



# Karlstad, Sweden

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## Local progress report on the implementation of the 10 Essentials for Making Cities Resilient (2013-2014)

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# Essential 1

*Put in place organization and coordination to understand and reduce disaster risk, based on participation of citizen groups and civil society. Build local alliances. Ensure that all departments understand their role to disaster risk reduction and preparedness.*

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## **How well are local organizations (including local government) equipped with capacities (knowledge, experience, official mandate) for disaster risk reduction and climate change adaptation?**

Level of Progress achieved: 5

### Description of Progress & Achievements:

Karlstad Municipality have worked to prevent flood risk for many years. There is a Flood risk Management Programme that is implemented in the municipality since 2010. It is now time to review the programme and the effort is to implement it into a climate adaptation plan, together with the other natural disaster hazards that we have to adapt to in City of Karlstad.

A contingency plan for flooding is developed, and have included several departments in the municipality.

Food risk maps are shown on the municipality website and is also used by the officials.

Karlstad Municipality is also working on putting together a better crises organization, that can deal with different types of crises.

Karlstad is part of the Making Cities Resilient since 2010 and that puts climate adaptation on the agenda in the municipality. There is a also a Flood risk Management Coordinator employed since 2007.

### Reference documents

> [Flood Risk Management-City of Karlstad \(2014\)](#)

## **To what extent do partnerships exist between communities, private sector and local authorities to reduce risk?**

Level of Progress achieved: 5

## Description of Progress & Achievements:

Karlstad Municipality are working together with different organizations and authorities within different projects, both on the strategic and technical level . For example is one project to build a levee to protect the general hospital, together with Värmland County Council.

Karlstad is also part of a group with other municipalities around lake Vänern, working with flooding issues.

## **How much does the local government support vulnerable local communities (particularly women, elderly, infirmed, children) to actively participate in risk reduction decision-making, policy making, planning and implementation processes?**

Level of Progress achieved: 5

## Description of Progress & Achievements:

Officials from the municipality take part in workshops and give lectures to citizens and local organizations if asked. The municipality has also organized flood risk walks for citizens together with Karlstad University and The County Administrative Board. Within the Contingency plan, homes for elderly care are top priority to be saved if floods occur.

Consultations with concerned citizens is also a part of the Swedish planning process.

## **To what extent does the local government participate in the national DRR planning?**

Level of Progress achieved: 5

## Description of Progress & Achievements:

Karlstad Municipality are working together with the Swedish Civil Contingencies Agency (MSB) in disaster risk reduction work. Karlstad has been part of conferences, seminars and give lectures together with MSB. Karlstad is part of the Making Cities Resilient Campaign since 2010 and has had city to city exchanges. The municipality has also a close collaboration with The County Council. City of Karlstad has also been a part of the national HFA process.

## Essential 2

*Assign a budget for disaster risk reduction and provide incentives for homeowners, low-income families, communities, businesses and public sector to invest in reducing the risks they face.*

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### **How far does the local government have access to adequate financial resources to carry out risk reduction activities?**

Level of Progress achieved: 5

#### **Description of Progress & Achievements:**

There is a yearly budget for investigations and flood measurements etc. There are also investments made for special projects and the purchase of pumps and barriers as well as the construction of permanent flood protection structures. Prevention work is considered when building new areas.

### **To what degree does the local government allocate sufficient financial resources to carry out DRR activities, including effective disaster response and recovery?**

Level of Progress achieved: 5

#### **Description of Progress & Achievements:**

Karlstad Municipality have an investment budget and a operation budget of DRR. There is an flood risk management coordinator employed, working full time with these questions. The rescue and fire services have officials working with DRR, both prevention and operational.

### **What is the scope of financial services (e.g. saving and credit**

**schemes, macro and micro-insurance) available to vulnerable and marginalised households for pre- disaster times?**

Level of Progress achieved: 3

Description of Progress & Achievements:

Have no information

**To what extent are micro finance, cash aid, soft loans, lone guarantees etc available to affected households after disasters to restart livelihoods?**

Level of Progress achieved: 3

Description of Progress & Achievements:

Have no information

**How well established are economic incentives for investing in disaster risk reduction for households and businesses (e.g. reduced insurance premiums for households, tax holidays for businesses)?**

Level of Progress achieved: 3

Description of Progress & Achievements:

In Sweden the insurance companies has not yet higher fees for buildings situated in flood risk areas.

**To what extent do local business associations, such as chambers of commerce and similar, support efforts of small enterprises for business continuity during and after disasters?**

Level of Progress achieved: 3

Description of Progress & Achievements:

Have no information

## Essential 3

*Maintain up-to-date data on hazards and vulnerabilities, prepare risk assessments and use these as the basis for urban development plans and decisions. Ensure that this information and the plans for your city's resilience are readily available to the public and fully discussed with them.*

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### **To what degree does the local government conducted thorough disaster risk assessments for key vulnerable development sectors in your local authority?**

Level of Progress achieved: 5

#### **Description of Progress & Achievements:**

The municipality have guidelines regarding to new city planning and building. In every plan that is situated within a flood risk area, there is made an analysis of flood risk. The municipality has also developed a contingency plan for flooding, where every object important to society, are inventoried and a plan made for how to protect it.

### **To what extent are these risk assessments regularly updated, e.g. annually or on a bi-annual basis?**

Level of Progress achieved: 5

#### **Description of Progress & Achievements:**

Every contingency plan are updated every 4th year. The contingency plan for flooding are to be updated at least once per 4th year. The city plans are controlled within application for building permitt. We are at this date also doing an update on guidelines for flooding in the planning process.



**How regularly does the local government communicate to the community, information on local hazard trends and risk reduction measures (e.g. using a Risk Communications Plan) including early warnings of likely hazard impact?**

Level of Progress achieved: 5

Description of Progress & Achievements:

Karlstad Municipality have a strong and effective communication with the citizens, through media and website, both in advance and at crises.

**How well are local government risk assessments linked to, and supportive of, risk assessments from neighbouring local authorities and state or provincial government risk management plans?**

Level of Progress achieved: 5

Description of Progress & Achievements:

Karlstad region's rescue services organisation consists of several neighboring municipalities. Safety coordinators who work with risk and vulnerability make plans for all of the municipalities in the region. Through this, the emergency services organisation has a good review of risks in their jurisdiction. The risk and vulnerability assessments are sent to the county government.

There is also a river network, with municipalities along Klarälven river, that have annual meetings and extra meeting when there are risk of floods.

**How well are disaster risk assessments incorporated into all relevant local development planning on a consistent basis?**

Level of Progress achieved: 4

## Description of Progress & Achievements:

There is a flood analysis in all plans and planning program located in areas of flood risk. This is found in the city's comprehensive plan. Flood mitigation program provides guidance on how to plan and what risk you should approach. The next step is to get all sectors to take account of flood risk, for example, when planning for a senior citizen nursing home.

## Essential 4

*Invest in and maintain critical infrastructure that reduces risk, such as flood drainage, adjusted where needed to cope with climate change.*

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### **How far do land use policies and planning regulations for housing and development infrastructure take current and projected disaster risk (including climate related risks) into account?**

Level of Progress achieved: 5

Housing	Yes
Communication	Yes
Transportation	Yes
Energy	Yes

#### **Description of Progress & Achievements:**

In all plans affecting areas of flood risk, impact assessments are written. These plans can secure for example installations and the building of roads at a certain height above the anticipated flood water level. In this way the city can ensure that critical infrastructure is not affected by a flood.

We have also regulations according to building at a risk zone of landslides.

### **How adequately are critical public facilities and infrastructure located in high risk areas assessed for all hazard risks and safety?**

Level of Progress achieved: 5

#### **Description of Progress & Achievements:**

The municipality has developed a contingency plan for flooding, where an inventory of critical infrastructure at risk is identified. Primarily for inventory are those objects that are of the highest priority according to the national government (MSB) criteria for critical infrastructure. The contingency plan gives priority to the most vulnerable critical objects to the rescue services.

The municipality has also developed new guidelines for the planning process, where it says that regarding flooding all new critical infrastructure should have protection to a 10 000 year flood.

Guidelines in the planning process prohibit critical infrastructure to be built at sites of flooding risks.

## **How adequate are the measures that are being undertaken to protect critical public facilities and infrastructure from damage during disasters?**

Level of Progress achieved: 5

### Description of Progress & Achievements:

The municipality has developed a contingency plan for flooding, where an inventory of critical infrastructure at risk is identified. Primarily for inventory are those objects that are of the highest priority according to the national government (MSB) criteria for critical infrastructure. The contingency plan gives priority to the most vulnerable critical objects to the rescue services.

The municipality has also developed new guidelines for the planning process, where it says that regarding flooding all new critical infrastructure should have protection to a 10 000 year flood.

Every department in the municipality is responsible for protection of critical infrastructure. Different measures are being done, e.g. maps of where to put the temporary barriers to protect important roads, check valves, protection of electrical equipment etc.

### Reference documents

> [Flood Risk Management Measures \(2014\)](#)

# Essential 5

*Assess the safety of all schools and health facilities and upgrade these as necessary.*

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**To what extent have local schools, hospitals and health facilities received special attention for "all hazard" risk assessments in your local authority?**

Level of Progress achieved: 4

Schools	Yes
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Hospitals/ health facilities                      Yes

Description of Progress & Achievements:

Within the contingency plan for flooding, hospitals and other medical care are at highest priority. Schools are on a second level. This is following the guidelines from governmental institutions.

**How safe are all main schools, hospitals and health facilities from disasters so that they have the ability to remain operational during emergencies?**

Level of Progress achieved: 5

Schools	No
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Hospitals/ health facilities                      Yes

Description of Progress & Achievements:

We are at this time doing an inventory of these questions. The municipality is

planning a levee to protect the central hospital. This construction will start in 2016.

**To what degree do local government or other levels of government have special programs in place to regularly assess schools, hospitals and health facilities for maintenance, compliance with building codes, general safety, weather-related risks etc.?**

Level of Progress achieved: 5

Schools	Yes
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Hospitals/ health facilities Yes

Description of Progress & Achievements:

In Sweden we have different laws that are regulating these issues.

**How far are regular disaster preparedness drills undertaken in schools, hospitals and health facilities?**

Level of Progress achieved: 4

Schools	Yes
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Hospitals/ health facilities Yes

Description of Progress & Achievements:

Fire drills are regulated by law. These drills can also be used at other hazards also.

## Essential 6

*Apply and enforce realistic, risk compliant building regulations and land use planning principles. Identify safe land for low-income citizens and develop upgrading of informal settlements, wherever feasible.*

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### **How well are risk-sensitive land use regulations and building codes, health and safety codes enforced across all development zones and building types?**

Level of Progress achieved: 4

#### Description of Progress & Achievements:

In Sweden there are different laws regarding these issues and that the municipality have to follow, for example building rules. Flood risk issues are investigated in every city plan.

### **How strong are existing regulations (e.g. land use plans, building codes etc) to support disaster risk reduction in your local authority?**

Level of Progress achieved: 4

#### Description of Progress & Achievements:

The Swedish law that regulates building is better today after adjustment. It is up to every municipality to regulate planning, but we do not have any national guidelines to follow regarding natural hazards.

City of Karlstad has developed new guidelines for the planning process, where it says that regarding flooding all new critical infrastructure should have protection to a 10 000 year flood, and for housing there should be a protection of 200 year flood.

We do not have any guidelines for other kinds of natural hazards.





# Essential 7

*Ensure education programmes & training on disaster risk reduction are in place in schools and communities.*

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## **How regularly does the local government conduct awareness-building or education programs on DRR and disaster preparedness for local communities?**

Level of Progress achieved: 5

Programs include cultural diversity issues	No
Programs are sensitive to gender perspectives	No

### **Description of Progress & Achievements:**

Regarding to flood risks in Karlstad, the municipality works hard to communicate the risk to the citizens both through media and through the municipal website. Officials give lectures to different organizations and there are brochures about safety. The rescue services visit schools to educate about different risks and how to protect from them. Every employed in school take courses in CPR and first help. Students are also taught CPR.

## **To what extent does the local government provide training in risk reduction for local officials and community leaders?**

Level of Progress achieved: 5

### **Description of Progress & Achievements:**

Every employed in Karlstad Municipality have to take a coarse in climate adaptation, where flood risk is one of the issues. The flood risk management coordinator give

lectures, attend meetings etc at different levels in the municipality. There have been different exercises regarding to flooding.

**To what degree do local schools and colleges include courses, education or training in disaster risk reduction (including climate related risks) as part of the education curriculum?**

Level of Progress achieved: 4

Description of Progress & Achievements:

University of Karlstad have a research center for climate change and DRR:  
<http://www.kau.se/klimat-och-sakerhet> Public schools are learning about climate change and it's consequences as part of the school curriculum.

**How aware are citizens of evacuation plans or drills for evacuations when necessary?**

Level of Progress achieved: 2

Description of Progress & Achievements:

We have no evacuation plan in the municipality.

## Essential 8

*Protect ecosystems and natural buffers to mitigate floods, storm surges and other hazards to which your city may be vulnerable. Adapt to climate change by building on good risk reduction practices.*

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### **How well integrated are local government DRR policies, strategies and implementation plans with existing environmental development and natural resource management plans?**

Level of Progress achieved: 5

#### Description of Progress & Achievements:

Karlstad Municipality have strategies and goals for Karlstad as a sustainable city. Karlstad is working with different climate adaptation projects; energy saving projects, sustainable storm water management, form new nature reserves, sustainable transport systems, protect valuable water systems, sustainable city building etc.

### **To what degree does the local government support the restoration, protection and sustainable management of ecosystems services?**

Level of Progress achieved: 5

Forests	Yes
Coastal zones	Yes
Wetlands	Yes
Water resources	Yes
River basins	Yes
Fisheries	Yes

## Description of Progress & Achievements:

Karlstad Municipality are working with reserve nature, primarily for its specific nature qualities. The secondary gains, for example flood retaining areas, have also been an important factor the last years, when forming nature reserves. The municipality is under the progress of developing new nature reserves in the city.

### **How much do civil society organizations and citizens participate in the restoration, protection and sustainable management of ecosystems services?**

Level of Progress achieved: 4

## Description of Progress & Achievements:

There are environmental organizations that have a more monitoring part and have interests in different environmental issues e.g. fish, botany, birds etc. These organizations do not have a managing part but more a opinion-forming part. It is the Swedish government that has a governing part through laws. Karlstad Municipality is working together with these organizations in different projects, for exchange of knowledge, advice and to work together as one.

### **How much does the private sector participate in the implementation of environmental and ecosystems management plans in your local authority?**

Level of Progress achieved: 4

## Description of Progress & Achievements:

The private sector are working with certificates to achieve certain standards. It is a good thing for companies to be environmental friendly. Karlstad Municipality have

collaboration with companies/developers within city planning, crises management and environmental issues.



## Essential 9

*Install early warning systems and emergency management capacities in your city and hold regular public preparedness drills.*

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### **To what degree do local institutions have access to financial reserves to support effective disaster response and early recovery?**

Level of Progress achieved: 5

#### Description of Progress & Achievements:

Every division within the municipality are responsible for their operations. The risk and vulnerability analyses point at what risk they have to prepare for. They apply for a budget for their operations. The municipality have also a budget reserve for unforeseen events.

### **To what extent are early warning centres established, adequately staffed (or on-call personnel) and well resourced (power back ups, equipment redundancy etc) at all times?**

Level of Progress achieved: 5

#### Description of Progress & Achievements:

Karlstad Region Rescue Services is an organization consisting of five neighbouring municipalities. They are responsible for the Risk and Vulnerability Plans and are together with the Technical Service and Property Management Department responsible for DRR. There are temporary barriers, pumps and power back-ups to handle flooding. In case of severe flooding the municipality can ask for help of MSB. There is also a Crises Management Committee where the Municipality Director together with the Director of Rescue Services is leading the work when the city is flooded. Monitoring of water levels in both Klarälven River and Lake Vänern is shown at the Municipality website and are updated once every 24 hours. For an instant report of water levels, the involved officials have a mobile application.

## **How much do warning systems allow for adequate community participation?**

Level of Progress achieved: 5

### **Description of Progress & Achievements:**

Karlstad have a communication plan for crises. Using different media as TV, radio, website and different social networks as Facebook we can get out a message to our citizens in short time. If necessary there is also a car with speakers on that we can use.

## **To what extent does the local government have an emergency operations centre (EOC) and/or an emergency communication system?**

Level of Progress achieved: 5

### **Description of Progress & Achievements:**

Karlstad Region Rescue Services are responsible for the operation in case of emergency. Together with Technical Service and Property Management Department they establish a EOC when necessary. The daily routines are handled from the rescue services. There is an emergency communication system that the police, rescue service and Technical Service and Property Management Department share

## **How regularly are training drills and rehearsal carried out with the participation of relevant government, non-governmental, local leaders and volunteers?**

Level of Progress achieved: 4

Description of Progress & Achievements:

There have been one large training drill according to flood risk. In the Contingency Plan, it is stated that there should be different kind of drills every other year. Both for management and for rescue services. The continuing planning for a small flood is also one kind of drill.

**How available are key resources for effective response, such as emergency supplies, emergency shelters, identified evacuation routes and contingency plans at all times?**

Level of Progress achieved: 5

Stockpiles of relief supplies	Yes
Emergency shelters	No
Safe evacuation routes identified	Yes
Contingency plan or community disaster preparedness plan for all major hazards	Yes

Description of Progress & Achievements:

The contingency plan for flooding will help the emergency staff to prioritize what objects to save during a flood. The plan shows also what roads are to be protected during a flood. The hospitals have a short stock of supplies and also the rescue services. Therefore it is important to have a plan for where to get these supplies at short notice.

The Technical Services and Property Management Department have different kinds of supply in stock, to manage flooding e.g. temporary barriers, power supply, check valves, pumps etc.



# Essential 10

*After any disaster, ensure that the needs of the survivors are placed at the centre of reconstruction with support for them and their community organizations to design and help implement responses, including rebuilding homes and livelihoods.*

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## **How much access does the local government have to resources and expertise to assist victims of psycho-social (psychological, emotional) impacts of disasters?**

Level of Progress achieved: 5

### Description of Progress & Achievements:

There are an organization for these issues, POSUM, with people from hospital, church, rescue service, school/childcare, social division sand from Swedish Civil Contingencies Agency.

## **How well are disaster risk reduction measures integrated into post-disaster recovery and rehabilitation activities (i.e. build back better, livelihoods rehabilitation)?**

Level of Progress achieved: 4

### Description of Progress & Achievements:

In Sweden there are laws who control these issues. We have a principle of responsibility that says that whoever are responsible for an operation/function/activity in normal circumstances are also responsible in crises situations.

## **To what degree does the Contingency Plan (or similar plan) include**

## **an outline strategy for post disaster recovery and reconstruction, including needs assessments and livelihoods rehabilitation?**

Level of Progress achieved: 4

### Description of Progress & Achievements:

In Sweden there are laws who control these issues. We have a principle of responsibility that says that whoever are responsible for an operation/function/activity in normal circumstances are also responsible in crises situations. There is also a law that says that every municipality has to have a contingency plan and an action plan for crises management. Karlstad has different action plans for different activities. These plans mostly focus on action before and during crises. A contingency plan for dam failure is in progress, and it will contain an evacuation plan.