

# **NIGECHIZU**

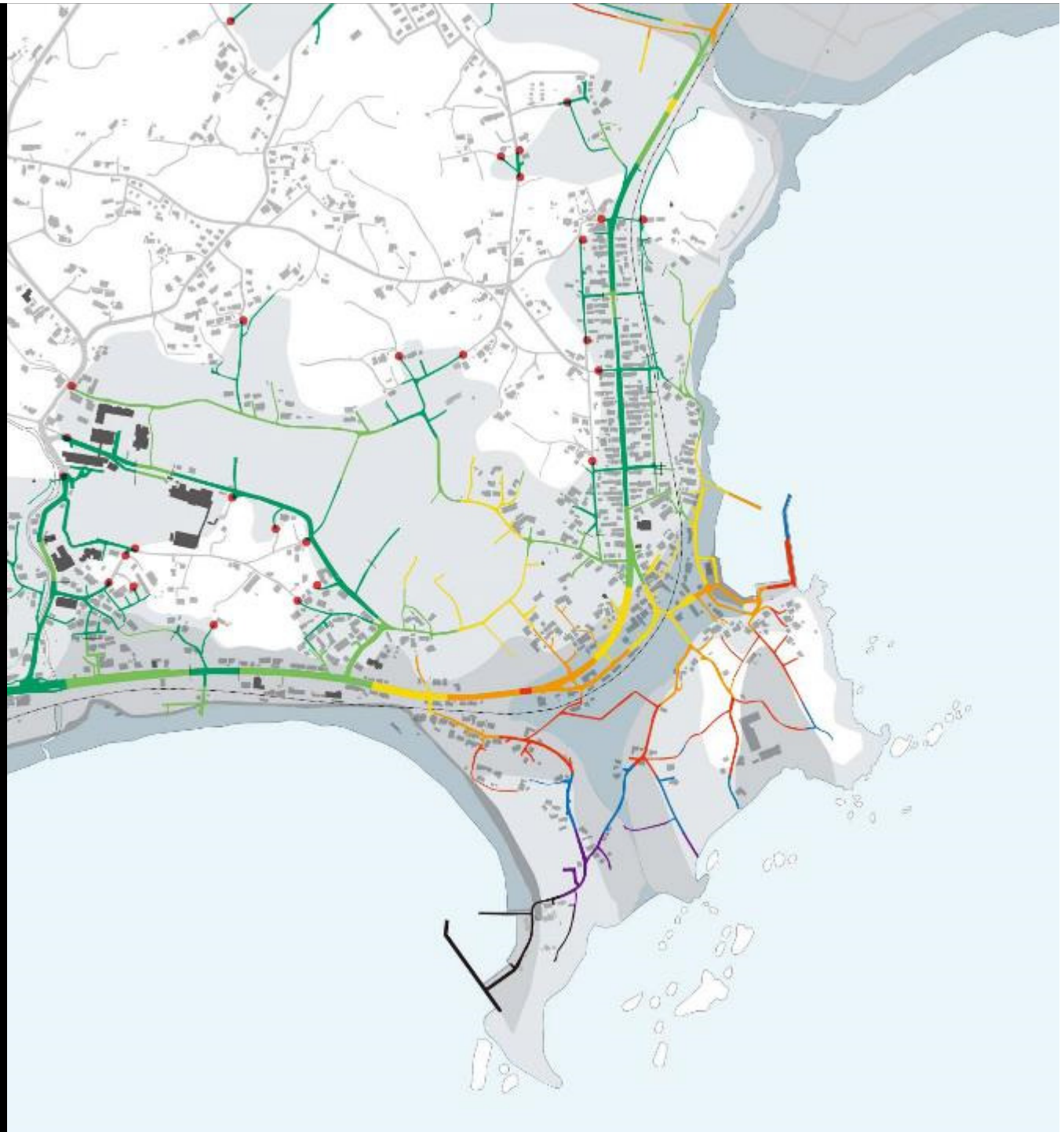
## **Community Evacuation Mapping**

**NIKKEN SEKKEI Volunteer Team**



**What is NIGECHIZU?**

**A Hazard  
Mapping and  
Evacuation  
Planning tool  
for  
communities**

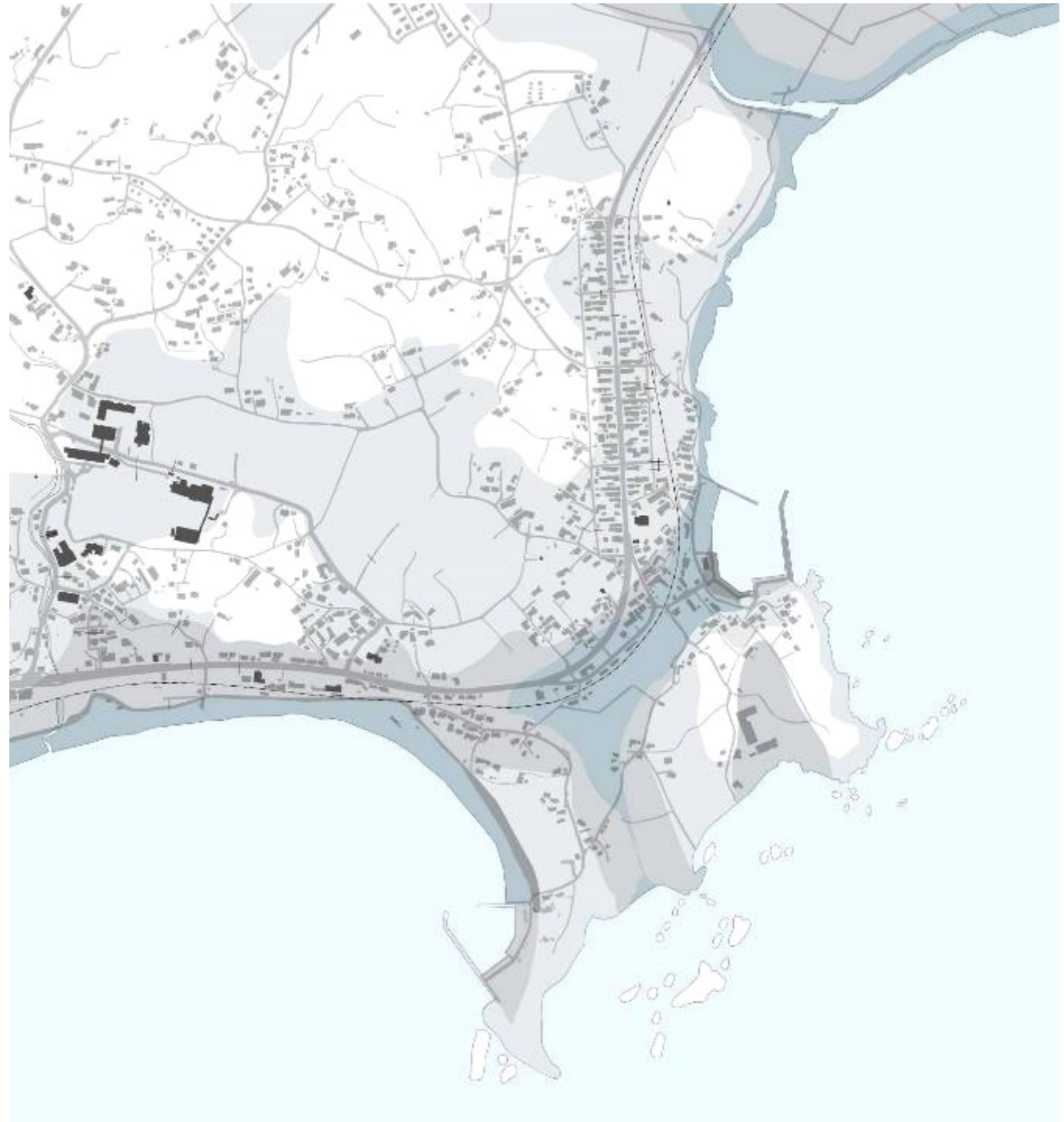
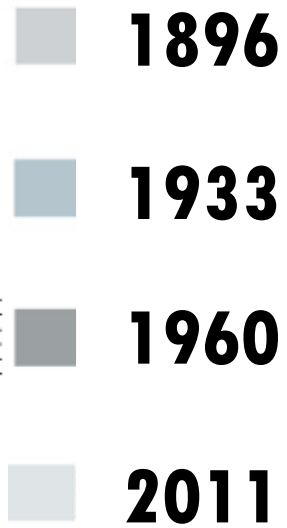




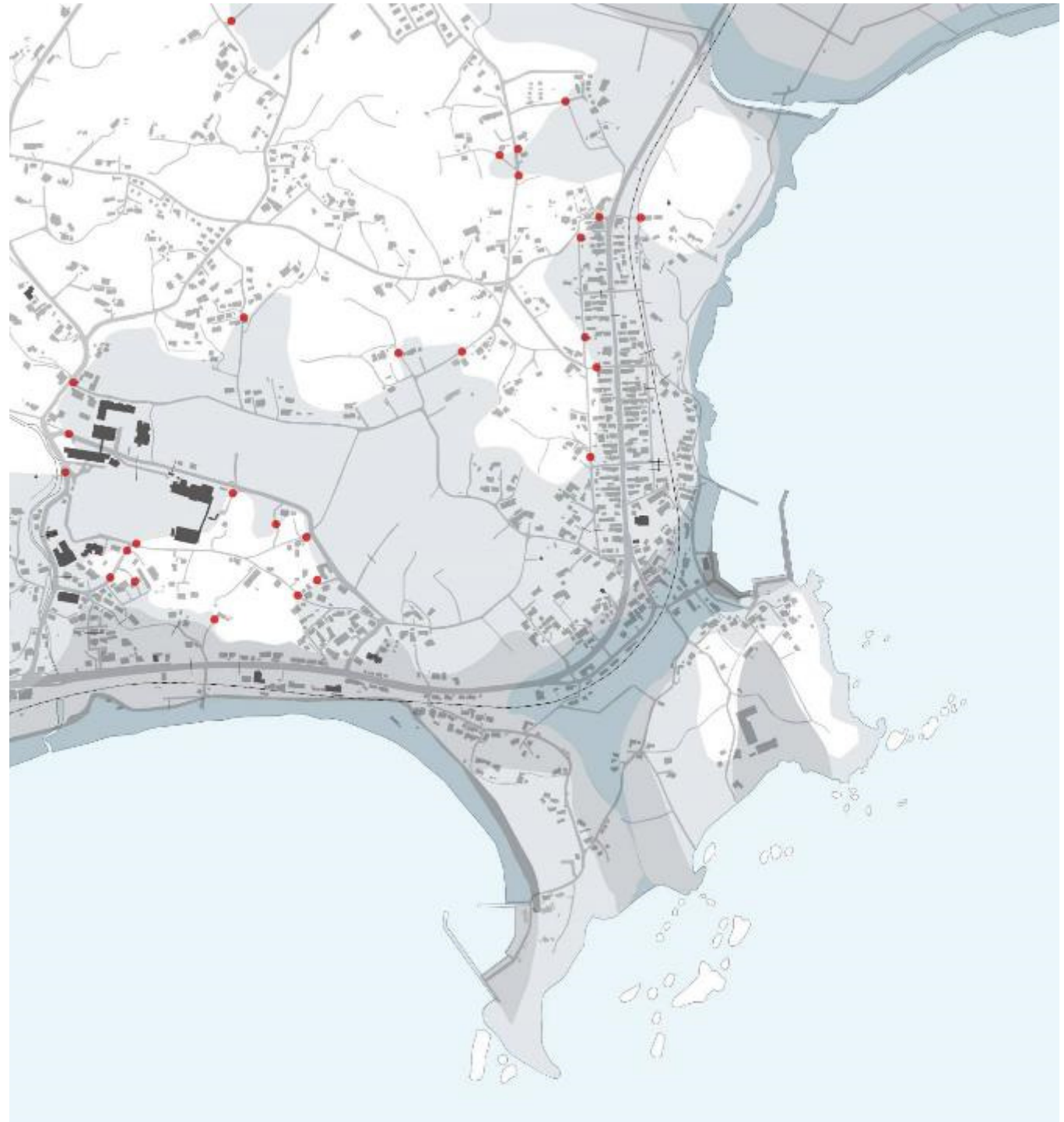




**Step 1:**  
**Visualize**  
**hazard -**  
**Map historic**  
**Tsunami**  
**extents**



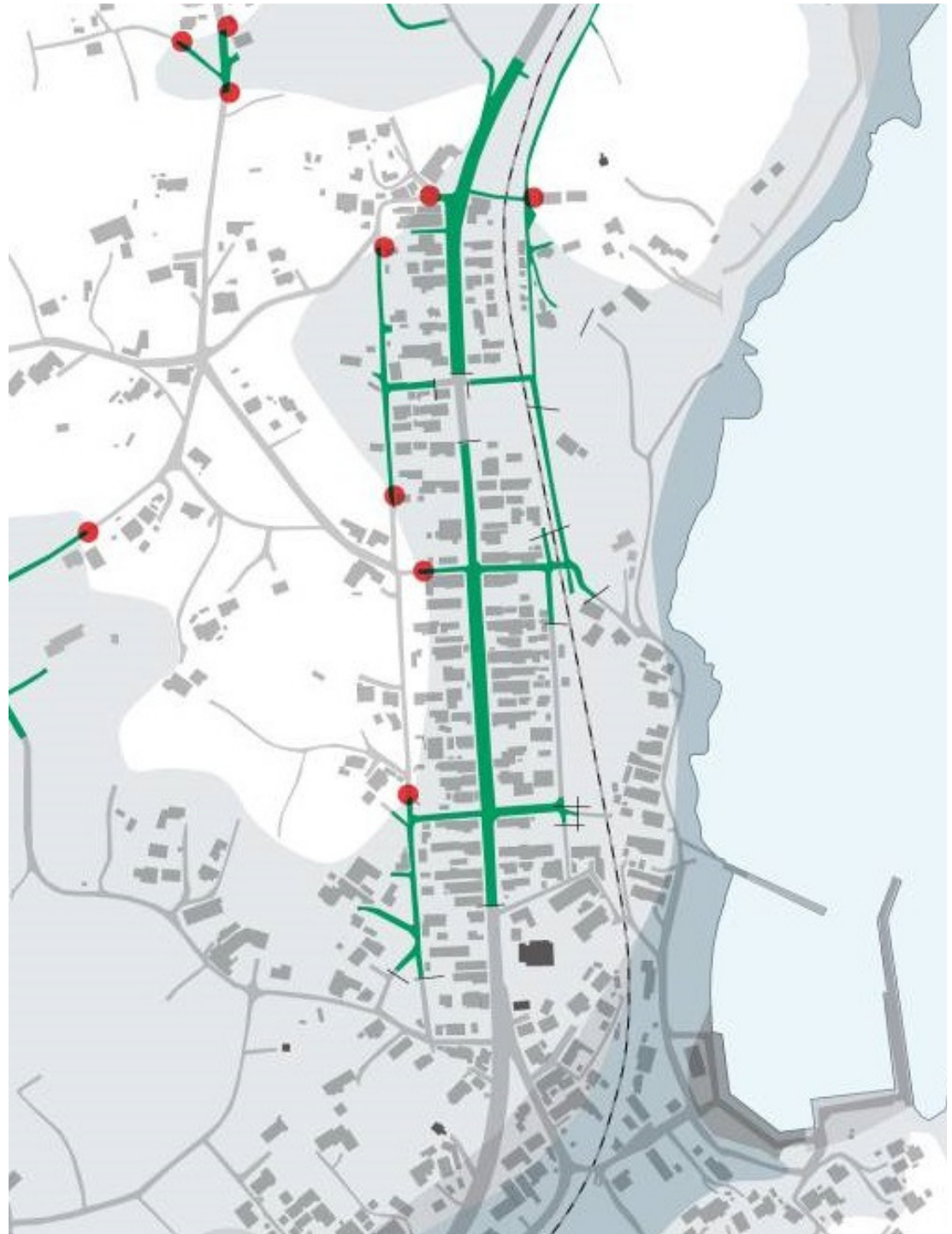
**Step 2:**  
**Identify and**  
**Mark the**  
**evacuation**  
**points (safe**  
**locations)**



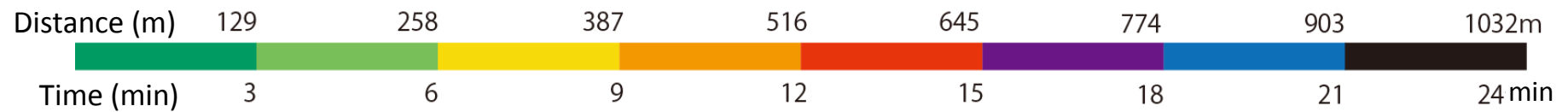


**Step 3:**  
**Color all roads**  
**according to the**  
**distance from the**  
**evacuation points**

**\*Use different colors for**  
**every 3-min distance**

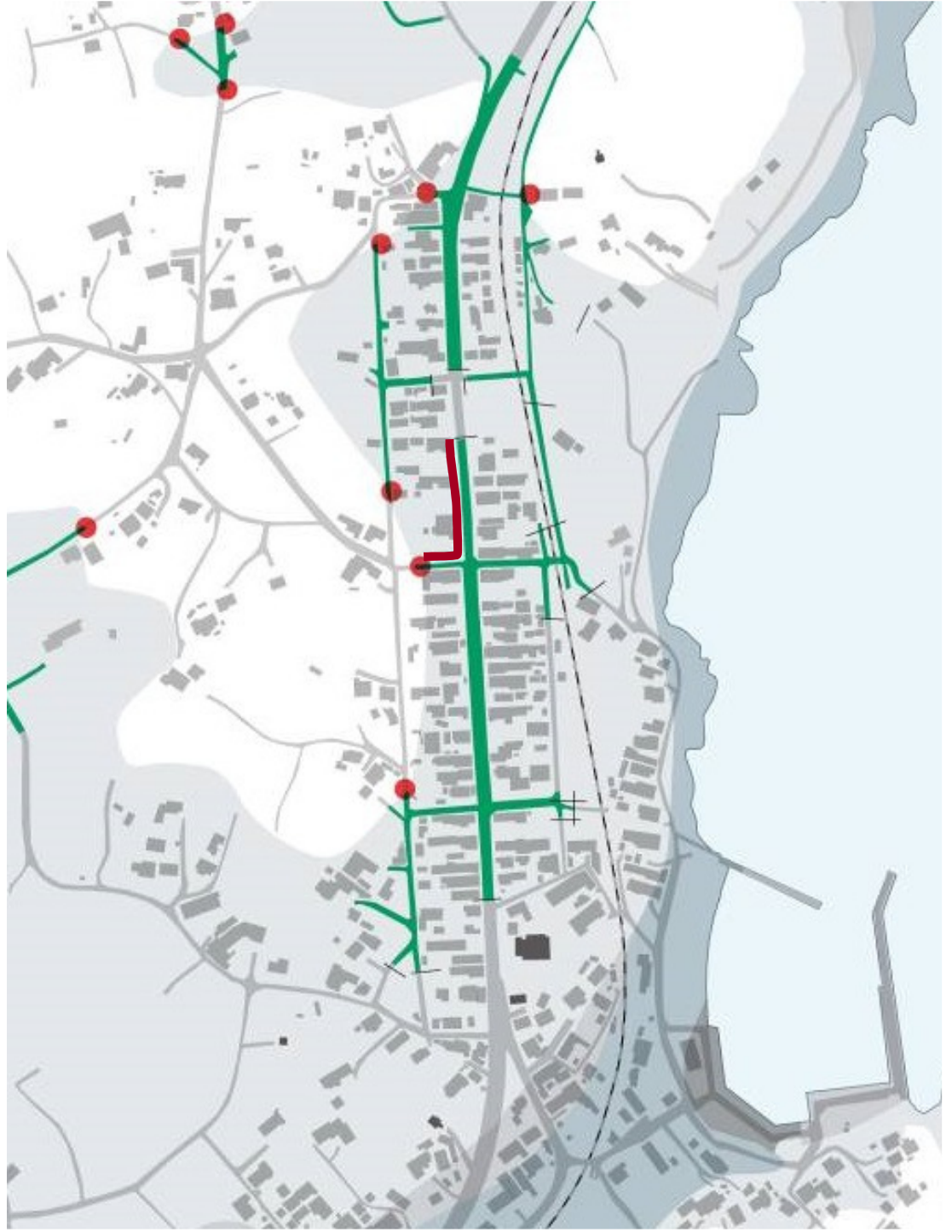


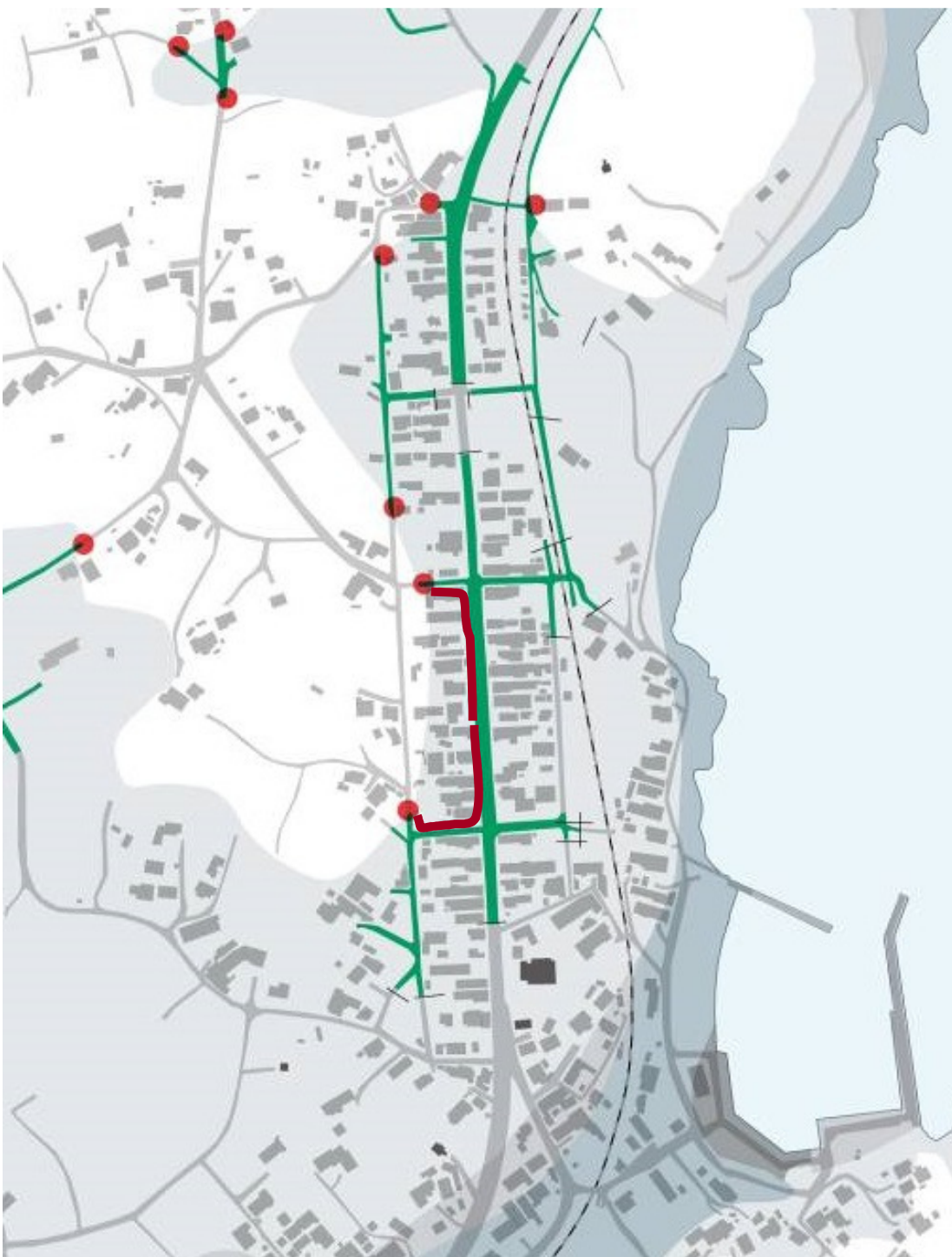




**43 m/min**

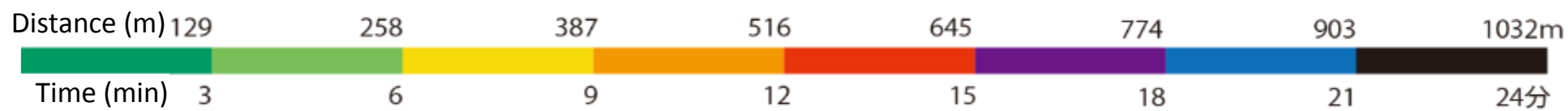
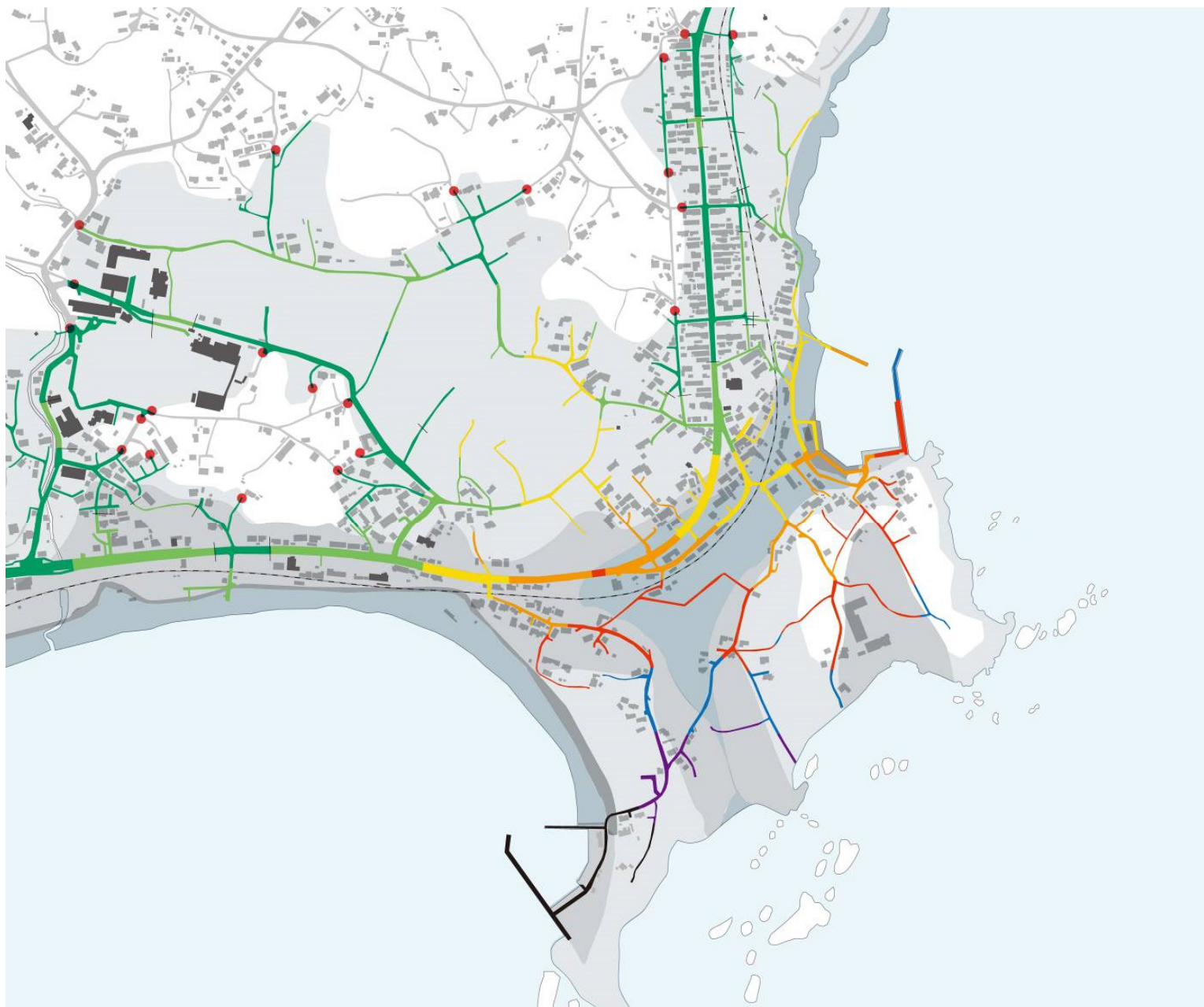
**Estimated walking speed of an elderly person**



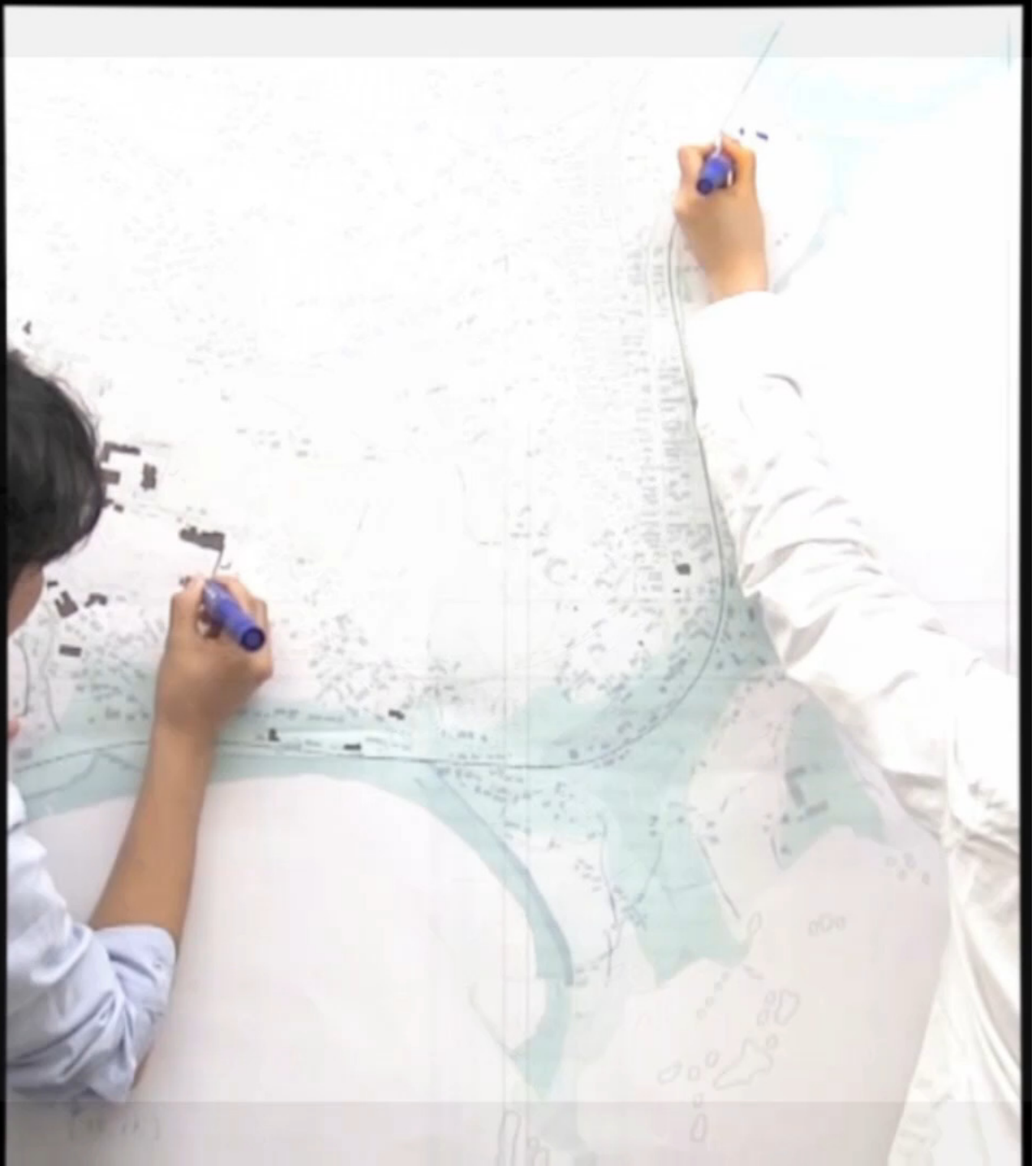








## Application





# **Linking the results to Preparedness Actions**

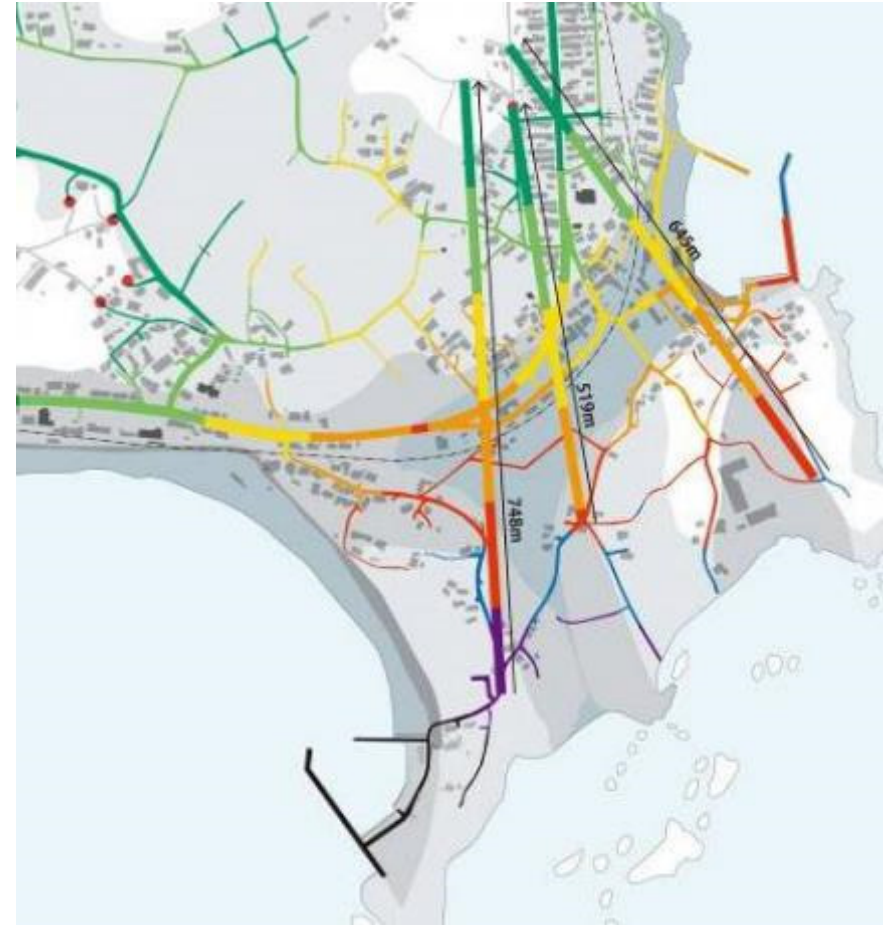
# **Comparing the Cost Effectiveness of Options to Reduce the Evacuation Time**

2-3 years Build new roads to reduce the time to reach high ground



Build new tertiary roads

Cost: 0.35 million Yen  
Completion: 3 ~ 6 months



Build new Bypasses

Cost: 750 million yen  
Completion: 2 ~ 3 years



## 3-5 years Making coastal areas safer against Tsunami



Build evacuation towers

Cost: 13 million Yen  
Completion: 3 ~ 5 years



Prepare elevated locations as evacuation points

Cost: 35 million Yen  
Completion: 3 ~ 5 years



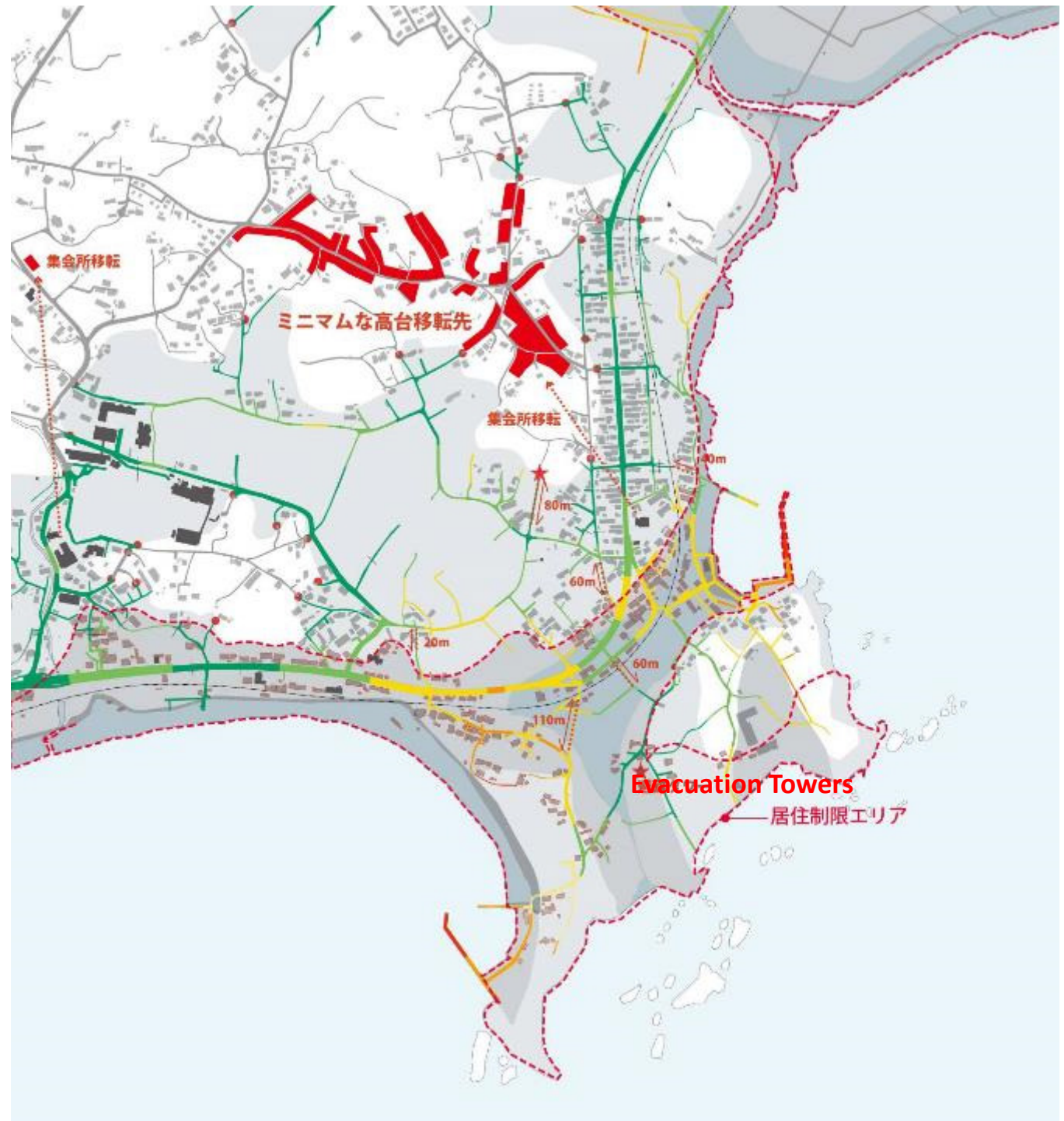
Traffic signage guiding evacuation directions



Building Evacuation Towers



Relocation of Evacuation Center



*Key question and discussion point with the community:*

**How much risk would the local community be willing to accept?**

**→ It is **not** possible to build a 100% safe environment**



## Inspires voluntary actions





**Inspires voluntary actions**





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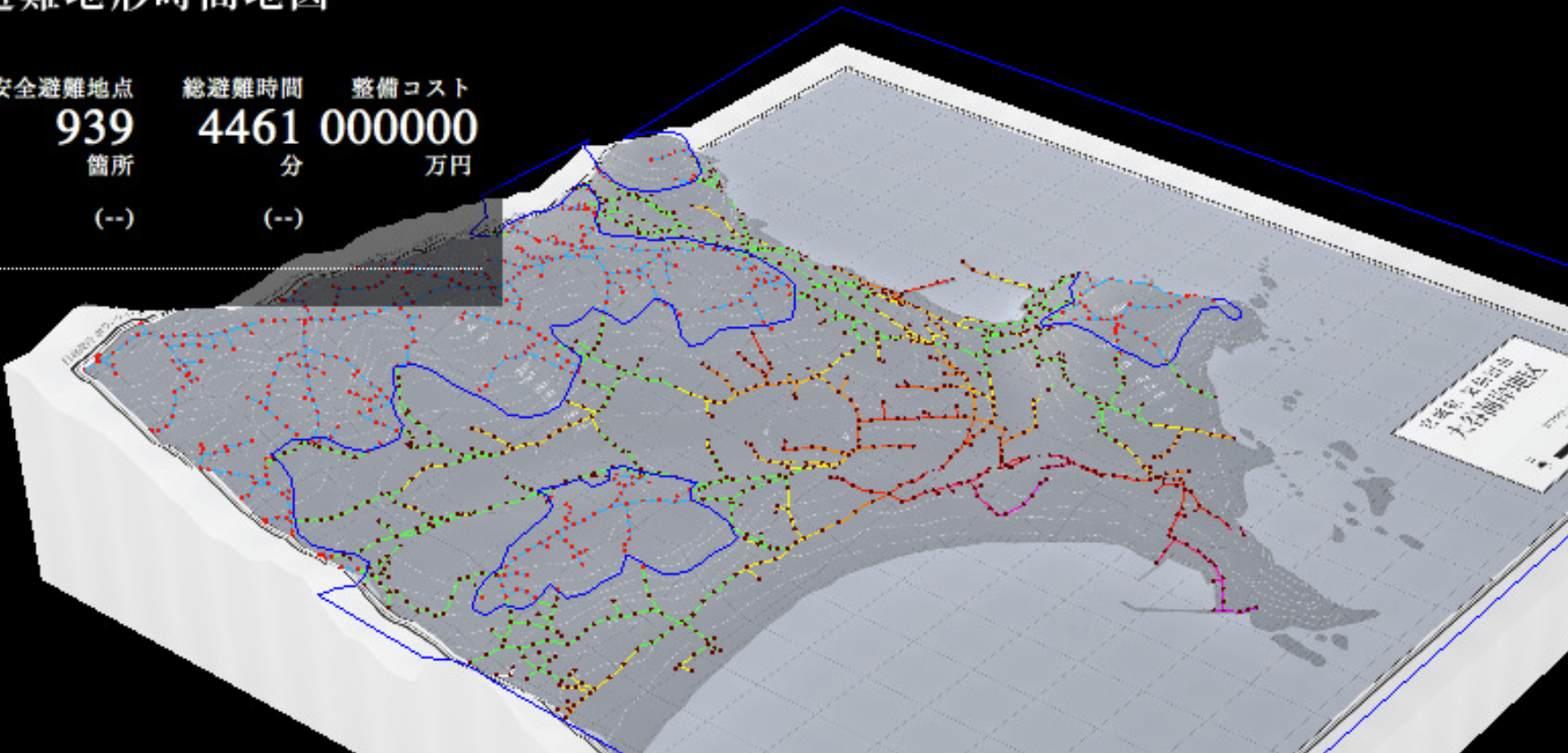
逃げ地図 beta

nigechizu.com/ozone/

## Evacuation Topology and Time Map

### 避難地形時間地図 LOG ▶

安全避難地点	総避難時間	整備コスト
939 箇所 (--)	4461 分 (--)	000000 万円



In addition, we are developing a tool to enable more people to be involved in community development by programming the escape map and putting it up on the Web.

This is the Escape Map version 2.0







**nigechizuproject.com**





**Let's give it a try!**

