



UNIVERSITÀ DEGLI STUDI DI MILANO

Dipartimento di Scienze Agrarie e Ambientali



Greenways Heritage Outputs

Touristic GIS, Web-App, Protocol

Giulio Senes, Roberto Rovelli

Dikli, September 5th 2019



UNIVERSITÀ
DEGLI STUDI
DI MILANO



The Greenways Heritage Project

Tourism product

- ✓ Creation of **tourism product package** through **collaboration agreements**.
- ✓ Improving the competitiveness of SMEs:
 - improving skills and raising awareness;
 - strengthening public-private cooperation.

Technologies in Cultural and Creative Industries

- ✓ Creation of a **multiplatform web-application, containing all the information** on Greenways Heritage itineraries.
- ✓ **360° virtual tour**
- ✓ **Best practices guide** - new technologies used on Cultural UNESCO sites and greenways

Promotion & Communication

- ✓ **Declaration** for UNESCO and greenways as common destination
- ✓ **Workshops and conferences;**
- ✓ **Valorisation strategy**
- ✓ **Best practices guide**
- ✓ **Special GWH award**

Specific objectives

The objective of UMIL actions is to **promote and enhance the visibility** of a new transnational thematic tourism product ("**Heritage greenways**") by using **Cultural Creative Industries (CCIs) - related technologies** and by providing comprehensive and practical information to potential tourists and tourism stakeholders.

In particular, the WP2 aims to:

1. **create new information** on heritage, greenways and related services, geographically contextualized and mapped;
2. **share and spread the information** to potential tourists and tourism stakeholders using CCIs-related technologies;
3. create a "**brand awareness**" related to "**Heritage greenways**".

Activity 1: detailed mapping

This activity consists of **gathering and mapping** (at 1:10.000/1:25.000 scale) all the **information** related to the territories characterized by:

- the presence of a **UNESCO site**,
- and the presence of a **greenway**.

The information gathered are related to:

- natural, cultural and historical resources,
 - accessibility,
 - touristic attractions,
 - services.
- The data have been collected from **official sources**, when possible (e.g: UNESCO organization, national and regional touristic agencies, etc.).
 - Different **buffer zones** have been defined, in order to identify the resources and touristic services to be mapped (on the base of *the literature related to pedestrian and cycle touristic activities*).























Activity 2: Greenways Heritage Touristic GIS

The information collected have been organized in a GIS database, with 14 entities or layers.

Layer ID	Layer	Geometry type	Source	Criteria for selection
01	UNESCO sites [UNESCO]	Point	UNESCO web site	Max 10 km from a greenway
02	Greenways [GW]	Polyline	Partner knowledge	Max 10 km from a UNESCO sites
03	Cultural-Historical resources [CHR]	Point	Official touristic Information	Max 2,5 km from a greenway
04	Protected Areas [PA]	Polygon	Official list of national protected area	Max 2,5 km from a greenway
05	Natural Resources (NR)	Point	Official touristic Information	Max 2,5 km from a greenway
06	Cycle friendly accommodations (CA)	Point	Official cycle friendly certification; ex. Bed and Bike (DE)	Max 5 km from a greenway
07	Generic Accommodations (GA)	Point	National/regional touristic databases	Max 2,5 km from a greenway
08	Food & Beverage (bar, restaurant, etc.) [F&B]	Point	Partner knowledge	Max 1 km from a greenway
09	Transfer Services [TS]	Point	Partner knowledge	Max 2,5 km from a greenway
10	Bike Rental points [BR]	Point	Official touristic Information; partner knowledge	Max 2,5 km from a greenway
11	Rail Stations [RS]	Point	Railway company	Max 2,5 km from a greenway
12	Public Navigation Services [PNS]	Point	Navigation Company	Max 2,5 km from a greenway
13	Emergencies [EM]	Point	Official Information	Max 2,5 km from a greenway
14	Touristic Information points [TI]	Point	Official touristic Information	Max 1 km from a greenway

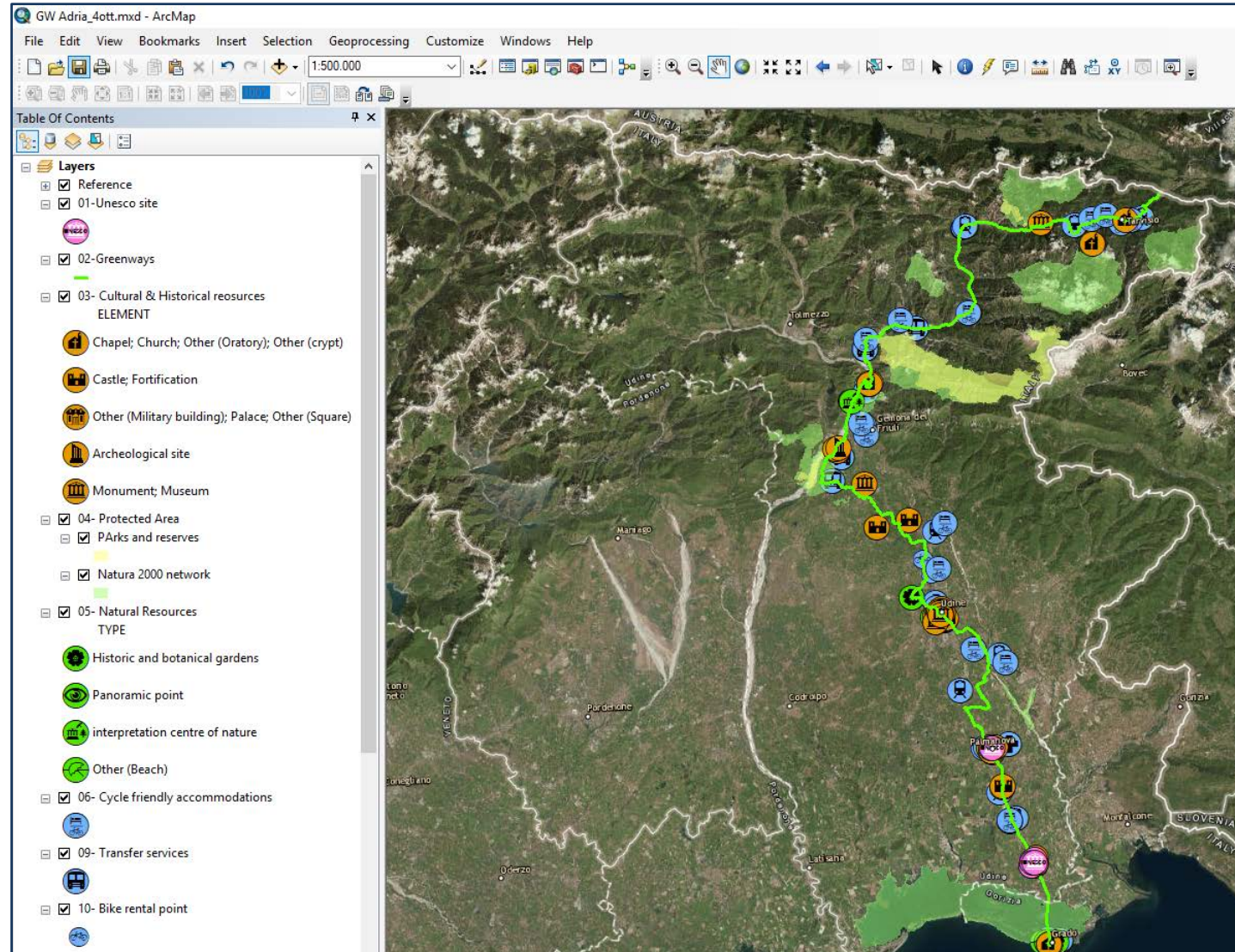
Activity 2: Greenways Heritage Touristic GIS

The information collected have been organized in a GIS database, with 14 entities or layers.

01 - UNESCO sites		04 - Protected areas		06 - Cycle friendly accommodations	
02 - Greenways		05 - Natural Resources:		07 - Generic Accommodations	
03 - Cultural & Historical resources:		<i>Historic and botanical gardens</i>		08 - Food & Beverage	
<i>Religious buildings (chapels, churches, monasteries, etc.)</i>		<i>Panoramic points</i>		09 - Transfer services	
<i>Castles, towers and fortifications</i>		<i>Interpretation centers of nature</i>		10 - Bike rental points	
<i>Archeological sites and ruins</i>		<i>Other natural resources</i>		11 - Rail stations	
<i>Museums and monuments</i>				12 - Public Navigation Services	
<i>Palaces, villas and other civil buildings</i>				13 - Emergencies	
				14 - Touristic Information points	

Activity 2: Greenways Heritage Touristic GIS

The information collected have been organized in a GIS database, with 14 entities or layers.



Activity 2: Greenways Heritage Touristic GIS

Resources and services mapped

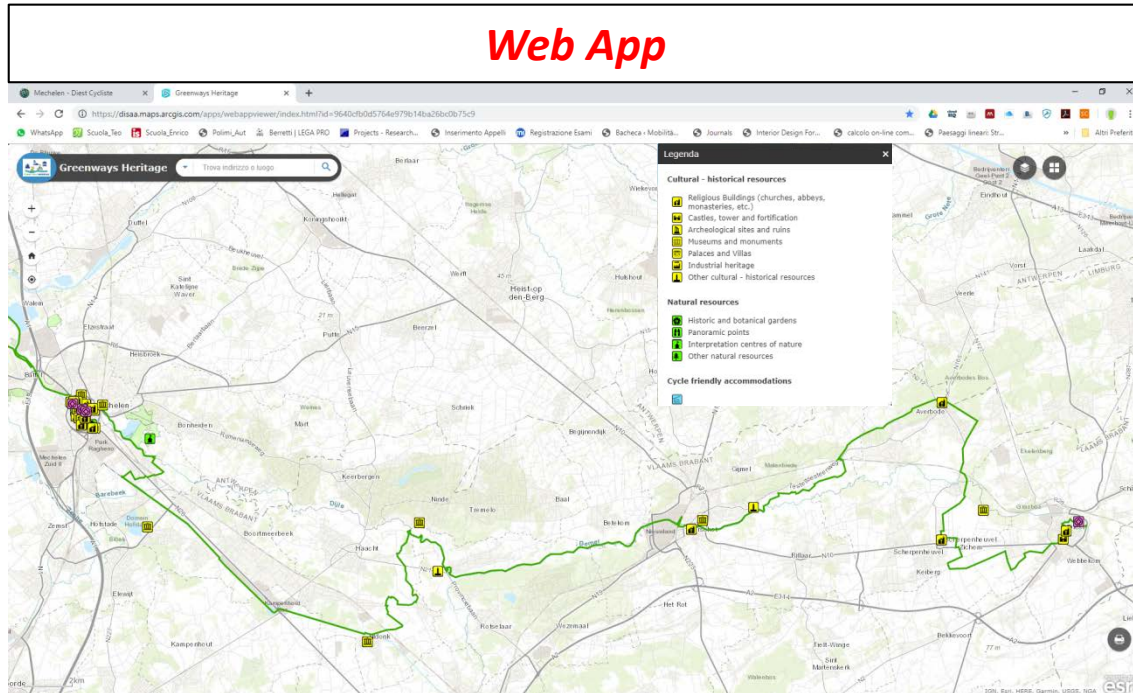
- ✓ **22** UNESCO sites;
- ✓ **15** greenways connected to the UNESCO sites in **10** countries (**1.132 km**):
 - *Vía Verde de la Sierra de la Demanda (Spain)*: 54 Km;
 - *Vía Verde de los Montes de Hierro (Spain)*: 43 km;
 - *Vía Verde del Ferrocarril Vasco Navarro (Spain)*: 127 Km.
 - *Vennbahn (Germany, Belgium, Luxembourg)*: 125 Km;
 - *Piste Cyclable d'Echternach (Luxembourg)*: 43 km
 - *Alpe Adria (Italy, Austria)*: 410 Km;
 - *Dampfroß und Drahtesel (Austria)*: 50 km
 - *Beghina (Belgium)*: 40 Km;
 - *Mechelen – Diest (Belgium)* : 76 km;
 - *Rīga - Ērgļi (Latvia)*: 79 Km;
 - *Two Tunnels Greenway (UK)*: 20 km;
 - *Bristol Bath Railway Path (UK)*: 21 km;
 - *Ecopista de Guimarães (Portugal)*: 14 km;
 - *Ecopista do Ramal de Mora (Portugal)*: 20 km;
 - *Přibyslav – Sázava Greenway (Czech Republic)*: 10 km;
- ✓ **409** cultural-historical resources;
- ✓ **106** natural resources;
- ✓ **151** cycle friendly accommodations and + **712** generic accommodations;
- ✓ **2816** Food & Beverage;
- ✓ **57** bike rental points and **31** transfer services;
- ✓ **69** rail stations and **16** public navigation services;
- ✓ **19** emergencies;
- ✓ **41** touristic information points.

Activity 3: Web-GIS based Multiplatform application

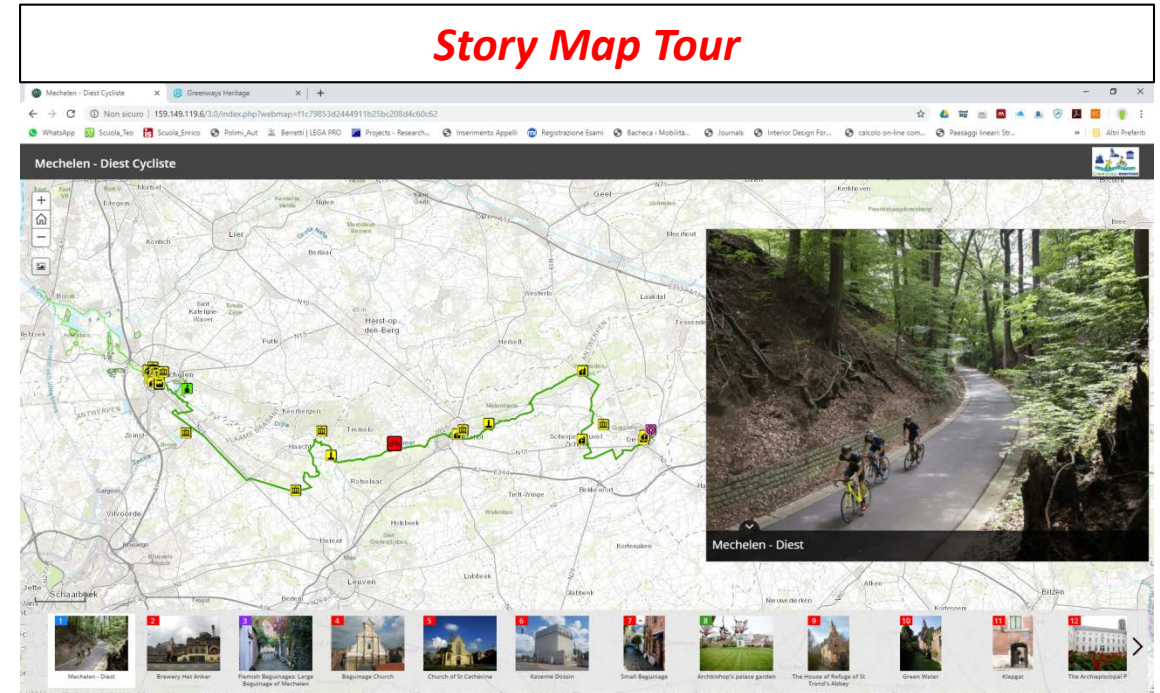
The Database will be shared with **tourists and stakeholders** through the development of a **multiplatform Web-GIS based application** that will run on **any device and Operation System**.

The application will be based on the integration of **two tools**:

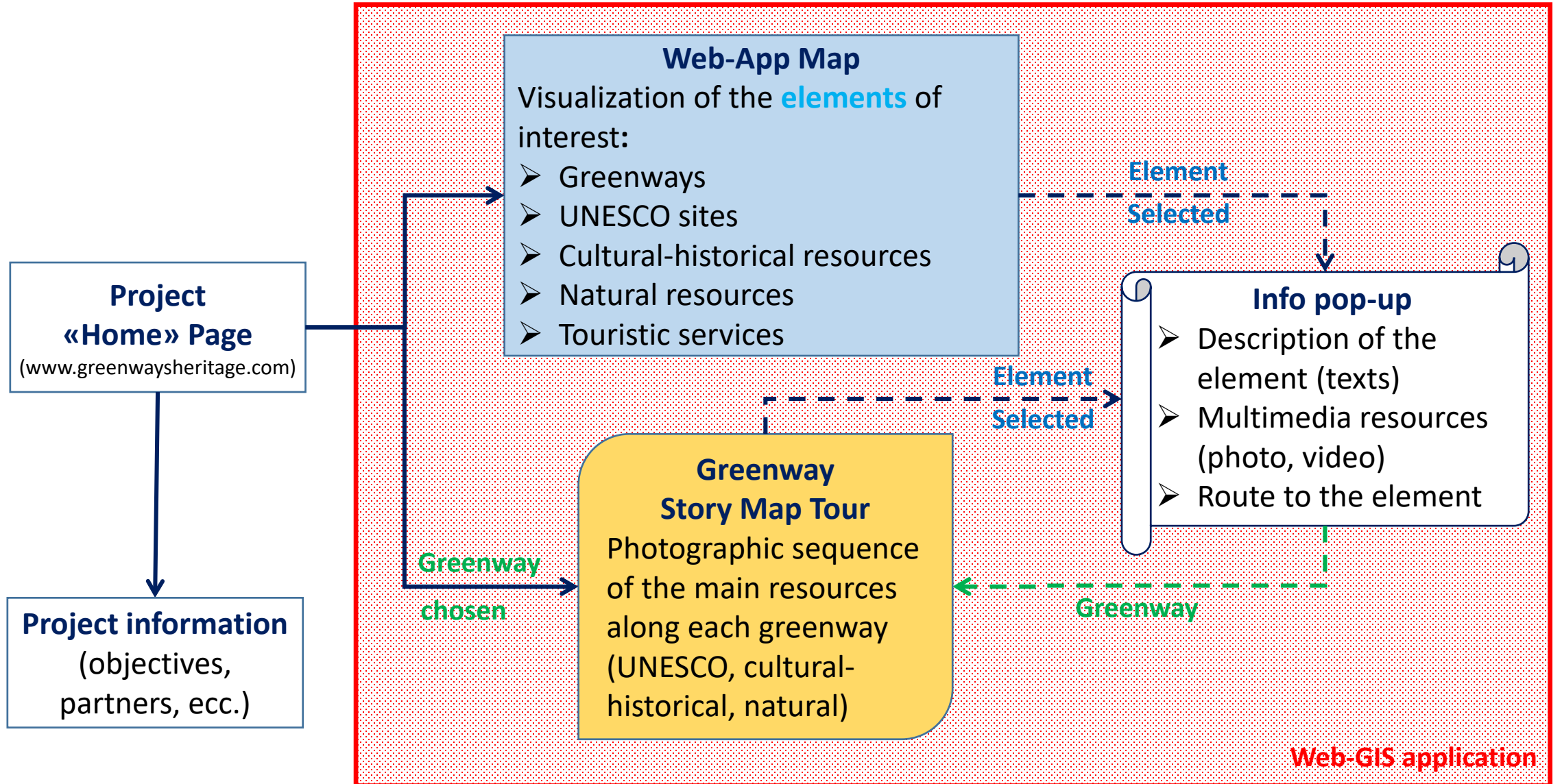
Web App



Story Map Tour



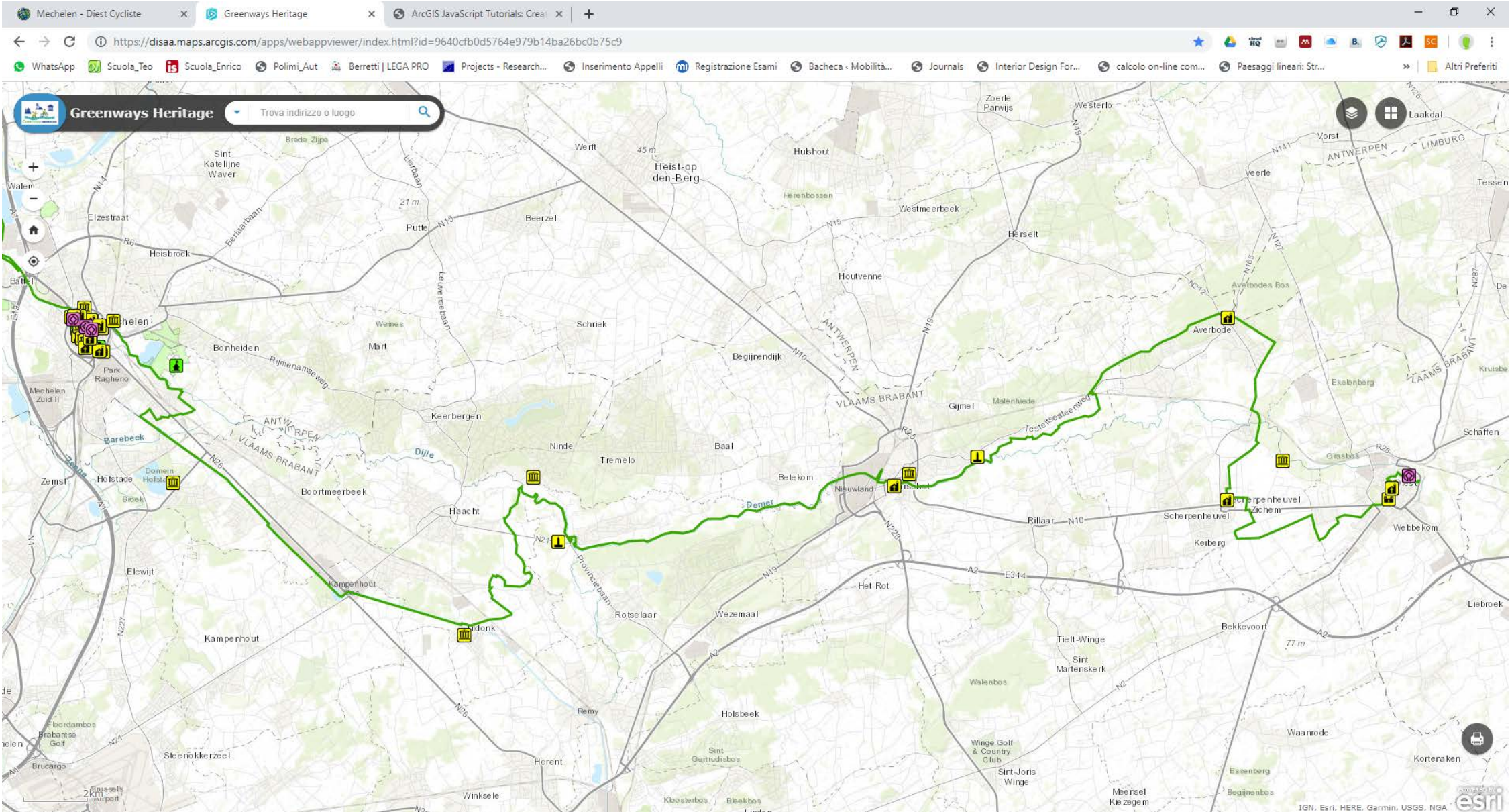
Activity 3: Web-GIS based Multiplatform application



Activity 3: Web-APP

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Activity 3: Web-APP



The screenshot displays a web browser window with the following elements:

- Browser Tabs:** Mechelen - Diest Cycliste, Greenways Heritage, ArcGIS JavaScript Tutorials: Creat...
- Address Bar:** <https://disaa.maps.arcgis.com/apps/webappviewer/index.html?id=9640cfb0d5764e979b14ba26bc0b75c9>
- Page Header:** Greenways Heritage, Trova indirizzo o luogo (search bar), Laakdal (user profile).
- Map:** A topographic map of the Mechelen region in Flanders, Belgium. A prominent green line highlights a specific path or route. Various landmarks, roads, and water bodies are labeled.
- Map Controls:** A vertical toolbar on the left side includes a home button, a location pin, a compass, and zoom in/out (+/-) buttons.
- Map Style Selector:** A 'Galleria mappe di base' (Basic Map Gallery) is open on the right, showing four map styles: OpenStreetMap, Immagini con etichette (Images with labels), Topografico (Topographic), and Vie (Streets).
- Footer:** The bottom right corner features the Esri logo and the text 'IGN, Esri, HERE, Garmin, USGS, NGA'.

Activity 3: Web-APP



The screenshot displays a web application titled "Greenways Heritage" running in a browser. The browser's address bar shows the URL: <https://disaa.maps.arcgis.com/apps/webappviewer/index.html?id=9640cfb0d5764e979b14ba26bc0b75c9>. The browser's tab bar includes "Mechelen - Diest Cycliste", "Greenways Heritage", and "ArcGIS JavaScript Tutorials: Crea...". The browser's address bar also shows several bookmarks such as "WhatsApp", "Scuola_Teo", "Scuola_Enrico", "Polimi_Aut", "Berretti | LEGA PRO", "Projects - Research...", "Inserimento Appelli", "Registrazione Esami", "Bacheca < Mobilità...", "Journals", "Interior Design For...", "calcolo on-line com...", "Paesaggi lineari: Str...", and "Altri Preferiti".

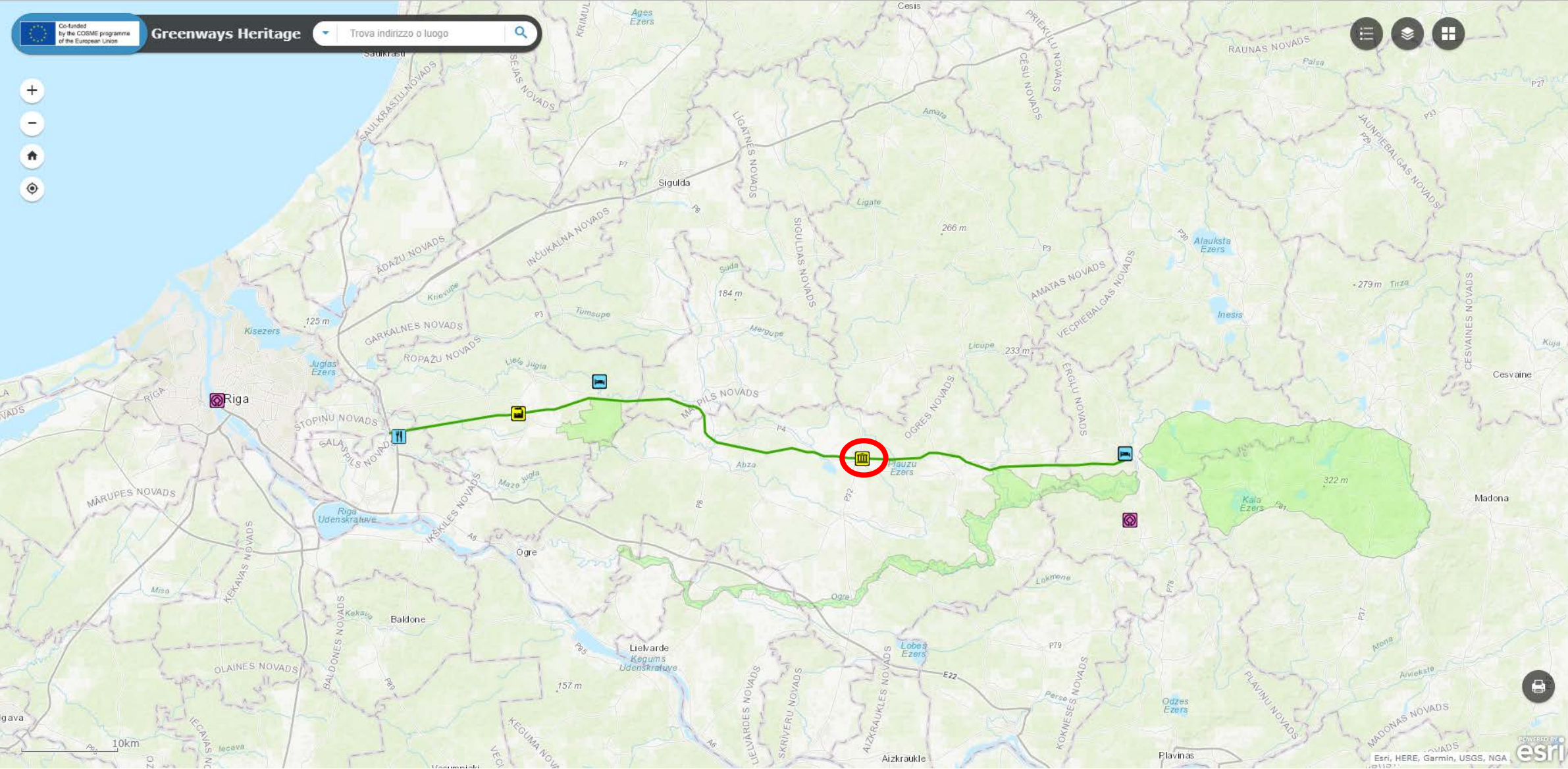
The main content area is a map of the Mechelen region in Belgium, showing various heritage sites marked with icons. A green line highlights a specific route or area on the map. The map interface includes a search bar at the top left with the text "Trova indirizzo o luogo" and a search icon. The map also shows a scale bar at the bottom left and a "Laakdal" button at the top right.

On the right side of the map, there is a "Elenco layer" (Layer List) panel. It contains a search bar and a list of layers with checkboxes and icons. The layers are:

- UNESCO sites - visualizzazione
- UNESCO sites
- Religious Buildings (churches, abbeys, monasteries, etc.)
- Castles, towers and fortifications
- Museums and monuments
- Archaeological sites and ruins
- Palaces and villas
- Industrial heritage
- Other cultural - historical resources
- Historic and botanical gardens
- Panoramic points
- Interpretation centre of nature
- Other natural resources

The map also shows the "ANTWERPEN" and "VLAAMS BRABANT" regions. The map interface includes a search bar at the top left with the text "Trova indirizzo o luogo" and a search icon. The map also shows a scale bar at the bottom left and a "Laakdal" button at the top right.

Activity 3: Web-APP




Activity 3: Web-APP



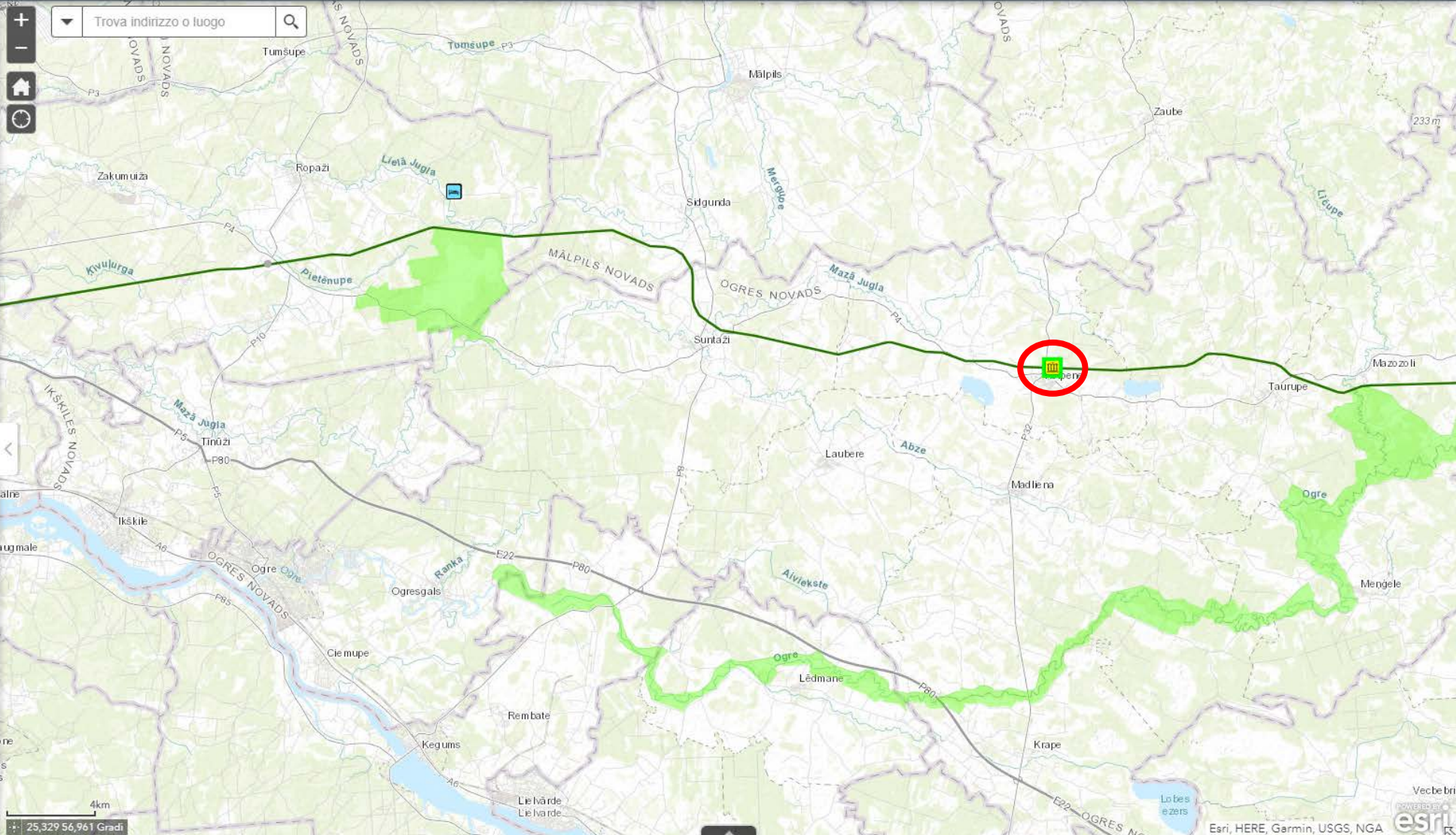
Greenways Heritage

Sergei Eisenstein Communications Center
Sergeja Eizenšteina Komunikācijas centrs
Ķeipenē



An exhibition devoted to Sergey Eisenstein is displayed in the station building (he has visited it) and Ķeipene Communication Centre is installed in the building. In one of the rooms, exhibits characterizing Sergey Eisenstein are displayed, as well as railway items from the beginning of the 20th century. In another room, there is a public Internet centre that brings the breeze of wide world into the small and serene village.

Ķeipene Ķeipenes pagasts, 5062, Ogres



The map displays a green highlighted path across the region, with a red circle highlighting the location of the Sergei Eisenstein Communications Center near Ķeipene. The map includes labels for various locations such as Mālpils, Ogres, and Ķeipene, as well as rivers like the Mērgoše and Mazā Jugla. A search bar at the top left contains the text 'Trova indirizzo o luogo'.

Activity 3: Web-APP



Co-funded by the COSME programme of the European Union

Greenways Heritage

Trova indirizzo o luogo

Belfries of Belgium and France: Tour de Saint-Rombaut
Belforten van België en Frankrijk: Sint-Romboutstoren

St Rumbold's Cathedral was built in the 13th century. From the outset, it was larger and more impressive than all the other parish churches and later on it became 'the church of the archbishops'. The inside of the cathedral is breathtaking. You can admire Anthony van Dyck's painting 'Christ on the Cross', along with works by (among others) Michel Coxcie, Gaspard de Crayer, and Abraham Janssens. The real showpiece, however, has to be the high altar by Lucas Faydherbe which dates from 1665.

Onder den Toren, 2800, Mechelen

Activity 3: Web-APP



Greenways Heritage

Greenway Rīga - Ērgļi

145139 Km from Stopiņi end Ērgļi (graveled road)
Rīga - Ērgļi railway line was established in year 1937 and it operated until 2007. The former railway line is connecting two UNESCO sites in Latvia: Historical centre of Riga and Struve Geodetic Arc. The greenway starts 16km from Riga and goes to Ērgļi. On the way there is possibility to visit Sergei Eisenstein Communications Center that is located at the former Ķeipenes station and devoted to film director and film theorist.

Technical Data
The greenway begins in Stopiņi (Latvia) and ends in Ērgļi (Latvia)
Length:145138.851
Width:3.000
Slope:1%
Surface:graveled road
Users:pedestrian; bikes; mountain bike; horse riders; rollers cross country skier

Management Authority
Latvia Greenways association
Pils laukums 1, 4101, Cēss
+371 20220072
<http://greenways.lv/>
info@greenways.lv

+ Tourist information authority
+ Other information (da kontrollare)

Activity 3: Story Map Tour

- 1 Mechelen - Diest
- 2 Brewery Het Anker
- 3 Flemish Beguinages: Large Beguinage of Mechelen
- 4 Beguinage Church
- 5 Church of St Catherine
- 6 Kazerne Dossin
- 7 Small Beguinage
- 8 Archbishop's palace garden
- 9 The House of Refuge of St Trond's Abbey
- 10 Green Water
- 11 Klappgat
- 12 The Archiepiscopal P

Activity 3: Story Map Tour

Mechelen - Diest Cycliste

Non sicuro | 159.149.119.6/3.0/index.php?webmap=f1c79853d2444911b25bc208d4c60c62

Mechelen - Diest Cycliste

Belfries of Belgium and France: Tour de Saint-Rombaut

St Rumbold's Cathedral was built in the 13th century. From the outset, it was larger and more impressive than all the other parish churches and later on it became 'the church of the archbishops'. The inside of the cathedral is breathtaking. You can admire Anthony van Dyck's painting 'Christ on the Cross', along with works by (among others) Michel Coxie, Gaspard de Crayer, and Abraham Janssens. The real showpiece, however, has to be the high altar by Lucas Faydherbe which dates from 1665.

[Get direction](#)

14 Belfries of Belgium and France: Tour de Saint-Rombaut

15 The Cells, art studio

16 Grote Markt

17 Belfries of Belgium and France: Old Cloth Hall with

18 Melaan

19 Our Margaret

20 The Schepenhuis, or Aldermen's House

21 Ijzerleen

22 Vismarkt (Fish Market)

23 Haverwerf, Dyle Path

24 Grootbrug

25 Sinte Metteuin



Activity 3: Story Map Tour


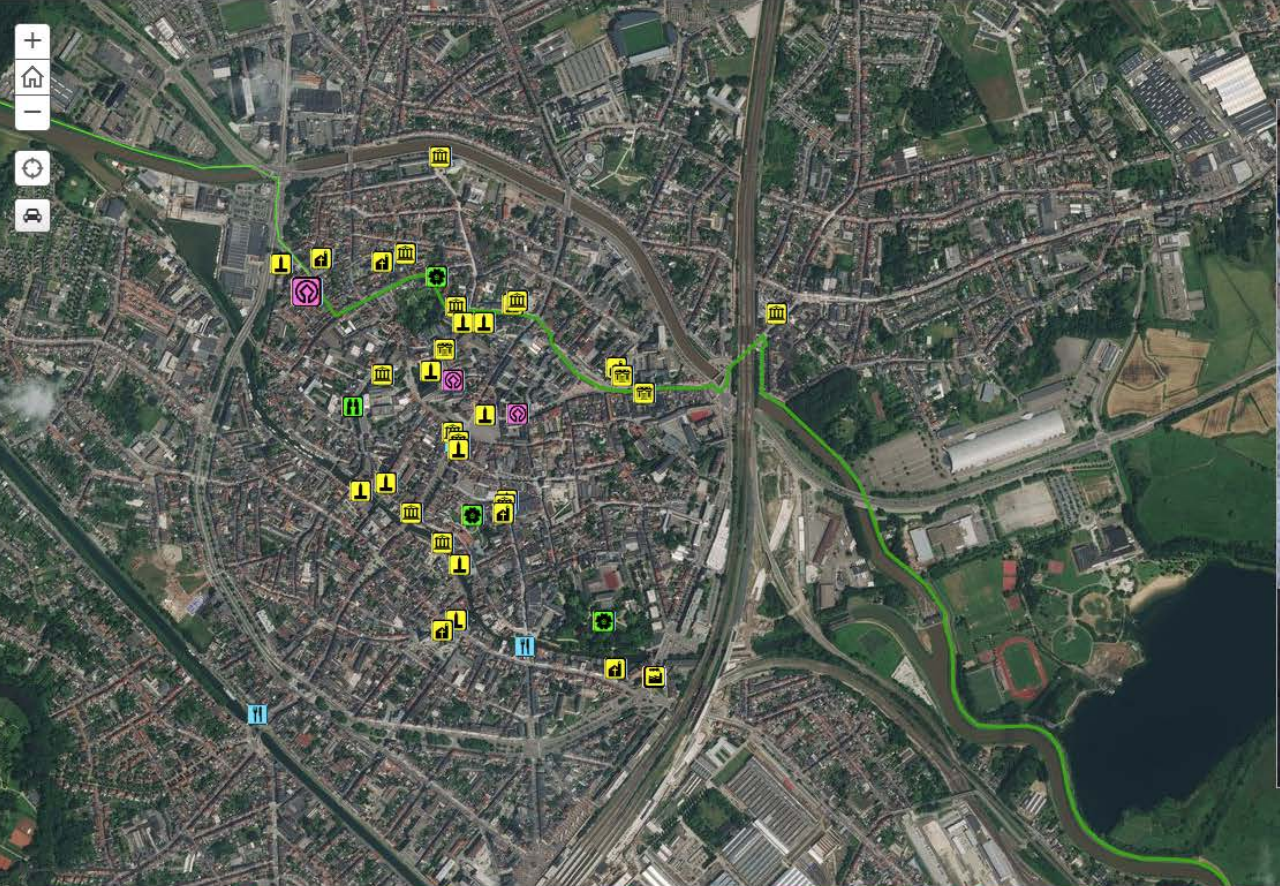


Greenways Heritage x Mechelen - Diest Cycliste x +

binariverdi.it/gwheritage/3.1/index.php?webmap=f1c79853d2444911b25bc208d4c60c62


Mechelen - Diest Cycliste

Co-funded by the COSME programme of the European Union



Flemish Beguinages: Large Beguinage of Mechelen

The Béguines were women who dedicated their lives to God without retiring from the world. In the 13th century they founded the béguinages, enclosed communities designed to meet their spiritual and material needs. The Flemish béguinages are architectural ensembles composed of houses, churches, and green spaces, with a layout of either urban or rural origin and built in styles specific to the Flemish cultural region.



- Mechelen - Diest
- Brewery Het Anker
- Flemish Beguinages: Large Beguinage of Mechelen
- Beguinage Church
- Church of St Catherine
- Kazerne Dossin
- Small Beguinage
- Archbishop's palace garden
- The House of Refuge of St Trond's Abbey
- Green Water
- Klappat
- The Archbishopal P

Activity 4: Development of the “brand”

Definition of a “**protocol**” for the development of the “**Heritage Greenways**” **brand**, with guidelines, criteria and requirements check-list.



The evaluation grid consists of **55 criteria**, organized into **3 main themes** and **9 subthemes**, that consider the most relevant greenway qualitative characteristics for the users.

For each criterion, the evaluator can assign:

- 2 points, if the greenway presents the ideal condition,
- 1 point, if the greenway presents the acceptable condition,
- 0 points, if the greenway presents an inadequate condition.

Tab. 1 - Evaluation grid: Themes, subthemes and n° criteria

Theme	Subtheme	N° of criteria
A. Greenway	A1. General conditions	5
	A2. Safety	7
	A3. Comfort	6
	A4. Maintenance	4
	A5. Signage along the greenway	7
	Greenway Total	29
B. Tourism services	B1. Intermodality	5
	B2. Accommodations and other services	7
	Tourism services Total	12
C. Heritage	C1. UNESCO heritage	7
	C2. Other resources (natural, historical and cultural)	7
	Heritage Total	14
Total		55



Activity 4: Development of the “brand”

Definition of a “protocol” for the development of the "Heritage Greenways" brand, with guidelines, criteria and requirements check-list.

A **weight** (0.5, 1, 2 or 3) is assigned to each criterion, based on its contribution and importance to the overall greenway quality. The score is obtained multiplying the assigned points by its weight.

The assignment of the brand is subject to compliance with **5 mandatory criteria**, defined as General Conditions, for which it is necessary to obtain at least one point/each.

General conditions (Subtheme A1)				
N.	Criterion	POINTS		
		Answer A (2 points)	Answer B (1 point)	Answer C (0 points)
A.1.1	Presence of UNESCO sites within 10 km from the greenway	≥2	1	0
A.1.2	Greenway realized through the recovery of disused railways, towpaths or rural roads, with the preservation of heritage elements that witness to the past of the route. (e.g.: tunnels, viaducts, bridges, stations, progressive mileage signs, hydraulic engineering works, mills, etc.)	Yes, most sections are realized through the recovery of disused railways, towpaths or rural roads	Yes, only some sections are realized through the recovery of disused railways, towpaths or rural roads	No
A.1.3	Access allowed to different users (pedestrians, cyclists, rollers, horse raiders etc.)	cyclists and pedestrians and others	only cyclists and pedestrians	No, only one category of users
A.1.4	Slope of the greenway <4%	Yes, for all the greenway	Yes except for short sections	No, for long sections
A.1.5	Signalization of the intersections with ordinary roads and shared sections	Most intersections are adequately regulated	At least half of the intersections are adequately regulated	Less than half of the intersections are adequately regulated

Activity 4: Development of the “brand”

Definition of a “protocol” for the development of the "Heritage Greenways" brand, with guidelines, criteria and requirements check-list.

The overall greenway quality is assessed by comparing the achieved score (ranging from 0 to 109) with the maximum possible score (109); in this way, the **final score is scaled to a 0-100** scale. The same scaling procedure can be applied to the scores related to each theme (greenway, tourism services and heritage)

Theme	Score Max (Point Max X Weight)	Final score (0-100)
Greenway (GW)	57	$\left(\frac{\sum Score GW_{[0-57]}}{57}\right) \times 100$
Tourism services (TS)	23	$\left(\frac{\sum Score TS_{[0-23]}}{23}\right) \times 100$
Heritage (HE)	29	$\left(\frac{\sum Score HE_{[0-29]}}{29}\right) \times 100$
Overall quality (OQ)	109	$\left(\frac{\sum Score OQ_{[0-109]}}{109}\right) \times 100$

Final Score (0-100)	Quality class	Quality Stars
0-20	Sufficient	★
21-40	Discrete	★★
41-60	Good	★★★
61-80	Very good	★★★★
81-100	Excellent	★★★★★

Activity 5: raise “brand” awareness

• Greenway users questionnaire

Personal information (origin, age, gender, education level, occupational status, outdoor activities propensity)	8
Current greenway use (activities, mode and time of use, mean of transport, reasons of use)	9
Relation with the Unesco site (knowledge, visit, influence on the greenway use)	5
Expenses along the greenway (type and amount of expenses: accommodation, bar, restaurant, bike rental, UNESCO ticket, ecc.)	4
Usual greenway use (frequency and time of use, activities, reasons, mean of transport)	8
Evaluation of the greenway quality (information, services, possible improvements)	5
Total	39

• UNESCO site users questionnaire

All UNESCO users	Personal information (origin, age, gender, education level, occupational status, outdoor activities propensity)	8
	Visit to the UNESCO site (reason, activities, mean of transport)	5
	Relation with the greenway (knowledge and use of the greeway)	6
Only greenway users	Usual greenway use (frequency and time of use, activities, reasons, mean of transport)	7
	Expenses along the greenway (type and amount of expenses: accommodation, bar, restaurant, bike rental, UNESCO ticket, ecc.)	4
	Evaluation of the greenway quality (information, services, possible improvements)	5
	Total	35


On-site version (pdf and QR code) / online version




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Thanks for the attention
Touristic GIS, Web-App, Protocol

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Paldies par uzmanību

Dikli, September 5th 2019



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