

# DELIVERABLE D.T4.2.2

# Setting up of emergency plans for the target

heritage sites - Croatia, Kaštela

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# I. DESCRIPTIVE PART

### I.1 General information

Plan name: Emergency plan for the target heritage sites

Plan area: area of the City of Kaštela (Kaštel Sućurac, Kaštel Gomilica)

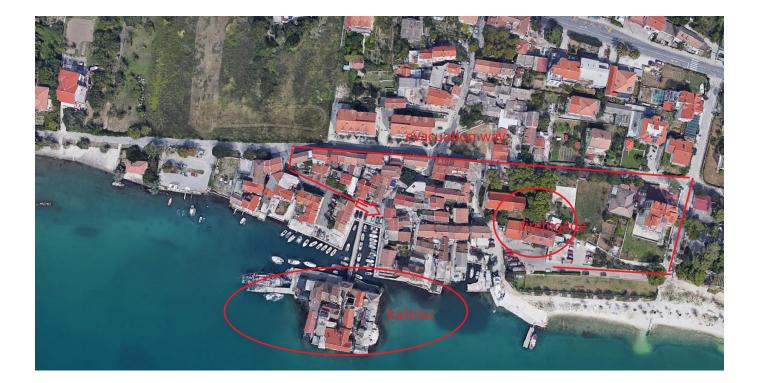
### I.2. Site description and hazard analysis

Due to its location at the coast, the greatest threat for the cultural heritage of the City of Kaštela is the influence of tidal waves that are formed in the narrow bay of Kaštela. They often emerge as a result of bad weather. Because of the increased wave heights, the wider area can be submerged and flood duration can be extended. Such seawater penetration to the coast often results in damage of cultural heritage elements. In this case, the buildings are located on the coast. In particular, numerous castles were built on the sea rocks and are therefore exposed to the effects of seawater, which has a very negative effect on the building structures due to its specific properties. In addition, cultural heritage sites are threatened by the negative impact of torrential flows that occur during short-term and heavy rainfall. The steep slopes of Kozjak Mountain extending towards Kaštela cause a large number of occasional torrential flows during intense rainfall. Under these conditions, the existing drainage system is inadequate, and because of its inefficiency, the underground and ground floors of buildings, as well as cultural heritage objects containing valuable monuments, collections, etc. are often flooded. In addition to devastating floods, several fires due to drought in the City of Kaštela were recorded in recent history. The wildfires on Kozjak Mt., which surrounds the town of Kaštela on the north side, represent the greatest danger. Each of the aforementioned risks has a significant impact on the elements of cultural heritage, primarily in the context of damage to the physical condition and appearance of the buildings, damage to wooden and metal structures and artefacts, and damage to the interior of protected elements of cultural heritage.

The access way for fire trucks to the Museum of the City of Kaštela, which is also an evacuation way, is shown below. The evacuation way, starting with the building of the Museum of the City of Kaštela, passes through Obala kralja Tomsilava Street, continues along Don Ante Rubignonia Street, Franjo Tuđman Road and Putaljski Put Street.



The access road for fire trucks to the Kaštilac location in the settlement of Kaštel Gomilica is also shown below. From the location of the voluntary firebrigade, fire trucks must pass along Kupališni prilaz Street and Primorska Street before reaching the square where the fire truck can be parked. The location where the fire truck can be parked is in the immediate vicinity of the Kaštilac location.



## I. 3. List of historic buildings with instructions for their protection

#### Immovable monuments:

	Characteristics of the historic object: - name	Proposed method of protection	Necessary forces: - number of people: what	Estimated time
No.	<ul> <li>location / address</li> <li>short description with the specification of the most valuable elements</li> </ul>	(Divided into threats if there are differences in proceedings)	services, volunteers, who else? - equipment: belonging to whom / stored where?	needed for protection
1	Muzej grada Kaštela - Nadbiskupska palača, Trg Gospojske Štrade 1, 21212, Kaštel Sućurac - 3 floors stone object with wooden floors and roof construction, - 15 century castle built on embakment later widenet, rare speciment of medieval arhitecture with renesance elements. The oldest castle in the Kastela with original settlement inside the walls. Preserved 8 stone folk houses, 2 - 3 floors objects, with wooden elements, inhabited. One entrance/exit point.	<ul> <li>Heavy rain: <ul> <li>risig sea level and heavy rain: sandbags</li> <li>constructed dams, system of pumps- in future</li> <li>possibility of rising prefabricated dams around the</li> <li>settlement and most enadngered objects, heavy</li> <li>pumps equipped drainage system <ul> <li>implementation strong air dryer system in order</li> <li>minimaze impact of humidation on the wall</li> <li>structure <ul> <li>early warning flood system</li> </ul> </li> </ul> </li> <li>Fire due to drought: <ul> <li>continuous monitoring of environmental</li> <li>conditions</li> <li>early warning and emergency response</li> <li>raising awareness of the local population</li> <li>continuous cooperation with international and national experts</li> <li>adequate firefighting equipment within the object</li> <li>organization of adequate fire protection system</li> <li>organizing fire access</li> </ul> </li> </ul></li></ul>	<ul> <li>Heavy rain: <ul> <li>local fire brigade , civil</li> <li>protection society, employees of</li> <li>muzemum of Kastela city, local</li> <li>citizens - app 300 participants</li> <li>Operational forces of fire</li> <li>fighting; associations; Cultural</li> <li>Heritage managers</li> <li>equipment: portable pumps,</li> <li>electris sumersible pumps, fire truck,</li> <li>absorbing dam, - belonigin and</li> <li>stored to local fire brigade 700</li> <li>meters from the pilot site</li> <li>equipment; sandbags, two</li> <li>trucks, hydraulic rescue tool -</li> <li>belonging to department of</li> <li>maintence of Kastela City, 4 km</li> <li>from the pilot site.</li> </ul> </li> <li>Fire due to drought: <ul> <li>three fire trucks, hydraulic</li> <li>recuse tool, crane, ladders, extinguising foam.</li> </ul> </li> </ul>	Heavy rain: Since the rising level of the sea and heavy rain are predictable it is necesarry to prepare 0 phase: sanbags and enough number of pumps which have to be easy rechable and fast to implement on the site. Depends of the strenght of the impact and expected duration esitmated time to prepare site is 3 hours. Fire due to drought: 15 minutes from the first trace of fire
2	Location Kaštilac , Brce 1, 21213 Kaštel Gomilica - settlemet of 25 stone houses with wooden floors and roofs, 23 inhabitetd, 1-4 floors, built on island 40 meters from the shore. Outside walls of houses are former	Heavy rain: - rising sea level and heavy rain: sandbags constructed dams, system of pumps- in future possibility of rising prefabricated dams around the	Heavy rain: local fire brigade , civil protection society,employees of muzemum of Kastela city, local	<b>Rising sea</b> <b>level</b> : estimat time to prepare site is

fortification system from 16 ct. - bridge connection with shore, only one enter/exit point beneath city tower that has wooden construction elements. - the most important presentation of civilan settlements developement on the area o Kastela. - the most endengered location from the risk of high tide, rising the sea level and fire due to drought	settlement and most endangered objects, heavy pumps equipped drainage system - possibility of upbringing firm damn system around the site in order to prevent water penetration directly through the walls of the castle - early warning flood system - equipping the location with hydrant network <b>Fire due to drought:</b> - continuous monitoring of environmental conditions - early warning and emergency response - raising awareness of the local population - continuous cooperation with international and national experts - adequate firefighting equipment within the object - organization of adequate fire protection system - organizing fire access	citizens - app 200 participants - Operational forces of fire fighting; associations; Cultural Heritage managers - equipment: portable pumps, electris sumersible pumps, submersible turbine pumps, high preasure pumps, fire truck, absorbing dam, firebrigade boat with pupms and water cannons - belonigin and stored to local fire brigade 400 meters from the pilot site - equipment; sandbags, two trucks, hydraulic rescue tool - belonging to department of maintence of Kastela City, 3 km from the pilot site Fire due to drought: - firebrigade boat with pupms and water cannons ,two fire trucks, hydraulic rescue tool, fire extinguish equipment within the museum, - belonigin and stored to local fire brigade 400 meters from the pilot site	2 hours, Fire througt the drought: 15 minutes
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#### Movable monuments:

No.	Artifact characteristics: - name / type - short description - location - quantity, size, weight	Monument protection: - proposed method of protection - quantity and type of packaging	Necessary forces: - Number of people: what services, volunteers, who? - equipment: belonging to whom / stored where? - transport to a safe place/storage - how?	Estimated time needed for protection	A safe place to which artifacts will be evacuated
1	Ancient collection The ancient collection was created as a result of numerous researches by the Archaeological Department in the last twenty years. Finds from the ancient settlement of Sikuli on Resnik stand out, which represent the main item in the Permanent Exhibition. A small part	<ul> <li>- in all collections protection depends on the materials, size and conditions of the artifacts.</li> <li>- paper and textile artefacts are most vulnerable to water, humidity and fire, and most valuable artefacts in museum are consist of these materials. Proposed</li> </ul>	<ul> <li>local fire brigade, civil protection unit, employees of museum, volunteers</li> <li>basic equipment (plastic bags, textile and small number of boxes) are stored in facility of museum. For detail evacuation more equipment should be procured.</li> <li>specialized vehicle - local fire brigade, 700 m</li> </ul>	2 <sup>nd</sup> phase - transportation to safe place -	Premises of building of old chemical school in Kaštel Sućurac , 500 m from the museum in Sućurac and in premises of high

	of the exhibition consists of objects from the Roman cemetery in Donji Krtine in Kaštel Sućurac and from the Roman rustic villa located next to Stara Maslina in Kaštel Štafilić. Time period: antiquity Type of building: various utilitarian objects; grave goods; jewelry; Money; weapon; tool Material: ceramic, metal, stone, bone Number of inventoried items: 2384	methods for small artifacts include protection in waterproof bags and boxes, fragile artefacts will be put in sponge or textile and put in firm plastic boxes. Larger artifacts will be wrapped and protected for later evacuation. Since most of the large artefacts are made from stone or clay, they are more resilient to water impact. - furniture will be wrapped and protected and prepared for transport. - fire extinguishing is priority, then moving heritage monuments	from museum in Sućurac, 2000 m from museum Vitturi - truck - City of Kaštela, 4000 m from museum in Sućurac , 2000 m from museum Vitturi In case of fast water impact artefacts from the ground level will be removed to first floor of the building, and in next step to safe place with vehicle and truck previously secured and prepared for transportation. If it is not possible to carry out an evacuation by land, the evacuation can be carried out with the help of a firefighter if all safety requirements are ensured.		school in Kaštela Novi, 3000 meters from museum Vitturi
2	Prehistoric collection The prehistoric collection of the Museum of the City of Kaštela contains objects from several important sites from the wider area of Kaštela. Objects from Muja's cave, the Neolithic settlement on Resnik, sinkholes and tombstones from the Vučevica and Kaštela fortresses are most represented in the prehistoric part of the new permanent exhibition. The items in the collection were collected mainly by archaeological research and reconnaissance. Time period: Paleolithic; Bronze Age Type of material: ceramic dishes; lithic artifacts Material: ceramics, stone, animal bones, metal Number of inventoried items: 345	<ul> <li>in all collections protection depends on the materials, size and conditions of the artifacts.</li> <li>paper and textile artefacts are most vulnerable to water, humidity and fire, and most valuable artefacts in museum are consist of these materials. Proposed methods for small artifacts include protection in waterproof bags and boxes, fragile artefacts will be put in sponge or textile and put in firm plastic boxes. Larger artifacts will be wrapped and protected for later evacuation.</li> <li>Since most of the large artefacts are made from stone or clay, they are more resilient to water impact.</li> <li>furniture will be wrapped and protected and prepared for transport.</li> <li>fire extinguishing is priority, then moving heritage monuments</li> </ul>	<ul> <li>local fire brigade, civil protection unit, employees of museum, volunteers</li> <li>basic equipment (plastic bags, textile and small number of boxes) are stored in facility of museum. For detail evacuation more equipment should be procured.</li> <li>specialized vehicle - local fire brigade, 700 m from museum in Sućurac, 2000 m from museum Vitturi</li> <li>truck - City of Kaštela, 4000 m from museum in Sućurac , 2000 m from museum Vitturi</li> <li>In case of fast water impact artefacts from the ground level will be removed to first floor of the building, and in next step to safe place with vehicle and truck previously secured and prepared for transportation.</li> <li>If it is not possible to carry out an evacuation by land, the evacuation can be carried out with the help of a firefighter if all safety requirements are ensured.</li> </ul>	In case of fast water impact, 1 <sup>st</sup> phase - 1 hour. 2 <sup>nd</sup> phase - transportation to safe place - several days.	Premises of building of old chemical school in Kaštel Sućurac , 500 m from the museum in Sućurac and in premises of high school in Kaštela Novi, 3000 meters from museum Vitturi
3	The medieval collection contains finds from medieval sites in Kaštela. Finds from Gajin and Stombrat stand out. Time period: 9th - 15th century Material type: jewelry; tool; stone fragments Material: metal 71; stone 4, herringbone 1, glass paste 1 Number of inventoried items: 77	<ul> <li>in all collections protection depends on the materials, size and conditions of the artifacts.</li> <li>paper and textile artefacts are most vulnerable to water, humidity and fire, and most valuable artefacts in museum are consist of these materials. Proposed methods for small artifacts include protection in waterproof bags and boxes, fragile artefacts will be put in sponge or textile and put in firm plastic boxes. Larger artifacts will be wrapped and protected for later evacuation.</li> </ul>	<ul> <li>local fire brigade, civil protection unit, employees of museum, volunteers</li> <li>basic equipment (plastic bags, textile and small number of boxes) are stored in facility of museum. For detail evacuation more equipment should be procured.</li> <li>specialized vehicle - local fire brigade, 700 m from museum in Sućurac, 2000 m from museum Vitturi</li> <li>truck - City of Kaštela, 4000 m from museum in Sućurac , 2000 m from museum Vitturi</li> <li>In case of fast water impact artefacts from the ground level will be removed to first floor of the</li> </ul>	In case of fast water impact, 1 <sup>st</sup> phase - 1 hour. 2 <sup>nd</sup> phase - transportation to safe place - several days.	Premises of building of old chemical school in Kaštel Sućurac , 500 m from the museum in Sućurac and in premises of high school in Kaštela Novi, 3000 meters from museum Vitturi

		<ul> <li>made from stone or clay, they are more resilient to water impact.</li> <li>furniture will be wrapped and protected and prepared for transport.</li> <li>fire extinguishing is priority, then moving heritage monuments</li> </ul>	building, and in next step to safe place with vehicle and truck previously secured and prepared for transportation. If it is not possible to carry out an evacuation by land, the evacuation can be carried out with the help of a firefighter if all safety requirements are ensured.		
4	Marin Studin Collection The collection of Marina Studina includes works by the only Kastela sculptor of the first half of the 20th century. The collection includes sculptures and reliefs created in the period from 1917 to 1958. Time period: 1918 - late 1950s Type of material: sculptures, reliefs, plaques Material: wood, plaster, bronze Number of inventoried items: 70	<ul> <li>in all collections protection depends on the materials, size and conditions of the artifacts.</li> <li>paper and textile artefacts are most vulnerable to water, humidity and fire, and most valuable artefacts in museum are consist of these materials. Proposed methods for small artifacts include protection in waterproof bags and boxes, fragile artefacts will be put in sponge or textile and put in firm plastic boxes. Larger artifacts will be wrapped and protected for later evacuation.</li> <li>Since most of the large artefacts are made from stone or clay, they are more resilient to water impact.</li> <li>furniture will be wrapped and protected and prepared for transport.</li> <li>fire extinguishing is priority, then moving heritage monuments</li> </ul>	<ul> <li>local fire brigade, civil protection unit, employees of museum, volunteers</li> <li>basic equipment (plastic bags, textile and small number of boxes) are stored in facility of museum. For detail evacuation more equipment should be procured.</li> <li>specialized vehicle - local fire brigade, 700 m from museum in Sućurac, 2000 m from museum Vitturi</li> <li>truck - City of Kaštela, 4000 m from museum in Sućurac , 2000 m from museum Vitturi</li> <li>In case of fast water impact artefacts from the ground level will be removed to first floor of the building, and in next step to safe place with vehicle and truck previously secured and prepared for transportation.</li> <li>If it is not possible to carry out an evacuation by land, the evacuation can be carried out with the help of a firefighter if all safety requirements are ensured.</li> </ul>	In case of fast water impact, 1 <sup>st</sup> phase - 1 hour. 2 <sup>nd</sup> phase - transportation to safe place - several days.	Premises of building of old chemical school in Kaštel Sućurac , 500 m from the museum in Sućurac and in premises of high school in Kaštela Novi, 3000 meters from museum Vitturi
5	Collection of documentary material Marin Studin The collection consists of documents related to the life and work of the Kastela sculptor Marin Studin. The collection includes works by the only Kastela sculptor of the first half of the 20th century. The collection includes sculptures and reliefs created in the period from 1917 to 1958. Time period: 20th century Type of material: documents; newspaper articles; exhibition catalogs, photographs Material: paper, photo paper Number of inventoried items: 80	<ul> <li>in all collections protection depends on the materials, size and conditions of the artifacts.</li> <li>paper and textile artefacts are most vulnerable to water, humidity and fire, and most valuable artefacts in museum are consist of these materials. Proposed methods for small artifacts include protection in waterproof bags and boxes, fragile artefacts will be put in sponge or textile and put in firm plastic boxes. Larger artifacts will be wrapped and protected for later evacuation.</li> <li>Since most of the large artefacts are made from stone or clay, they are more resilient to water impact.</li> <li>furniture will be wrapped and protected and prepared for transport.</li> <li>fire extinguishing is priority, then moving heritage monuments</li> </ul>	<ul> <li>local fire brigade, civil protection unit, employees of museum, volunteers</li> <li>basic equipment (plastic bags, textile and small number of boxes) are stored in facility of museum. For detail evacuation more equipment should be procured.</li> <li>specialized vehicle - local fire brigade, 700 m from museum in Sućurac, 2000 m from museum Vitturi</li> <li>truck - City of Kaštela, 4000 m from museum in Sućurac , 2000 m from museum Vitturi</li> <li>In case of fast water impact artefacts from the ground level will be removed to first floor of the building, and in next step to safe place with vehicle and truck previously secured and prepared for transportation.</li> <li>If it is not possible to carry out an evacuation by land, the evacuation can be carried out with the help of a firefighter if all safety requirements are ensured.</li> </ul>	In case of fast water impact, 1 <sup>st</sup> phase - 1 hour. 2 <sup>nd</sup> phase - transportation to safe place - several days.	Premises of building of old chemical school in Kaštel Sućurac , 500 m from the museum in Sućurac and in premises of high school in Kaštela Novi, 3000 meters from museum Vitturi

6	A collection of modern art The collection of modern art includes paintings, drawings and graphics created in the first half of the 20th century; paintings by Milan Tolić, Petar Bettiza, Frane Ivanec, drawings by Pava Metličić and two graphic sheets of the poetic-graphic map "Jama" by Ivan Goran Kovačić, illustrated by Zlatko Prica and Edo Murtić in 1944. Time period: 1919 - 1944 Type of material: paintings, drawings, graphics Material: canvas, paper Number of inventoried items: 10	<ul> <li>in all collections protection depends on the materials, size and conditions of the artifacts.</li> <li>paper and textile artefacts are most vulnerable to water, humidity and fire, and most valuable artefacts in museum are consist of these materials. Proposed methods for small artifacts include protection in waterproof bags and boxes, fragile artefacts will be put in sponge or textile and put in firm plastic boxes. Larger artifacts will be wrapped and protected for later evacuation.</li> <li>Since most of the large artefacts are made from stone or clay, they are more resilient to water impact.</li> <li>furniture will be wrapped and protected and prepared for transport.</li> <li>fire extinguishing is priority, then moving heritage monuments</li> </ul>	<ul> <li>local fire brigade, civil protection unit, employees of museum, volunteers</li> <li>basic equipment (plastic bags, textile and small number of boxes) are stored in facility of museum. For detail evacuation more equipment should be procured.</li> <li>specialized vehicle - local fire brigade, 700 m from museum in Sućurac, 2000 m from museum Vitturi</li> <li>truck - City of Kaštela, 4000 m from museum in Sućurac , 2000 m from museum Vitturi</li> <li>In case of fast water impact artefacts from the ground level will be removed to first floor of the building, and in next step to safe place with vehicle and truck previously secured and prepared for transportation.</li> <li>If it is not possible to carry out an evacuation by land, the evacuation can be carried out with the help of a firefighter if all safety requirements are ensured.</li> </ul>	In case of fast water impact, 1 <sup>st</sup> phase - 1 hour. 2 <sup>nd</sup> phase - transportation to safe place - several days.	Premises of building of old chemical school in Kaštel Sućurac , 500 m from the museum in Sućurac and in premises of high school in Kaštela Novi, 3000 meters from museum Vitturi
7	A collection of paintings of contemporary art The collection contains paintings, graphics and drawings from the middle of the 20th century to the present day. Most of the material consists of works created from the 1980s, ie from the beginning of the Studin Gallery, the origin of today's Museum, until today. The authors represented in the collection are mainly from Croatia, there is a smaller number of contemporary authors from abroad. The collection is stylistically and heterogeneous in terms of materials used and technological procedures. Time period: second half of the 20th century - 21st century Type of material: paintings, graphics, drawings, photographs Material: canvas; paper, photo paper, hardboard, MDF, glass Number of inventoried items: 113	<ul> <li>in all collections protection depends on the materials, size and conditions of the artifacts.</li> <li>paper and textile artefacts are most vulnerable to water, humidity and fire, and most valuable artefacts in museum are consist of these materials. Proposed methods for small artifacts include protection in waterproof bags and boxes, fragile artefacts will be put in sponge or textile and put in firm plastic boxes. Larger artifacts will be wrapped and protected for later evacuation.</li> <li>Since most of the large artefacts are made from stone or clay, they are more resilient to water impact.</li> <li>furniture will be wrapped and protected and prepared for transport.</li> <li>fire extinguishing is priority, then moving heritage monuments</li> </ul>	<ul> <li>local fire brigade, civil protection unit, employees of museum, volunteers</li> <li>basic equipment (plastic bags, textile and small number of boxes) are stored in facility of museum. For detail evacuation more equipment should be procured.</li> <li>specialized vehicle - local fire brigade, 700 m from museum in Sućurac, 2000 m from museum Vitturi</li> <li>truck - City of Kaštela, 4000 m from museum in Sućurac , 2000 m from museum Vitturi</li> <li>In case of fast water impact artefacts from the ground level will be removed to first floor of the building, and in next step to safe place with vehicle and truck previously secured and prepared for transportation.</li> <li>If it is not possible to carry out an evacuation by land, the evacuation can be carried out with the help of a firefighter if all safety requirements are ensured.</li> </ul>	In case of fast water impact, 1 <sup>st</sup> phase - 1 hour. 2 <sup>nd</sup> phase - transportation to safe place - several days.	Premises of building of old chemical school in Kaštel Sućurac , 500 m from the museum in Sućurac and in premises of high school in Kaštela Novi, 3000 meters from museum Vitturi
8	A collection of sculptures of contemporary art The collection of sculptures of contemporary art includes works created in the period from 1955 to the present day, mostly by domestic authors. According to stylistic features,	<ul> <li>in all collections protection depends on the materials, size and conditions of the artifacts.</li> <li>paper and textile artefacts are most vulnerable to water, humidity and fire, and most valuable artefacts in museum</li> </ul>	<ul> <li>local fire brigade, civil protection unit, employees of museum, volunteers</li> <li>basic equipment (plastic bags, textile and small number of boxes) are stored in facility of museum. For detail evacuation more equipment should be procured.</li> </ul>	In case of fast water impact, 1 <sup>st</sup> phase - 1 hour. 2 <sup>nd</sup> phase - transportation to safe place -	Premises of building of old chemical school in Kaštel Sućurac , 500 m from the museum in Sućurac and in

	materials and technological procedures, the collection is heterogeneous. Time period: from 1950 onwards Type of material: sculptures, reliefs Material: metal; stone; wood; gypsum; ceramics; glass Number of inventoried items: 70	are consist of these materials. Proposed methods for small artifacts include protection in waterproof bags and boxes, fragile artefacts will be put in sponge or textile and put in firm plastic boxes. Larger artifacts will be wrapped and protected for later evacuation. Since most of the large artefacts are made from stone or clay, they are more resilient to water impact. - furniture will be wrapped and protected and prepared for transport. - fire extinguishing is priority, then moving heritage monuments	<ul> <li>specialized vehicle - local fire brigade, 700 m from museum in Sućurac, 2000 m from museum Vitturi</li> <li>truck - City of Kaštela, 4000 m from museum in Sućurac , 2000 m from museum Vitturi</li> <li>In case of fast water impact artefacts from the ground level will be removed to first floor of the building, and in next step to safe place with vehicle and truck previously secured and prepared for transportation.</li> <li>If it is not possible to carry out an evacuation by land, the evacuation can be carried out with the help of a firefighter if all safety requirements are ensured.</li> </ul>	several days.	premises of high school in Kaštela Novi, 3000 meters from museum Vitturi
9	Storage book The "Maestral" collection includes paintings, sculptures, graphics, drawings and photographs that have been valorized as the most valuable works created by the fifteen- year operation of the "Maestral" Art Colony Time period: 1980 - 2002 Type of material: paintings, graphics, drawings, photographs, sculptures, reliefs Material: canvas, paper, metal, glass Number of inventoried items: 159	<ul> <li>in all collections protection depends on the materials, size and conditions of the artifacts.</li> <li>paper and textile artefacts are most vulnerable to water, humidity and fire, and most valuable artefacts in museum are consist of these materials. Proposed methods for small artifacts include protection in waterproof bags and boxes, fragile artefacts will be put in sponge or textile and put in firm plastic boxes. Larger artifacts will be wrapped and protected for later evacuation. Since most of the large artefacts are made from stone or clay, they are more resilient to water impact.</li> <li>furniture will be wrapped and protected and prepared for transport.</li> <li>fire extinguishing is priority, then moving heritage monuments</li> </ul>	<ul> <li>local fire brigade, civil protection unit, employees of museum, volunteers</li> <li>basic equipment (plastic bags, textile and small number of boxes) are stored in facility of museum. For detail evacuation more equipment should be procured.</li> <li>specialized vehicle - local fire brigade, 700 m from museum in Sućurac, 2000 m from museum Vitturi</li> <li>truck - City of Kaštela, 4000 m from museum in Sućurac , 2000 m from museum Vitturi</li> <li>In case of fast water impact artefacts from the ground level will be removed to first floor of the building, and in next step to safe place with vehicle and truck previously secured and prepared for transportation.</li> <li>If it is not possible to carry out an evacuation by land, the evacuation can be carried out with the help of a firefighter if all safety requirements are ensured.</li> </ul>	In case of fast water impact, 1 <sup>st</sup> phase - 1 hour. 2 <sup>nd</sup> phase - transportation to safe place - several days.	Premises of building of old chemical school in Kaštel Sućurac , 500 m from the museum in Sućurac and in premises of high school in Kaštela Novi, 3000 meters from museum Vitturi
10	Ethnographic collection The ethnographic collection was founded in 1990, after the purchase of a large number of items of ethnographic character (chests, horseshoes, spindles). Time period: 19th century - 20th century Type of material: furniture; jewelry; tools Material: metal; wood; textile Number of inventoried items: 277	<ul> <li>in all collections protection depends on the materials, size and conditions of the artifacts.</li> <li>paper and textile artefacts are most vulnerable to water, humidity and fire, and most valuable artefacts in museum are consist of these materials. Proposed methods for small artifacts include protection in waterproof bags and boxes, fragile artefacts will be put in sponge or textile and put in firm plastic boxes. Larger artifacts will be wrapped and protected for later evacuation.</li> </ul>	<ul> <li>local fire brigade, civil protection unit, employees of museum, volunteers</li> <li>basic equipment (plastic bags, textile and small number of boxes) are stored in facility of museum. For detail evacuation more equipment should be procured.</li> <li>specialized vehicle - local fire brigade, 700 m from museum in Sućurac, 2000 m from museum Vitturi</li> <li>truck - City of Kaštela, 4000 m from museum in Sućurac , 2000 m from museum Vitturi</li> <li>In case of fast water impact artefacts from the</li> </ul>	In case of fast water impact, 1 <sup>st</sup> phase - 1 hour. 2 <sup>nd</sup> phase - transportation to safe place - several days.	Premises of building of old chemical school in Kaštel Sućurac , 500 m from the museum in Sućurac and in premises of high school in Kaštela Novi, 3000 meters from museum Vitturi

		Since most of the large artefacts are made from stone or clay, they are more resilient to water impact. - furniture will be wrapped and protected and prepared for transport. - fire extinguishing is priority, then moving heritage monuments	ground level will be removed to first floor of the building, and in next step to safe place with vehicle and truck previously secured and prepared for transportation. If it is not possible to carry out an evacuation by land, the evacuation can be carried out with the help of a firefighter if all safety requirements are ensured.		
11	A collection of devotionals The collection of devotionals contains objects that were used in houses to express piety. These objects can be used in church spaces for a certain period of time. These are crucifixes, rosaries, icons, medallions, reliquaries, prayer books. Time period: 18th century - 20th century Type of material: objects related to the piety of the inhabitants of Kaštela; objects of piety Material: paper; metal; wood; textile; skin Number of inventoried items: 347	<ul> <li>in all collections protection depends on the materials, size and conditions of the artifacts.</li> <li>paper and textile artefacts are most vulnerable to water, humidity and fire, and most valuable artefacts in museum are consist of these materials. Proposed methods for small artifacts include protection in waterproof bags and boxes, fragile artefacts will be put in sponge or textile and put in firm plastic boxes. Larger artifacts will be wrapped and protected for later evacuation.</li> <li>Since most of the large artefacts are made from stone or clay, they are more resilient to water impact.</li> <li>furniture will be wrapped and protected and prepared for transport.</li> <li>fire extinguishing is priority, then moving heritage monuments</li> </ul>	<ul> <li>local fire brigade, civil protection unit, employees of museum, volunteers</li> <li>basic equipment (plastic bags, textile and small number of boxes) are stored in facility of museum. For detail evacuation more equipment should be procured.</li> <li>specialized vehicle - local fire brigade, 700 m from museum in Sućurac, 2000 m from museum Vitturi</li> <li>truck - City of Kaštela, 4000 m from museum in Sućurac , 2000 m from museum Vitturi</li> <li>In case of fast water impact artefacts from the ground level will be removed to first floor of the building, and in next step to safe place with vehicle and truck previously secured and prepared for transportation.</li> <li>If it is not possible to carry out an evacuation by land, the evacuation can be carried out with the help of a firefighter if all safety requirements are ensured.</li> </ul>	In case of fast water impact, 1 <sup>st</sup> phase - 1 hour. 2 <sup>nd</sup> phase - transportation to safe place - several days.	Premises of building of old chemical school in Kaštel Sućurac , 500 m from the museum in Sućurac and in premises of high school in Kaštela Novi, 3000 meters from museum Vitturi
12	Collection of documentary material The collection contains various documents from the 19th and 20th centuries: books, maps, plans, school certificates, diplomas, postcards, photographs, personal documents Time period: 18th century - 20th century Type of material: photographs; postcards; books; written documents Material: photographs; postcards; books; written documents Number of inventoried items: 2092	<ul> <li>in all collections protection depends on the materials, size and conditions of the artifacts.</li> <li>paper and textile artefacts are most vulnerable to water, humidity and fire, and most valuable artefacts in museum are consist of these materials. Proposed methods for small artifacts include protection in waterproof bags and boxes, fragile artefacts will be put in sponge or textile and put in firm plastic boxes. Larger artifacts will be wrapped and protected for later evacuation.</li> <li>Since most of the large artefacts are made from stone or clay, they are more resilient to water impact.</li> <li>furniture will be wrapped and protected and prepared for transport.</li> <li>fire extinguishing is priority, then moving heritage monuments</li> </ul>	<ul> <li>local fire brigade, civil protection unit, employees of museum, volunteers</li> <li>basic equipment (plastic bags, textile and small number of boxes) are stored in facility of museum. For detail evacuation more equipment should be procured.</li> <li>specialized vehicle - local fire brigade, 700 m from museum in Sućurac, 2000 m from museum Vitturi</li> <li>truck - City of Kaštela, 4000 m from museum in Sućurac , 2000 m from museum Vitturi</li> <li>In case of fast water impact artefacts from the ground level will be removed to first floor of the building, and in next step to safe place with vehicle and truck previously secured and prepared for transportation.</li> <li>If it is not possible to carry out an evacuation by land, the evacuation can be carried out with the help of a firefighter if all safety requirements are</li> </ul>	In case of fast water impact, 1 <sup>st</sup> phase - 1 hour. 2 <sup>nd</sup> phase - transportation to safe place - several days.	Premises of building of old chemical school in Kaštel Sućurac , 500 m from the museum in Sućurac and in premises of high school in Kaštela Novi, 3000 meters from museum Vitturi

			ensured.		
13	Collection of weapons and equipment The collection contains specimens of weapons and equipment from the 16th to the 20th century that were used in the Venetian- Turkish wars. Also in this collection are weapons and equipment used in the Homeland War. Time period: 18th century - 20th century Type of material: weapon; war equipment Material: metal; wood; stone Number of inventoried items: 117	<ul> <li>in all collections protection depends on the materials, size and conditions of the artifacts.</li> <li>paper and textile artefacts are most vulnerable to water, humidity and fire, and most valuable artefacts in museum are consist of these materials. Proposed methods for small artifacts include protection in waterproof bags and boxes, fragile artefacts will be put in sponge or textile and put in firm plastic boxes. Larger artifacts will be wrapped and protected for later evacuation.</li> <li>Since most of the large artefacts are made from stone or clay, they are more resilient to water impact.</li> <li>furniture will be wrapped and protected and prepared for transport.</li> <li>fire extinguishing is priority, then moving heritage monuments</li> </ul>	<ul> <li>local fire brigade, civil protection unit, employees of museum, volunteers</li> <li>basic equipment (plastic bags, textile and small number of boxes) are stored in facility of museum. For detail evacuation more equipment should be procured.</li> <li>specialized vehicle - local fire brigade, 700 m from museum in Sućurac, 2000 m from museum Vitturi</li> <li>truck - City of Kaštela, 4000 m from museum in Sućurac , 2000 m from museum Vitturi</li> <li>In case of fast water impact artefacts from the ground level will be removed to first floor of the building, and in next step to safe place with vehicle and truck previously secured and prepared for transportation.</li> <li>If it is not possible to carry out an evacuation by land, the evacuation can be carried out with the help of a firefighter if all safety requirements are ensured.</li> </ul>	In case of fast water impact, 1 <sup>st</sup> phase - 1 hour. 2 <sup>nd</sup> phase - transportation to safe place - several days.	Premises of building of old chemical school in Kaštel Sućurac , 500 m from the museum in Sućurac and in premises of high school in Kaštela Novi, 3000 meters from museum Vitturi
	Textile collection The collection contains specimens of clothing and various textile objects made in the 19th and 20th centuries. Time period: 17th century - 20th century Material type: clothing; laundry; bed sheet Material: textile Number of inventoried items: 447	<ul> <li>in all collections protection depends on the materials, size and conditions of the artifacts.</li> <li>paper and textile artefacts are most vulnerable to water, humidity and fire, and most valuable artefacts in museum are consist of these materials. Proposed methods for small artifacts include protection in waterproof bags and boxes, fragile artefacts will be put in sponge or textile and put in firm plastic boxes. Larger artifacts will be wrapped and protected for later evacuation. Since most of the large artefacts are made from stone or clay, they are more resilient to water impact.</li> <li>furniture will be wrapped and protected and prepared for transport.</li> <li>fire extinguishing is priority, then moving heritage monuments</li> </ul>	<ul> <li>local fire brigade, civil protection unit, employees of museum, volunteers</li> <li>basic equipment (plastic bags, textile and small number of boxes) are stored in facility of museum. For detail evacuation more equipment should be procured.</li> <li>specialized vehicle - local fire brigade, 700 m from museum in Sućurac, 2000 m from museum Vitturi</li> <li>truck - City of Kaštela, 4000 m from museum in Sućurac , 2000 m from museum Vitturi</li> <li>In case of fast water impact artefacts from the ground level will be removed to first floor of the building, and in next step to safe place with vehicle and truck previously secured and prepared for transportation.</li> <li>If it is not possible to carry out an evacuation by land, the evacuation can be carried out with the help of a firefighter if all safety requirements are ensured.</li> </ul>	In case of fast water impact, 1 <sup>st</sup> phase - 1 hour. 2 <sup>nd</sup> phase - transportation to safe place - several days.	Premises of building of old chemical school in Kaštel Sućurac , 500 m from the museum in Sućurac and in premises of high school in Kaštela Novi, 3000 meters from museum Vitturi
14	<b>Collection of works of art and arts and crafts</b> The collection of works of art and crafts consists of objects of various purposes and artistic quality from the 18th century to the 20th century.	<ul> <li>in all collections protection depends on the materials, size and conditions of the artifacts.</li> <li>paper and textile artefacts are most vulnerable to water, humidity and fire,</li> </ul>	<ul> <li>local fire brigade, civil protection unit, employees of museum, volunteers</li> <li>basic equipment (plastic bags, textile and small number of boxes) are stored in facility of museum. For detail evacuation more equipment</li> </ul>	In case of fast water impact, 1 <sup>st</sup> phase - 1 hour. 2 <sup>nd</sup> phase - transportation to	Premises of building of old chemical school in Kaštel Sućurac , 500 m from the museum in

	Time period: 16th century - 20th century Type of material: furniture; useful objects; decorative items; jewelry; images; sculptures Material: ceramic; metal; wood Number of inventoried items: 640	and most valuable artefacts in museum are consist of these materials. Proposed methods for small artifacts include protection in waterproof bags and boxes, fragile artefacts will be put in sponge or textile and put in firm plastic boxes. Larger artifacts will be wrapped and protected for later evacuation. Since most of the large artefacts are made from stone or clay, they are more resilient to water impact. - furniture will be wrapped and protected and prepared for transport. - fire extinguishing is priority, then moving heritage monuments	<ul> <li>should be procured.</li> <li>specialized vehicle - local fire brigade, 700 m from museum in Sućurac, 2000 m from museum Vitturi</li> <li>truck - City of Kaštela, 4000 m from museum in Sućurac , 2000 m from museum Vitturi</li> <li>In case of fast water impact artefacts from the ground level will be removed to first floor of the building, and in next step to safe place with vehicle and truck previously secured and prepared for transportation.</li> <li>If it is not possible to carry out an evacuation by land, the evacuation can be carried out with the help of a firefighter if all safety requirements are ensured.</li> </ul>	safe place - several days.	Sućurac and in premises of high school in Kaštela Novi, 3000 meters from museum Vitturi
15	Kaštel Sućurac Native Collection (Ada Danek) The collection and redemption was started by the Association for the Preservation of Cultural Heritage "Podvorje" in 1989. The collection consists of objects of various purposes and artistic quality from the 18th to the 20th century. Time period: 18th - 20th century Material type: clothing; laundry; bed sheet; furniture; useful objects; jewelry; images; sculptures Material: paper; metal; wood; textile Number of inventoried items: 947	<ul> <li>in all collections protection depends on the materials, size and conditions of the artifacts.</li> <li>paper and textile artefacts are most vulnerable to water, humidity and fire, and most valuable artefacts in museum are consist of these materials. Proposed methods for small artifacts include protection in waterproof bags and boxes, fragile artefacts will be put in sponge or textile and put in firm plastic boxes. Larger artifacts will be wrapped and protected for later evacuation. Since most of the large artefacts are made from stone or clay, they are more resilient to water impact.</li> <li>furniture will be wrapped and protected and prepared for transport.</li> <li>fire extinguishing is priority, then moving heritage monuments</li> </ul>	<ul> <li>local fire brigade, civil protection unit, employees of museum, volunteers</li> <li>basic equipment (plastic bags, textile and small number of boxes) are stored in facility of museum. For detail evacuation more equipment should be procured.</li> <li>specialized vehicle - local fire brigade, 700 m from museum in Sućurac, 2000 m from museum Vitturi</li> <li>truck - City of Kaštela, 4000 m from museum in Sućurac , 2000 m from museum Vitturi</li> <li>In case of fast water impact artefacts from the ground level will be removed to first floor of the building, and in next step to safe place with vehicle and truck previously secured and prepared for transportation.</li> <li>If it is not possible to carry out an evacuation by land, the evacuation can be carried out with the help of a firefighter if all safety requirements are ensured.</li> </ul>	In case of fast water impact, 1 <sup>st</sup> phase - 1 hour. 2 <sup>nd</sup> phase - transportation to safe place - several days.	Premises of building of old chemical school in Kaštel Sućurac , 500 m from the museum in Sućurac and in premises of high school in Kaštela Novi, 3000 meters from museum Vitturi

### I. 4. Materials and equipment necessary for protection

- Site of Archbishop palace Kaštel Sućurac.
  - <u>Heavy rain and sea flood threat:</u>
    - Volunteer Fire Department- Mladost: 2 Motor pumps 1600l/min, 1 electric submersible pump 400l/min, 2 Specialised veihcle all equipement in premises of firefighting brigade, 700 meters from the site, 73 operative firefighters
    - Comannding officier Joško Božin
    - 15 minutes time of reaction
    - **Civil protection unit kaštela:** sandbags, sand, delivery truck, wooden bariers - all equipement in premises of Utility unit in Kaštel Novi, 5 km from the pilot site - 46 civil protection comissioners in Kaštela Sućurac, 400 citizens and volunteers
    - 60 min time for reascion
  - Fire threat:
    - Volunteer Fire Department- Mladost: 1 fire truck, 1 tank, 2 specialised vehicle all equipement in premises of firefighting brigade, 700 meters from the site, 73 operative firefighters,
    - Commanding oficier Joško Božin
    - 15 minutes time of reaction

### - Site of Kaštilac, Kaštel Gomilica

- <u>Heavy rain and sea flood threat</u>
  - Volunteer Fire Department- Gomilica 2 Specialized water vehicle, 1 Electric pump, 1 Suction-pressure pump, 1 Water pump UP1, 1 High pressure pump, 2 Absorbing dam - all equipement in premises of firefighting brigade, 400 meters from the site, 10 operative workers, 40 volunteers firefighters
  - Comannding officier Milivoj Taslak
  - 20 minutes time of reaction
  - **Civil protection unit kaštela:** sandbags, sand, delivery truck, wooden bariers - all equipement in premises of Utility unit in Kaštel Novi, 4 km from the pilot site - 22 civil protection comissioners in Kaštela Sućurac, 200 citizens and volunteers
- Fire threat:
  - Volunteer Fire Department- Gomilica: 1 fire truck, 1 fire trunk 2 specialised vehicle, 1 firefighting boast all equipement in premises of firefighting brigade, 400 meters from the site, 10 operative workers, 40 volunteers firefighters
  - Comannding officier Milivoj Taslak
  - 15 minutes time of reaction

### I. 5. List of the evacuation / protection order

1) <u>Settlement Kastilac, Kaštel Gomilica</u>- the most vulnerable due to the location on the sea level, inhabited, inappropriate draining system, lack of fire/water exits, state of the infrastructure which combines stone and wooden elements, problematic access in case of storm (if the waves are too high fireboat cannot participate and only one exit is throuh city gate which is below tower that has wooden elements).

2) <u>Castle Vitturi, Kaštel Lukšić</u> - Central Muzeum of Kaštela is located in that object, built in the seaside on the sea level, renovated with one entrance/exit through the caste door. Museum depo is situated on the ground level, artifacts are endangered by the sea water. Wooden construction elements and paper artefacts make it vulnerable to the fire. Important representing area and fundus are in there.

3) <u>Archbishop palace, Kaštel Sućurac</u> - Department of Museum of Kaštela, built on the sea level with inappropriate draining system, inhabited, museum depo is on the ground level. The threat for the citizens as well for the museum exhibits. Since is not directly on the se side more time is available for reaction and prevention action.

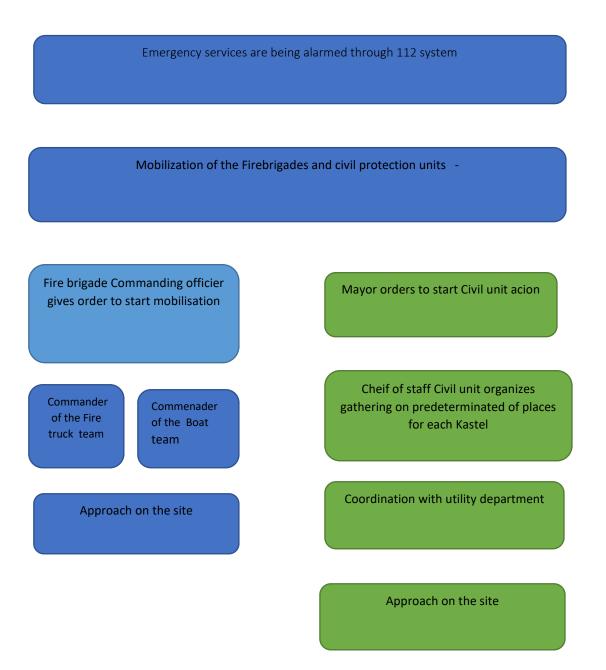
4) <u>Movable objects:</u>

Movable objects from the ground level (museum depo) that are vulnerable to the water impact will be reallocated on the first floor of the museum where it will be prepared for further move to the safe place. Parts of collections made from wood, fabric, paper and pergament approximately 350 items. Stone, ceramics, glass and metal objects will be removed from the ground level after emergency situation to be restored and preserved.

# I. 6. List of rescue units, institutions and organizations that are intended to provide assistance

- DVD Mladost Kaštela Sućurac, Putaljki put 58, Commanding Officer Joško Božin,
   Phone ++385 21 224 333, mladost-dvd@st.ht.hr
- DVD Kaštel Gomilica- Kaštel Gomilica, Obala Kralja Tomislava 3, Commanding Officer Milivoj Taslak,
  - Phone: ++385 21 222 360 , info@dvdkastelgomilica.hr
- DVD Kaštela- Kaštel Stari, Ulica Ivana Danila 21, Commanding Officer Roko Maletić,
   Phone: ++ 385 21 23 0333, <u>info@dvd-kastela.hr</u>
- <u>Civil protection</u> 14 members of command under coordination of Mayor through 112 coordination system and in accordance to Civil protection plan

## I. 7. Diagram of the alarm / notification system



## I. 8. Operational Instructions

The organizational schemes for the activities of stakeholders in Kaštel Sućurac and Kaštel Gomilica are given below.

## OPERATIONAL INSTRUCTIONS FOR CRISIS MANAGEMENT IN KAŠTEL SUĆURAC:

#### Cultural heritage managers

- identifies endangered inventory,
- carry out rescue prioritization,
- monitor the situation,

- monitor conditions to alert the competent services in time,
- inform the competent services.

### Local population and volunteers from local associations:

• provide evacuation assistance.

#### Competent operational services:

- competent, professional and operational body,
- organizes the Civil Protection Headquarters,
- jointly appoint a Rescue team leader,
- determine the parameters for setting temporary measures,
- installation of temporary embankments to save time for evacuation of damaged or extremely endangered movable cultural heritage,
- constant consultation of all operational units in the field,
- evacuate damaged and endangered cultural heritage,
- pumping water out of flooded parts of the building after evacuation,
- assist and actively participate determine the status of other parts of the museum that were not under the direct influence of water,
- assist and actively participate determine the threat status of the unaccounted museum property.

### Rescue team leader:

- distributes responsibilities between units responsible for evacuation,
- in coordination with Competent operational services makes a decision on the implementation of the evacuation of movable cultural heritage that has been previously inventoried and prioritized for rescue,
- in coordination with members of the operational services, determine the status of other parts of the museum that were not under the direct influence of water,
- in coordination with members of the operational services, determines the threat status of the unaccounted museum property,
- defining further guidelines for action in case of continued adverse weather conditions.

### OPERATIONAL INSTRUCTIONS FOR CRISIS MANAGEMENT IN KAŠTEL GOMILICA:

#### Cultural heritage managers:

- identifies endangered inventory,
- carry out rescue prioritization,
- monitor the situation and monitor the conditions to alert the competent services in time,
- inform the competent services and the local population about the observed fire,
- record damage and endangered property after evacuation,
- participates in decision-making on further activities.

#### Competent operational services:

- shall appoint a rescue team leader,
- identify hazards and define measures in accordance with the identified situation,
- determine all forms of accidents,
- carry out the evacuation of casualties,
- record damage and endangered property after evacuation,
- participates in decision-making on further activities,
- pump water out of flooded parts of the building.

#### The Cultural Heritage Rescue and Evacuation Action Manager:

- carries out prioritization, ie the order of performing protection and rescue activities,
- gives approval to start the firefighting procedure,
- communicates with the cultural heritage manager and operational services about the decision on further activities,
- allocates responsibilities between operating units present,
- determine the status of other parts of the castle that were not directly affected by water and determine the status of the property,
- in cooperation and communication with others, defines guidelines for action in case of continued adverse weather conditions.

# I. 9. Organization of exercises and training in the field of cultural heritage protection.

Cultural institutions in the Republic of Croatia have no obligation to hold exercises and training in the field of cultural heritage protection. For this reason, cultural institutions do not conduct such exercises and training. However, institutions are legally obliged to draw up an Evacuation and Rescue Plan. Experience gathered from pilot site demonstration are presented to responsible persons (head master and muzeum staff, firebrigade members) in order to implement it in existig rescue plans and to prepare annually exercise as a mandatory ectivity.

# **II. GRAPHIC PART**

## II. 1. Organizational Map

A map including:

- immovable monuments,
- places with movable monuments,
- headquarters / location of rescue units and/or organizations,
- potential threats that can be shown on the map, e.g. rivers, landslides.

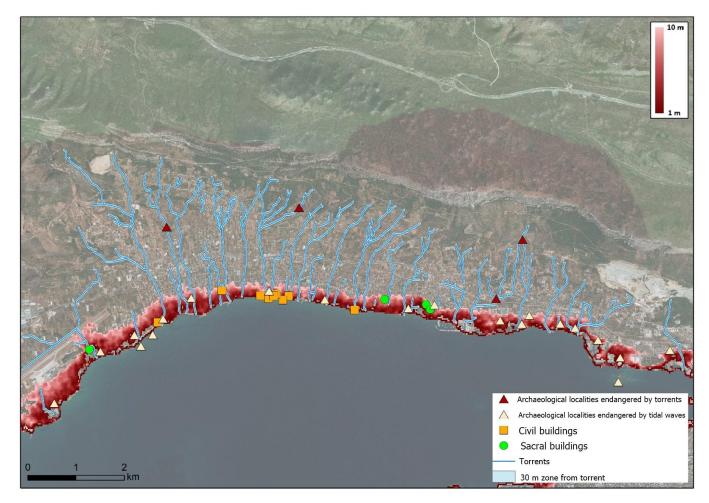


FIG. 1. ENDANGERED ELEMENTS OF CULTURAL HERITAGE IN THE AREA OF THE CITY OF KAŠTELA