6%	3	21,4%	6	7
Admin support staff	6	27,3%	4	28,6%	10	10
GUB police officers	0	0%	1	7,1%	1	1
<b>TOTAL Non-operational staff</b>	<b>22</b>	<b>100%</b>	<b>14</b>	<b>100%</b>	<b>36</b>	<b>35</b>
<b>TOTAL staff</b>	<b>603</b>		<b>31</b>		<b>634</b>	<b>658</b>



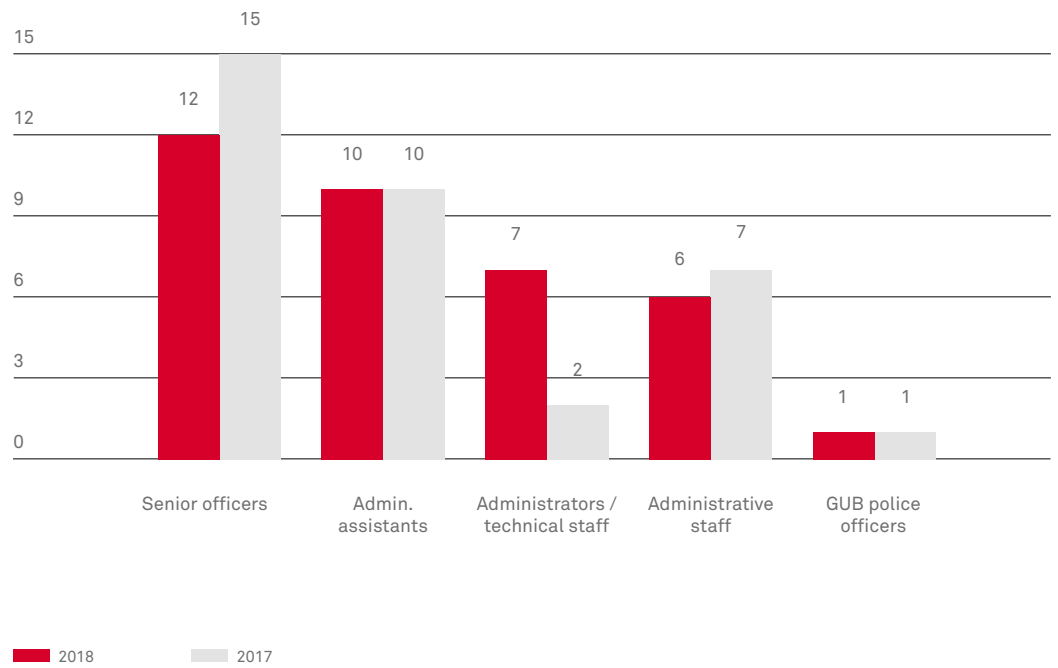
**Operational staff**



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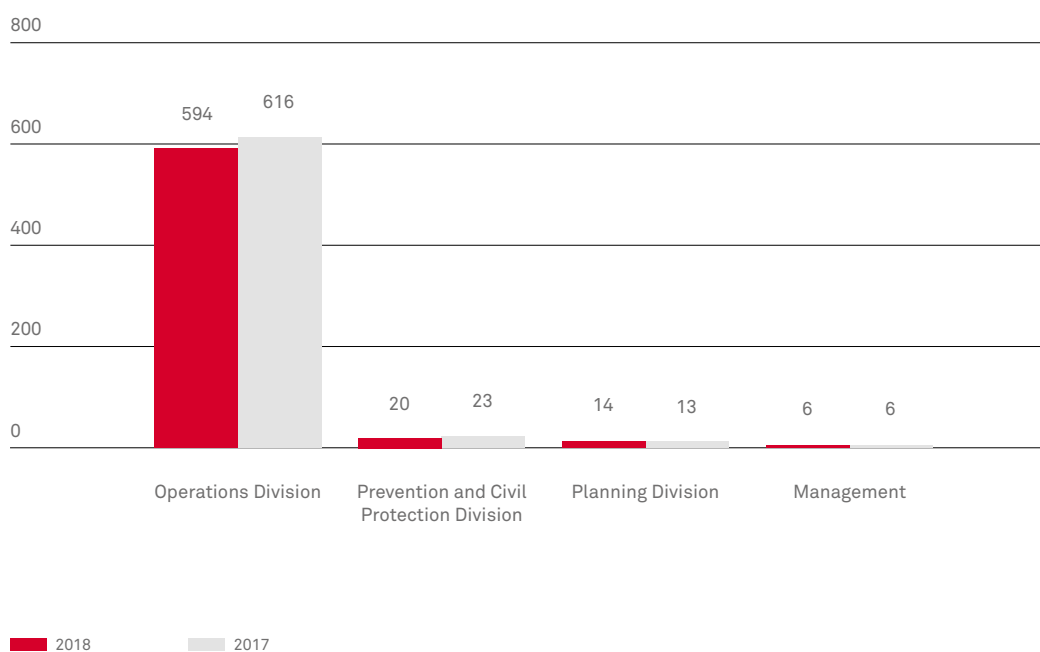
**Non-operational staff**



### Organisational structure

	Operational staff		Non-operational staff		TOTAL 2018	TOTAL 2017
Management	2	0,3%	4	11,1%	<b>6</b>	<b>6</b>
Operations Division	582	97,3%	12	33,3%	<b>594</b>	<b>616</b>
Prevention and Civil Protection Div.	6	1,0%	14	38,9%	<b>20</b>	<b>23</b>
Planning Division	8	1,3%	6	16,7%	<b>14</b>	<b>13</b>
<b>TOTAL staff</b>	<b>598</b>	<b>100%</b>	<b>36</b>	<b>100%</b>	<b>634</b>	<b>658</b>

### Organisational structure



The average age of operational staff on 31 December 2018 was 42.72, representing a slight increase on the previous year, as it was 42.27 in 2017.

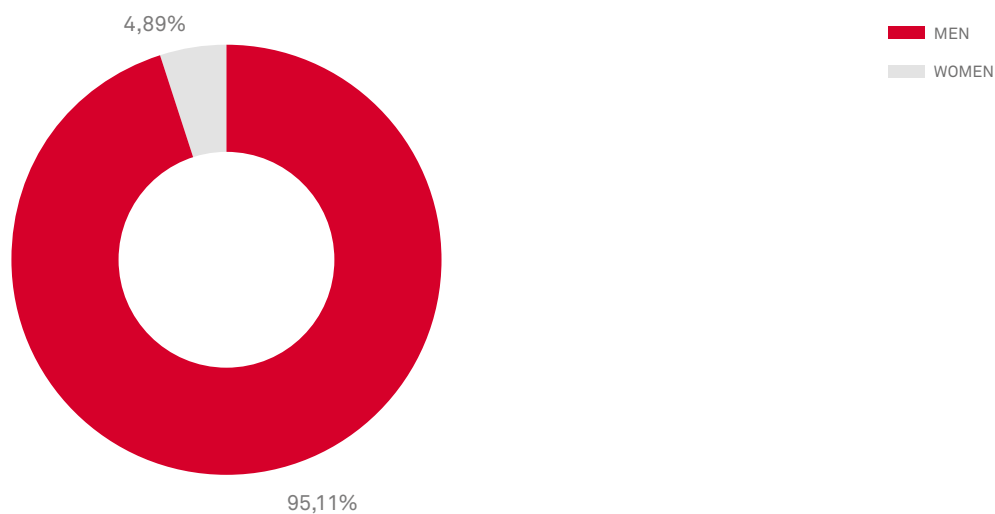
### 5.3 Women in the Barcelona Fire Brigade

The incorporation of women into Barcelona Fire Brigade is a relatively recent phenomenon (2007), which is why females account for such a small percentage of staff members. For this reason, the City Council has been introducing positive discrimination measures for women in recruitment processes (in cases where they get the same scores as men). This will benefit women candidates in forthcoming recruitment processes.

In any event, the percentage of women is increasing, rising from 4.56% in 2017 to 4.89% in 2018. The overall increase since 2013 is 1.23%.

However, it should be noted that, while the overall percentage of women within SPEIS continues to rise slightly, most of that increase has been due to women joining the brigade’s central and health services.

#### Staff distribution by gender



Therefore, in March, the Fire Brigade took part in an event organised by the Area of Prevention and Safety entitled “Women in the Safety and Emergency Services”, organised by the Area of Prevention and Safety, in order to showcase and increase the presence of women in the force. The conference aimed to reinforce the need to fight for gender equality in the uniformed forces, as well as invite reflection on the role of women in public-safety and emergency forces. On this occasion, it focused on harassment in the workplace.

The Mayor of Barcelona opened the conference and, among other things, she explained that the City Council has set in motion a series of measures to tackle harassment in the workplace, including the launch of a protocol against sexual and gender harassment in order to ensure that the working environment is also a safe place for women.

Various round tables and talks were held during the conference, dealing with different kinds of gender violence in the work







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environment. Firstly, Elena Garrido, with a PhD in Psychology, and Noelia Igareda, with a PhD in Law, explained clearly and didactically what the types of gender violence are and their implications in each speciality: how they affect women psychologically and what legal instruments are currently available to combat them.

Luisa Velasco, the former local police inspector who has a PhD in Psychology, explained her personal experiences as a victim of sexual and workplace harassment within a police force.

Subsequently, representatives from the city councils of Barcelona (Elena Pérez), Valencia (Candida Barroso) and Badalona (Dora Martínez) presented the mechanisms and procedures available to each of those administrations for tackling gender violence.

Finally, Amadeu Recasens, the Commissioner for Security and Safety, summarised the conclusions drawn from the conference.

Furthermore, SPEIS also attended the Education Fair for the second time. They shared a stand with the Guàrdia Urbana (city police), where firefighters dealt with requests for information from young

people who came to ask what it took to become a firefighter.

A corporal and a member of the medical staff also offered a talk in the Employment Hall.

Apart from answering queries raised by the people attending, especially concerning the entrance examinations, they and the other professionals on duty at the stand during the Education Fair also handed out forms to women who were interested, so that they could take part in the “Firefighter, why not?” sessions organised in collaboration with Barcelona Activa. 364 women completed the form requesting information about the project.

These sessions, jointly designed with Barcelona Activa, involve a series of awarenessraising actions that aim to encourage more women to join the city’s Prevention,

Extinction and Rescue Service. Their motivation is a response to the fact that very few women are members of the Fire Brigade and, furthermore, in the last three recruitment campaigns less than 5% of candidates were women.

Over one hundred women were able to take part in this project.

### 5.4 Staff management

There was a 6.37% absenteeism rate among SPEIS operational staff in 2018. More specifically, 217 officers were on sick leave and there were 301 cases of temporary incapacity for work, representing a total of 8,055 days off work. In the case of nonoperational staff, there were 2 cases of sick leave, involving two members of staff, totalling 194 days and representing a absenteeism rate of 4.12%.

The most notable steps taken to reduce levels of absenteeism include the monitoring of sick-leave cases (sometimes by calling in the person concerned); adapting workplaces; the work carried out by the Manager's Office inspection team, contacting health centres in order to shorten

waiting lists for medical tests, appointments and surgical operations; authorisation for rehabilitation during service hours in order to shorten the duration of sick leave, and coordination with the City Council's medical inspection team.

On the other hand, given the nature of its work, the Barcelona Fire Brigade has one of the highest levels of work-related accidents. More specifically, 59 accidents leading to sick leave were recorded in 2018, corresponding to a total of 1,272 accident-related and relapse sick-leave days. This data includes accident-related sick-leave days due to accidents travelling to or from work and relapses from previous accidents.





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