

Going In-Seine with the Bane of Frozen Rain:

*Dealing with a Major Flood and
Snowstorm Scenario in the French Capital*

Pr. Pierre Carli

SAMU de Paris

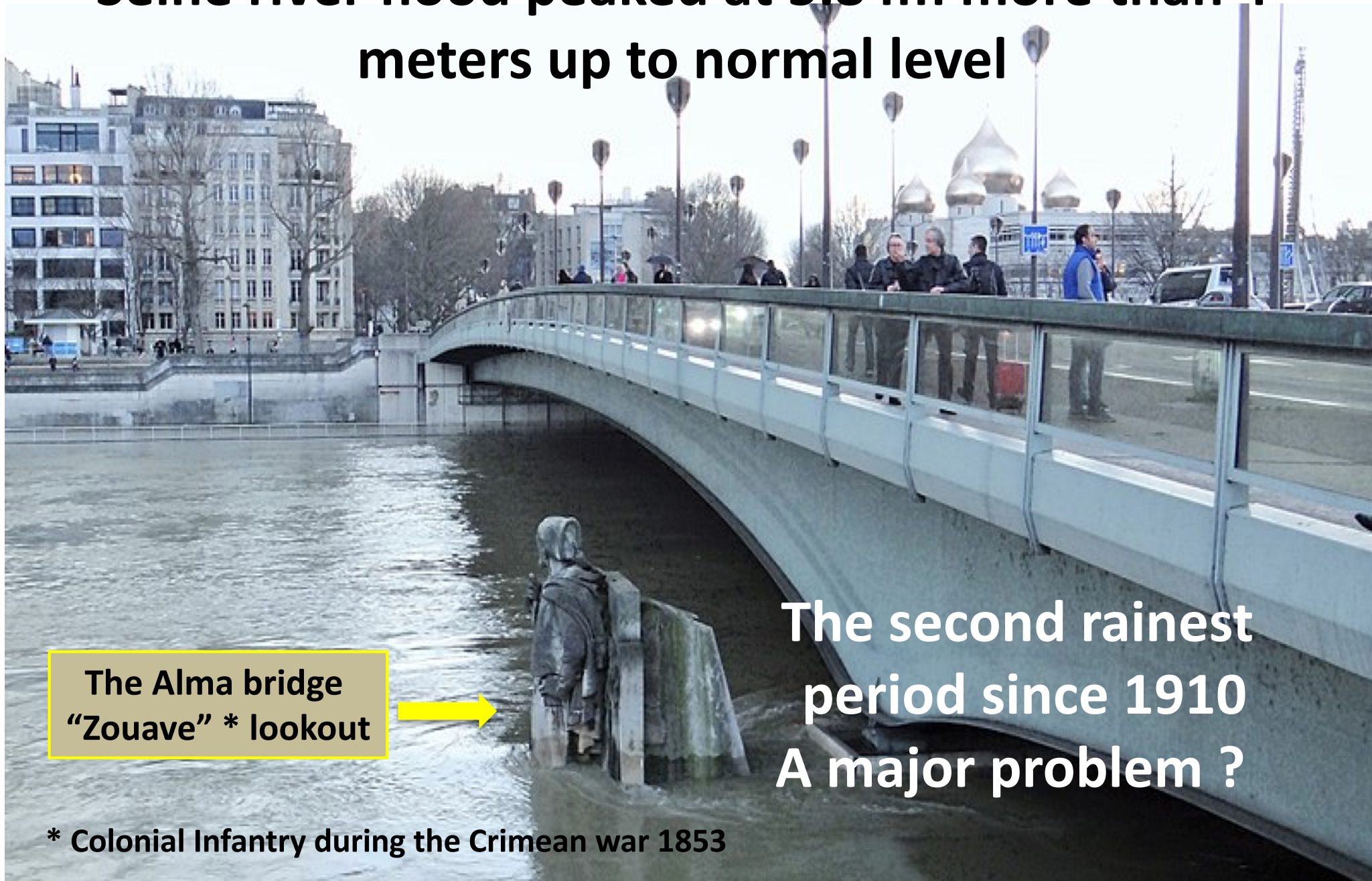
Hôpital Universitaire Necker

Paris France



January 2018

Seine river flood peaked at 5.84m more than 4 meters up to normal level



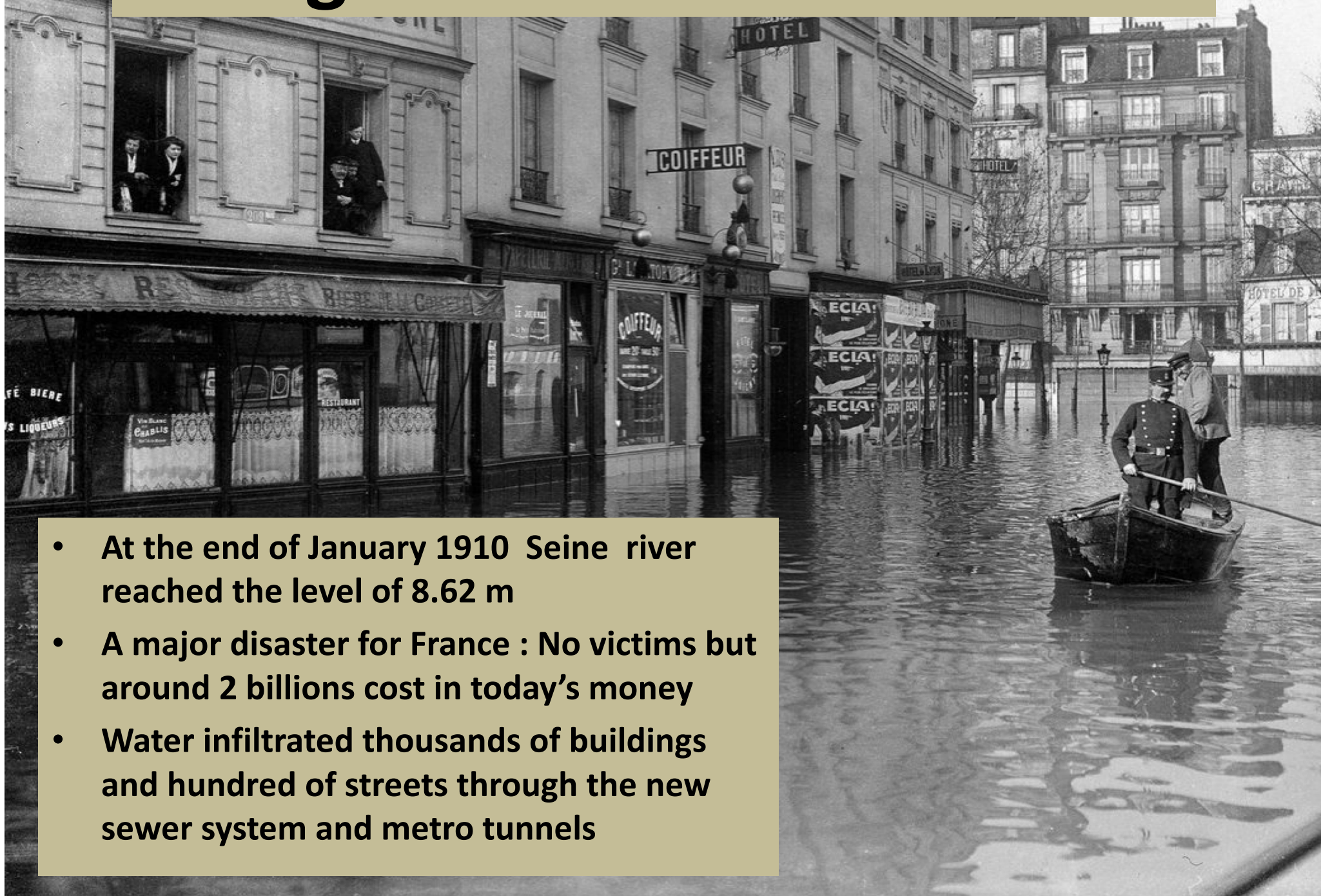
**The Alma bridge
“Zouave” * lookout**



**The second rainiest
period since 1910
A major problem ?**

*** Colonial Infantry during the Crimean war 1853**

The great flood of Paris 1910



- At the end of January 1910 Seine river reached the level of 8.62 m
- A major disaster for France : No victims but around 2 billions cost in today's money
- Water infiltrated thousands of buildings and hundred of streets through the new sewer system and metro tunnels

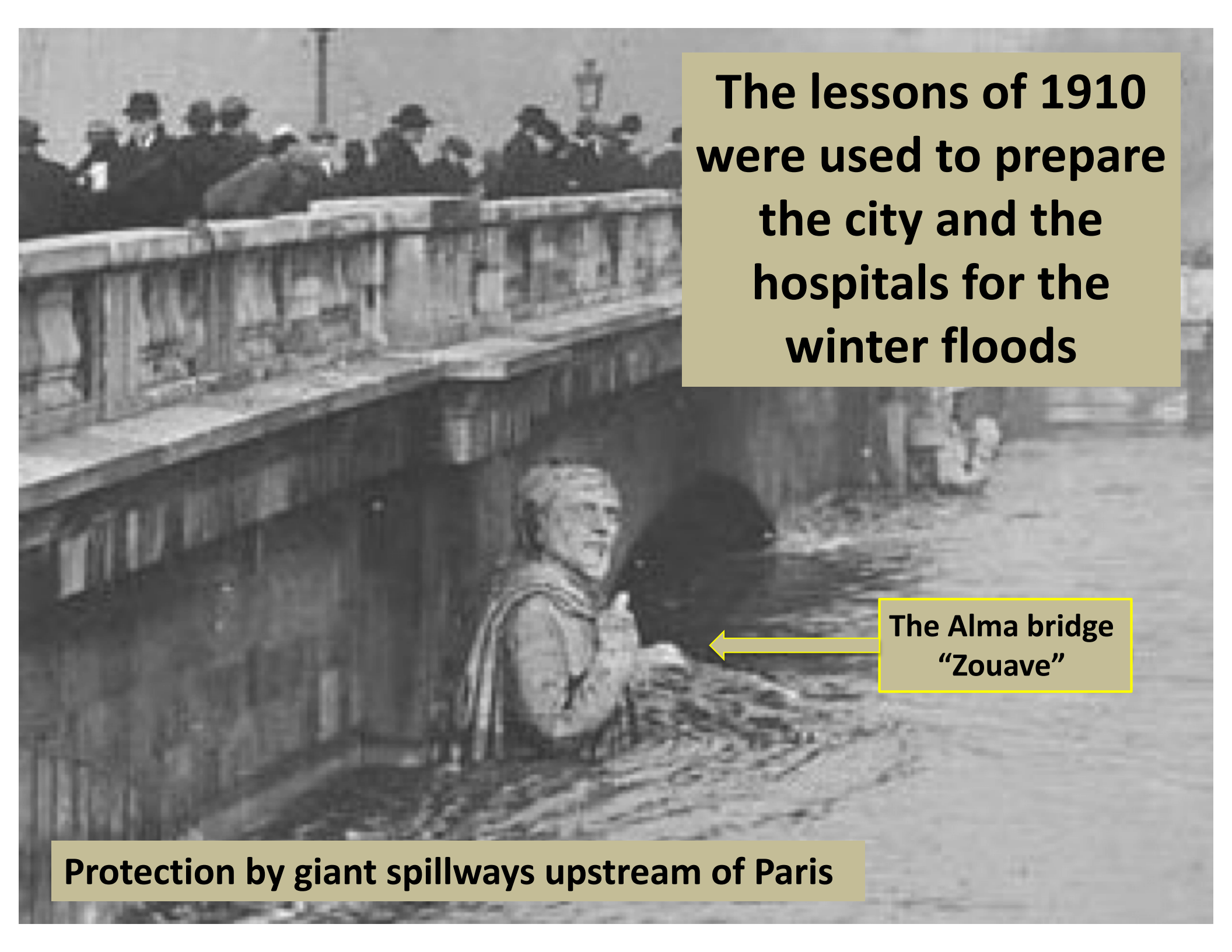
Inside the Paris Hospitals

January 1910



- Evacuations
- Improvised care organization





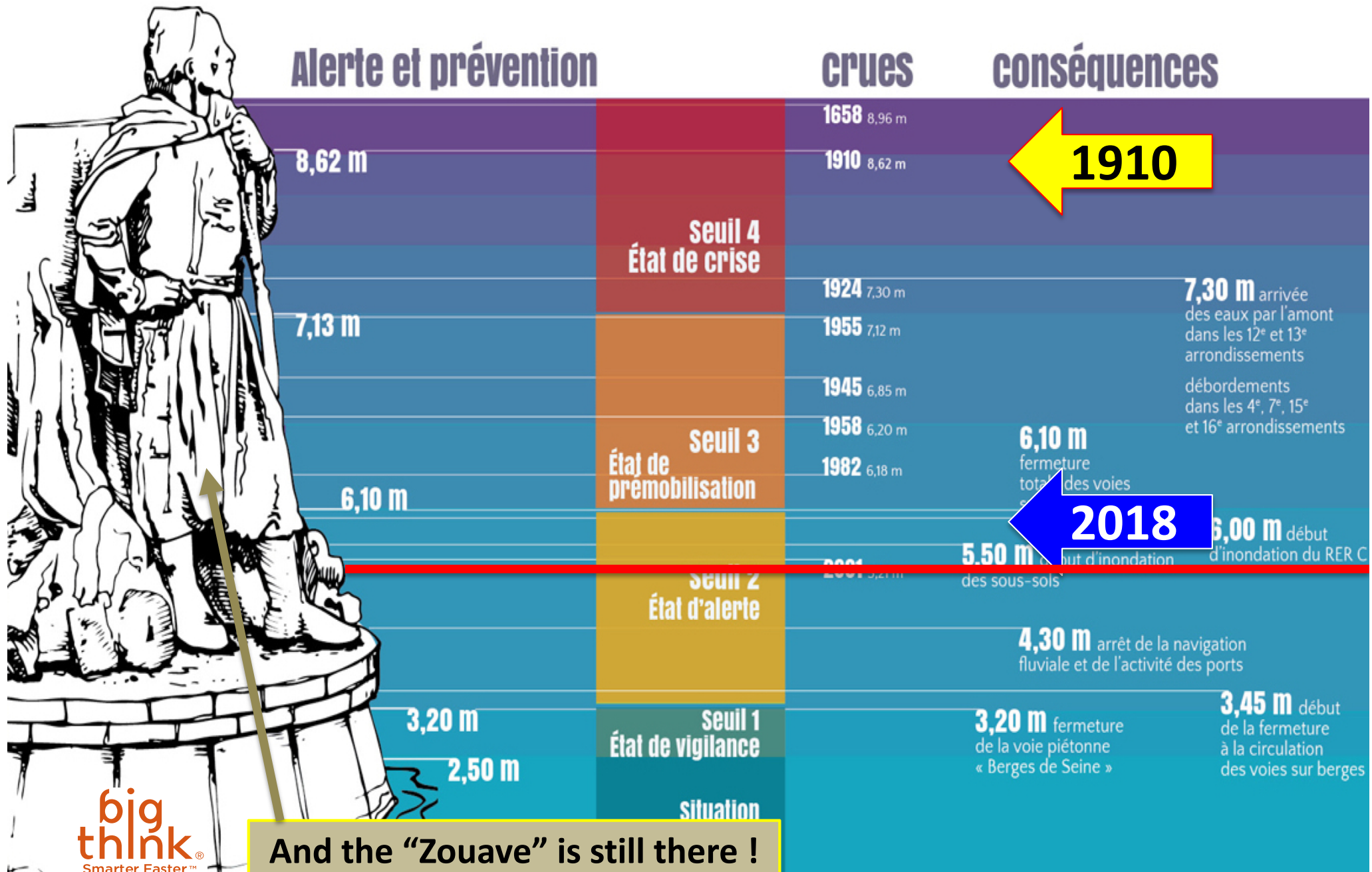
**The lessons of 1910
were used to prepare
the city and the
hospitals for the
winter floods**

**The Alma bridge
“Zouave”**

Protection by giant spillways upstream of Paris

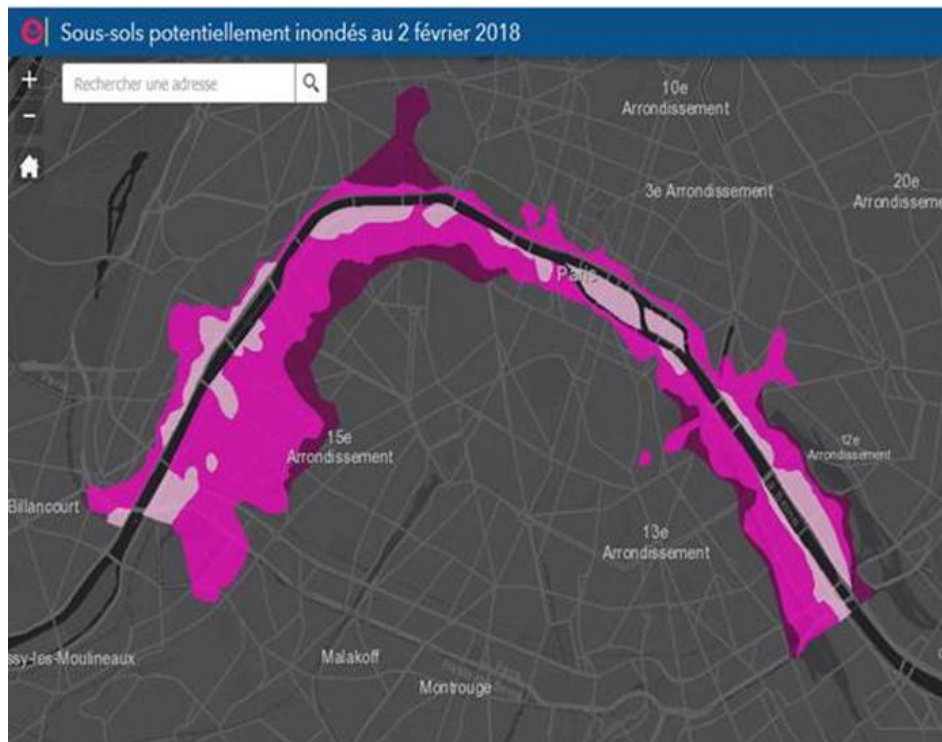
Contingency Plan

Levels of flood readiness In Paris



Paris Region Civil Defense cell crisis

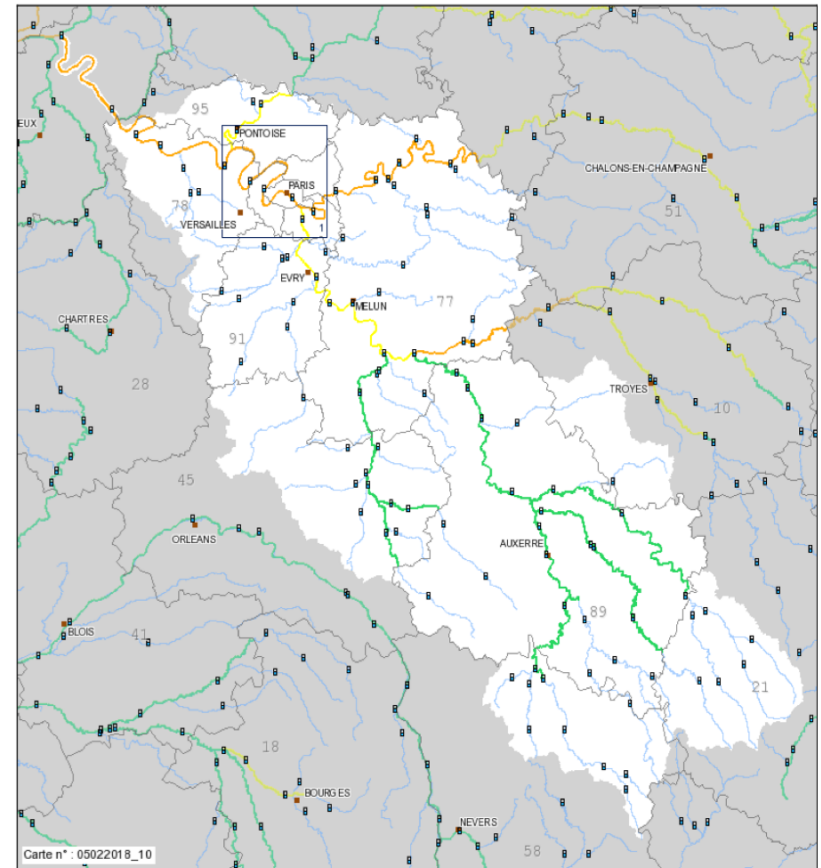
- Activated at 5.50 m
- 24 – 48 h prevision
- Daily report
- Computer simulation
- Conference call 2/24 :
All the services



Bulletin du Service de Prévision des Crues Seine-moyenne-Yonne-Loing



VIGICRUES



Contingency Health Care Plan

- **Hospitals**

- in the flood risk area

- Preventive measures (power supply ...)
 - Emergency actions (partial closure , pumping ...)
 - Decision to evacuate

- out of the area

- Support of evacuated hospitals

- **EMS**

- maintaining daily activity

- if needed evacuation of hospitals : up to 300 patients per day

Flood January 2018

5.84m : Level 2 of the plan activated

- Hospital partial closure :
One Cyberknife[®]
radiosurgery equipment
shut down for a week
- Pumping in the basement
of 3 hospitals
- No evacuation



**A flood of 4 meters was not a major problem
So proud ! But ...**

Paris February 7, 2018

A snow storm

Temperature – 2 C°

The largest snow fall since 1987

METRO

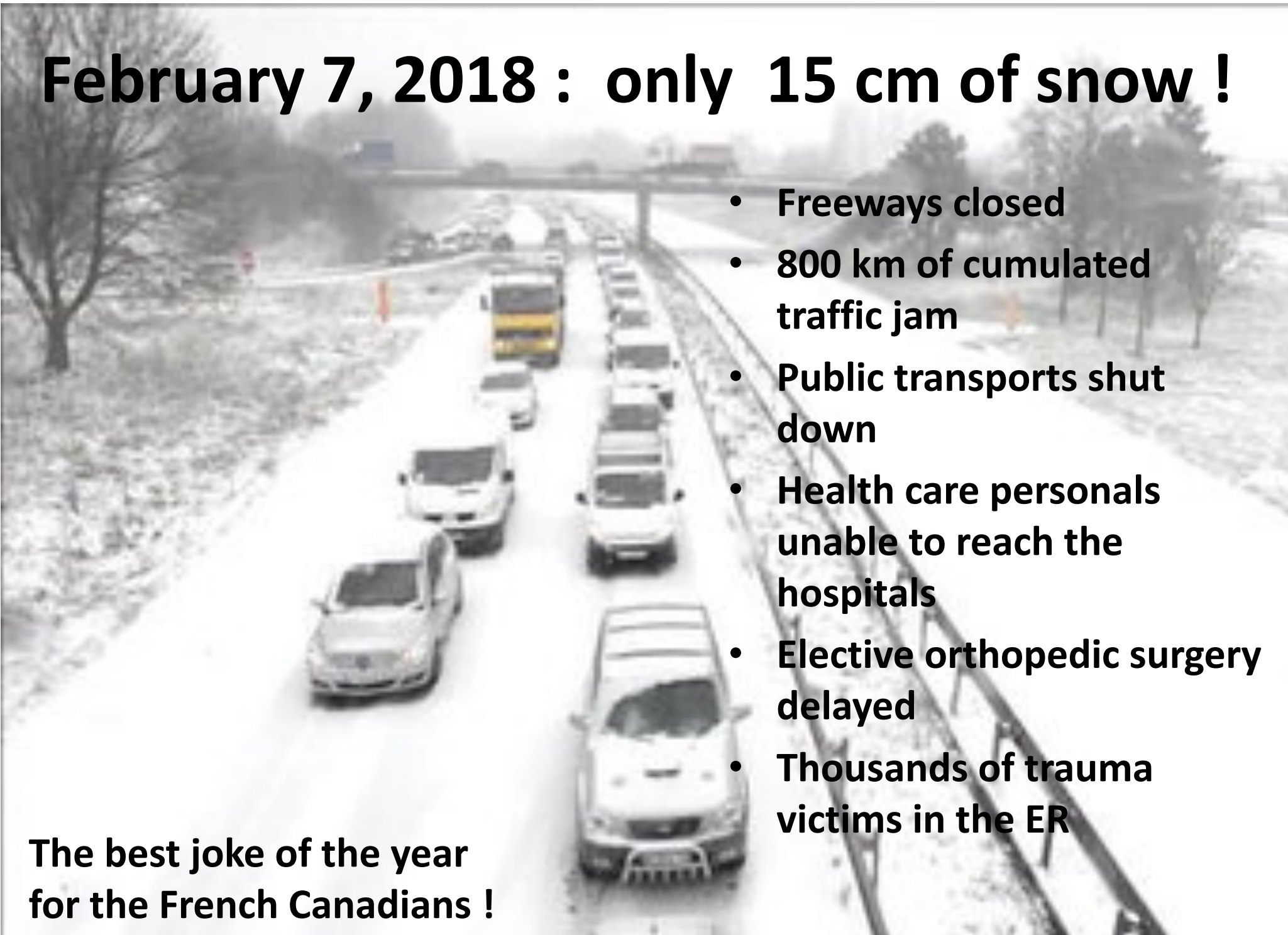
Saint-Michel

No snow storm plan
48 hours of nightmare in the Paris region

February 7, 2018 : only 15 cm of snow !

- Freeways closed
- 800 km of cumulated traffic jam
- Public transports shut down
- Health care personals unable to reach the hospitals
- Elective orthopedic surgery delayed
- Thousands of trauma victims in the ER

**The best joke of the year
for the French Canadians !**



Climate disasters are changing

- Plan for the worst
 - The major flood
- Prepare to be surprised !
 - By 12cm of snow

