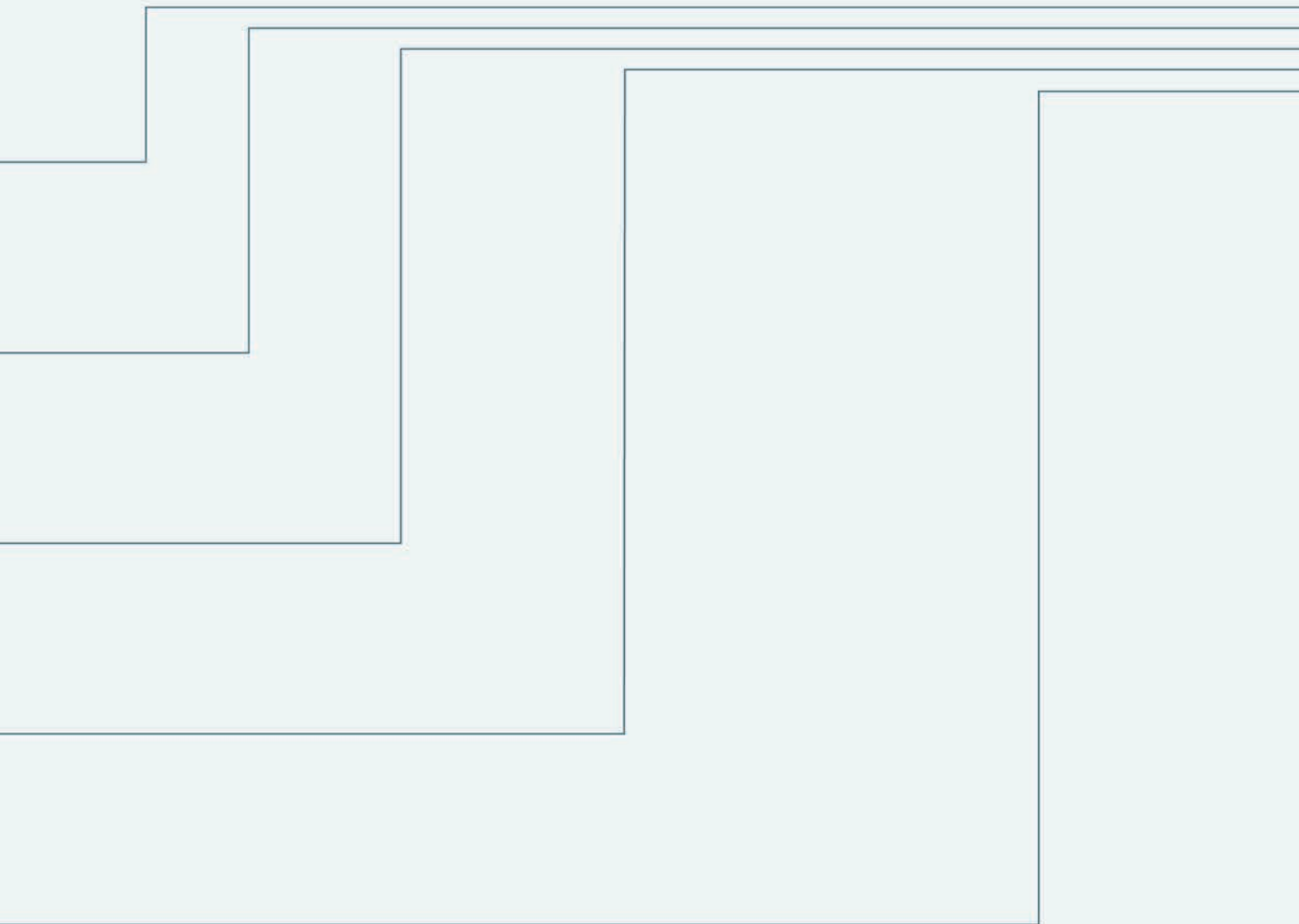


ASSESSMENT TOOL for Industrial Landscapes

trALLs to development opportunities



“The multi-thematic assessment of Alpine brownfield sites is a challenging process, as it involves many different disciplinary fields and an incredible amount of sectoral knowledge. The industrial landscapes Assessment tool designed and developed within the framework of trAIlS has proved to be successful in tackling this complexity. The tool helps to integrate the whole assessment procedure and makes it transparent, smooth in its practicability and, most important, capable to meet the needs of the stakeholders and communities.”

- **Marcelo Modica, project lead**
Technical University of Munich

About the project trAIlS

The decline of traditional heavy and manufacturing industries is today occurring even in peripheral and less urbanized regions, such as the Alps. Here, in the so-called “green heart of Europe”, this process is leaving behind impressive former productive landscapes of substantial size and complexity: Alpine Industrial Landscapes (industrial landscapes). The potential value of industrial landscapes in terms of the opportunities that they offer for sustainable transformation is strongly connected to Alpine-wide ecological, economic and social key challenges including the regeneration and improvement of blue and green infrastructures, the reactivation or upgrade of regional economies, and the promotion of local identity, as well as cultural heritage.

The project trAIlS aimed to generate significant knowledge about industrial landscapes and to develop and test sustainable transformation strategies that were applicable to, and replicable across, the whole of the Alpine area. Using a multidisciplinary, and transnational approach, the project combined expertise in the fields of spatial and landscape planning, socio-economic sciences, and ecologic restoration, whilst also directly cooperating with local communities in four pilot sites in Austria (Eisenerz), Italy (Borgo San Dalmazzo), France (L'Argentière-la-Bessée), and Slovenia (Tržič).

The project supported local and regional stakeholders in the complex process of sustainable industrial landscapes transformation, and provided them with strategic planning tools for the future as well as with useful hands-on experience.

trAIlS project mission statement,
www.alpine-space.eu/projects/trails/en/about

ASSESSMENT TOOL for Industrial Landscapes

trALLs to development opportunities

Title

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Assessment Tool for Industrial Landscapes

trALLs to development opportunities

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S SPATIAL ASSESSMENT

The spatial analysis focuses on the main spatial elements needed for the development of planning pathways at a multi-scale level. Two scales can be selected for the analysis: a regional scale (1:5000 and above) to get an overview of the specific location and to identify characteristics within the region; a local scale (smaller than 1:5000) for more in-depth analysis which focuses on the pilot area and its immediate surroundings.

HOW TO BENEFIT FROM UNDERSTANDING SPATIAL ASSESSMENT

Raising awareness of the environment and landscape

Knowledge of the topography and terrain, the location and type of nature protected areas, land use, blue and green connections and danger zones enables the identification of possibilities and limitations involving the future urban design processes of a specific area in a spatial context.

Awareness of existing settlement frameworks

Mapping and understanding the typologies of settlements, their historical buildings, uses and functions allows the identification of problems as well as the challenges and potentials regarding the future development of a specific area. Cumulatively, this allows the establishment of an adequate project framework. The settlement assessment helps to identify urban polarities and provides references for further planning processes.

Knowledge of mobility and accessibility

The analysis of mobility involves collecting data about roads and road networks, as well as information about public transport. The mobility assessment helps to identify the level of accessibility that is fundamental to the future development of the territory.

Investigation of supply and disposal infrastructure

An analysis of ICT supply, water supply and wastewater disposal infrastructure, as well as of the sewage and energy supplies allows identification of the possibilities and the limitations of existing networks as well as consequent needs to implement developments.

Identifying (legal) restrictions

Knowing local and supralocal rules regarding national, regional, and local networks helps you to understand the direction in which the future development is headed and what restrictions you have to take into account.



What actions would you like to take?

Spatial assessment is a very complex field. There are numerous assessments and analysis that can be undertaken. To make things more operational, here are a few Actions that the Spatial Assessments can help you achieve.

1. Look at the Actions on the left and decide how important each is (Low, Moderate, High).
2. Look on the right as to which Questions are required for the Action to be achieved. You can also read about each Question in the table on the right.
3. Tackle the Actions of High importance first.

| Actions the Spatial Assessment can help with | Action importance | | | Question needed | | | | |
|---|-------------------|-----|------|-----------------|---|---|---|---|
| | Low | Mod | High | A | B | C | D | E |
| Identify environmental and landscape conditions. | | | | ✓ | | | | |
| Identify danger zones - restrictions for the transformation. | | | | ✓ | ✓ | | | ✓ |
| Identify settlement typologies and urban polarities. | | | | | ✓ | | | |
| Identify potentials and limits of mobility and accessibility. | | | | | | ✓ | | ✓ |

| Actions the Spatial Assessment can help with | Action importance | | | Question needed | | | | |
|---|-------------------|-----|------|-----------------|---|---|---|---|
| | Low | Mod | High | A | B | C | D | E |
| Identify potentials and limits of supply and disposal infrastructure. | | | | | | | ✓ | ✓ |
| Identify legal restrictions. | | | | ✓ | ✓ | ✓ | ✓ | ✓ |

HOW TO DO THE SPATIAL ASSESSMENT

Here are 5 basic questions, from A to E, which spatial assessment can answer and are relevant for the transformation of industrial landscapes. Depending on your needs, you can set out to answer as many as you wish or just skip to the most relevant.

| | Question | Explanation | Main use of the output |
|---|--|---|--|
| A | Which spatially significant conditions have to be considered at different scale levels? | As a result of the Environmental and Landscape analysis the user receives, for example, information about the topography and terrain, the location and type of nature protected areas, land use, and danger zones. | Identification of possibilities and limitations. Basic preparation work to set urban designs and ideas into a spatial context. |
| B | What problems and opportunities can understanding of the settlement give? | Mapping and understanding the typologies of settlements, the historical buildings, along with uses and functions allows identification of problems, challenges and potentials regarding the future development of a specific area, in order to establish the best project framework for it. | Identification of the basic information to be considered in designing scenario(s) for development. |
| C | How can the accessibility of the region / municipality / industrial abandoned site be assessed/evaluated? | Through the analysis of the mobility network, as well as the accessibility analysis, data about the road and rail network, as well as information about public transport and accessibility is collected. | In order to be able to redevelop a location, it requires, amongst other factors, insights about mobility and accessibility. |
| D | What electricity, thermal and information infrastructure are available and how are water supply and wastewater disposal organized? | The acquisition of an holistic system view requires analysis of supply and disposal infrastructure. Therefore, the ICT supply, the water supply and disposal infrastructure, as well as the sewage and the energy supply are examined. | In order to show the potential of the location for possible reuse, it is important to include the existing supply and disposal infrastructure in the planning process. |
| E | What are the planning rules/guidelines at different scale levels (state, regional, local) and why is it useful to know these? | Identification of the local and supralocal rules that are present in national, regional and local plans/programs. | In order to understand the direction of future development and to understand planning that apply in the area. |

SUMMARY OF ADVICE ON IMPLEMENTATION

- Language barriers can often be an obstacle in data searches. Many country-specific platforms, as well as the available data, are only prepared in the official language of the country.
- Translation tools can provide an important aid to data research.
- Get the help of local experts who can give you an introduction to the most important data portals in the region for the respective analysis topic. In addition, the language barrier can be overcome by consulting a "local".
- Furthermore, a local expert can point out issues relevant for planning that are difficult to identify as an external expert.
- The data required for GIS analysis will usually be provided free of charge by the planning authorities of the relevant state in the form of geoportals. In addition, regions often also provide a region-specific geodata portal.
- If you need data beyond country-specific portals, the EU provides a comprehensive database for geodata through the INSPIRE geoportal.
- When searching for planning relevant data, it is advisable to use different search engines and different languages.

A Which spatially significant conditions have to be considered at different scale levels?

Analysis of the environment and landscape identifies opportunities and limitations at both scale levels. In this context basic information on land use will help to indicate past use and illustrate the framework for future use (sealed or paved soil). In addition, the generated content can be used, for example, to develop strategies for risk prevention and to strengthen resilience of the site.

In the course of this question, the environment and landscape are analysed at two different scales:

- Local scale (pilot site within the municipality) and
- Regional scale (municipality within the region and beyond).

How it is done

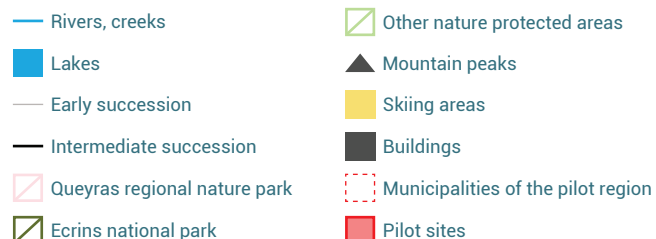
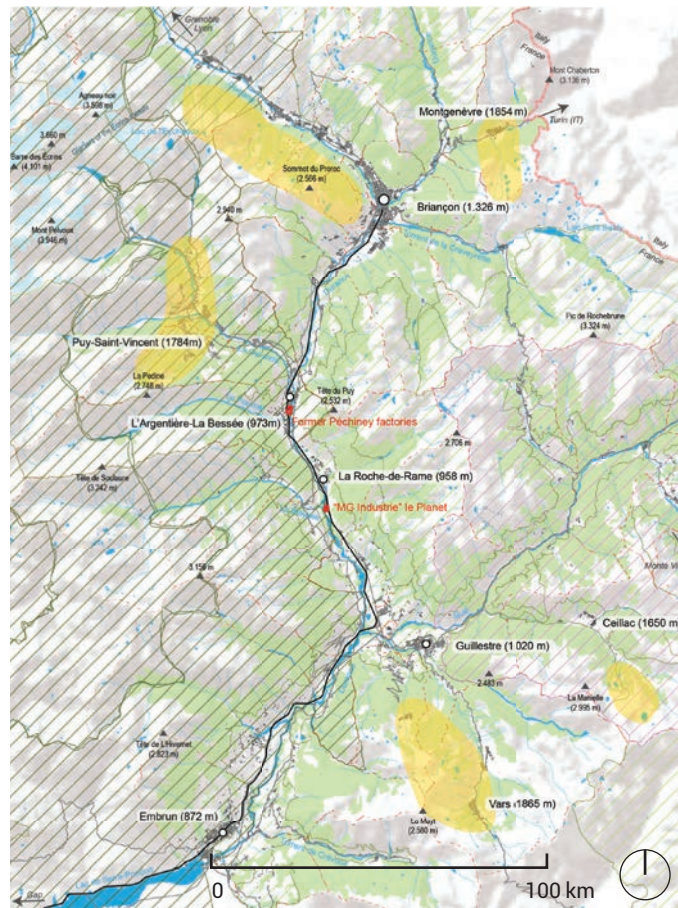
By using GIS data, various elements related to the environmental and landscape analysis can be analysed:

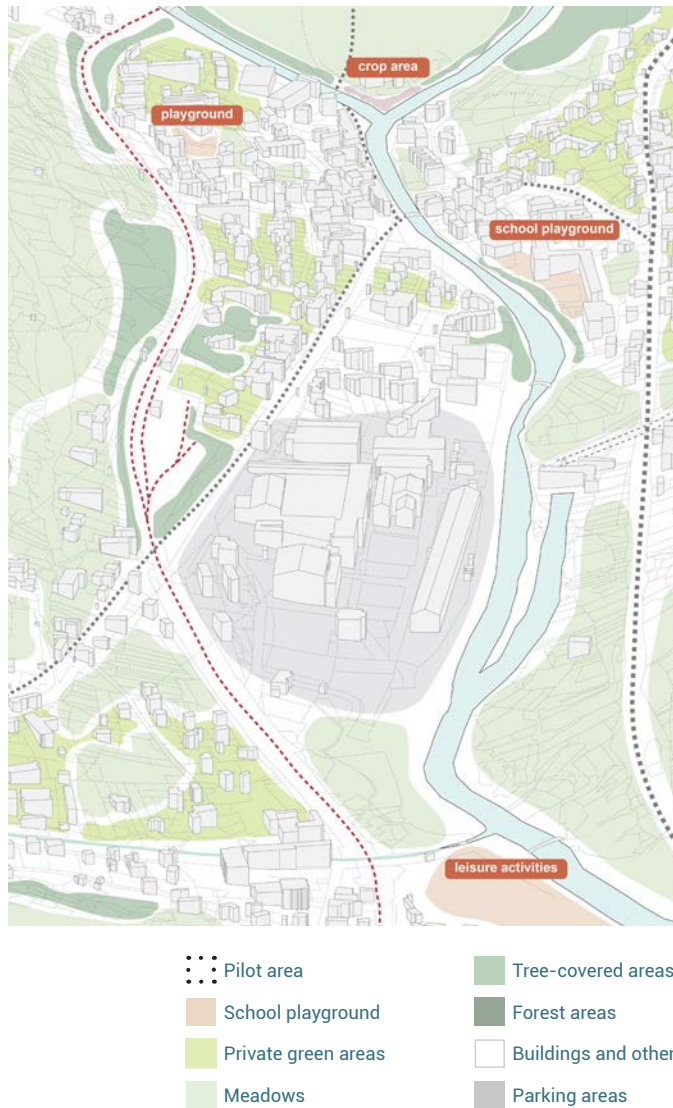
- Analysing the topography and terrain means mapping and providing a qualitative description of the topography via contour lines and terrain base maps in GIS. Additionally, a 3D model of the terrain can be created to enable a spatial analysis in digital form. With these outputs, the possibilities and limitations of the terrain can be identified.
- With the help of mapping nature protected areas in GIS the type and localization of the protected areas can be determined.
- By using the CORINE land cover the land use can be analysed and interpreted quantitatively using GIS.
- GIS can also be used to map hazard zones (floods, mudflows and avalanches) and other territorial fragilities. Based on this analysis step development possibilities and limitations can be identified.

In addition to GIS analysis, visual impressions can be obtained via on-site visits and through photo documentation. These impressions can be integrated into the spatial analysis.

TIPS AND TRICKS

RIGHT: Example of the environmental and landscape analysis in the French pilot region. The figure displays a topographic map with further elements of the environmental and landscape analysis of the Durance river valley between Briançon and Embrun.





TIPS AND TRICKS

ABOVE: Example of the environmental and landscape analysis in the French pilot area. The map displays the features of open spaces (green areas, playgrounds, meadows, and forest areas).

Needed resources and information

- Access to geodata portals that provide the necessary GIS data to conduct analysis on the environment and landscape.
- Local know-how to gain background knowledge in addition to readily available data.
- Access to detailed information on the existing conditions (a working relation with the municipality officials).

Required time and expertise

- An expert with the know-how to analyse environmental and landscape content, who carries out GIS analysis using available data and generates outputs such as maps.
- Estimated time of 50 hours for the research and preparation of the maps.

Expected output

- Maps that represent the current environmental and landscape situation in the region and situate the region in a wider context.
- Maps that represent the current environmental and landscape situation at a local scale and highlights the specific area.

B What problems and opportunities can the understanding of settlement provide?

The analysis of the settlements allows an understanding to be gathered of the urban layout in which the pilot area is located, as well as the urban polarities, the typologies of the buildings and their state of use. It is also interesting to know settlement history and different construction phases (this last point refers mainly to the local scale). The results of such analysis can be used, for example, to develop strategies relevant to future uses and the typologies of the pilot area, in order to establish the best project framework for it.

The settlement framework and features are analysed at two scales:

- Local scale (pilot site within the municipality) and
- Regional scale (municipality within the region and beyond).

How it is done

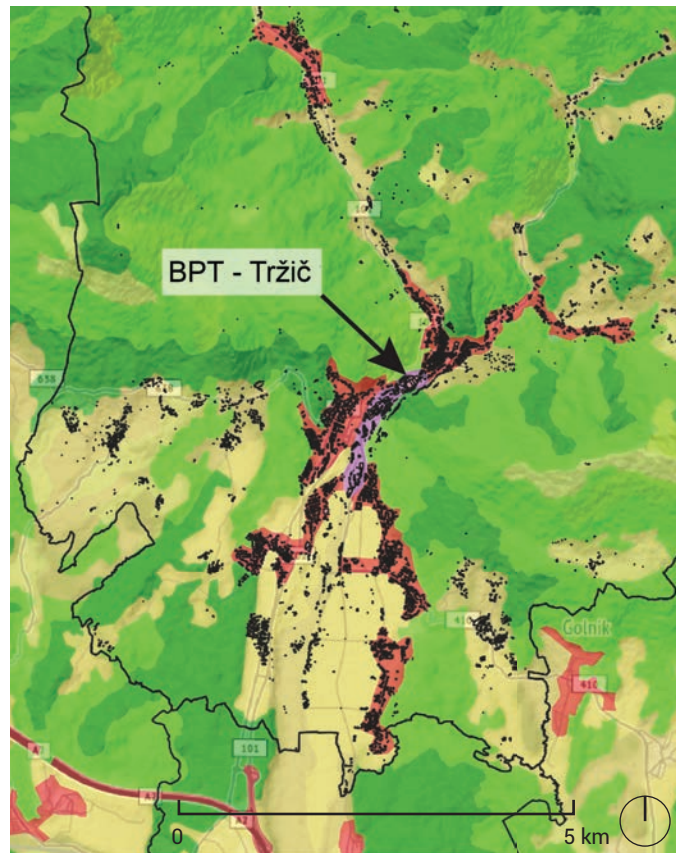
The settlement analysis can be carried out using GIS data, aerial photos, and specific documents. The following settlement elements can be analysed:

- Desk research, based on the GIS data allows analysis of the prevalent uses. The work involves mapping and categorization of residential, industrial and commercial functions, as well as of public facilities both on the regional and on the local scale.
- By using the CORINE land cover, the land use can be analysed and interpreted quantitatively using GIS data.
- Consulting municipal documents and online research allows mapping of urban polarities. The work involves finding out the main urban attractors for uses as well as historical and documentary value or landmarks in the area.
- At the local scale, by collecting info from the municipality, abandoned and non-abandoned buildings can be mapped.

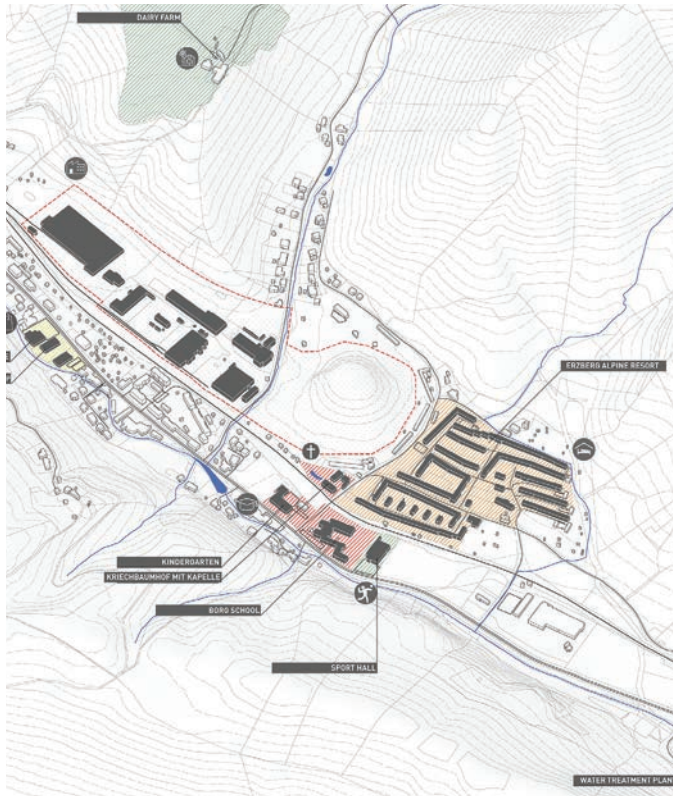
In addition to GIS analysis, visual impressions can be obtained by on-site visits and photo documentation. These impressions can be integrated into the spatial analysis.

TIPS AND TRICKS

RIGHT: Example of settlement analysis at the regional scale in the Slovenian pilot region. The figure shows the territory and its different functional characteristics.



| | |
|--|-----------------------------|
| Discontinuous urban fabric | Coniferous forest |
| Industrial or commercial units | Mixed forest |
| Road, rail networks, associated land | Natural grasslands |
| Pastures | Moors and heathland |
| Complex cultivation pattern | Transitional woodland-shrub |
| Agric. land with areas of natural veget. | Bare rocks |
| Broad-leaved forest | Sparsely vegetated areas |



TIPS AND TRICKS

LEFT: Example of settlement analysis at the local scale in the Austrian pilot area. The figure shows the urban polarities surrounding the pilot area.

Needed resources and information

- Access to geodata portals provide the GIS data necessary to conduct analysis on settlement framework.
- Local know-how to gain background knowledge in addition to readily available data.
- Access to the municipality officials that will provide detailed information regarding existing site conditions.

Required time and expertise

- An expert with the know-how to analyse settlement content, who carries out GIS analysis using the available data and generates outputs such as maps.
- Estimated time of 50 hours for the research and preparation of the maps.

Expected output

- Maps that represent the current settlement situation in the region and situate the region in a wider context.
- Maps that represent the current settlement situation at a local scale and highlight the specific area.



C How can the reachability of the region / municipality / industrial abandoned site be assessed/evaluated?

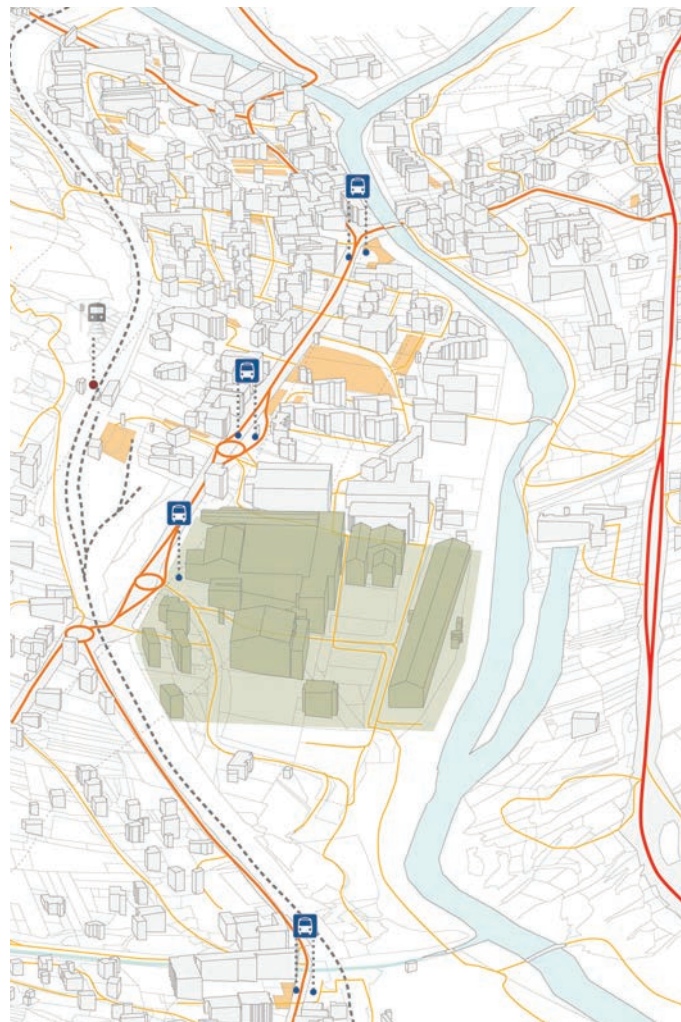
In order to be able to redevelop a site, its accessibility is important. By determining accessibility, a spatial impression of the location of the region / the municipality / the pilot site can be established, both within the country and with reference to neighbouring countries. The accessibility should be analysed for different modes of transport (passenger & freight transport by road, rail and air). At a regional level, bicycle traffic may also be relevant for tourist aspects and (increasingly) with regard to commuting.

Accessibility is analysed at two scales:

- Local scale (pilot site within the municipality) and
- Regional scale (municipality within the region and beyond).

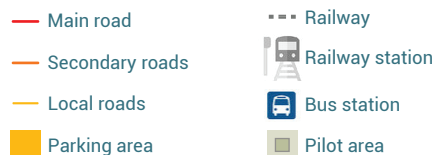
How it is done

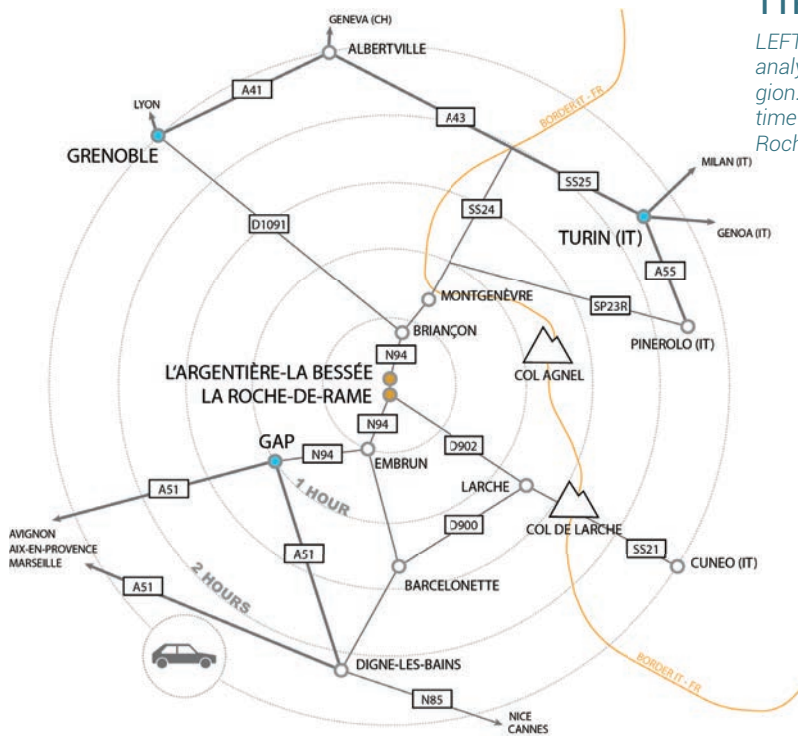
- Collect concrete information from municipalities - particularly with regard to the local scale.
- Collect concrete information from the region - particularly that which is related to the regional scale.
- The analysis is based on desk research, which can be carried out in the form of GIS analysis. For this purpose, the following mobility-relevant topics can be analysed:
 - analysis of road networks involves mapping and categorising road networks and identifying main connections;
 - similar to the analysis of the road network, the rail network can also be analysed. The focus is on used and unused rail infrastructure and its use (passenger or freight);
 - in order to get a complete overview of the rail network, the public transport system will also be analysed;
 - the previously described analysis pertaining to mobility accessibility can be put into the context of accessibility by qualitative descriptions. For this purpose, mapping of distance and travel time can be provided.



TIPS AND TRICKS

RIGHT: Example of the mobility and accessibility analysis at the local scale in the French pilot region. The figure shows the road hierarchy, the public mobility network, and the parking areas.





TIPS AND TRICKS

LEFT: Example of the mobility and accessibility analysis at the regional scale in the French pilot region. The figure displays the accessibility and travel time of the pilot sites L'Argentière-la-Bessée and La Roche-de-Rame via the road network.

Needed resources and information

- Access to geodata portals provide the GIS data necessary to conduct analysis on the existing mobility of the region.
- Access to timetable information, route planners and websites of local transport associations
- Local know-how to gain background knowledge in addition to readily available data.
- Access to municipality officials that provide detailed information regarding the existing site conditions.

Required time and expertise

- An expert with the know-how to analyse mobility content, who carries out GIS analysis using available data and generates outputs such as maps.
- Estimated time of 30-40 hours for the research and preparation of the maps (researching different modes of transport).

Expected output

- Maps that represent the current mobility situation in the region and situate the region in a wider context.
- Maps that represent the current mobility situation at a local scale and highlight the accessibility to the specific area via private and public transport means.



D Which electricity, thermal and information infrastructure are available, and how are water supply and wastewater disposal organized?

Analysis of the supply and disposal infrastructure shows development potentials and limitations at both scale levels. In order to redevelop a site, an analysis of the existing supply and disposal infrastructure is also required in order to obtain a holistic system view. For example, when ICT supply is analysed it provides an overview of the availability of different types of existing information and communication technologies (fixed-line, mobile communication network, broadband network).

This can be analysed at two different levels:

- Local scale (pilot site within the municipality) and
- Regional scale (municipality within the region and beyond).

How it is done

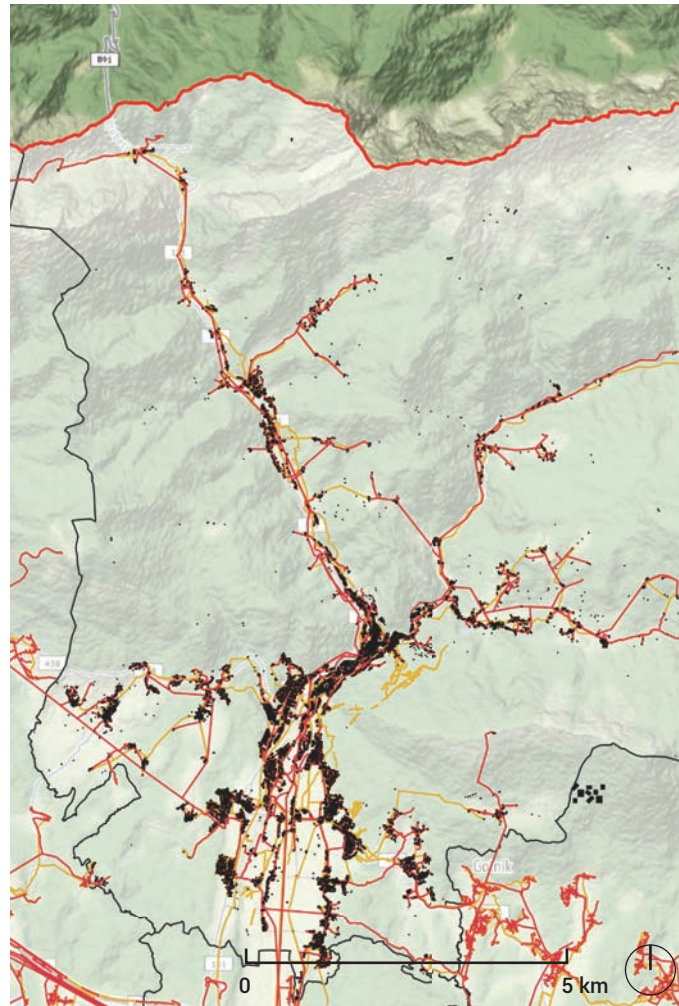
The settlement analysis can be carried out using GIS data, aerial photos, and specific documents. The following settlement elements can be analysed:

- ICT supply and communication technology.
- The organization of water supply and wastewater disposal can be also analysed.
- Energy supply for a future redevelopment (includes, for example, the supply of electricity and thermal energy).

TIPS AND TRICKS

RIGHT: Example of the analysis of supply and disposal infrastructure in the Slovenian pilot region. The figure displays a topographical map with the electricity and IT infrastructure in the municipality Tržič.

ON NEXT PAGE: Example of the analysis of the supply and disposal infrastructural (in particular the water supply network) in the Slovenian pilot region. The figure shows the existing water supply network.



- Electricity - infrastructure
- IT infrastructure
- Buildings
- Municipality border
- National border



Needed resources and information

- Access to geodata portals that provide the GIS data necessary to conduct analysis of the supply and disposal infrastructure.
- Local know-how to gain background knowledge in addition to that which is readily available.
- Access to municipality that provides detailed information regarding existing conditions.

Required time and expertise

- An expert who carries out GIS analysis using available data and generates outputs such as maps.
- Estimated time of 20-25 hours for the research and preparation of the maps.

Expected output

- Maps that represent the current supply and disposal infrastructure situation in the region and situate the region in a wider context.
- Maps that represent the current supply and disposal infrastructure situation at a local scale.



E What are the planning rules/guidelines at the different scale levels and why is it useful to know them?

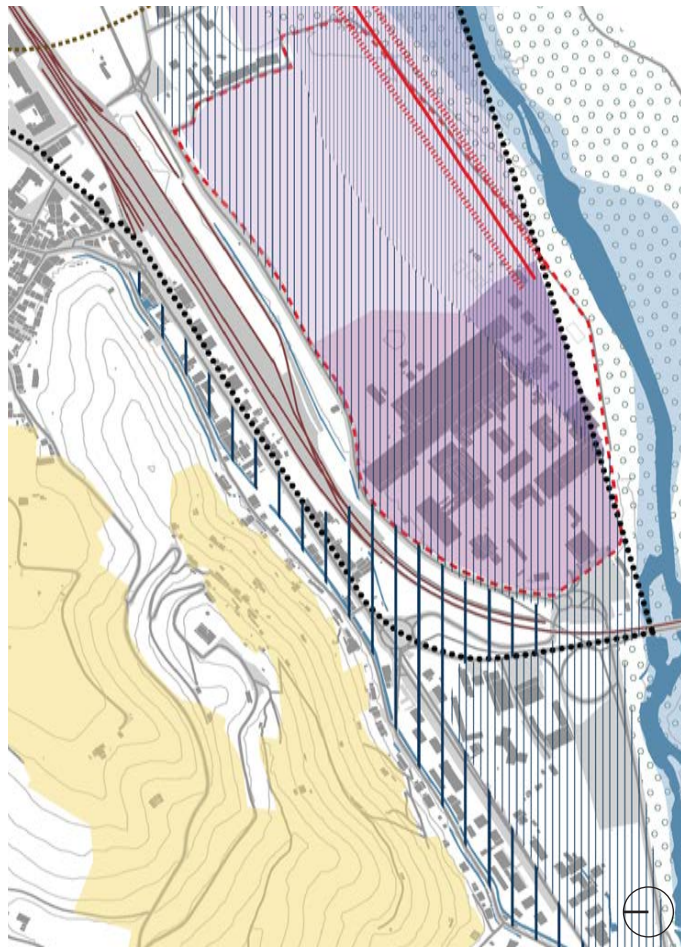
In order to redevelop a site, it is necessary to know all the rules governing that particular area. We have to know in which direction future development will progress and which restrictions we have to take into account for the project. In addition to obligatory constraints and restrictions, it is useful to identify the guidelines of steering documents that suggest potential transformation scenarios for areas.

The identification of local and supralocal rules in national, regional and local plans/programs can be carried out at two scales:

- Local scale (pilot site within the municipality) and
- Regional scale (municipality within the region and beyond).

How it is done

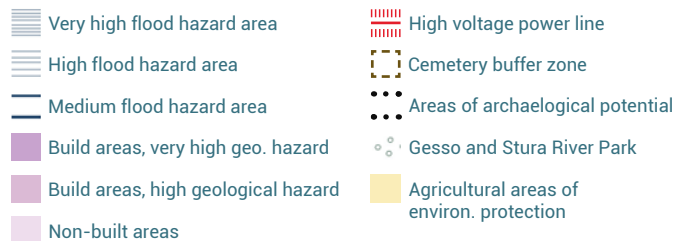
- Collect concrete information from municipalities, particularly related to the local scale.
- Collect concrete information from the region, particularly related to the regional scale.
- Desk research may be possible if the documents are made available on digital platforms. In these cases, research can be carried out in the form of GIS analysis. For this purpose, the following planning topics can be analysed:
 - local rules; sample plans, programs, projects;
 - supralocal rules; national, regional, supra-municipal plans, programs, projects;
 - specific and thematic documents and reports.

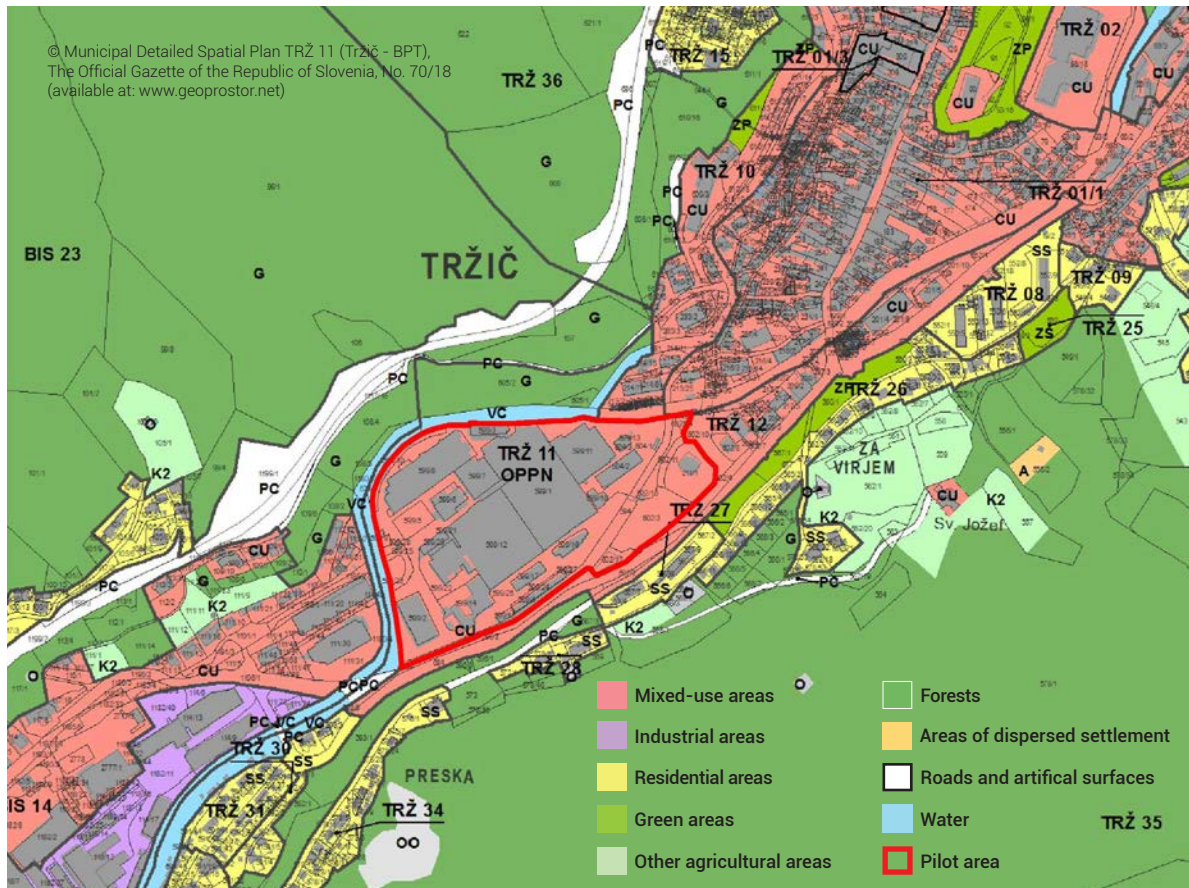


TIPS AND TRICKS

RIGHT: Example of the planning rules on regional scale in the Italian pilot area. The figure displays the supralocal rules for the Italcementi area. In particular it shows the geomorphological/hydrogeological hazards and suitability of the area for urban use.

ON NEXT PAGE: The municipal spatial plan in the Slovenian pilot area. The figure displays the permitted and non-permitted uses of the site and other spatial planning conditions.





Needed resources and information

- Access to geodata portals that provide the GIS data needed to conduct analysis on the planning rules/guidelines.
- Local know-how to gain background knowledge in addition to that data which is already freely available.
- Access to municipality that provides detailed information regarding existing and project conditions.

Required time and expertise

- Estimated time of 50 hours for the research and preparation of the maps.

Expected output

- Maps that represent the current planning conditions in the region.
- Maps that represent the current rules/guidelines at a local scale.

