

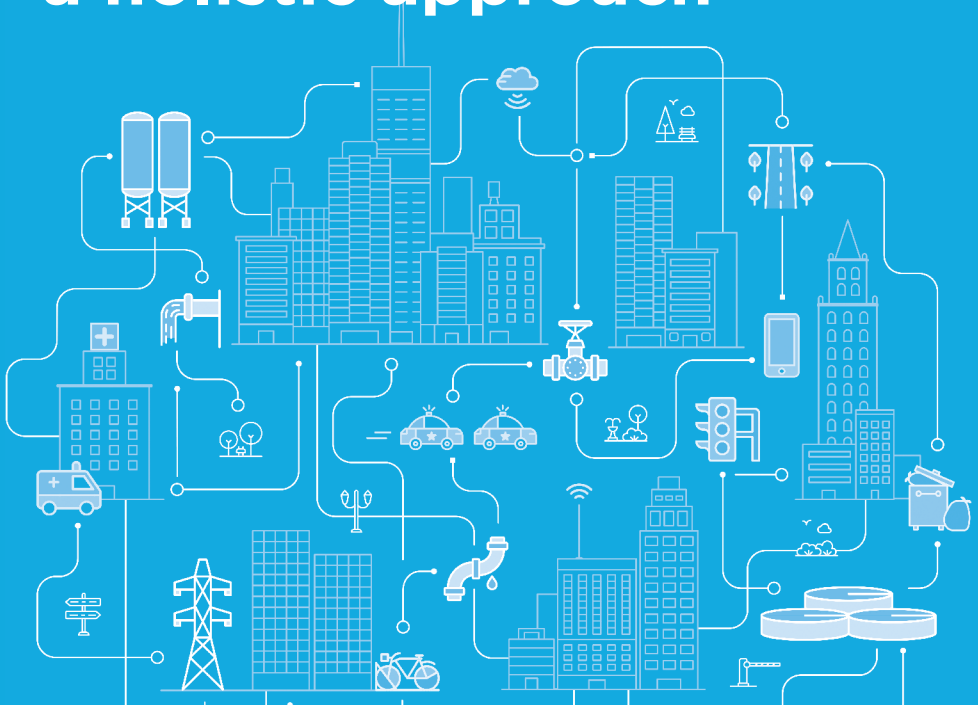


RESILIENT CITIES FACING
CLIMATE CHANGE



HOW TO...

globally analyse, diagnose and manage urban resilience with a holistic approach

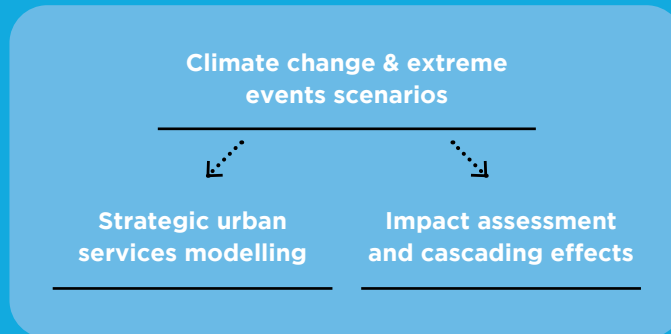


WHAT IS YOUR GOAL?

Identify the most vulnerable elements and enhance commitment and strategic leadership within the city

The main objective of a holistic resilience assessment is to help city decision makers and urban service operators make fully informed and structured choices to make their cities more resilient, analyzing the interdependencies between different city services, monitoring the city and simulating cascade effects in case of impacts that may affect the city.

In order to implement a holistic resilience assessment, detailed information on climate variables, as well as simulations on hazards and impacts on strategic urban services must be used. With this information, the holistic assessment can be done, also including the effects of climate change and the benefits obtained by implementing adaptation strategies. Although the strategies could be directly obtained from the traditional approach -using the results of sectorial models-, they can strongly benefit from a holistic approach, being able to consider the co-benefits and transversal effects.



Holistic resilience assessment & management

Initial holistic resilience assessment to diagnose the problems

Simulation of the effects of climate change scenarios

Inclusion of resilience and adaptation strategies

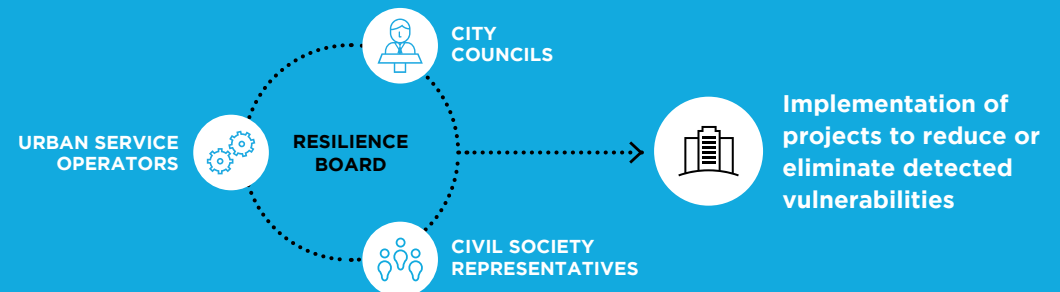
Resilience & adaptation strategies for the market uptake

WHAT BENEFITS SHOULD YOU ACHIEVE?

- ✓ **A more resilient city and society – by design**
This process builds local capacity, enables collaboration, and delivers foresight.
- ✓ **Breaking the silos**
Using this process, communication within and between organizations is far more effective.
- ✓ **Creation of a Resilience Community**
A community of key stakeholders that will step up for their city and prepare it for crisis.
- ✓ **The city will react as a team to cascade effects**
Thanks to the intuitive and engaging approach, your city will react better and jointly to threats and their chains of consequences
- ✓ **Simulate and gather information to take more informed decisions**
With all this information (plus simulation and monitoring the city), the process helps city managers to decide about planning, investments, organisational matters, new protocols, and other next steps to strengthen the resilience of the city

WHO SHOULD YOU INVOLVE?

In order to effectively deploy a holistic resilience assessment, you should **identify and involve the key players from services and infrastructures, responders and city managers across the city to establish a Resilience Board.**



RESCCUE SOLVES YOUR PROBLEMS

THIS IS HOW!

- ✓ What does a holistic resilience assessment offer?

ASSESSMENT RESILIENCE DIAGNOSIS

Integrated analysis of the operation of urban services during a crisis



MODELLING

- **Creation of detailed sector models** to identify **critical infrastructures and services**.
- **Diagnosis of the ability of cities** to respond to impacts.



INTERDEPENDENCIES

- **Identification of existing interdependencies** between the various services and infrastructures.
- Identification of **critical points and links** in urban networks.



IMPACTS

- **Definition of existing impacts** (considering the effects of climate change) and their propagation into the cities due to cascade effects.
- **Laying** the groundwork for the creation of a **Resilience Action Plan**.

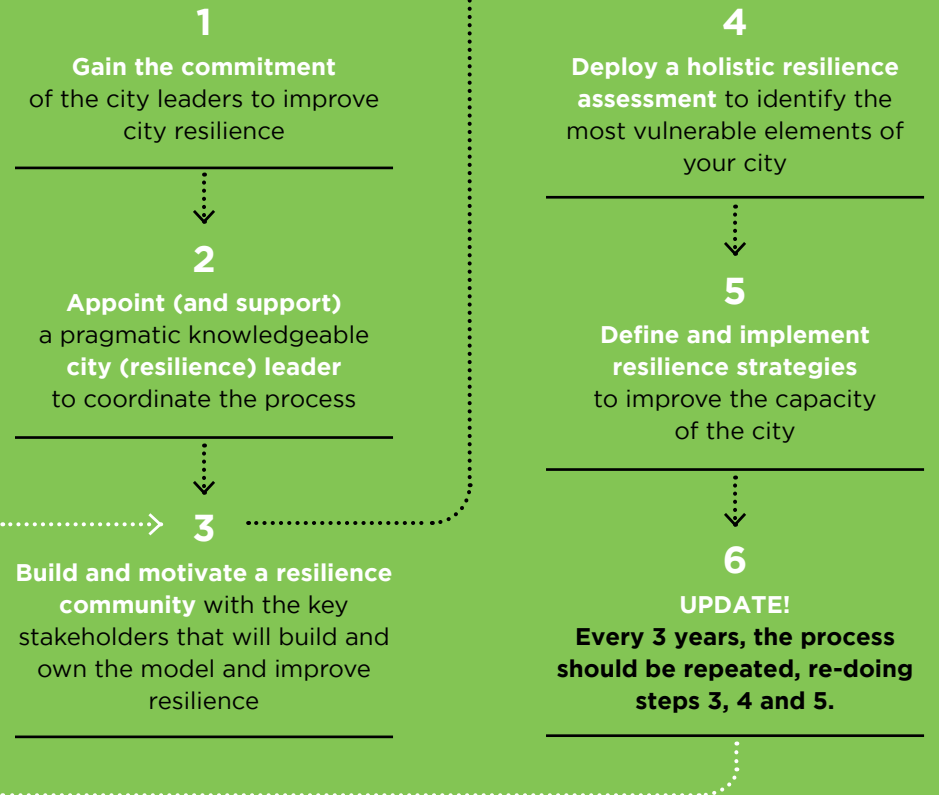


STRATEGIES

- **Define the comprehensive strategies (for infrastructures and operations)** to improve urban resilience.
- **Identify** all possible improvements to implement.



What should you do?



What can you use?

The RESCCUE Toolkit

Most of world population will end up living in cities, therefore it is critical and highly urgent to have tools available to assess, plan and monitor urban resilience in an integral way. RESCCUE has contributed with a set of innovative tools for urban resilience assessment, planning and management, which are gathered in the RESCCUE Toolkit. These tools, methodologies and results will help cities with their climate change adaptation strategy and will also improve their current capacity to cope with emergencies.

RESCCUE

SUPPORTING CITY DECISION MAKERS: HOLISTIC RESILIENCE ASSESSMENT & MANAGEMENT



Use these guidelines to:

Implement a holistic resilience assessment in your city

Cities, being systems of interdependent systems, cannot be understood by sectorial and disciplinary approaches alone. In this sense, RESCCUE goes beyond conventional urban resilience approaches delivering a forward looking, multi-scale, multisectoral and multi-hazard methodology.

With a holistic resilience assessment, the city vulnerabilities can be identified, together with its critical infrastructures and key relationships among critical services, by using a common language, visuals and insights from key stakeholders. This allows to understand the existing interdependencies between urban services.

Therefore, decision makers can mitigate the cascading effects that can escalate through interdependent assets, with often significant hidden costs. Taking into account the particular context and local conditions, cities can be proactive and invest wisely. This approach can be used for neighbourhoods, a whole city, urban technical networks or critical infrastructures.

5 steps to your solution:

- ✓ What is your goal?
- ✓ What benefits should you achieve?
- ✓ What does a holistic resilience assessment offer?
- ✓ What should you do?
- ✓ What can you use?

RESCCUE Project

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This project has received funding from European Commission by means of Horizon 2020, the EU Framework Programme for Research and Innovation, under Grant Agreement no. 700174



City resilience assessment experts:

The RESCCUE partners worked together under the leadership of Aquatec-SUEZ Advanced Solutions to tailor the deployment of a holistic resilience assessment in three cities: Barcelona, Lisbon and Bristol. Together, they provided the right mix of expertise, facilitation and city-specific knowledge to assess the resilience of these cities with a holistic approach.

- **Aquatec - SUEZ Advanced Solutions**
- **Hidra**
- **Urban DNA**
- **EIVP (École des Ingénieurs de la Ville de Paris)**
- **LNEC (Laboratório Nacional de Engenharia Civil)**
- **University of Exeter**

Using RESCCUE's holistic approach, the current resilience level of the different urban services in each city has been assessed, integrating the climate change scenarios, urban services modelling and climate change adaptation measures and strategies developed previously within the project.



Aquatec-SUEZ Advanced Solutions continuously participates in different international projects related to climate change adaptation, urban resilience, risk assessment and socio-economic analysis in the field of water management.

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RESCCUE HELPS YOU MAKE YOUR CITY RESILIENT TO CLIMATE CHANGE

The RESCCUE project

RESCCUE (RESilience to cope with Climate Change in Urban arEas—a multisectorial approach focusing on water) is Europe's first large-scale innovation and urban resilience project, aimed to **improve the capability of cities to anticipate, prepare for, respond to, and recover from significant climate-change related threats with minimum damage.**

A multisectorial approach, a key advantage of RESCCUE

The RESCCUE perspective is a holistic one, which focuses rather on the interconnections than on separate city units of the urban infrastructure networks. To interconnect the several sectorial models, the project takes advantage of the **proposed tools and methodologies.**

3 cities, 3 different challenges

The models and tools developed within RESCCUE to analyse urban resilience based on a multisectorial approach have been validated in three different cities, carefully selected by their representativeness of the European diversity in terms of climate type and city characteristics: **Barcelona, Lisbon and Bristol.**

The RESCCUE partners can be your strategic team to help you make your city resilient to climate change:

