

Favières

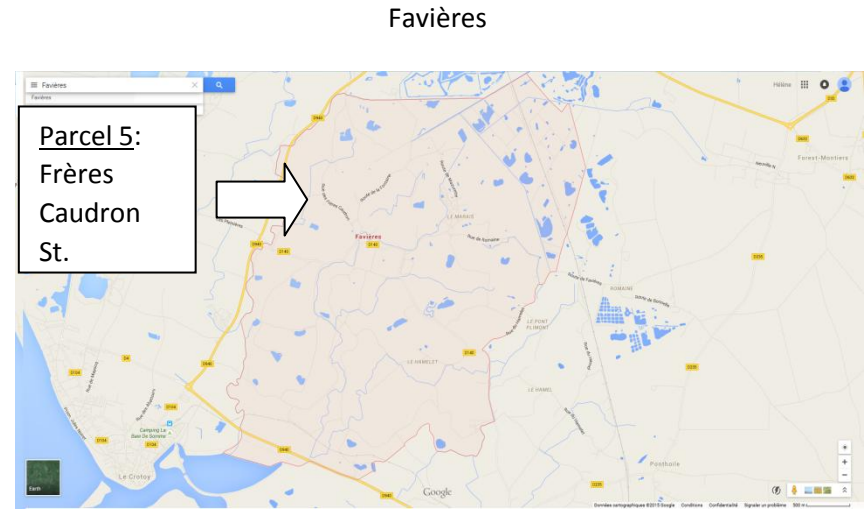
The project territory is characterized by the existence of the Somme estuary around which many centralities are situated. Rue, a former maritime harbor, still has a strong centrality on the northern side of the territory, the "Marquenterre" thanks to its dimension, its localization, its connectivities and its history. Further south, Nouvion, besides its small size, benefits from interlinked points between the secondary road in back estuary and the presence of a railway which links the north and the south of the Bay. Spreading out on two regions, "sister cities" (Eu/Le Tréport/Mers) represent a strategic hub on the territorial level but also on an economic one. The area represents an employment basin which is for the most part still steered towards industry, tourism and of which the main issue is to increase its attractiveness taking into account the maritime and fluvial water place on its territory.

- Scream LIDAR: Surveys were conducted in 2011 using airborne laser terrain mapper (ALTM) sensors. Coordinate reference systems are Lambert 93 (planimetry) and French NLN (National Leveling Network). The LIDAR precision range is centimetric.
- Scream GIS: GIS allows the analysis of objects in the space on computer. The used system is compatible with shapefile format. Data are stored in a database and classified by respecting the European INSPIRE standards to promote interoperability.
- Scream Modelisation: In the PAPI project, LIDAR generate an altimetric grind in GIS. This grind was put in a model with sea movement, water rise, fluvial movement, coastal defense (state of the works) and rising sea prediction (IPCC 2010). The model predicts flood penetration currently, medium-term (30-40 years) and long-term (100 years, experimental prediction only). The model of PAPI runs on 70 km of littoral with 3 estuaries. This surface allows a meshing of 200x200m (limit of computer calculation).

Program

Proposal for the development of a new residential district (built on stilts, amphibious, float or sponge...) of 20 dwellings to accommodate people who is working on the coastal fringe where the cost of land is too high.

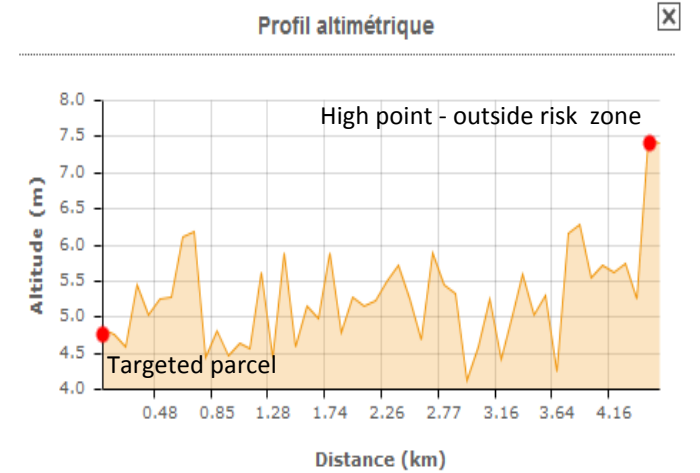
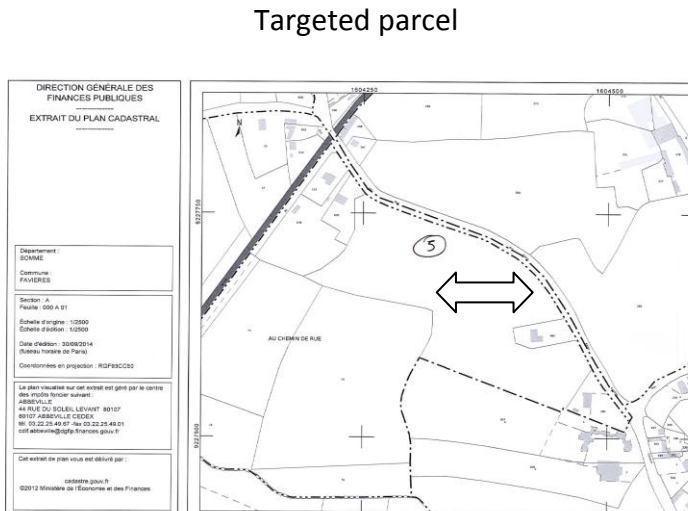
Location plan



Pathway of the projected parcel to a high point outside risk zone (dead cliff) following the road RD 940 below: 4.439 km.



Parcels mapping



Parcels areas

Total area: about 3 hectares.

Overall objective: Construction of a new neighborhood and renovation of an existing neighborhood (buildings, public space and infrastructure) in risk area (erosion, flooding, river flooding).

Expectations of results from the research "Architecture" WP2 and "Infrastructure" WP3:

- to adapt a parcel to the flooding risk (not to reduce the approach to a structure element);
- to propose materials or devices that can be positioned at ground level for 30 or 40 years that can still be sealed on the day a break of works;
- to propose infrastructures connected to roads and territories outside risk zone, which are able to rise and to ensure the continuity of personal mobility and infrastructure features;
- to make life possible for 10 or 20 years at the end of the parcel in the up position (permanent tidal);
- Infrastructures that will be "grouped" covered in surface or in technical spaces "hermetic" and integrated into the city aesthetically replacement of worn infrastructures (end-of-life) in existing urban areas located in the risk area (erosion or submersion): types of intervention.

<p>Modeling assumptions</p> <p>Centennial marine event x Decennial fluvial event:</p> <ul style="list-style-type: none"> - Degradation structures (reference condition 2014); - Rising Seas: pessimistic scenario GIEC: 2035: +17 cm, 2065: + 35 cm and 2115: + 70 cm; - Surges at the bottom of the bays; - Interaction rivers/seas. 	<p>Duration and depth of water</p> <p>In 20 years (2035) : between 1m and 1.50m ; In 50 years (2065) : between 1.50 and 2m.</p>	<p>Parameters</p> <p>Decennial fluvial flow crossed with a centennial marine event:</p> <p><u>Marine conditions:</u> Tide C106: 5.30 m; Marine surge: +1.2 m ; Swell: 7.3 m (average height); Time: 11 s (average period); Wind D : 270°N, 24.3 m/s ; Surge Baie de Somme for wind: 300°N: 12 cm</p> <p><u>Fluvial conditions:</u> Somme: 35m³/s in Abbeville</p>	<p>Slide</p>
<p>Reference situation</p> <p>2015</p>	<p>Type of hazard</p> <p>Structure overflows with rupture or not</p>	<p>Topography</p> <p>Average topographic level : +4m Water level: 9.85m FRENCH NLN (tidal coefficient 90) Tidal range: 8.60m FRENCH NLN (tidal coefficient 90)</p>	<p>Slide</p>
<p>Projected situation with structure which is deteriorating</p> <p>Targeted parcel</p>	<p>Type of hazard</p> <p>Hazard +50 years (2065)</p>	<p>Description of modeling</p> <p>A) Overflow after the rupture of dykes at the bottom of the Somme bay (along the panoramic road). Spillage of the flood tide n°1 from the Somme bay to the North.</p> <p>B) Overflow after the rupture of dykes at the bottom of the Authie bay. Spillage of the flood tide n°2 from the Authie bay to the South.</p> <p>C) The two flood tides are joining together.</p>	<p>Slide</p>