

FinEst Centre
for Smart Cities

SMART CITY CHALLENGE 2025

City Challenge

Max 3 pages

send to smartcity@taltech.ee by Sept 30, 2025

Challenge Title – (max 5 words, no acronyms) Riverbank resilience

City/county and country Pärnu City, Estonia

Main contact from your city/county – name, organization, job title, e-mail, phone

Maarja Karjam, Pärnu City Government, development specialist, Maarja.karjam@parnu.ee, 522 7137

1. What is the future urban challenge that would need a solution to?

Riverbank erosion and flooding threaten infrastructure and cultural heritage in Pärnu. A specific case is the Sauga River, where a cemetery is located on the riverbank. Rising water levels and erosion undermine the stability of the bank, putting the cemetery and surrounding areas at risk. The future challenge is to secure the riverbank while respecting environmental values and cultural sensitivities.

- **Please describe the challenge of your city / county neighboring a city?**

The Sauga River flows through areas that connect Pärnu with neighboring municipalities. The erosion problem does not stop at city borders – it has an impact on landowners, local communities and cross-municipal water management. Protection of the cemetery is a particularly sensitive issue that also carries symbolic value for residents.

- **Which category your challenge is primarily in: safe city, happy city, and climate resilient city?** Climate resilient city
- **Why is it important for your city to solve it? How big priority it is for you and why?**

Securing riverbanks is essential for:

- Protecting critical sites such as cemeteries and heritage areas,
- Preventing property damage and infrastructure loss,
- Safeguarding biodiversity and water quality.

For Pärnu, the Sauga River case is a high priority because the cemetery is an irreplaceable cultural and emotional site for citizens. Its degradation would cause irreversible damage and community distress.

- **Is this a unique challenge/problem of your city, why or is this by your knowledge a challenge/problem that many cities have – which kind of other cities?**

Riverbank erosion is not unique to Pärnu. Many cities with rivers face similar challenges, especially where water levels fluctuate and where cultural or historical sites are located near riverbanks (for example: Kaunas, Vilnius, Prague, Budapest).



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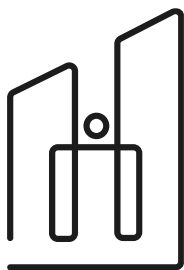


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2. Innovation.

- **How have you solved that issue so far? Why aren't the present solutions good enough? Are there legal obstacles, which ones?**

The city has reinforced some riverbank sections with traditional engineering methods (stones, retaining structures). However, these are local and short-term solutions.

They do not cover the entire affected area, Conventional solutions often harm ecosystems, Maintenance costs are high and solutions are not sustainable long-term. Classical wall-building (concrete or stone embankments) is extremely costly and beyond the financial capacity of many cities, including Pärnu,

Yes, environmental regulations and heritage protection laws require careful consideration. Construction near cemeteries and in river ecosystems faces legal and social sensitivities.

- **What should be the main features, characteristics of the future solution to be potentially best for that challenge or problem**
- Environmentally friendly bank stabilization techniques (nature-based solutions),
- Respect for cultural and emotional values of the cemetery,
- Long-term, cost-efficient and low-maintenance design,
- Ability to replicate in other parts of the city and region.

3. Expected impact of your pilot solution.

- To city environment: improved resilience of riverbanks, preserved ecosystems and reduced erosion.
- To citizens: protection of a culturally significant site (cemetery), enhanced trust in city governance.
- To city governance: strengthened capacity to manage climate adaptation challenges, ability to apply best practices regionally.

4. Piloting

- **Why would you be interested to become a piloting partner of a proposed solution to the challenge you are describing here? Describe shortly your capability to participate.**

Pärnu would be an excellent pilot partner because:

- the city faces a real and urgent case with the Sauga River,
- it provides an opportunity to test both engineering and nature-based solutions in combination,
- the project has high visibility and symbolic value, increasing community engagement,
- results can be scaled to other vulnerable riverbanks in Pärnu and elsewhere.



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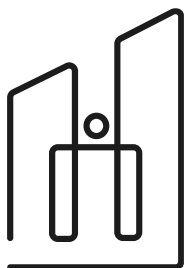


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CHECKLIST AND FAQ

Are you a city, municipality or a campus / private real estate developer?

Yes – you are warmly welcome to propose 1-3 challenges, one challenge per one template

No – do not send us any challenges but wait until we have gathered urban challenges and you are welcome to propose solution ideas by November 30

Are you describing challenge or problem? – Yes, then great.

Does a city need to propose a solution idea as well? – No, the researchers and companies will propose their solution ideas to the challenges proposal by the cities.

Can only Estonian cities propose challenges? Can only EU cities propose challenges? – No, cities* from whatever country are warmly welcome.

*A **City** is a local administrative unit where the majority of the population lives in an urban centre of at least 50 000 inhabitants and cities from countries with less than 5 cities of more than 100 000 inhabitants if they have more than 10 000 inhabitants. Those countries are: Croatia (HR), Cyprus (CY), Estonia (EE), Ireland (IE), Latvia (LV), Lithuania (LT), Luxembourg (LU), Malta (MT), Slovenia (SI) and Slovakia (SK).

Can our city participate without proposing a challenge? – Yes, that is also possible but then you need to vote for challenges proposed by other cities. This can be done between Oct 2-30.

How will the challenges be evaluated? – We will not evaluate the proposed challenges but other cities/municipalities/campuses/private real estate developers can vote for the proposed challenges. In Round 5 researchers will start to propose solution ideas only to the challenges that have minimum one Estonian city/county and one city/county from another country.

