Project funded by EUROPEAN UNION

TECHNICAL REPORT
ECOTOURISM EXPERTISE

Developing ecotourism net in black sea region
"ECOTOUR-NET"

Contracting authority:

ΔΗΜΟΣ ΞΑΝΘΗΣ

Contractor:

com&com
ΥΠΗΡΕΣΙΕΣ ΣΥΜΒΟΥΛΩΝ ΚΑΙ ΠΛΗΡΟΦΟΡΙΚΗΣ

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Technical Report

ECOTOURISM EXPERTISE

FINAL REPORT

TENDER FOR ECOTOURISM EXPERTISE

Developing ecotourism net in black sea region “ECOTOUR-NET”

Contents

Introduction

The study area of the project “Developing ecotourism net in black sea region”-ECOTOUR-NET is located within the Prefecture of Xanthi. The Prefecture includes the city of Xanthi, 81 villages and the total population amounts to 111,222 inhabitants. The mountainous area of the Prefecture, which is the subject of the study, belongs to the Rhodope Mountains and has rich flora, fauna and important cultural background. The main occupation of the inhabitants is agriculture and animal husbandry. The place has many comparative advantages and a wide field for the development of ecotourism, but so far no interventions have been made in this direction and there are few companies that are active in the field. The purpose of the project is to create the appropriate infrastructure for the development of hiking and cycling tourism, the promotion of the region and the stimulation of the local economy in the context of ecotourism. For the needs of the project, two hiking and two cycling routes were designed in the area of Haidou and Stavroupoli. The technical report includes the digital recording of the routes, their description, the recording of the points of interest, photographic material, as well as the indication of the points and the type of marking.

The choice of the routes was made with specific criteria such as attractiveness, safety, walkability, easy access and service to the target audience (cyclists, hikers).

The process followed by the project team for the recordings was the mapping of the area with on-site survey and high-precision GPS. After the recordings were completed, the data was processed in a GIS environment and displayed in a Google Earth background.

Assignment history

The services were assigned by the Municipality of Xanthi to the company Com & Com, which signed a subcontract with the topographer-cartographer Germantzidis Ilias. The work is part of the Ecotourism Expertise Service for the implementation of the action of the Municipality of Xanthi in the project: "Developing ecotourism net in black sea region (ECOTOUR-NET)".

The services that are included in the project per action, according to the codification of the project actions (ECOTOUR-NET), are "Action GA T1: Creation of Activity Routes and Location" and according to the signing of the contract between of Mr. Germantzidis Ilias and the company Com & Com include in detail the following deliverables:

• Design of four routes of ecological interest (2 hiking and 2 cycling) in the mountainous area of the Municipality of Xanthi

• Marking the routes in specialized cartographic-mapping software (GIS) and the points with determination of places for information signs according to the places of the signs and the important access points, tourist interest, rest, access and safety for the cycling and hiking activity.

• Visual (photographs) and written recording of important natural, geographical, human and aesthetic data for the compilation of the history of the location of the areas (obtaining information from the locals and other sources, old names of the natural and historical points of the routes, information about the past , the purpose of their use and their relevance to important events / people), in order to form the database for the creation of promotional material for the development of eco-tourism in the region.

The deliverables are included in this technical report.

Visibility data for the Regional Unit of Xanthi and the Region of Eastern Macedonia & Thrace

Source: Strategic & Business Plan for Tourism Development of the Region of Eastern Macedonia and Thrace, 2015

Ecotourism and Agrotourism in the Region of Xanthi

The Regional Unit of Xanthi seems to have the highest ecotourism and agrotourism infrastructure than any other Regional Unit of the Region of Eastern Macedonia and Thrace. With center the river of Nestos and in a rather large area that extends from the forest of Haidou, to Keramoti, the Livaditis Waterfall, the Vistonida lake and the Pomakochoria (Stavroupoli, Toxotes, Straits of Nestos, Delta Nestou-Kotza Orman, Kosinthos, Giftokastro, Kimmeria), there are a number of ecotourism units (Stavroupoli, Karyofyto, Xanthi) and service companies, which organize a number of activities along the river and in the surrounding mountains (trekking, rafting, archery, mountain biking, 4X4, bird watching).

Corresponding units with equestrian tourism and agritourism services exist in Komnina, Petinos, Myrodato Beach and Avdira. In Avdira, there is the center of the wine tourism infrastructure of the Regional Unit with vineyards and estates, which compose another part of the Wine Route of Dionysus. Xanthi Regional Unit is the second Regional Unit after Drama that has glider tracks (parachuting) in Neos Zygos, between Xanthi and Komotini.

One area in which the Regional Unit has a high infrastructure capital is thermalism. In the regional unit of Xanthi are the well-known Thermal Baths of Thermes (as well as other hot springs in the area of Pomakochoria) and the Spa of Potamia on the road to Komotini.

Gastronomy in the Prefecture of Xanthi

In the Peripheral Unit of Xanthi, typical dishes are the chickpeas with pumpkin and spices, the lamb with yufkades, the cured beef pie, the traditional pasta and the kebab. A trademark of Xanthi are both syrup sweets and those based on chocolate such as cariocas, nougat, saragli, syrup gelin bochta, soutzouk loukoum or the seker pare made of semolina and fresh butter. Jams and handmade pastries are also made with local ingredients and even wild forest fruits. In Xanthi, many fruits and vegetables (potatoes, asparagus, mushrooms) and legumes are produced.

Dairy products are of excellent quality, while large-scale production takes place in cheese (e.g., feta) and livestock products (e.g., poultry). Important parts of the nutrition of Xanthi are also the fish such as river trout, but also catches from the Thracian Sea and Porto Lagos. Finally, as far as wine is concerned, as in the rest of the Region, so in Xanthi, the tradition of Dionysus continues mainly in the vineyard of Abdera with the standard protected geographical indications Abdera wine.

Tourism demand in the Region of Eastern Macedonia and Thrace

According to information from the Institute for Tourism Research and Forecasting, 2013 in the region of Eastern Macedonia and Thrace arrived 1,154,977 visitors corresponding to 6% of total arrivals of the country. This is the 6th region in terms of demand for visitors. Of all the arrivals, only 6.3% had the plane as their means of transportation, while the other visitors came by road. The size of overnight stays is positive, as 2013 rose to 8,200,196 corresponding to 5% of national stays.

The Region of Eastern Macedonia and Thrace is selected for multi-day vacations, as in 2013 visitors stayed 7.1 days slightly different from the national average (8.9 days). According to the tourist destination, it is more dense than the resident visitors who were the 52.96% of the total visitors, while the foreigners were the 47.04%. Almost all foreign visitors come from European countries. In particular, the most important foreign tourism markets for the region are Germany (16.09%) which constitutes the main country of origin of visitors despite being significantly reduced compared to 2010 (-6.01%). Romania and Bulgaria (14.15% and 10.52% respectively) are following, where the region's tourism share increased significantly compared to the previous two years. Significant tourist flows also exist from the United Kingdom (9.96%) and Serbia and Montenegro (7.66%). A particularly dynamic tourism market is now Turkey (5.17%) for which there is an increase in overnight stays by approximately 2%, while the tourist traffic from Russia (6.58%) increased by 6.04% was spectacular in 2010-2012. The distribution of overnight stays during the year shows a stronger demand for the whole region during the summer period, namely in June, July and August.

Seasonality - Completeness - Consumer profile of visitors at Eastern Macedonia and Thrace

At the level of regional units, some differences are recorded with Drama and Evros attracting visitors beyond the peak period, during the autumn and winter months. The highest percentage of overnight stays in the Regional Unit of Drama that is essentially a winter destination is recorded in October. In Evros the tourist intensity is located in the quarter August-October with the overnight stays in the rest of the year being much less. The Regional Unit of Rhodope shows more traffic in August and September, while in the remaining months the distribution of overnight stays is lower, equable and does not exceed 9%. Finally, the Regional Unit of Kavala is a classic summer destination with

tourist traffic peaking in the four months June - September, while the rest of the year the rates of overnight stays are the lowest of all Regional Units and from January to April do not exceed 2.5%.

MONTH	REGIONAL UNIT OF KAVALA	REGIONAL UNIT OF RHODOPE	REGIONAL UNIT OF XANTHI	REGIONAL UNIT OF EVROS	REGONAL UNIT OF DRAMA
January	0.91	6.05	7.65	4.94	8.42
February	1.07	7.18	7.24	4.50	5.32
March	1.06	7.06	9.58	5.63	6.2
April	2.11	6.11	7.59	5.52	7.34
May	5.95	6.39	4.70	5.61	4.81
June	**16.09**	8.38	6.27	7.00	4.98
July	**24.86**	5.46	7.58	10.63	5.9
August	**28.35**	**14.51**	**14.11**	**16.05**	6.82
September	**14.89**	**15.04**	**12.58**	**12.02**	9.19
October	2.50	8.67	9.54	**11.79**	**16.48**
November	1.04	8.48	7.14	8.51	**13.08**
December	1.18	6.67	6.03	7.81	**11.46**

Of the total overnight stays, about 7% were spent in campsites in the Region. The visitors who like this type of accommodation are the Greeks, followed by the Bulgarians, the Germans and the Romanians. The phenomenon of seasonality is recognized as the most obvious feature of the tourism industry, while it is also the most important problem (or opportunity) that the industry is called to face. The Region of Eastern Macedonia and Thrace is facing a significant seasonality problem according to the CR6 concentration indicator which shows the total share of overnight stays of foreign visitors for the period May - October, the price of which reaches 87%, ranking it among the most problematic Regions together with the Ionian Islands, Western Macedonia, the South Aegean and Crete. The problem of seasonality is smaller for the period June - September where the rate receives a lower price, 76.07%. The seasonality of inbound and outbound tourism is significantly more intense in Greece compared to competing countries (Spain, Italy, Cyprus and Portugal). It is worth mentioning that the seasonality of domestic tourism is significantly lower than the seasonality of inbound and total tourism, but the size is significantly burdened in the last years of the economic crisis.

All the Regional Units face a problem of seasonality, however, it appears more intensely in the Prefecture of Kavala. The occupancy of beds in hotel accommodation in the Region of Eastern Macedonia and Thrace has been decreasing over time from 29.8% in 2012 to 27.5% in 2013 and is very low compared to the so-called tourist Regions of the country.

The highest bed occupancy at the level of Regional Units is recorded in the Units of Kavala, Rhodope and Evros, followed by Drama and Xanthi with a large deviation where the size of the occupancy does not exceed 18%.

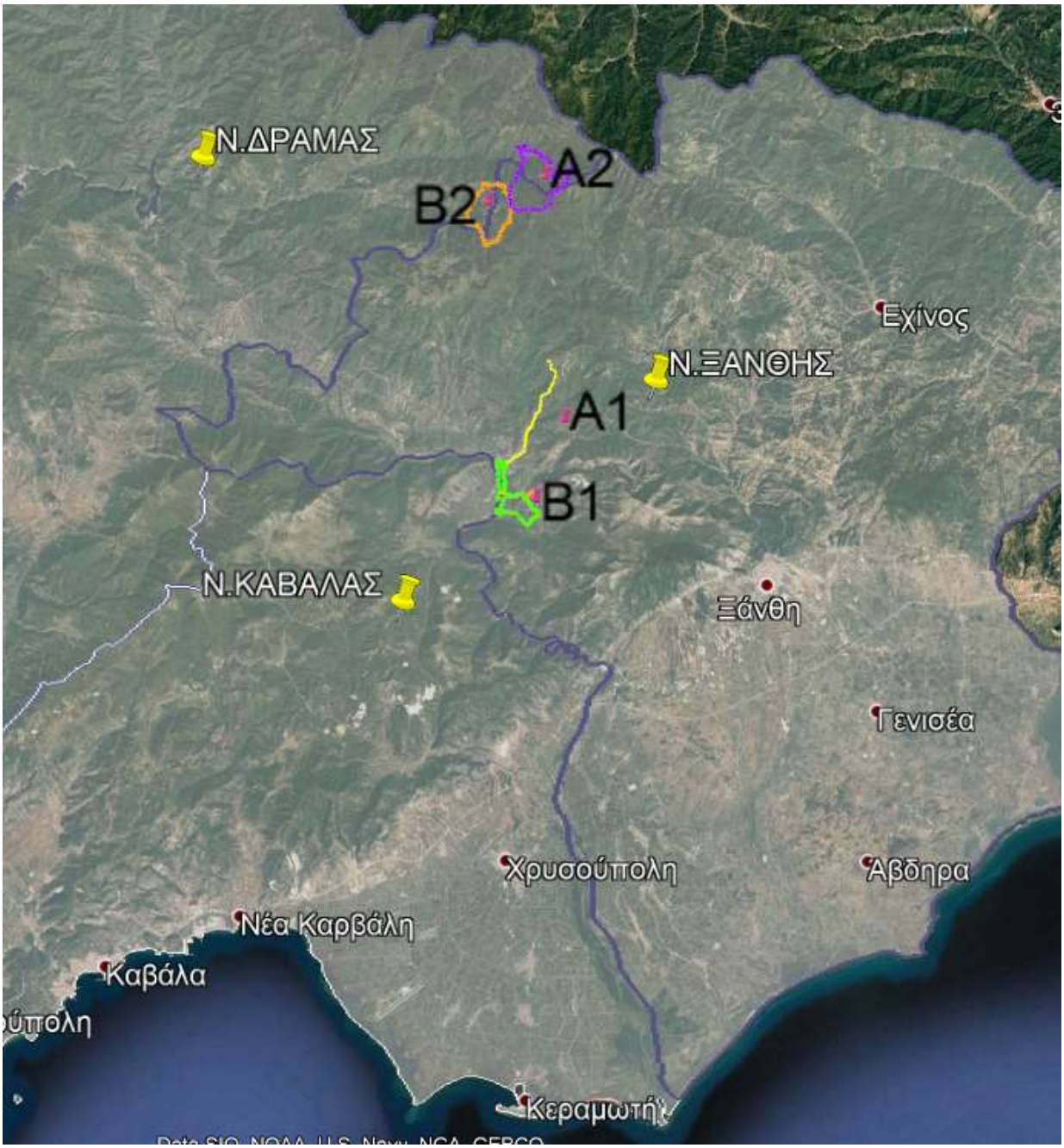
Elements that outline the consumer profile of visitors are tourism expenditures. For 2013, the total tourist expenditure in Region of Eastern Macedonia and Thrace reaches 373,522,493 euros, of which, 16.61% was allocated to accommodation expenditures, 19.35% for restaurants and bars, for travel 20.07%, for purchases and other expenses 30.93%, for entertainment 3.92% and for unknown expenses a 9.12%.

Study area

The study area extends within the Prefecture of Xanthi, Drama and specifically in the mountainous areas of Stavroupoli and Haidou. The project, as mentioned above, concerns the following hiking and cycling routes.

Routes	Length	Starting point			End		
		Place		Altitude	Place		Altitude
	km	X	Y	μ	X	Y	μ
Bicycle route B1 Stavroupoli - Nestos - Holy Monastery of Komnina - Komnina - Stavroupoli	13,7	559001	4560798	112μ	559001	4560798	112μ
Hiking route A1 Stavroupoli - Kallithea	8,7	559001	4560798	112μ	561712	4566484	690μ
Cycling route B2 Erymanthos (Forest Village) - Livaditi Waterfall – Erymanthos (Forest Village)	13,3	559470	4575601	1322	559470	4575601	1322
Hiking route A2 Erymanthos (Forest Village) - Leonidas Bridge - Preserved Monument of Nature – Erymanthos (Forest Village)	20,3	559470	4575601	1322	559470	4575601	1322

The following image shows in Google Earth background the route and the administrative boundaries of the Regional Units of Drama, Xanthi and Kavala.



Purpose of the project

The cycling and hiking routes that are proposed to be used serve:

• Forest recreation

• Environmental awareness

• The promotion of natural and cultural wealth

• The facilitation of human contact with nature

• The development of the local economy in the context of ecotourism

The studied design of the routes, the correct marking and in general the observance of the basic guidelines of the current legislation for the creation of routes extending in mountainous areas are key factors for the project to bring the above expected results, to last in time, to offer correct information and a sense of security to the cyclist.

Project elaboration Methodology

For the needs of the project, an extensive field research was carried out in the study area, which is depicted in the image below and extends to the mountainous area of Xanthi and specifically to the Rhodope Mountains.
The purpose of the field research was to find old paths that over time were abandoned, as they ceased to serve the needs of the inhabitants. Long time ago the connection between the settlements was made with mules through paths. Nowadays, if utilized, they can be an attraction for hikers and nature lovers.

During the research, information about the area was collected from reputable material of competent associations and from locals active in the area.

High-precision GPS was used for data collection and all the necessary data were recorded. Specifically, there were recorded the road network (main, secondary), the paths which are suitable for the needs of the project, the natural - cultural points of interest. At the same time, the marking works of the routes were recorded, in order to make them safe for the hikers and cyclists who will visit them.

All data were then entered into cartographic software and processed in a GIS environment. The purpose of the work described above was to visualize the results in the form of maps and to act in the future as guides for the implementation of the project.

Basic principles - route selection criteria

The route selection criteria are in line with the needs of the public to which they are addressed and in parallel with the specifications of the current legislation. Briefly, the following parameters have been taken into account:

1. Safety- Degree of difficulty

2. Attractiveness - Degree of service

3. Utilization of existing routes - paths

4. Correlation of routes with adjacent road network

5. Linear - Circular routes and deadlocks

6. Creation of new routes trails

7. Total length - slopes - sections of daily hiking and multi-day

8. Property status control and protection regime

Safety-degree of difficulty

The routes chosen for this project are aimed at a wide audience, as they do not present a particular degree of difficulty. The visitor will not encounter steep slopes, loose ground or steep locations. For the most part, the routes follow passable existing paths, ideal even for families with children. The variation of the degree of difficulty ranges from very easy to easy and is explained in the following table.

Degree of difficulty	Explanation
Very easy	It concerns easy paths with sufficient width and a smooth slope. Suitable for all ages and physical conditions.
Easy	It concerns easy-to-cross paths, with sufficient width and small variations in slopes, which for the most part are gentle. Suitable for all ages and physical conditions .
Medium	It concerns paths of moderate degree of difficulty, suitable for adults, with moderate to good physical condition. The abrupt changes in the slope are few and a short length of the path is made in narrow or rough ground.

Bicycle route B1

Stavroupoli - Nestos - Holy Monastery of Komnina - Komnina - Stavroupoli (13.7km)

The route starts from the square of the settlement of Stavroupoli and goes to the riparian area of Nestos, then continues to the Holy Monastery of Komnina, continues and ends at the point where it started, that is, in the square of Stavroupoli. The estimated time is 2 hours and the journey is very easy.

Hiking route A1

Stavroupoli - Kallithea (8.7km)

The route starts from the square of the settlement of Stavroupoli and is directed to the abandoned settlement of Kallithea. The estimated time is 4 hours and the journey is characterized by moderate difficulty.

Bicycle route B2

Erymanthos (Forest Village-) - Livaditis Waterfall – Erymanthos (Forest Village) (13.3km)

The route starts from the square of the Forest Village of Erymanthos, goes to the waterfall of Livaditis and ends at the point where it started, i.e., the Forest Village of Erymanthos. The estimated time is 1 hour and 20 minutes and the journey as a whole is characterized as easy.

Hiking route A2

Erymanthos (Forest Village) - Leonidas Bridge - Preserved Monument of Nature – Erymanthos (Forest Village) (20.3km)

The route starts from the square of the Forest Village of Erymanthos, goes to the historic bridge of Leonidas, continues to the Preserved Monument of Nature (Tsichlas Forest) and ends at the point where it started, i.e., the Forest Village of Erymanthos.

The estimated time is 8 hours and 30 minutes and the journey is characterized by moderate difficulty.

Attractiveness - Degree of service

The routes were selected taking into account the promotion and connection of the environmental and cultural attractions of the area in order to form safe fields for outdoor activities (hiking, cycling) and to create access to them. After the recording of the above-mentioned elements, a search was made to find existing paths that serve the purpose and at the same time are distinguished by high aesthetic beauty and ensure the safety of visitors.

Utilization of existing routes – paths

The four routes mentioned in this technical report are existing paths, which have been abandoned as they have ceased to serve the livelihood needs of the inhabitants. Most of the routes are in good condition and do not require extensive plant cleaning and restoration work. Necessary work along the entire length of the routes focuses on signage.

Bicycle route B1

Stavroupoli - Nestos - Holy Monastery of Komnina - Komnina – Stavroupoli

Only the installation of signage is required and no vegetation cleaning and restoration works are required.

Hiking route A1

Stavroupoli – Kallithea

Signage and vegetation cleaning and restoration works are required in the final part of the path, which enters the abandoned settlement of Kallithea. There, the vegetation is

dense and in some places the stone walls of the arable land maintained by the locals have slipped on the deck of the path.

Cycling route B2

Erymanthos (Forest Village) - Livaditi Waterfall – Erymanthos (Forest Village)

Only signage is required and no vegetation cleaning and restoration works are required.

Hiking route A2

Erymanthos - Leonidas Bridge - Preserved Monument of Nature - Erymanthos

Signage is required and gentle vegetation and restoration work is required, such as removing stones and removing small branches that interfere with pedestrian crossing.

Correlation of a path route with an adjacent road network

In several points the routes meet or even use the existing forest and provincial road network of the study area.

Linear, circular paths and deadlocks

The project includes one linear path and three circular paths.
Specifically:

Linear route

• Hiking route A1 | Stavroupoli - Kallithea

Circular routes

• Bicycle route B1 | Stavroupoli - Nestos - Holy Monastery of Komnina - Komnina - Stavroupoli

• Bicycle route B2 | Erymanthos (Forest Village) - Livaditi Waterfall – Erymanthos (Forest Village)

• Hiking route A2 | Erymanthos (Forest Village) - Leonidas Bridge - Preserved Monument of Nature – Erymanthos (Forest Village)

Routes and points of interest

Cycling route B1 (13,7km|2h)	**Stavroupoli - Nestos - Holy Monastery of Komnina - Komnina - Stavroupoli**
Circular	yes
Length	13,7km
Degree of difficulty	Very easy
Minimum altitude	60m
Maximum altitude	125m
Positive altitude difference	210m
Points of interest: folklore museum (Stavroupoli), river Nestos, Holy Monastery of Komnina, Macedonian tomb	

The cycling route starting and ending in Stavroupoli has very gentle slopes and is suitable for everyone. A large part of it moves on a smooth dirt road covered with trees, parallel to Nestos, in a landscape of special natural beauty and significant environmental value. At the 2nd km the visitor meets organized space with benches and kiosks. Then, at the 9th km, he/she can find food, water and places to rest in the settlement of Komnina. At the 4th km the route intersects with a third dirt road, on the left, which the cyclist can follow if he/she wants to return to Stavroupoli forming a shorter circular route, with a total length of about 6 km. The route is also of cultural interest as those that are interested can visit the museum of Stavroupoli, the Holy Monastery of Komnina at the 7th km and the Macedonian Tomb at the 10th km.

Folklore Museum of Stavroupoli: The Folklore Museum of Stavroupoli in the Prefecture of Xanthi was founded in 1944 on the private initiative of Stavros Karabatzakis, who for years collected in the traditional cafe of the village various objects, samples of a past era and everyday life, which were rendered useless by the rapid development of industry and technology. The collection is a work of fifty years and has been housed since 2001 on the first floor of the municipal building of the former Municipal Tobacco Corporation building.

Visitable: Yes - Contact phone: 2542 3 50100

Holy Monastery of Komnenos: The Holy Monastery of Constantine and Helen Komnenos, is located in Komnina and it is a part of the Holy Monastery of Kalamos. It was built in 1947 on the ruins of a 5th century Byzantine Monastery. It is accessible via a dirt road and at a distance of 1,800 meters from the village. There is only one nun from Jordan left in the monastery named Nektaria, who looks after the place and welcomes visitors with kindness.

Visitable: Yes - Contact phone: 2542 021008

Macedonian tomb: The tomb of Stavroupoli is the largest, best preserved and most impressive Macedonian tomb in Thrace. It is located south of the city, at a short distance from the road that leads to Komnina. Based on its architectural form and the few findings that were existed inside, it dates back to the first half of the 2nd century (BC). It is possible that it is connected with a settlement, located 500 m southern, at the site of Mytikas at Komnina, and has a long lifespan, from the Early Iron Age (9th - 8th century BC) to the Byzantine period.

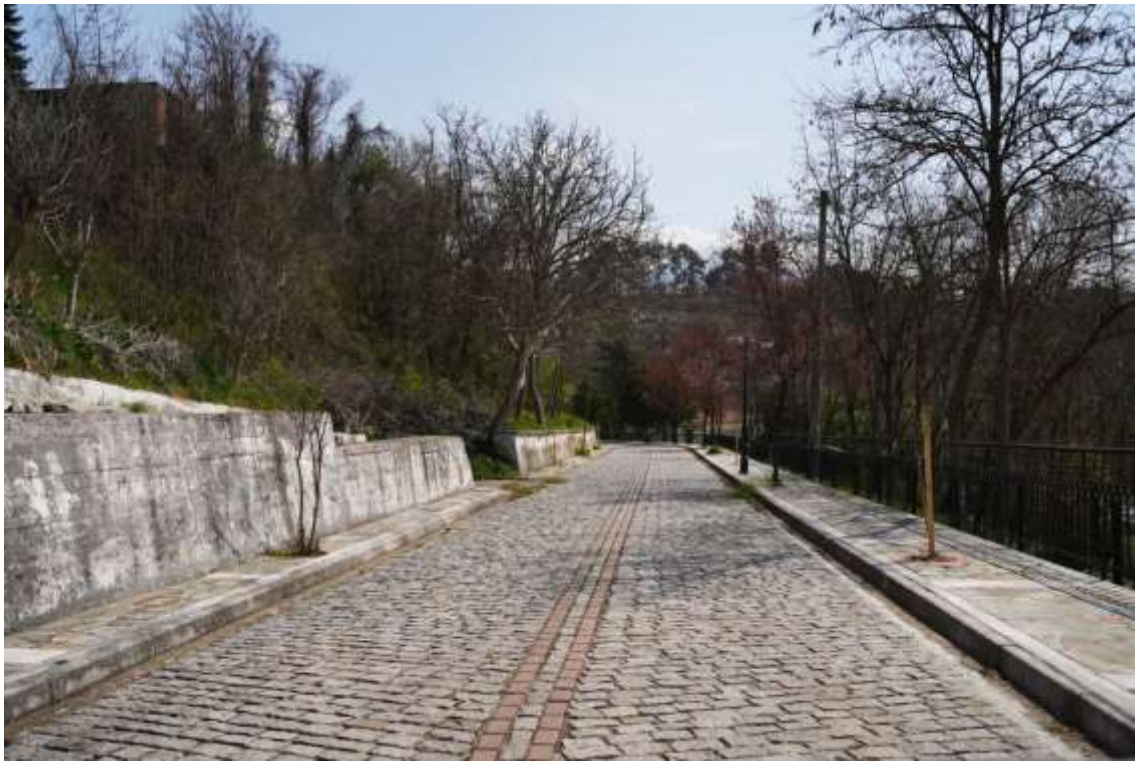
Visitable: Yes - The monument can be visited, by appointment from 8:00 to 15:00 - Contact telephones 25410 51003, 25410 51783 (Ephorate of Antiquities of Xanthi).

The entrance to the picturesque settlement of Stavroupoli

Stavroupoli

The square of Stavroupoli

The cobbled alleys of Stavroupoli



Rest point in Stavroupoli

Holy monastery of Constantine and Helen (wikimapia.org)

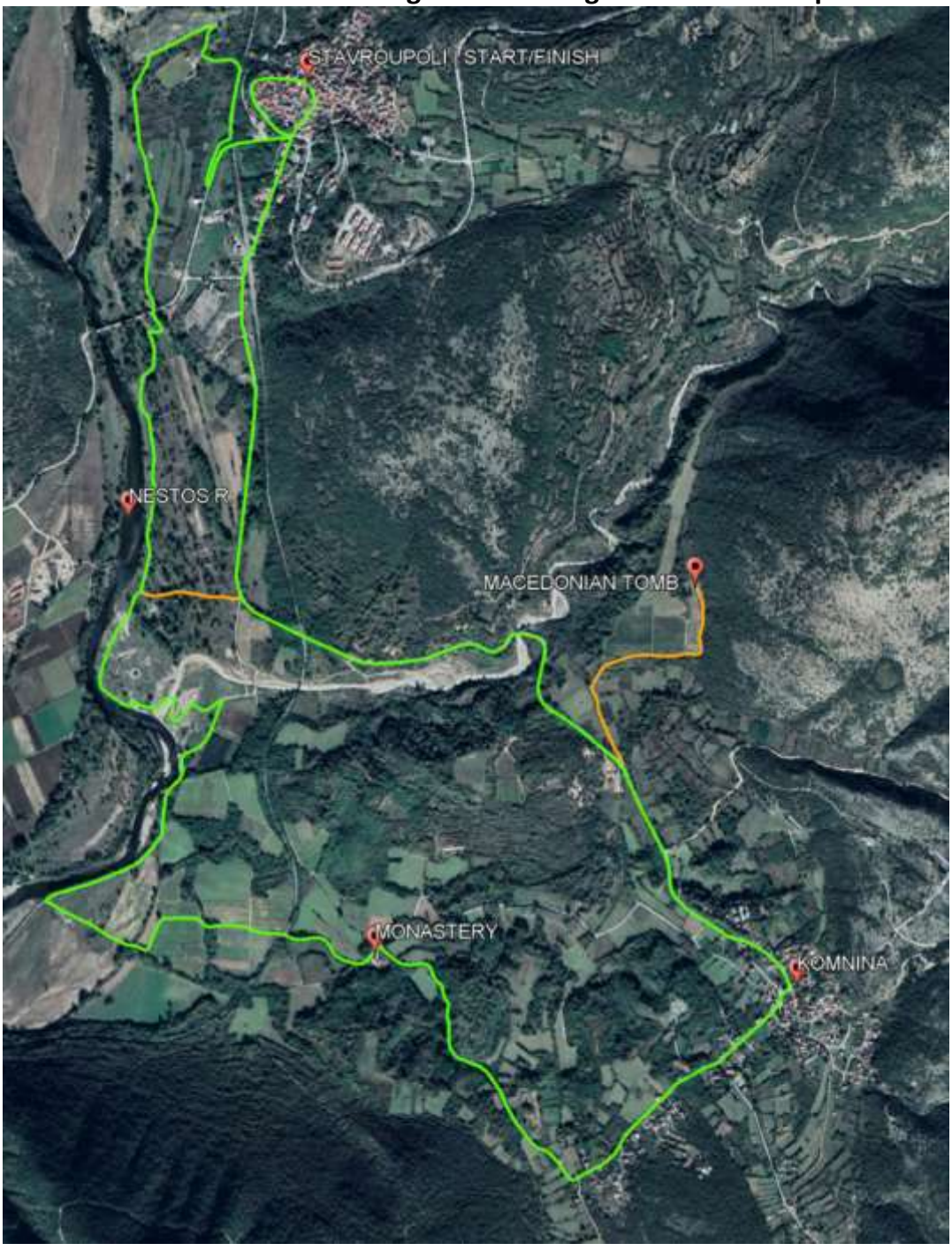
The riparian area of Nestos in Stavroupoli

Macedonian Tomb of Stavroupolis, (emtgreece.com)

Exterior of the Macedonian Tomb of Stavroupoli

Part of the cycling route B1

B1 route illustration on Google Earth background and route profile



Hiking route A1 (8,7km | 4h)	Stavroupoli - Kallithea
Circular	no
Length	9,2km
Degree of difficulty	moderate difficulty
Minimum altitude	110m
Maximum altitude	785m
Positive altitude difference	800m

Starting from Stavroupoli square, the route follows a dirt road for 1.5 km, in a northeast direction, which ends at the chapel of Agia Paraskevi. From this point begins the path to Kallithea, which is also characterized as a national path (E6) and ascends to a 780m altitude, in a wooded area. The route was followed by the inhabitants of the area and was the main connection between the settlements of Stavroupoli - Kallithea, something that testifies the stone cobbled path at the beginning of the path. In case of emergency there is access by dirt road to the 4th, 5th and 6th km of the path.

Paved section

The church of Agia Paraskevi

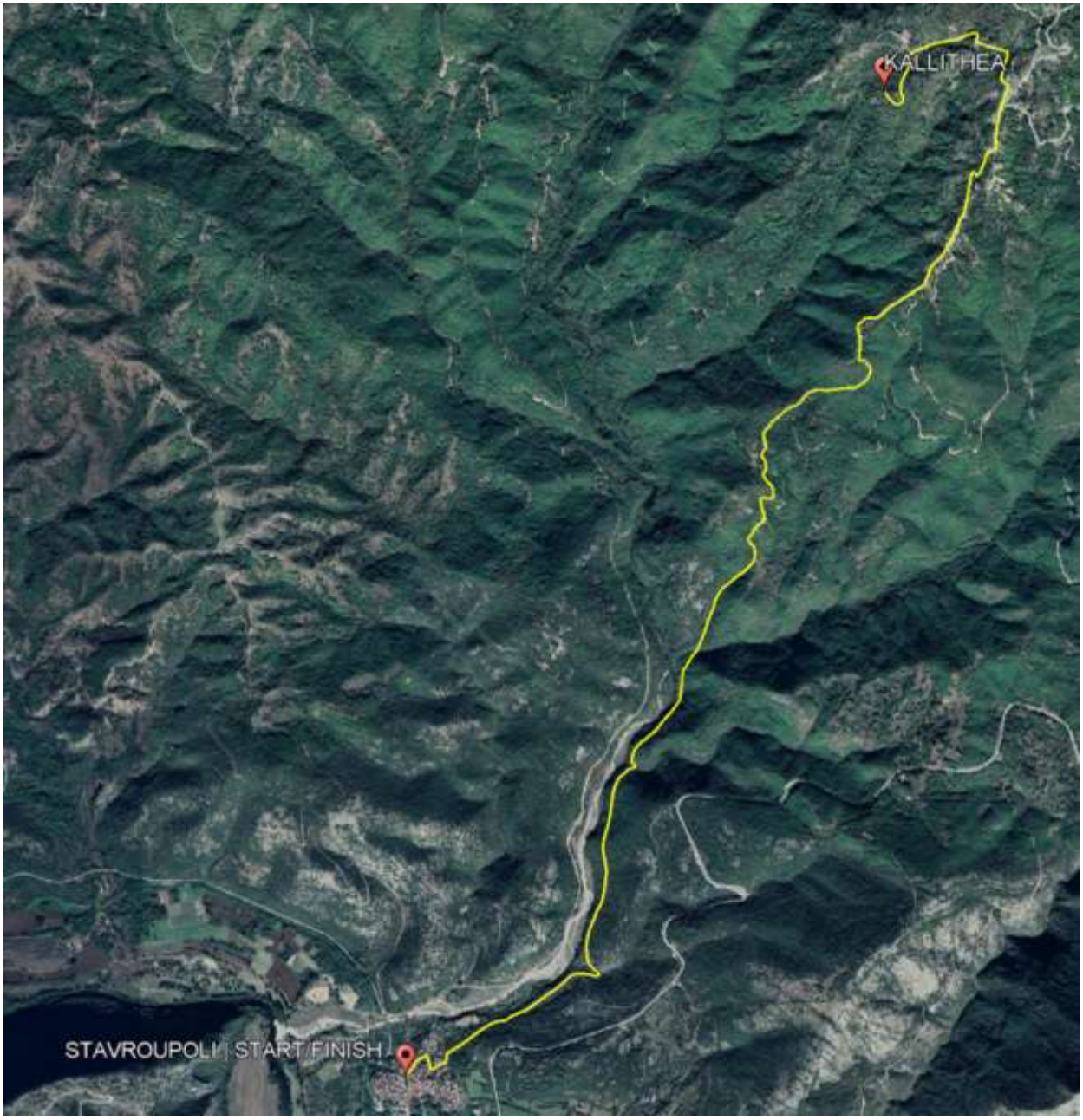
Route section

View position

Ruins of a castle and a place of view

Ruins of the abandoned settlement of Kallithea

A1 route illustration on Google Earth background and route profile



Cycling route B2 (13,3km | 1h 20')	Erymanthos (Forest Village) - Livaditi Waterfall – Erymanthos (Forest Village)
Circular	yes
Length	13km
Degree of difficulty	Easy
Minimum altitude	1.090m
Maximum altitude	1.330m
Positive altitude difference	548m
Points of interest: Erymanthos Forest Village, Monument of the Fallen, Livaditis waterfall	

The 9.5km of the 13km of the route move on a forest road and the remaining 3.5km on an asphalt provincial network. Almost along its entire length, the route is covered, mainly, by beeches. Combined with the altitude of the area, which is over 1,100m, one can enjoy a cycling ride even on the hottest days of the year. The route, initially, moves north for 700m, where it meets the beginning of the path which leads to the bridge of Leonidas. Then, it heads northwest to the monument of the fallen (3.3km) and continues southwest to the path of the Livaditis waterfall (7.3km). There is a wooden kiosk and it is a nice place to relax. The visitor has the option to follow the path, total length of 1.5 km, until the impressive waterfall or continue the cycling route following the dirt road and then the asphalt to end up in the Forest Village of Erymanthos.

Note: The path from the kiosk until the waterfall of Livaditis is small in distance, but has a steep slope. The altitude difference - loss is about 200m.

Livaditis Waterfall: Livaditis Waterfall is about 60 meters high and is one of the largest waterfalls in the Balkans. It is located on the borders of Xanthi and Drama, at the foot of Mountain Koula in a location with rich vegetation of birch, maples, alder, fences, anchovies etc. The vertical rocks have been sculpted by the rush of the water and in the crevices of the rocks, rare species of flora such as Minuartia saxifraga, Impatiens noli-tangere, and Anemone nemorosa are growing. In winter the waterfall offers a unique spectacle to visitors, as it freezes and huge stalactites are created.

Erymanthos Forest Village: The Erymanthos Forest Village is located in the forest of Haidou at an altitude of 1,350 meters. It was built by the Xanthi Forestry and consists of 12 wooden houses of two rooms that each can accommodate up to 6 people. It is offered for those who wish to experience the nature of the area and spend moments of relaxation in a wonderful forested landscape. It is in operation all year round.

Visitable: Yes - Contact number: 6976781945

Erymanthos Forest Village

Crossroads for Livaditis waterfall

The waterfall of Livaditis frozen

View from the path to Livaditis waterfall

Monument to the fallen near Erymanthos Forest Village

Horses in the area of Livaditis

Mixed forests in the area

Route B2 illustration on Google Earth background and route profile

Hiking route A2 (20,3km | 8h 30')	Erymanthos (Forest Village) - Leonidas Bridge - Preserved Monument of Nature – Erymanthos (Forest Village)
Circular	yes
Length	20,3km
Degree of difficulty	moderate difficulty
Minimum altitude	1.096μ.
Maximum altitude	1.545μ.
Positive altitude difference	1.145μ.
Points of interest: Leonidas Bridge, Preserved Nature Monument-Beech Forest (Tsichla Location)	

The hiking route for the bridge of Leonidas and the Preserved Monument of Nature starts from the Forest Village of Erymanthos and follows a path with a total length of 20.3 km. For the most part it consists of forest roads (15.76km) and the rest of trails (4.6km). For the first 700m, the hiker follows a dirt road in a northerly direction and then, in his/her right hand, begins the path which has a downhill slope along its entire length (1.8km). He/she crosses a dirt road after 1.6km and the path ends at the second one he/she encounters (1.8km). Then the route follows a dirt road for 5.6km to the stone arched bridge of Leonidas. From the bridge, the hiker moves in a southwesterly direction, on an uphill path, to meet again with a dirt road and continue for 4.1 km to the Preserved Monument of Nature. From this point, which is the easternmost of the route, the return to the forest village of Erymanthos begins. For 500m the visitor returns from the same dirt road and then turns left, at the first junction. He/she follows, in a southwesterly direction, the forest road network for 2km and enters a path at the point where there is a wooden kiosk. After 1.6km in mixed vegetation (coniferous-deciduous) the route meets a second kiosk and descends in a northwesterly direction until it meets a dirt road. At 1.4km, following this road, the course is completed in the Forest Village of Erymanthos. At several points along the way the visitor has the opportunity for a short break on the benches and kiosks that he/she will meet at 1.3km, 12.7km, 15.7km, and 17.3km. The route is very safe and the access by car is possible for the most part. During the winter months the forest roads are accessible only by four-wheel drive vehicles.

Preserved Monument of Nature-Beech Forest (Tsichla Location): At a distance of 12 km from the Forest Village of Erymanthos is the Beech Forest, at Tsichla at an altitude of 1,500m. It extends over an area of 180 acres and has been designated as a Conserved Monument of Nature, due to its undisturbed beech stands and its ecological, botanical and aesthetic value.

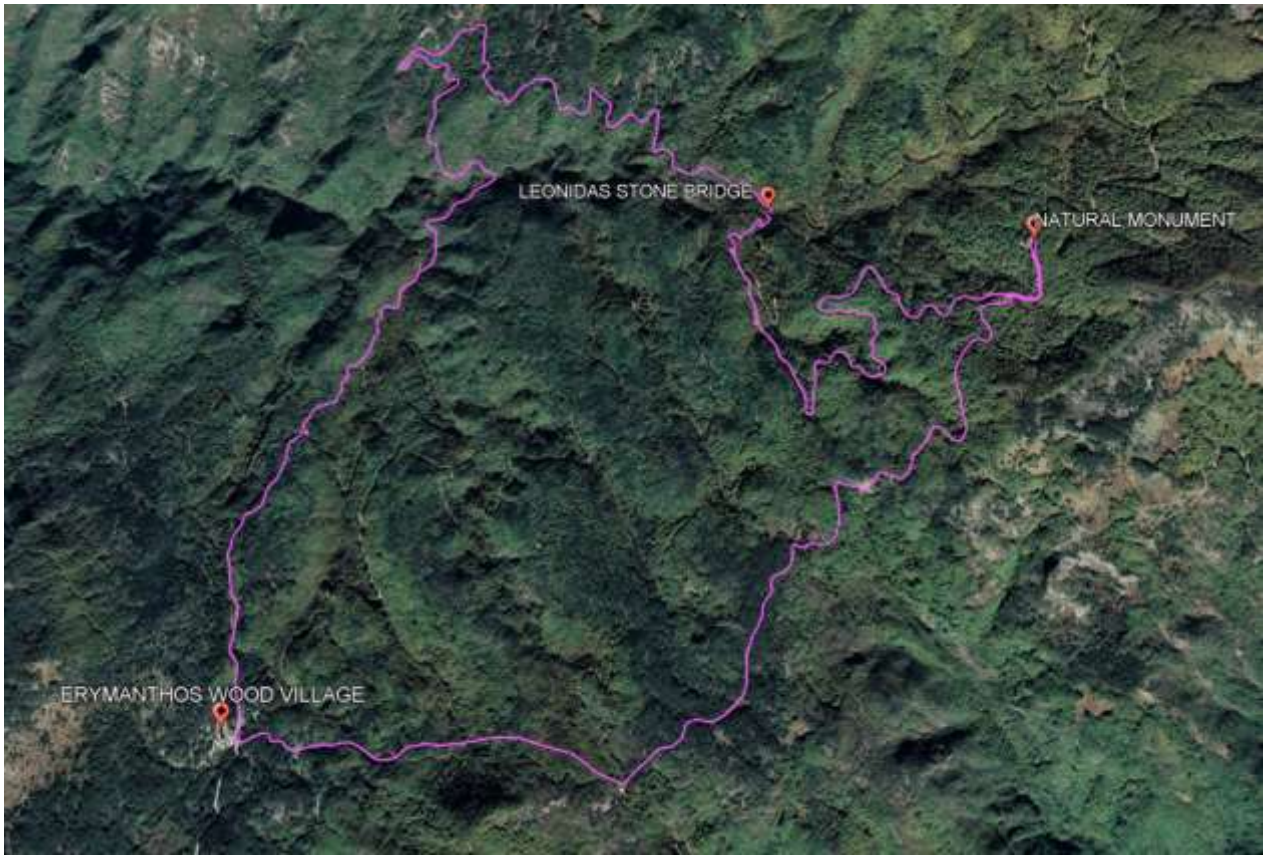
Leonidas Bridge: The bridge of Leonidas is single-arched and is located in Arkoudorema, 18 km northeast of the village of Livaditi. It is built at a 1,240m. altitude and is one of the highest points where a bridge has been built in Greece. During the Balkan Wars (1912-14) there was a great battle on the spot, as the Bulgarians had tried to capture it. The battle was won by the Greek Army, but the Chief Commander Leonidas lost his life. The bridge was named after him.

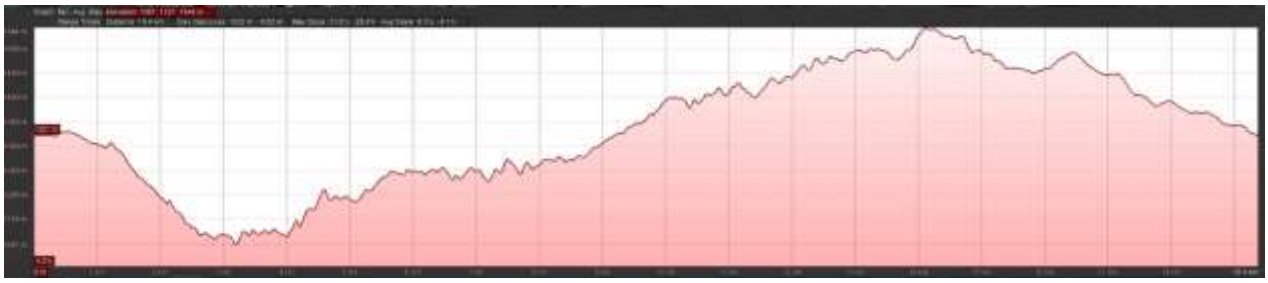
Leonidas Bridge

Preserved Monument of Nature (place of recreation)

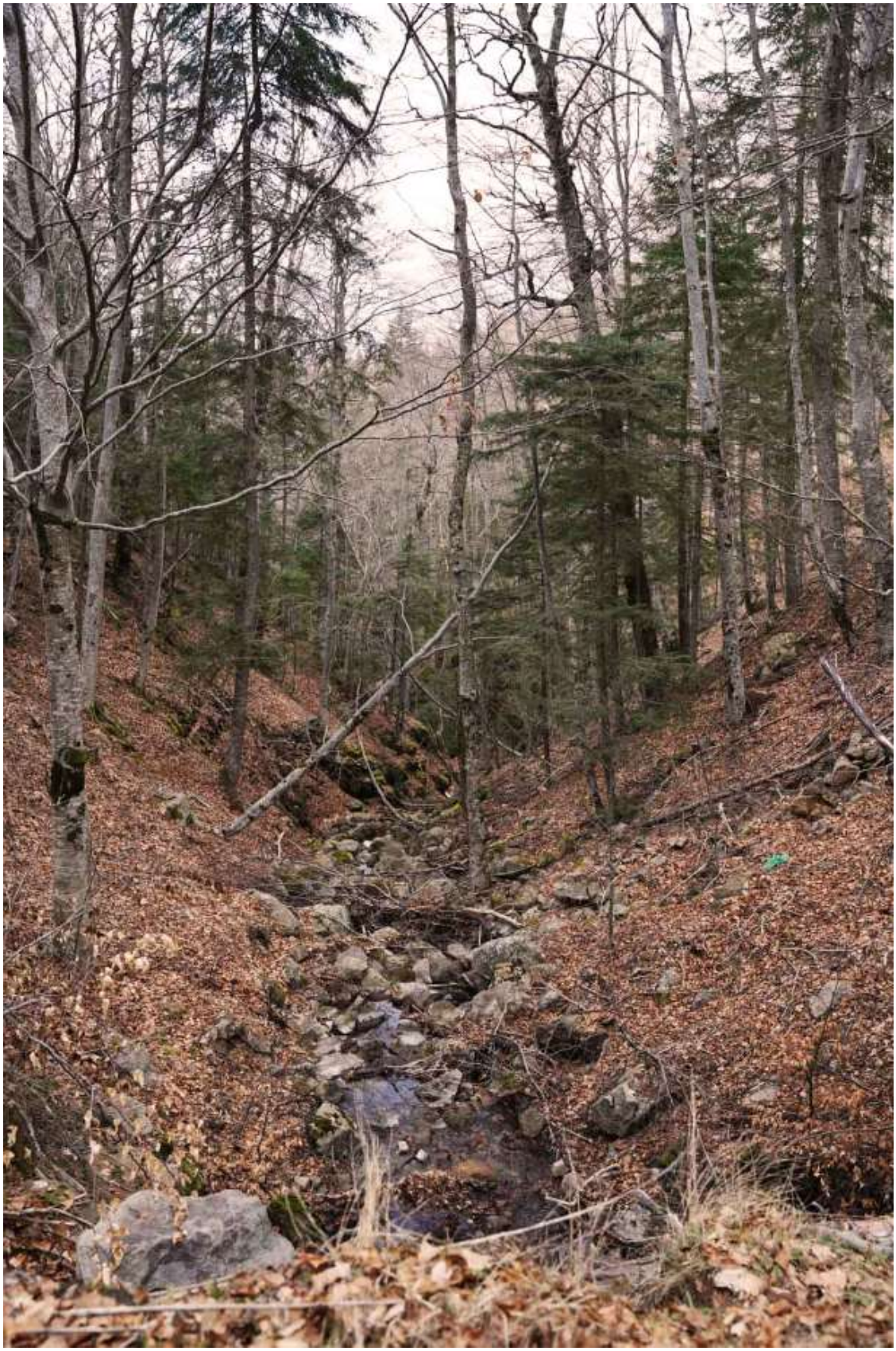
Points of natural beauty found along the way

A2 route illustration on Google Earth background and route profile





Additional photographic material from the study area




ΠΑΡΑΔΟΣΙΑΚΟΣ ΟΙΚΙΣΜΟΣ
ΣΥΛΛΟΓΟΥ ΣΑΡΑΚΑΤΣΑΝΩΝ ΞΑΝΘΗΣ
«Ο ΛΕΠΕΝΙΩΤΗΣ»

Creation of new routes – paths

The paths as mentioned are already existing paths which have been abandoned, as they have ceased to serve the livelihood needs of the inhabitants. It is not required to create new routes - paths.

Total length-estimated crossing time

ROUTE	LENGTH	ESTIMATED TIME
B1 cycling route	13,7 km	2 hours
A1 hiking route	8,7 km	4 hours
B2 cycling route	13,3 km	1 hour and 20 minutes
A2 hiking route	20,3 km	8 hour and 30 minutes

Ownership

The four routes of the present project are located to a large extent in forest areas, which are subject to the Forestry Offices of Xanthi, Stavroupoli and Drama.

Specifically, routes B1 and A1 are located in the area of responsibility of the Stavroupoli Forestry and routes B2 and A2 in the areas of responsibility of the Forestry of Xanthi and Drama.

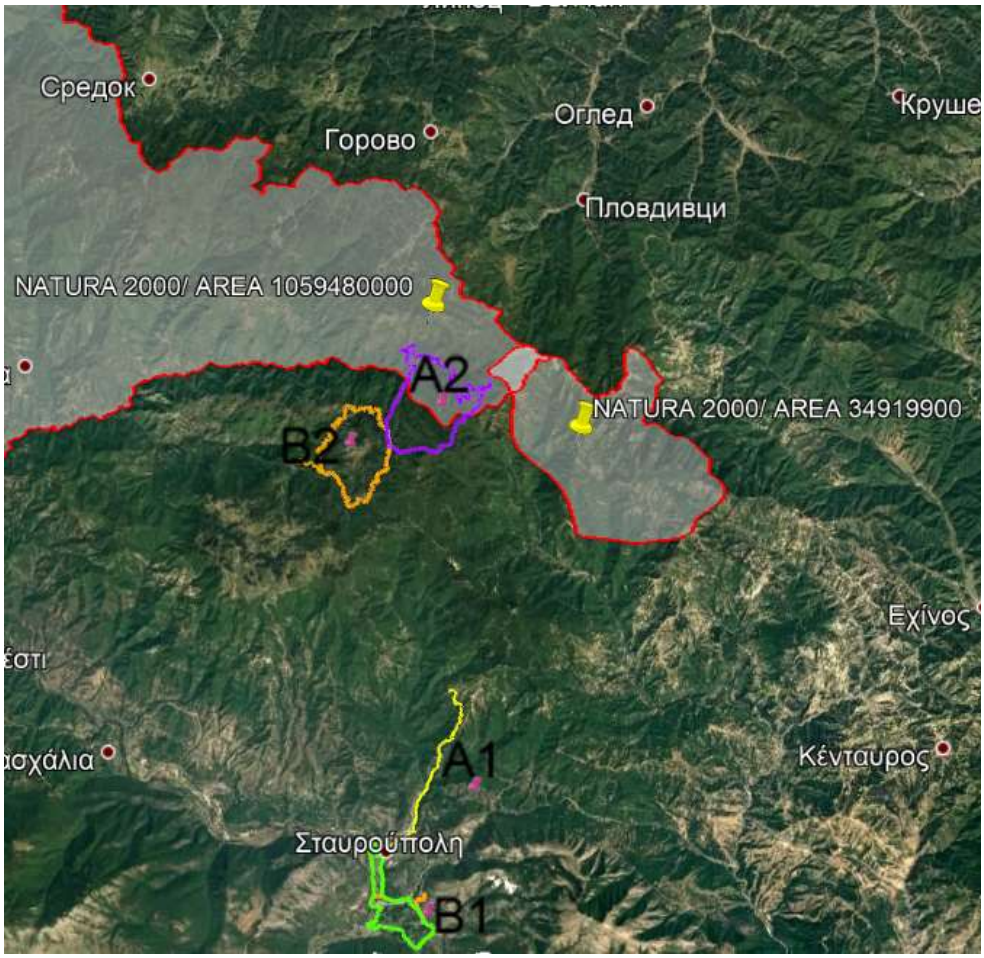
Protection regimes

The wider area has rich biodiversity and high environmental value. For this reason there are areas that are governed by special protection regimes, which are listed below and are captured in a Google Earth background.

NATURA 2000

Natura 2000 is a European Ecological Network of sites, which hosts natural habitat types and species habitats that are important at European level. Greece has currently designated 202 Special Protection Areas (SPAs) and 241 Places of Community Importance, where there are two of them that are still proposed. Available data is version 29 (v.29) that came after the Natura 2000 database update in May 2011.

Only one of the four thematic routes of this project enters the NATURA 2000 Network. In the background of Google Earth, the borders of NATURA 2000 are displayed with white polygons and a red border. The route that passes halfway within the boundaries is depicted in purple and is the A2 route "Erymanthos (Forest Village) - Leonidas Bridge - Preserved Monument of Nature Erymanthos (Forest Village)".



Wildlife shelters

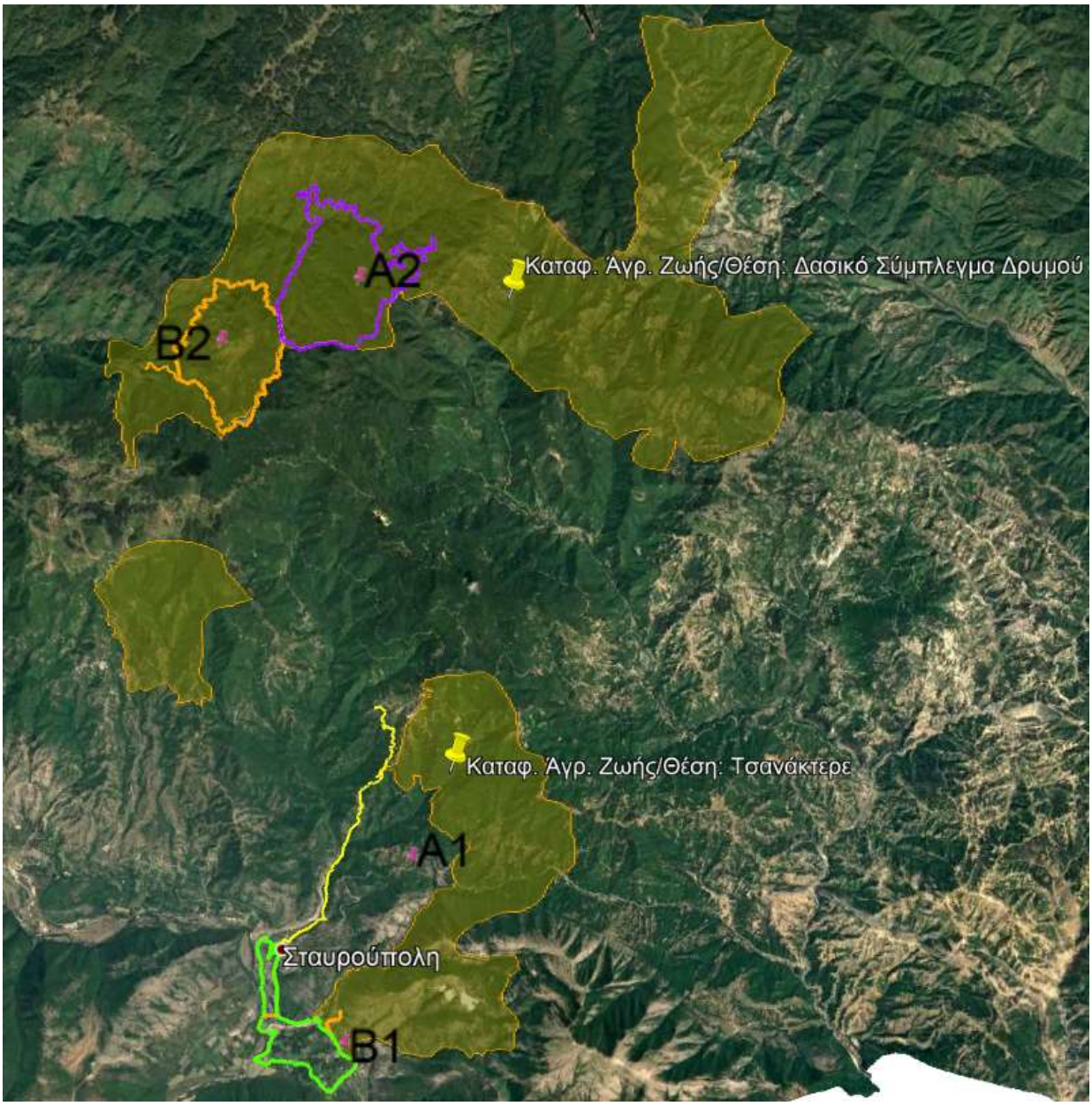
Some areas are designated as Prey and Wildlife Shelters with the aim of protecting and rescuing the natural environment and preserving, developing and exploiting the country's prey wealth.

More specifically, according to Law 3937/2011 for the conservation of biodiversity, as wildlife shelters are characterized natural areas (terrestrial, wetland or sea) which are of particular importance as important places for the growth of wild flora or as habitats for breeding, nutrition, overwintering wildlife species, or as fish breeding and spawning grounds, or, finally, as important sea habitats. Ecological corridors, among other categories of protected areas, can also be characterized as Wildlife shelters.

Two of the four routes of the present project move entirely to the Wildlife Forest Complex of the Forest Complex / Area 81004200. Below are the details of the specific protected area.

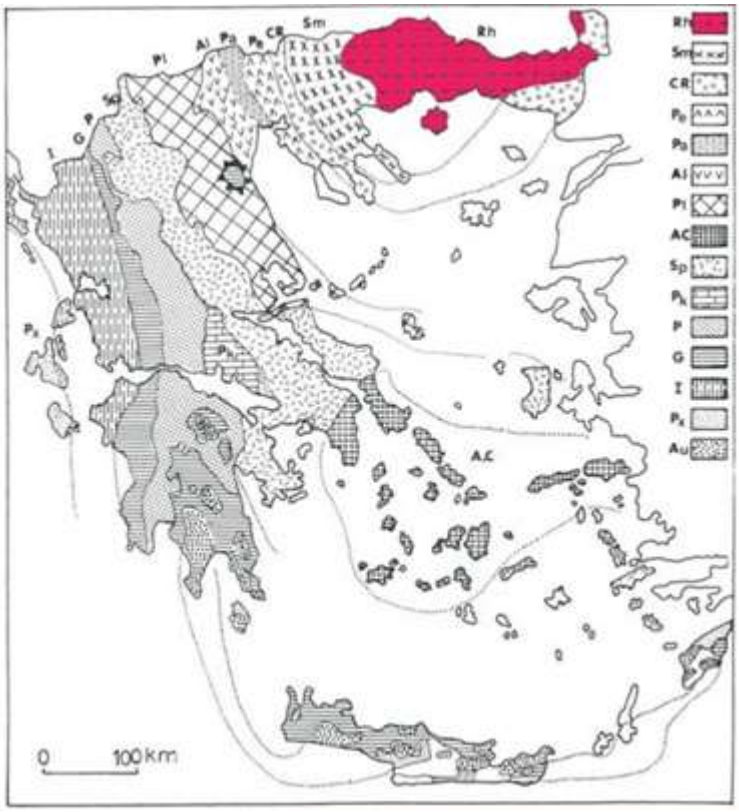
Perimeter	82851.9
Supervisory authority	STAVROUPOLIS FORESTRY
Position	FOREST COMPLEX
Types of flora	BEECH, FOREST, PINE, OAK, OYSTERY, ANCHOR, FIR, SPRUCE, BIRCH, WILLOWS, EARRING, WHITE TREMBLING
Region	EASTERN MACEDONIA-THRACE
Poultry	BLACKBIRD, THRUSH, EURASIAN WOODCOCK, COMMON WOOD PIGEON, FINCH, COMMON RAVEN, LANIUS, PARTRIDGE, EUROPEAN ROBIN, OWL, HORNED OWL, WESTERN CAPERCAILLIE, HAZEL GROUSE, WOODPECKER, EUROPEAN TURTLE DOVE, FALCON
Prefecture	XANTHI
Government Gazette	448/16-5-77
Area	81004200
Framework Decision	210501/1835/23-4-77
Mammal fauna	HARE, MARTEN, LEAST WEASEL, SQUIRREL, VULPES, WILD BOAR, ROE DEER, DEER
Area	22000
Area / Acres	81004.2
Fish fauna	BROWN TROUT, BARBEL

In the background of Google Earth, the borders of the Wildlife shelter are depicted with yellow polygons. The routes that are within the limits are the B2 Erymanthos (Forest Village) - Livaditi Waterfall – Erymanthos (Forest Village) and the A2 "Erymanthos (Forest Village) - Leonidas Bridge - Preserved Nature Monument – Erymanthos (Forest Village)".



Geology

The study area belongs to the Rodopi Mass. Rodopi is a geotectonic unit with characteristics of continental crust, probably of the old Eurasian plate.



It consists mainly of crystalline rocks into which acidic plutonic bodies, rocks, penetrate. Tectonic analysis of the crystal schist found three-fold phases:

- Paleozoic
- Jurassic / Cretaceous
- Tertiary

The mass of Rodopi is divided into two tectonic units: the lower tectonic Unit of Paggaio and the upper tectonic Unit of Sidironero. The first consists of gneisses, marbles, mica slates and the second of mimgates, gneisses, ophthalmogenic amphibolites and mica slates. The rocks that are found in the routes of the project according to the Geological Map of Greece of the Institute of Geological Research are listed in the following tables:

ROUTE	ROCKS	MEMORANDUM
B1	mr	Marbles or crystalline limestones
A1	mr	Marbles or crystalline limestones
B2	u, τ1	Volcanic rocks are found as acidic to neutral of the Miopliocene. Also, amphibians and gneisses, shales with layers of Eocene - Oligocene marbles are found
A2	u, τ1	Volcanic rocks are found as acidic to neutral of the Miopliocene. Also, amphibians and gneisses, shales with layers of Eocene - Oligocene marbles are found

Topography

The study area extends in semi-mountainous and mountainous areas with various slopes, which for the most part are gentle. The altitudes range from 60m. to 1,545m

ROUTE	ESTIMATED TIME
B1	The altitude of this route ranges from 60m. to 125m. The relief is gentle with gentle slopes. Part of the trail runs parallel to the river Nestos.
A1	The altitude of this route ranges from 110m. to 785m. The relief is gentle - intense with gentle - sharp slopes.
B2	The altitude of this route ranges from 1,090m to 1,330m. The relief is gentle - intense with gentle - sharp slopes.
A2	The altitude of this route ranges from 1,096m to 1,545m. The relief is soft and intense with gentle and steep slopes. The path passes through streams of periodic flow.

Territory

According to the Land Maps of the Directorates of Forests B and D of the Ministry of Agriculture, each cartographic unit of the land map is described with a symbol expressing main and stable ecological characteristics, such as geomorphology, soil depth, erosion, slope, exposure, species and state of natural vegetation.

Route B1 is located in an area where alluvial material appears as parent material in the open valleys, with deep soil, with no erosion and gentle slopes. The area is part of the zone of deciduous oaks and cultivated areas.

Route A1 is located in an area where the gneisses appear as parent material on the rounded peaks and at the bottom of the slopes, with deep and shallow soil, with no and intense erosion and moderate - gentle slopes. The area is part of the deciduous oak zone and the degree of anthropogenic impact on vegetation is weak.

Route B2 is located in an area where the gneiss and granite appear as parent material on the rounded peaks and at the bottom of the slopes, with deep and shallow soil, with no and intense erosion and moderate - gentle slopes. The area is part of the zone of deciduous oaks, fir and in some parts grasslands and abandoned fields appear. The degree of anthropogenic impact on vegetation is intense-moderate.

Route A2 is located in an area where the gneisses and granite appear as parent material on the rounded peaks and at the bottom of the slopes, with deep and shallow soil, with no and intense erosion and moderate - gentle slopes. The area is part of the zone of deciduous oaks, fir and in some parts grasslands and abandoned fields appear. The degree of anthropogenic impact on vegetation is intense-moderate.

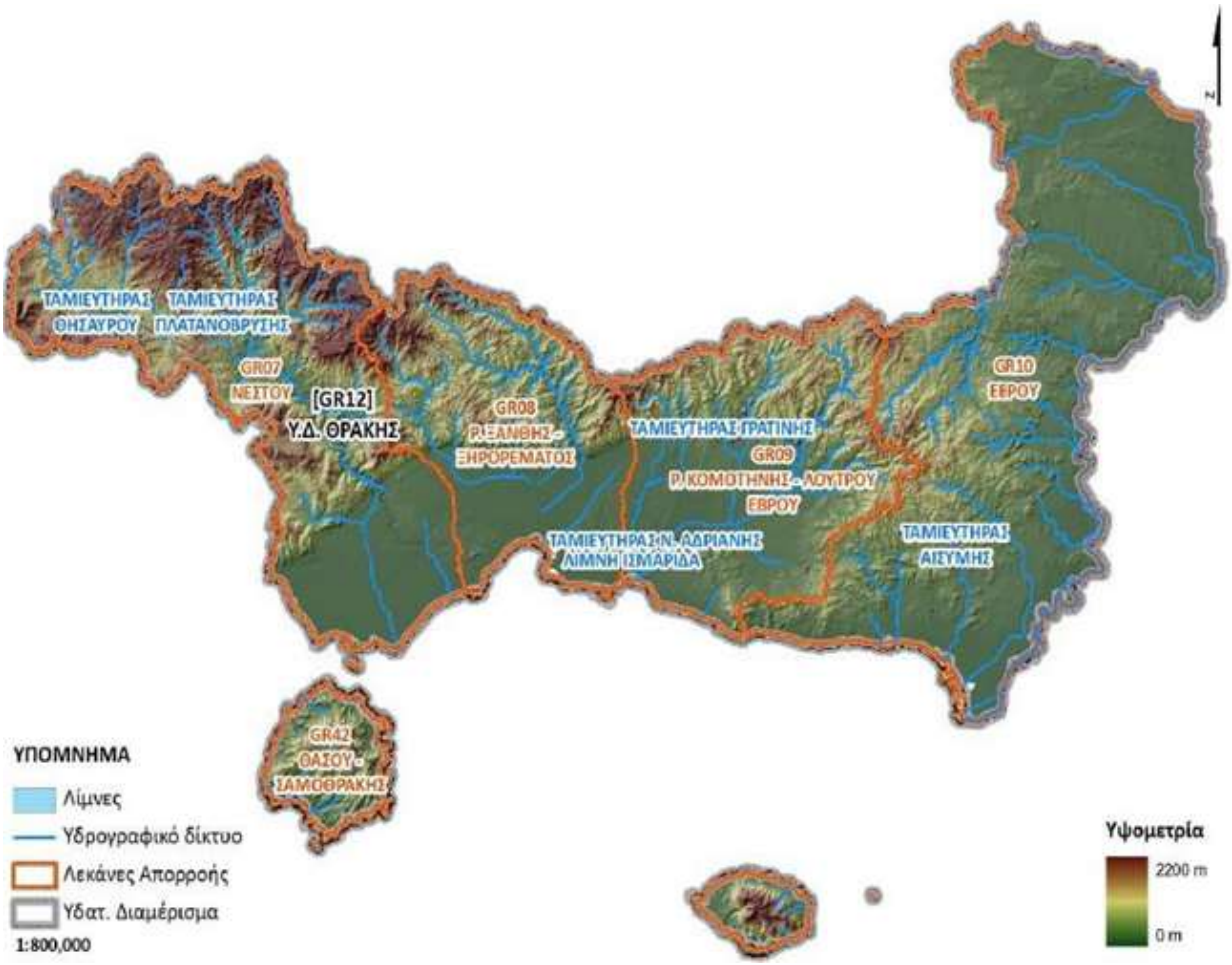
Hydrology

The study area belongs to the Water Department of Thrace (GR12), which occupies a total area of 11,243 km2, of which 564 km2 belong to the islands of Thassos and Samothrace. The department is defined north by the border line of Greece - Bulgaria and the hydrocritic of the Nestos -Ochyro, east by the border line of Greece - Turkey to the Gulf of Ainos, west of the hydrocritic of the basins Nestos - Ochyro, Nestos - Strymon - Nea Karvali stream and the hydrocritic of the coastal streams of Chrysoupoli up to the Gulf of Kavala. The Water Department 12 contains two cross-border catchments, those of river Nestos and Evros. These basins are shared by Greece with Bulgaria (Nestos) and with Bulgaria and Turkey (Evros). The watercourses that cross the border line between the countries are, in the basin of Nestos, apart from river Nestos itself and river Despatis, and in the basin of Evros, river Ardas and Erythropotamos. River Evros is the border line between Greece and Turkey, except for a small section in the area of Nea Vyssa where the river flows within Turkish territory. The Water Department 12 is generally characterized by a sufficient supply of water, but with the important note that a very large part of this supply (in terms of surface water) comes from transboundary waters. According to the recent compilation of the water balance and the supply and demand balance in the HR that took place in the context of the management studies of the former Ministry of Development (2003-2008), the water supply to the Water Department is as follows:

Surface water resources: The Water Department has many remarkable rivers, mainly the river Evros and its tributaries and the river Nestos. Smaller than the previous ones but also important in terms of potential are the rivers Lissos (Filiouris), Kosinthos and Kompsatos. There are even smaller but important at the local level watercourses, such as the stream of Komotini in Rodopi and the streams Irini and Loutrou in Evros.

The average annual water supply to the water department is 14,006 hm3 (Ministry of Development and Investment, 2008) of which 18.6% (2,600 hm3) comes from the own resources of the department, while the remaining 81.4% (11,406 hm3) comes from:

- The inflow of water from Bulgaria through the river Evros (8,525 hm3, 74.7%)
- The inflow of water from Bulgaria through the river Ardas (2,370 hm3, 20.7%)
- The inflow of water from Bulgaria through the river Nestos (511 hm3 or 4.4%)



According to the Public Power Corporation data regarding the runoff at the site of the Thesavros dam, the long-term runoff of the Nestos (including part of the Greek basin) amounts to approximately 1,020 hm3 for the period 1961-1995 and 1998-2006, while the runoff for the period 1980 -2001 which coincides with the analysis period of the management study of Ministry of Development and Investment amounts to 780 hm3. Regarding the supply of water in the Greek part of the basins, it is distributed in the basin of Evros in 741 hm3, in the basin of the stream of Irini (Alexandroupolis area) in 223 hm3, in the basin of Lissos (Filiouri) in 449 hm3, in the basins of Kosinthos and Kompsatos at 316 hm3 and in the Nestos basin at 687 hm3. In the island part of the water department, the water supply in Thassos amounts to 93 hm3 and in Samothrace to 90 hm3.

Groundwater resources: The greatest pressures for groundwater pumping, for all uses, are located in the groundwater systems (GWS) of Xanthi - Komotini (70 hm 3 / year), Orestiada (45 - 50 hm3 / year) and Delta Nestou (20 hm3 / year). The average annual supply to the groundwater systems of Orestiada is estimated at about 60 hm3 / year, with a very large supply of the system from the rivers Arda and Evros. The same applies to the groundwater systems of Nestos Delta where the natural annual feedback from both the rainfall and the river Nestos is of the order of 96 hm3 / year, mainly enriching the well and the deeper aquifers. The water needs, to a large extent, are covered by the utilization of the natural discharges of the karst water supply systems as in the case of the karst groundwater systems of the Mountains of Lekani and Thassos Island. The discharge of the Basin Mountains system takes place mainly through the large springs of Stratonos, Paradisos, Limni and Boirani. It is considered the most dynamic aquifer system of the Water Department12, with huge annual renewable reserves which are estimated at about 500 hm3.

In the eastern and western part of the groundwater systems of Xanthi-Komotini there is a drop in the piezometric level with very large seasonal fluctuations which are directly related to the over-pumping of the system during the irrigation period. At the Nestos substation in its eastern and western part, there is also a large drop in the level during the summer months due to over-pumping, which, however, returns after the end of the irrigation season. The estimated total annual renewable quantities of the main groundwater systems of the water department of Thrace amount to approximately 852 hm3 (Institute of Geological and Mineral Research, 2010).

Climate

The study area for the most part is located in P.E. Xanthi. Inland and in the lowlands, the pan-European climate prevails, while in the mountains the mountainous one prevails. The annual rainfall in the interior ranges between 600 and 1000 mm, while in the northern mountains it exceeds 1000 mm. According to the National Program for Management and Protection of Water Resources (2008), the average annual rainfall is estimated at 778 mm. The average annual temperature of the department is 14.5-16.5 ° C. The annual thermometric range exceeds 20 ° C. Based on the area of the mainland and the average annual rainfall (778 mm), the annual rainfall is 8,262 hm3. The total volume of surface runoff (Evros, Nestos, Filiouris and Xirorema basins) is about 10,200

hm3, and with the subtraction of inputs from neighboring countries the surface runoff from the Greek parts of the basins amounts to approximately 2,700 hm3. For the island part, a potential of 100 hm3 is calculated. In particular, for the assessment of the climate of the nearest area of the project, the historical data of the meteorological station of National Meteorological Service are presented. The meteorological station of National Meteorological Service in Xanthi has a latitude of 41 ° 08 ', longitude 24 ° 53', altitude 83 m, while it provides statistical data for the basic climatic parameters for the period 1975-1997.

Then the meteorological data of this station are presented in tables and diagrams.

Temperature fluctuation			
Month	**Average temperature**	**Average maximum**	**Average minimum**
January	5,6	9,4	-0,3
February	6,8	10,4	0,1
March	9,6	13,4	2,5
April	14,3	18,5	6,8
May	19,8	23,8	12,0
June	24,1	28,4	15,7
July	26,6	31,1	18,5
August	26,0	30,7	18,0
September	22,4	27,2	13,9
October	16,5	21,1	9,0
November	11,0	14,5	4,8
December	5,9	10,4	1,1
Year	**15,8**	**19,9**	**8,5**

Rainfall data		
Month	**Precipitation**	**Moisture %**
January	81,1	73,2
February	38,1	73,7
March	38,7	73,4
April	78,9	73,5
May	42,9	70,1
June	32,8	65,6
July	26,1	61,6
August	20,3	62,7
September	26,9	68,4
October	20,3	70,7
November	66,3	75,3
December	126,6	74,3
Year	**599,7**	**70**

Number of phenomenon discrimination					
Month	**Precipitation**	**Rain**	**Snow**	**Storm**	**Fog**
January	6,0	4,4	0,8	0,0	0,1
February	6,3	4,8	1,0	0,0	0,2
March	6,6	6,2	0,3	0,0	0,6
April	8,1	8,0	0,0	0,2	0,0
May	7,3	7,3	0,0	0,8	0,0
June	6,3	6,3	0,0	1,2	0,0
July	4,8	4,8	0,0	1,0	0,0
August	3,3	3,3	0,0	0,4	0,0
September	3,0	3,0	0,0	0,1	0,0
October	4,4	4,4	0,0	0,2	0,1
November	8,0	7,8	0,0	0,1	0,2
December	7,0	6,5	0,4	0,0	0,3
Year	**71,1**	**66,8**	**2,5**	**4,0**	**1,5**

Wind data		
Months	**Prevailing wind directions**	**Average wind intensity at nodes**
January	B	2,8
February	B	2,6
March	B	2,0
April	B	1,5
May	B	1,7
June	B	1,9
July	B	1,9
August	B	1,8
September	B	1,8
October	B	2,5
November	B	2,7
December	B	2,2

Vegetation - Flora

The study area is located within the Mediterranean vegetation zone (Quercetalia pubescentis):

Hilly, sub-mountainous

This zone appears vertically in the mountains and horizontally in the interior of the country. In particular, with the gradual abandonment, in both directions, of the Mediterranean vegetation zone, a peculiar transitional vegetation zone appears, which is physiologically similar to the zone of evergreen vegetation and differs from it by flora and ecological foliage, or a deciduous vegetation or and mainly from oak forest.

The distinction between the Euro-Mediterranean and the Mediterranean vegetation zone is quite clear in central and northern Greece. In southern Greece and Crete the boundaries are unclear, because Q. coccifea also appears in Oleo - lentiscetum. The appearance of thermophilic species, such as Pistacia lentiscus, Olea europaea var. silvestris, Calycotome vilosa, Smilax aspera etc. may be expressed as the limit of Mediterranean vegetation. In this zone the climate becomes more continental with harsher winters, more rainfall, but also with a characteristic dry season. Winter temperatures often drop below zero and the snow lasts for a few weeks. Also, in this zone there are two or three sub-zones that differ from each other physiognomically, florally and ecologically. The subzones are the Ostryo-Carpinion and Quercion confertae. In addition, for southern Greece (Crete, Peloponnese and Central Greece up to Lamia) it may be appropriate to distinguish a third sub-zone the Quercion cocciferae.

The Ostryo - Carpinion subzone

This subzone can be distinguished in three-growth spaces.

1. The Quercetum cocciferae or Cocciferetim that occurs in southern Greece and Crete reaches an altitude of more than 1000 meters appearing in the underground spruce and black pine. It is characterized by the lack of eastern hornbeams.

2. The Coccifero Carpinetum which appears as hilly or flat in a significant area both in central eastern Greece (from Lamia and further north) and in northern Greece as well as in the interior of western Greece. The large area of Quercus coccifera presented in this zone is mainly due to anthropogenic influences and the high resistance of it to grazing, fires and other injuries, as well as its high root and pre-germination capacity. Initially, this area was dominated mainly by Quercus coccifera or broad-leaved oak forests. Proof of this is the fact that, with the prohibition of grazing and fencing in some

torrent basins, within a few years the physiognomy of Pseudomaqui changes and broad-leaved species, such as oak and anchovy, predominate. However, this does not exclude the existence of Quercus coccifera forests. The cultivation of olives and citrus fruits is not possible here and instead cereals, cotton, maize, tobacco are cultivated.

3. Carpinetum orientalis that occurs in northern Greece, in the valleys of the rivers Axios, Strymon, Nestos, etc., in the northern parts of the hilly area and on the slopes of the high mountains, where it replaces Coccitero -Carpinetum or continues with it. In its composition, in addition to Carpinus orientalis, one can find Fraxinus ornus, Pistacia terebinthus, Ligustrum vulgaris, Rhus_coriaria, Cotinus coggygria, Quercus pubescens, Quercus conferta, Acer monspesulanum, Sorbus torminalis etc. Also, here the cultivation of cereals, tobacco and vines dominates, mainly for the production of wine grapes and excellent conditions are created for the cultivation of fruit trees (peach, apple).

The wider area is characterized by a high diversity of plant species and vegetation types, with some of them being rare such as the pure clusters of Birch (Betula pendula) and Pentavelon or Balkan Pine (pinus peuce). The main vegetation formation is the forest, with landscapes of great aesthetic and ecological value composed of beech forests, Luzulo-Fagetum and Asperulo-Fagetum, thermophilic oak forests with Quercus frainetto, residual alluvial forests (Alno Pinus peuce forests), mountainous to alpine acidophilic forests Spruce of the plant community Vaccinio piceetea. There are also calcareous alpine and subalpine meadows, and at lower altitudes transitional peatlands. The area is a huge botanical garden, where one can find more than 50 species of trees, such as the three species of Beech (Fagus sp.), Forest Pine (Pinus sylvestris), Black Pine (Pinus nigra), Pentaveloni Pine (Pinus peuce) (mainly at the top of mountain Koula) the hybrid spruce (Abies borisii-regis), the spruce (Picea excelsa), the oak (Quercus sp.), The birch (Betula pendula), the Alder (Alnus glutinosa), the Fraxinus (Fraxinus sp.), The Ostrya (Ostrya carpinifolia), Gavros (Carpinus sp.), Lefki (Populus sp.), Sorvia (Sorbus sp.), and many wild fruits such as Cherries (Prunus sp.), Prunus domestica etc. From the semi-parasites Ixos is found, from the climbing ones Kissos, Agriabelos and Arkoudovatos, while the subsurface vegetation consists of Moss, Fern, Lichens etc. It is estimated that the number of plant species and subspecies exceeds 1000 taxonomic units. Of these, endemic plants of Rodopi are Viola, Lily, Geo, Soldanella, Averlia, Drossera and many orchids. The area of Rodopi is the southernmost limit of distribution for many species of northern plants such as white spruce, spruce, birch, pentavelon pine, etc.

Specifically, in the study area, starting from Stavroupoli and in the direction of Haidou, there is a mixed vegetation of oaks and shrubs such as blueberries, blackberries and wild roses. Then the vegetation thickens enough and dense bushy vegetation appears from ferns, mountain roses, shrubs, gourds. Approaching Livaditis, mixed deciduous and coniferous forests with beeches, birches, pine and black pines, spruces and firs make their appearance. From the Forest Village of Erymanthos and above there is a forested landscape, which consists of low bush vegetation (cotton wool, wild roses), black pines and forest pines.

Indicative photographic material of flora from the Rodopi Mountain Range Management Agency

1 Deciduous zone, 2 Beech-Fir zone and mountainous Mediterranean conifers, 3 Cold coniferous zone, 4 Alpine - Alpine zone

1Tekelia speciosa, 2 Pulsatilla helleri (rhodopea), 3 Dactylorhiza sambucina, 4 Crocus veluchensis

Fauna

The biodiversity presented by the area of the Prefecture of Xanthi is great. In the south of the prefecture and especially in Lake Vistonida and in Porto Lagos, there is a great variety of birds that nest and winter in the area, but also a variety of other, migratory ones. The bird fauna in the areas of the prefecture of Xanthi includes many species. Some of the most important are the herons and their main representatives, the gray egret, the white egret and the cryptosic. Other species we meet are the aquatic laguna, various species of duck, including the species of barbara, storks, spoonbills and also the reed warbler, the silver pelican, the river gull, the black-headed gull and other very rare species of birds. Many species of migratory birds, such as flamingos, gulls, herons, storks pass through the area and stop during their migration, for food and perching. It is also important that the Nestos Delta is home to 260 bird species, out of the 474 basic species that live in Europe. Of particular interest is the river Kompsatos, which is a refuge for many birds of prey. This wetland can be considered as a single ecological unit with Vistonida and it is protected by the Ramsar Convention. Reptile fauna is also considered rich. Various species of turtle, lizard and snake have been identified. In the rich waters of the wetlands and rivers of the prefecture, finally, there are many species of fish such as the mullet, the briana, the gobios, the glyni, the tsironi etc. Specifically, mammals such as the bear, the wolf, the roe deer, the deer, the wild boar, the wild cat, the wild goat, the hare, the badger, the fox, the ferret, the squirrel, the hedgehog are found in the study area. From birds we find the black chamois as well as other species of woodpeckers, the mountain partridge, the black stork as well as many species of predators, such as the white parrot, the golden eagle, the peregrine falcon, the eagle owl. It is also noteworthy that in Rodopi lives the southernmost large population of wild turkey (350-450 people). The wild boar, a biomarker of ecologically rich forests, states with its presence the Central European cold-tempered character of the forests of the region, which is the only place in Greece that hosts it together with the wild boar.

Indicative photographic material of fauna from the Rodopi Mountain Range Management Agency

Ursus Arctos

Rupicapra rupicapra

Equus ferus caballus

Capreolus capreolus

Sciurus vulgaris

Muscardinus avellanarius

Lutra lutra

Lepus europaeus Pallas

Erinaceus roumanicus Barrett-Hamilton

Landscape

The landscape of the study area is relatively homogeneous and includes central mainland areas, while it develops to the north near the Greek-Bulgarian border. Detailed information for each route is given in previous passages.

Protection status

Detailed information for the areas where the project extends or for those that are nearby and are under a special protection regime are given in a previous passage.

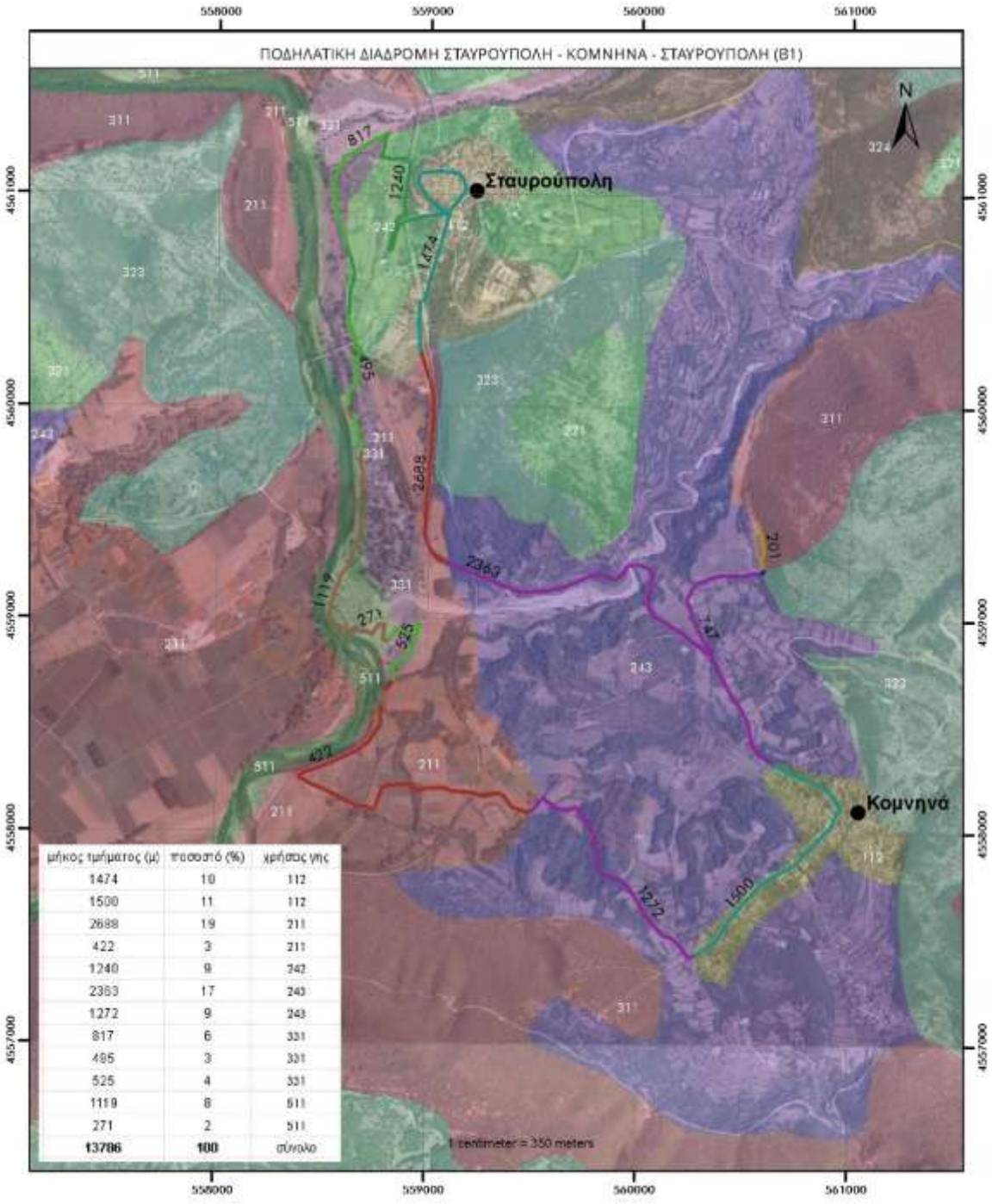
Existing infrastructures

The existing infrastructures for the routes of the present project are mentioned in a previous section where they are described in detail.

Land use

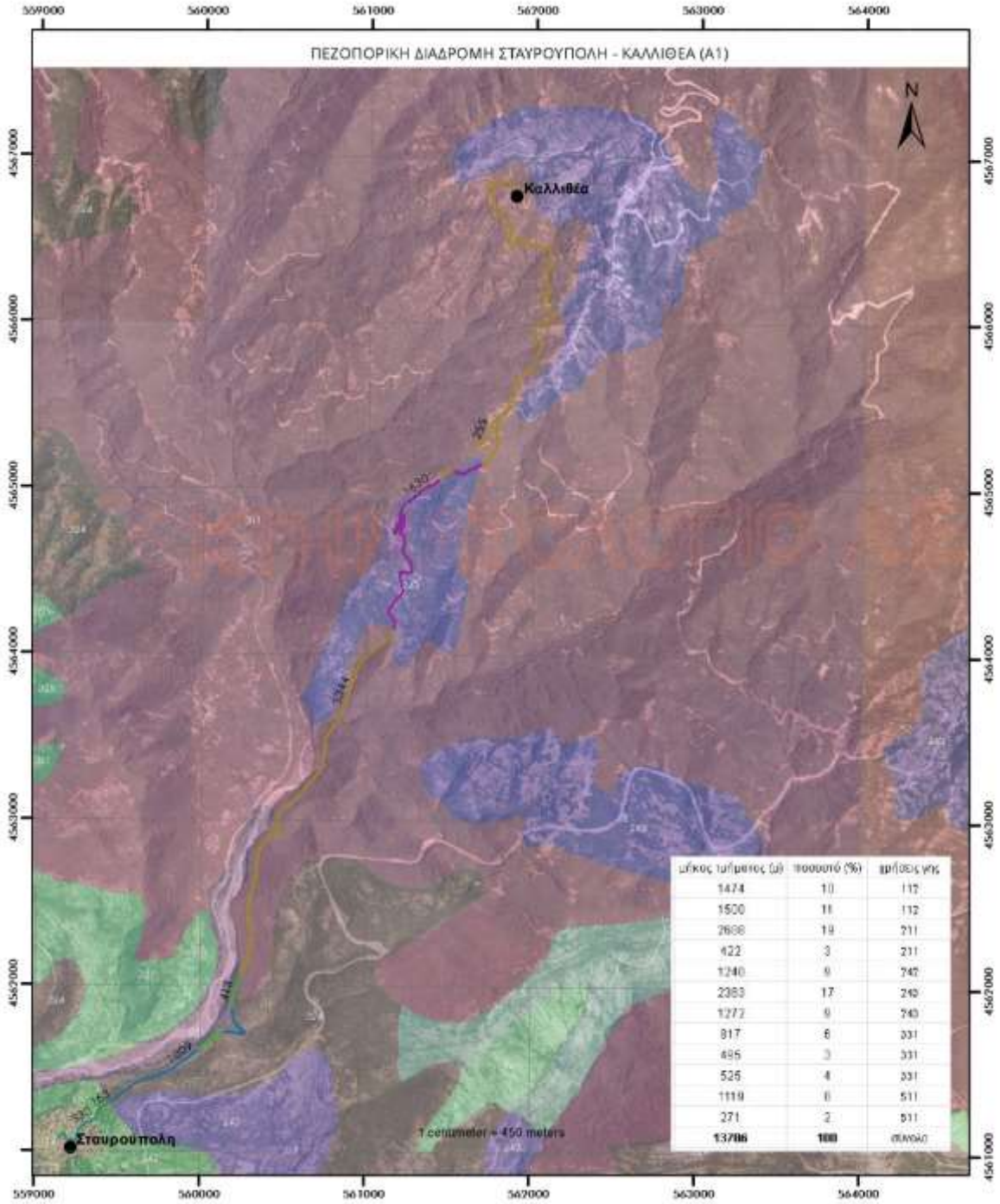
Most of the routes of the present project extend to forests, forest and rural areas, as well as pastures. Also, some sections of the routes cross settlements.

Route B1



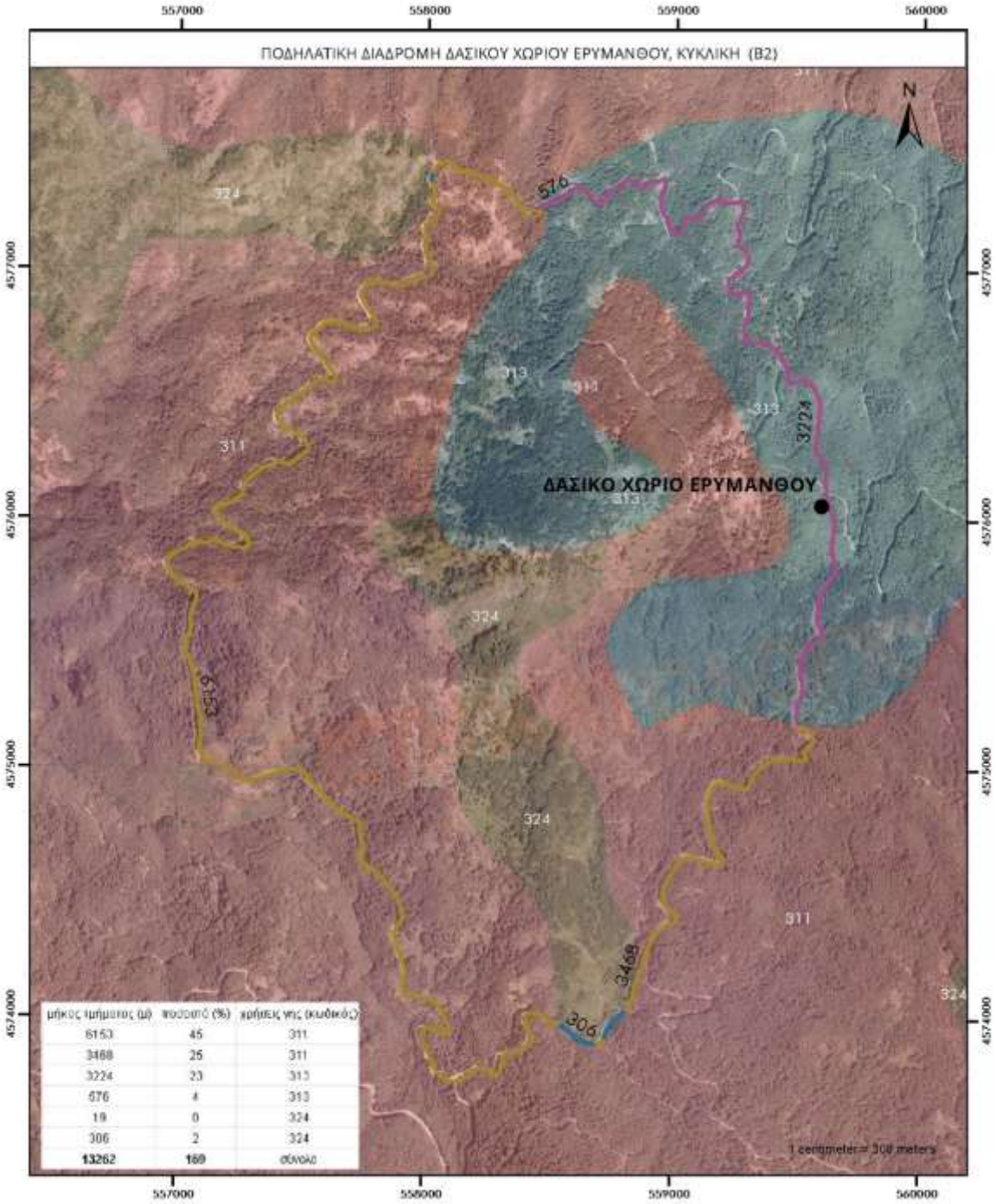
μήκος τμήματος (μ)	ποσοστό (%)	χρήσεις γης
1474	10	112
1500	11	112
2688	19	211
422	3	211
1240	9	242
2363	17	243
1272	9	243
817	6	331
495	3	331
525	4	331
1119	8	511
271	2	511
13786	**100**	σύνολο

Route A1

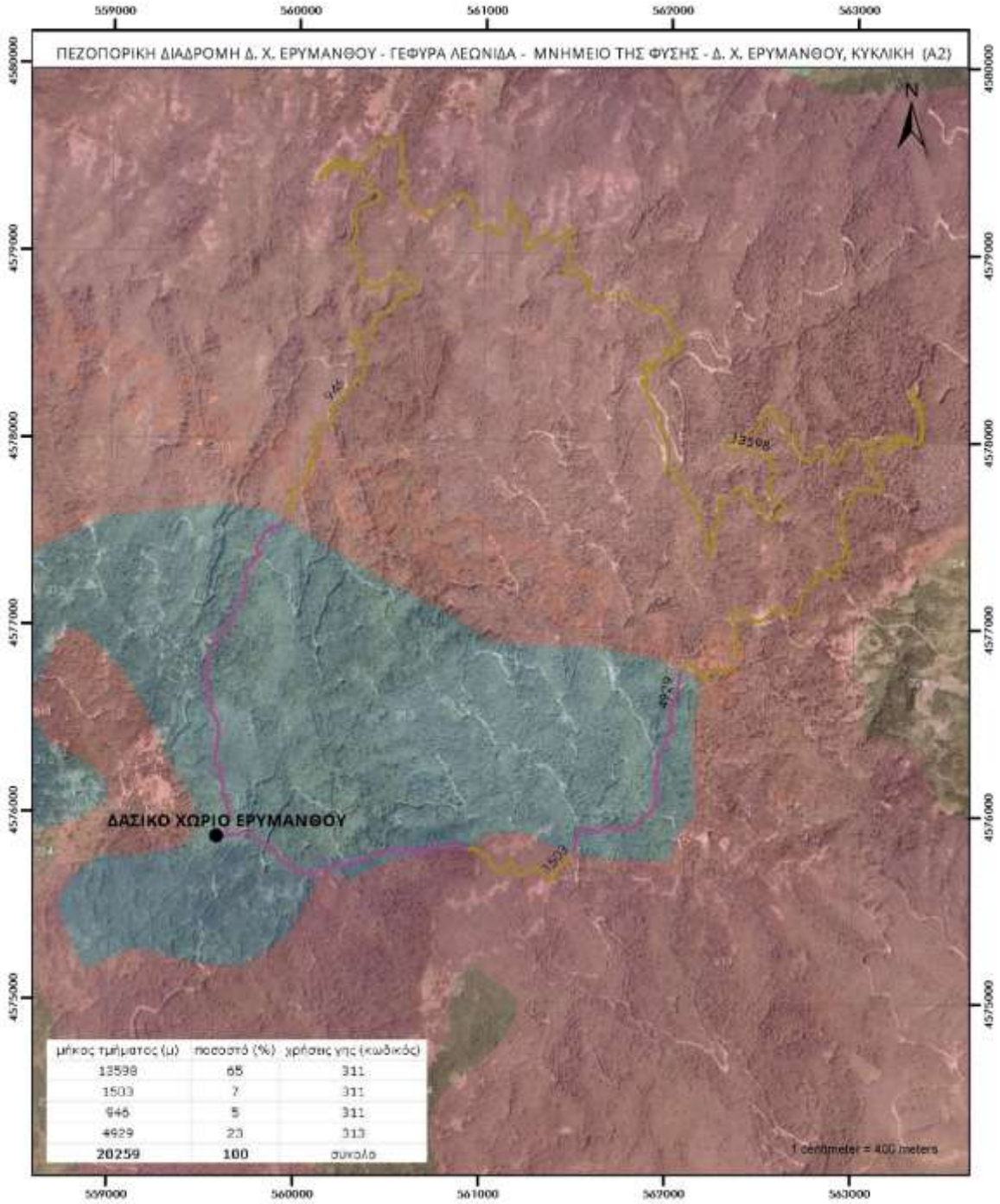


μήκος τμήματος (μ)	ποσοστό (%)	χρήσεις γης
1474	10	112
1500	11	112
2698	19	211
422	3	211
1240	9	242
2383	17	242
1272	9	243
817	6	331
495	3	331
526	4	331
1119	8	511
271	2	511
13786	100	ΣΥΝΟΛΟ

Route B2


ΠΟΔΗΛΑΤΙΚΗ ΔΙΑΔΡΟΜΗ ΔΑΣΙΚΟΥ ΧΩΡΙΟΥ ΕΡΥΜΑΝΘΟΥ, ΚΥΚΛΙΚΗ (B2)
ΔΑΣΙΚΟ ΧΩΡΙΟ ΕΡΥΜΑΝΘΟΥ
N
557000
558000
559000
560000
4577000
4576000
4575000
4574000
576
3224
3468
306
519
324
311
313
μήκος τμήματος (μ)
ποσοστό (%)
κρήμνες γης (κυρίως)
6153 45 311
3468 26 311
3224 23 313
576 4 313
19 0 324
306 2 324
13262 100 ΣΥΝΟΛΟ
1 centimeter = 300 meters

Route A2


559000
560000
561000
562000
563000
ΠΕΖΟΠΟΡΙΚΗ ΔΙΑΔΡΟΜΗ Δ. Χ. ΕΡΥΜΑΝΘΟΥ - ΓΕΦΥΡΑ ΛΕΩΝΙΔΑ - ΜΝΗΜΕΙΟ ΤΗΣ ΦΥΣΗΣ - Δ. Χ. ΕΡΥΜΑΝΘΟΥ, ΚΥΚΛΙΚΗ (Α2)
N
4580000
4579000
4578000
4577000
4576000
4575000
946
13598
4929
1503
ΔΑΣΙΚΟ ΧΩΡΙΟ ΕΡΥΜΑΝΘΟΥ
μήκος τμήματος (μ) ποσοστό (%) χρήσεις γης (κωδικός)
13598 65 311
1503 7 311
946 5 311
4929 23 313
20259 100 σύνολο
1 centimeter = 400 meters

Land Use Memorandum

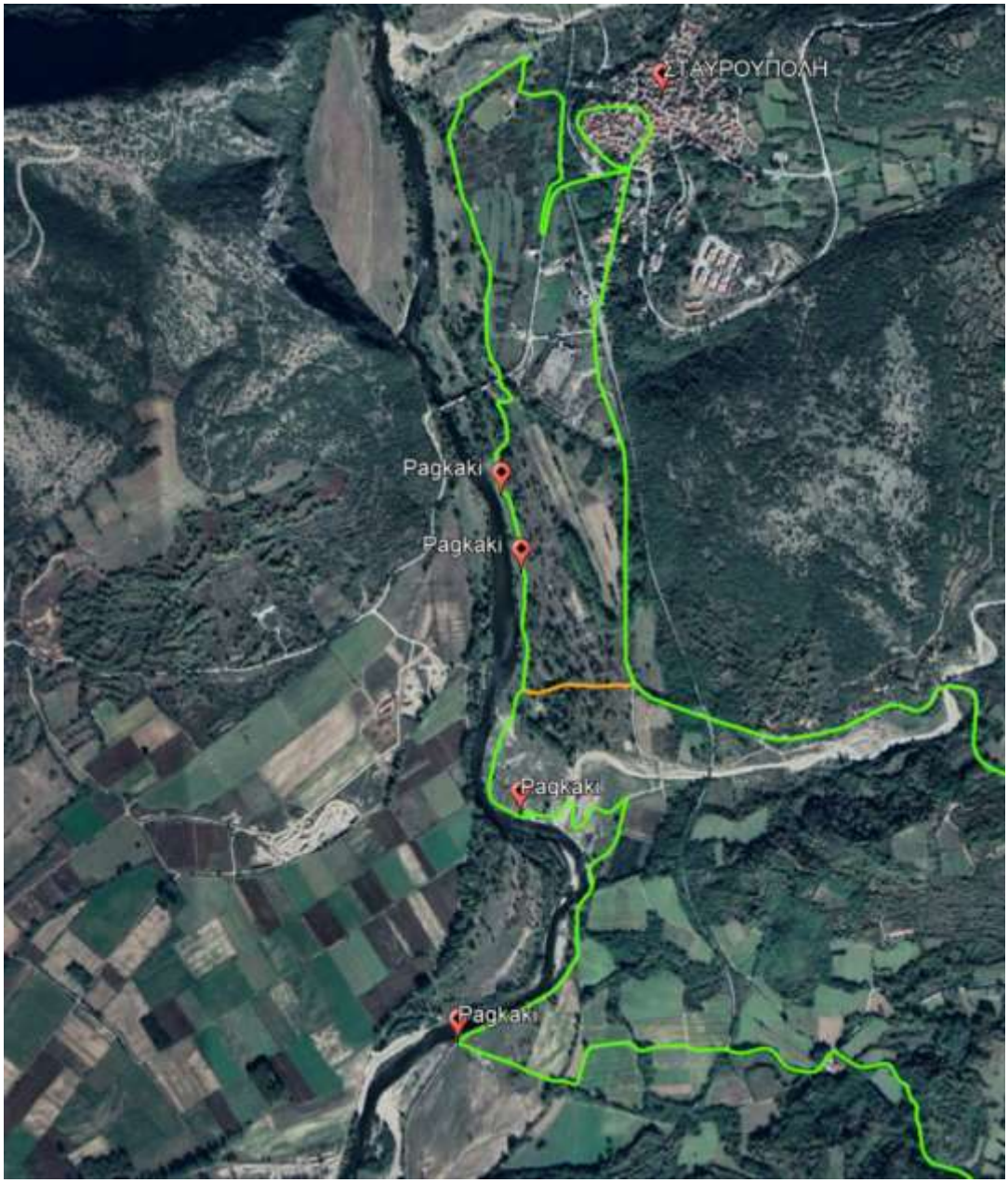
Κωδικός	Χρήσεις γης
112	Ασυνεχής αστικός ιστός
211	Μη αρδευόμενη αρόσιμη γη
242	Σύνθετες καλλιέργειες
243	Γη που χρησιμοποιείται κυρίως για γεωργία μαζί με σημαντικά τμήματα φυσικής βλάστησης
311	Δάσος πλατύφυλλων
313	Μικτό δάσος
321	Φυσικοί βοσκότοποι
323	Σκληροφυλλική βλάστηση
324	Μεταβατικές δασώδεις και θαμνώδεις εκτάσεις
331	Παραλίες, αμμόλοφοι, αμμουδιές
511	Υδατορρεύματα

112: discontinuous urban fabric
211: non-irrigated arable land
242: complex crops
243: land used mainly for agriculture along with important parts of natural vegetation
311: broadleaf forest
313: mixed forest
321: natural pastures
323: hardwood vegetation
324: transitional afforestation and shrubland
331: beaches, dunes, sandy beaches
511: watercourses

Proposed projects

• In the settlement of Stavroupoli it is important to provide the possibility of renting bicycles as well as technical support services from the Municipality of Xanthi or from a private individual.

• On the B1 route it is proposed to place wooden benches on the riparian part of the route which will serve visitors for a pleasant stop overlooking the river Nestos. In total, 4 benches can be placed in the positions shown in the image below.



• The route Stavroupoli - Kallithea (A1) is the only one of the four that needs restoration as the vegetation that has developed within the path. Most of the route requires gentle cleaning except in the last 750m. that needs an intense one, mainly from shrubby vegetation.

• In the location of Kallithea it would be useful to operate catering and accommodation infrastructure. If this is not possible, it is recommended to set up an organized space with a kiosk, tables and a fountain that will serve the public.

• The design of information signs, with bilingual performance for the important points of environmental and cultural interest such as the protected natural monument (Tsichlas Forest), the river Nestos, the Macedonian tomb, the bridge of Leonidas etc.

• Map design with necessary information about the area and the proposed routes. The map is proposed to be installed on signs, at the starting points of the routes and to be printed on velvet paper so that it is distributed free of charge to the visitors. It is good to be provided in electronic form and to be compatible for mobile phones.

• The construction of a website where all the useful information (accommodation, restaurants, maps, etc.) will be hosted, as well as relevant promotional material (photos, videos, etc.).

Road network connection – access

In their entirety, the routes that make up the project, at various points of their route intersect or use the existing forest and provincial road network of the study area, as well as asphalted provincial network.

Route B1 | Asphalt provincial network - Dirt road – Path

The route starts from the square of the settlement of Stavroupoli, therefore initially it moves on an asphalt provincial network, to the point where it approaches the river Nestos, continues on a dirt road (good walkability) and then on a steep path until it reaches again a landfill which passes through arable land. Upon his return, the cyclist enters again on an asphalt provincial network up to Stavroupoli square. It is easy to reach the route in many places via road network, as the route moves on it.

Route A1 | Asphalt provincial network - Dirt road - Forest road – Path

The route starts from the square of the settlement of Stavroupoli, therefore initially it moves on an asphalt provincial network, to the point where it meets a dirt road, until the church of Agia Paraskevi. From this point onwards the hiker moves on a path to the settlement of Kallithea. Access via road network is possible at the place where the church of Agia Paraskevi is located. From there the hiker meets at three points a forest road, which is passable and easily accessible.

Route B2 | Forest road - Asphalt paved provincial network

The route starts from the Forest Village of Erymanthos and for the most part moves on a forest road. The route intersects at eight points with forest roads, which are impassable and easily accessible, especially during the winter months. Towards the end and for a short distance (3.5 km) the route meets an asphalt provincial network, until the end.

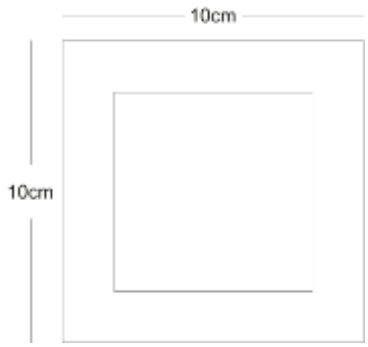
Route A2 | Forest road - Asphalt provincial network

The route starts from the Forest Village of Erymanthos and for the most part moves on forest roads (15.7 km) and the rest on paths (4.6 km). It intersects at eleven points with other forest roads, which are impassable and easily accessible, especially during the winter months.

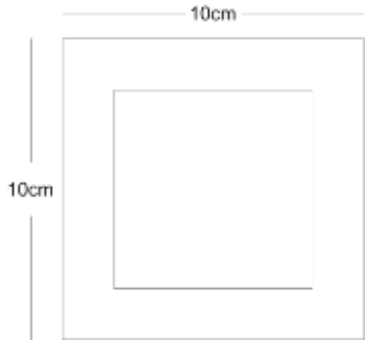
Marking- Signs

The purpose of road marking is to provide safe guidance for hikers and increase traffic in the area. In this project, types of markings, confirmation signs, direction signs, information signs and map-bearing signs were applied. The interventions that are indicated are mild, harmonized with the natural landscape and are in line with the Government Gazette 206 / B / 30-1-2017 "Determination of technical specifications for the drawing, marking, opening and maintenance of mountaineering hiking trails".

The **confirmation marks** that are proposed to be used are made of aluminum measuring 10x10cm (max) with a thickness of 1mm. They will be placed during the route every 500-150 meters.



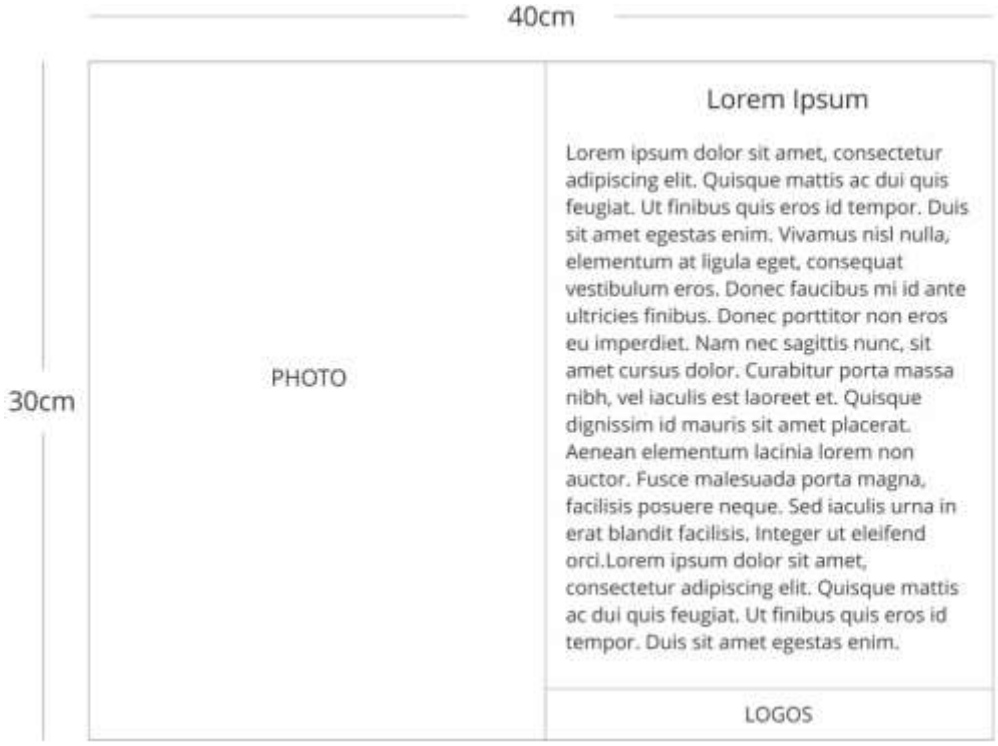
The **confirmation marks on a stake** (P) proposed to be used are made of aluminum measuring 10x10cm (max) 1mm thick and are supported on 1 stake. They will be placed at points of the routes where either the trail is not visible or there is no surface for the placement of the confirmation signals.



The direction plates (PK) and the direction-plates with km-time (PKM), which are proposed to be used are made of chestnut wood / aluminum 2mm thick and dimensions

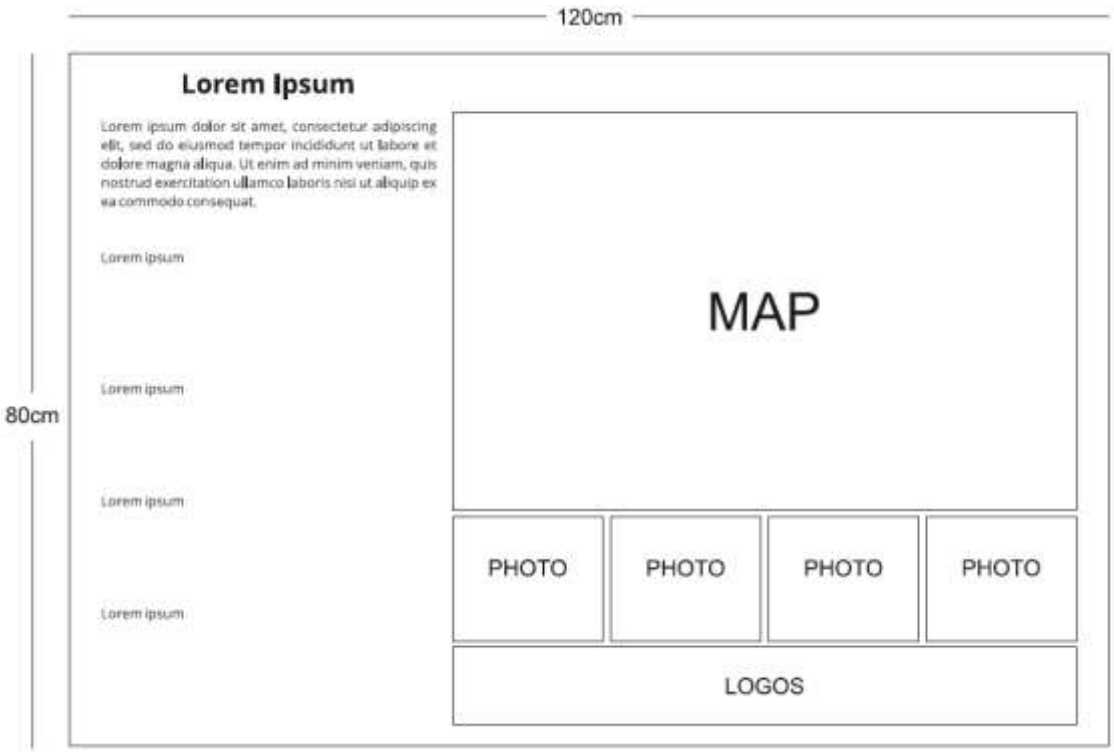
25x15cm. They will bring information (Greek-English) about the type of route, the direction, the distance and the hiking / cycling time. They will be placed at intersections and in open places where there is no visible trace.

The **information boards** that are proposed to be used are made of chestnut wood / aluminum 2mm thick and dimensions 40x30cm. They will bring information (Greek-English) and photographic material for remarkable points of interest and will be placed near them.



The **information plates** are proposed to be made of 2mm thick aluminum and dimensions 120x80cm. They will bring the map of the area, where the hiking / cycling

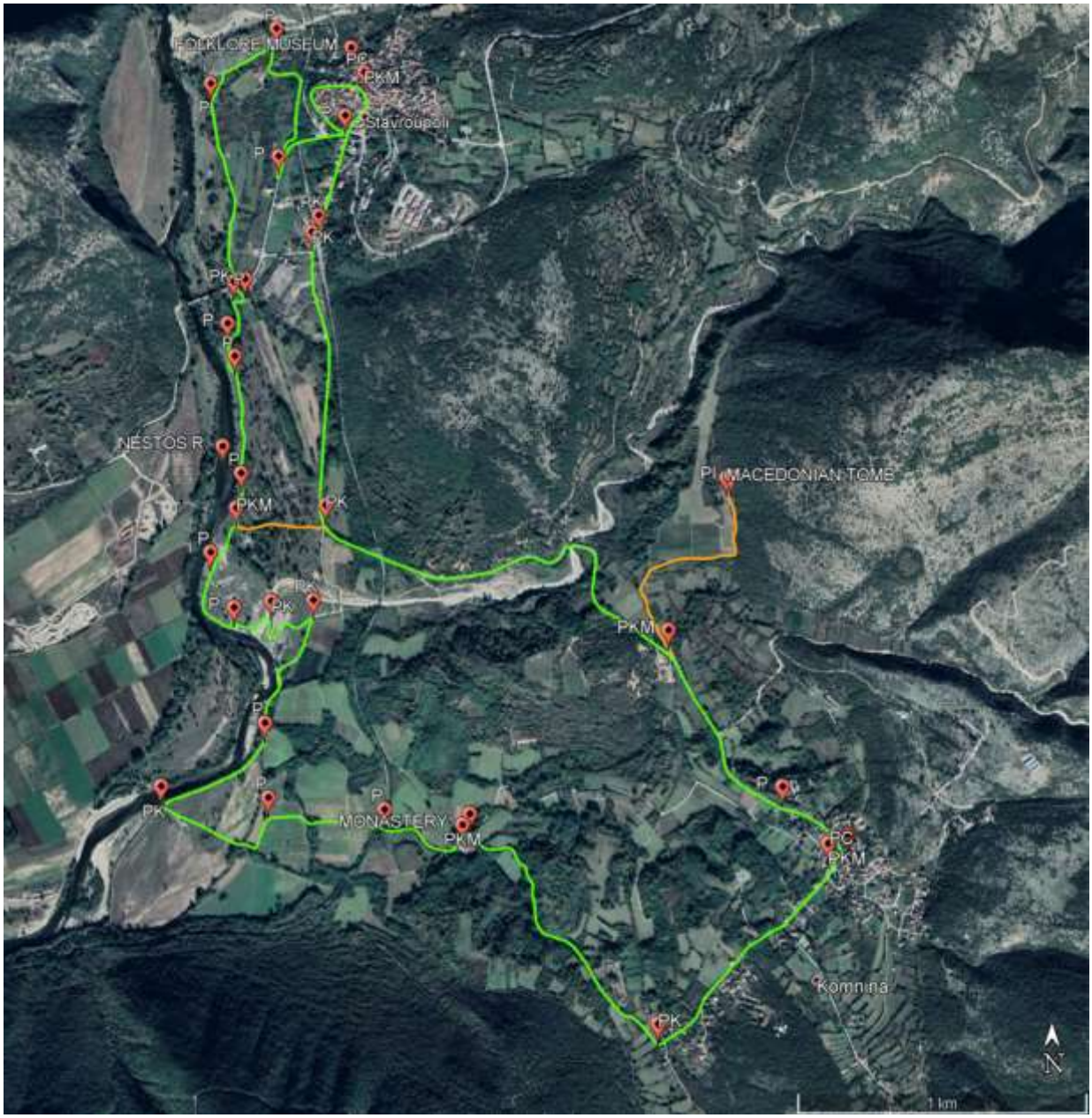
routes will be depicted, the points of interest with descriptions (Greek-English) and photos and will be placed in central points.



The signage on each route

Bicycle route B1

Stavroupoli - Nestos - Holy Monastery of Komnina - Komnina - Stavroupoli | 13.7km | 2h


FOLKLORE MUSEUM
Stavroupoli
NESTOS R.
MACEDONIAN TOMB
MONASTERY
Komnina
N
1 km

Ποδηλατική διαδρομή Β1

Σταυρούπολη - Νέστος – Ιερά Μονή Κομνηνών - Κομνηνά – Σταυρούπολη | 13,7km | 2h

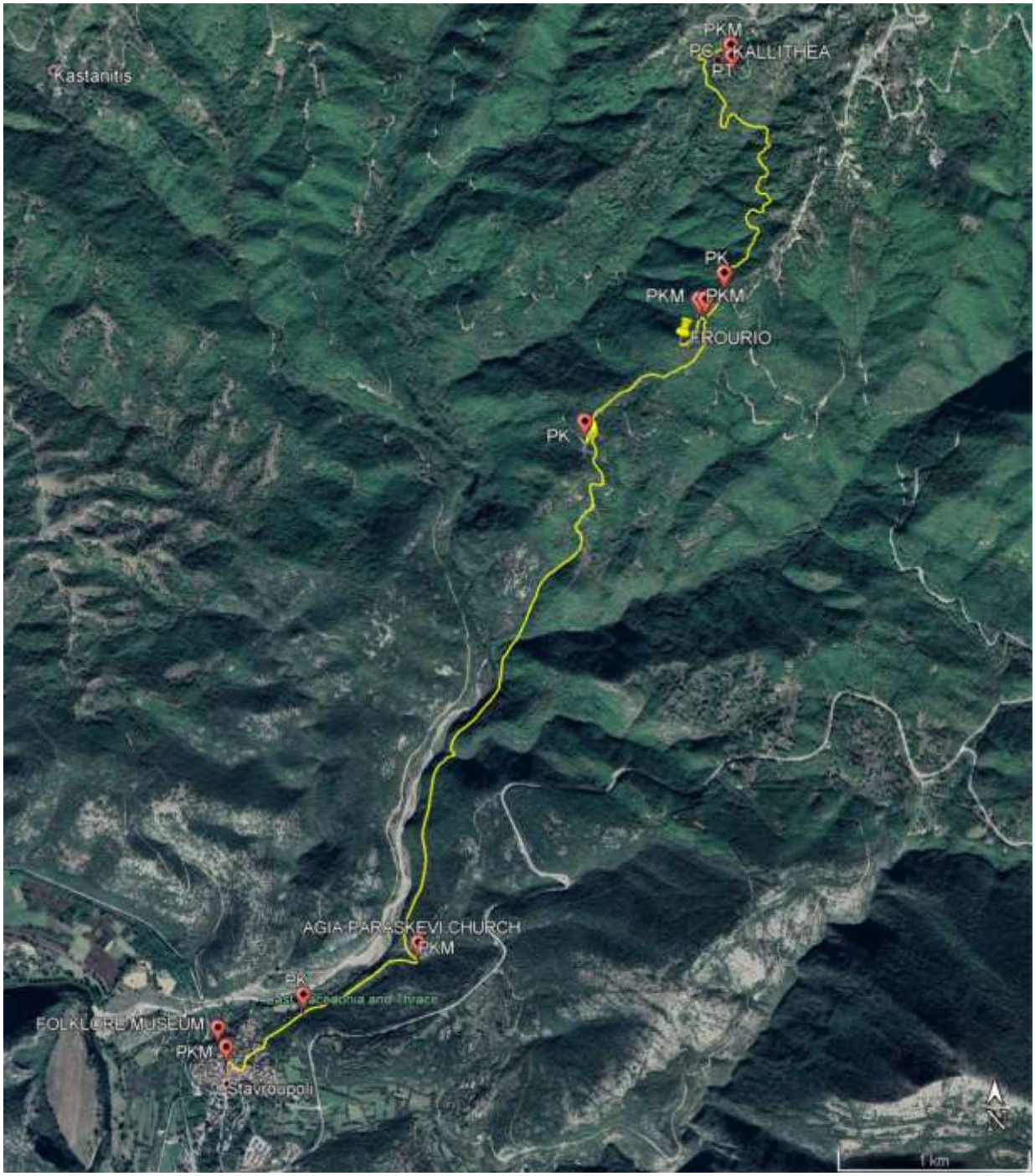
Α/Α	ΣΥΝΤΕΤΑΓΜΕΝΕΣ		ΕΙΔΟΣ ΣΗΜΑΝΣΗΣ	ΛΕΚΤΙΚΟ	ΚΑΤΕΥΘΥΝΣΗ
	POINT_X	POINT_Y			
0	559004,966	4560797,962	PC		
1	559004,966	4560797,962	PKM	ΝΕΣΤΟΣ | NESTOS RIVER 1,8km 10'	9
				ΚΟΜΝΗΝΑ | KOMNINA 9,2km 1h 10'	9
2	558930,029	4560623,207	P		
3	558863,1398	4560458,222	P		
4	558849,3021	4560994,841	P		
5	558384,6652	4560762,566	P		
6	558534,0911	4559954,349	PK	ΝΕΣΤΟΣ | NESTOS	3
				ΚΟΜΝΗΝΑ | KOMNINA	3
7	558488,6868	4559943,455	P		
8	558466,7812	4559774,161	P		
9	558497,0607	4559642,29	P		
10	558528,2658	4559175,855	P		
11	558510,9153	4559039,066	PKM	ΚΟΜΝΗΝΑ | KOMNINA 5,5km 40' ΣΤΑΥΡΟΥΠΟΛΗ | STAVROUPOLI 2,1km 15' ΣΤΑΥΡΟΥΠΟΛΗ | STAVROUPOLI 3,7km 30'	3 9 9
12	558413,0773	4558865,19	P		
13	558507,5341	4558652,262	P		
14	558651,475	4558677,872	PK	ΚΟΜΝΗΝΑ | KOMNINA ΣΤΑΥΡΟΥΠΟΛΗ | STAVROUPOLI	3 9
15	558815,3184	4558682,724	PK	ΚΟΜΝΗΝΑ | KOMNINA ΣΤΑΥΡΟΥΠΟΛΗ | STAVROUPOLI	3 9
16	558632,4058	4558211,48	P		
17	558238,0637	4557969,866	PK	ΚΟΜΝΗΝΑ | KOMNINA ΣΤΑΥΡΟΥΠΟΛΗ | STAVROUPOLI	9 3
18	558648,7353	4557930,787	P		
19	559091,9374	4557891,301	P		
20	559416,6971	4557877,939	PKM	ΚΟΜΝΗΝΑ | KOMNINA 2,1km 15' ΣΤΑΥΡΟΥΠΟΛΗ | STAVROUPOLI 7,1km 1h'	3 9
21	560761,3806	4557783,871	PKM	ΣΤΑΥΡΟΥΠΟΛΗ | STAVROUPOLI 4,6km 30' ΜΑΚΕΔΟΝΙΚΟΣ ΤΑΦΟΣ | MACEDONIAN TOMB 2km 15' ΝΕΣΤΟΣ | NESTOS 3,4km 15 ' ΜΟΝΑΣΤΗΡΙ ΚΟΜΝΗΝΩΝ | MONASTERY OF KOMNINA 2,1km 15'	3 3 9 9
22	560102,8592	4557128,177	PK	ΚΟΜΝΗΝΑ | KOMNINA ΣΤΑΥΡΟΥΠΟΛΗ | STAVROUPOLI	9 3
23	560766,2446	4557792,198	PC		

24	560599,091	4557991,775	P		
25	560181,9345	4558576,941	PKM	ΜΑΚΕΔΟΝΙΚΟΣ ΤΑΦΟΣ | MACEDONIAN TOMB 1km ' 7'	3
				ΣΤΑΥΡΟΥΠΟΛΗ | STAVROUPOLI 3,5km 25'	9
26	560424,2683	4559166,373	PI	ΜΑΚΕΔΟΝΙΚΟΣ ΤΑΦΟΣ | MACEDONIAN TOMB	
27	558860,9349	4559052,86	PK	ΣΤΑΥΡΟΥΠΟΛΗ | STAVROUPOLI	9
				ΚΟΜΝΗΝΑ | KOMNINA	3
				ΝΕΣΤΟΣ | NESTOS	3
				ΝΕΣΤΟΣ | NESTOS	9
28	558798,8301	4560146,193	PK	ΣΤΑΥΡΟΥΠΟΛΗ | STAVROUPOLI	3
				ΚΟΜΝΗΝΑ | KOMNINA	9
29	558825,988	4560214,153	PK	ΣΤΑΥΡΟΥΠΟΛΗ | STAVROUPOLI	9
				ΚΟΜΝΗΝΑ | KOMNINA	3

The above data are also listed in an excel file.

Hiking route A1

Stavroupoli - Kallithea 8.7km | 4h

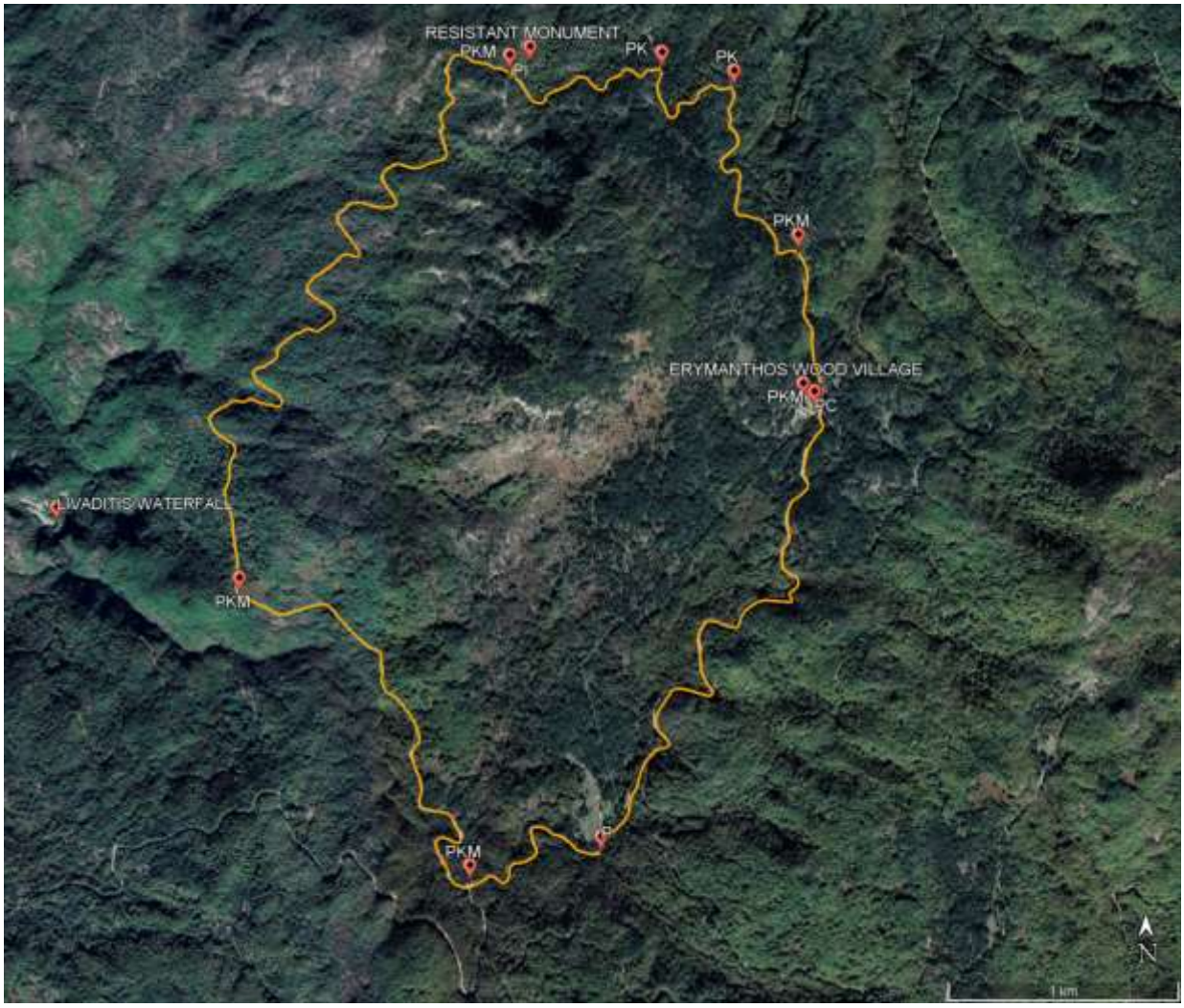


Πεζοπορική διαδρομή Α1					
Σταυρούπολη – Καλλιθέα | 8,7km | 4h					
Α/Α	ΣΥΝΤΕΤΑΓΜΕΝΕΣ		ΕΙΔΟΣ ΣΗΜΑΝΣΗΣ	ΛΕΚΤΙΚΟ	ΚΑΤΕΥΘΥΝΣΗ
FID	POINT_X	POINT_Y			
0	559002,3781	4560797,956	PKM	ΚΑΛΛΙΘΕΑ | KALLITHEA 8,6km 3,5h	3
1	559453,5999	4561113,967	PK	ΚΑΛΛΙΘΕΑ | KALLITHEA	9
				ΣΤΑΥΡΟΥΠΟΛΗ | STAVROUPOLI	3
				ΚΑΛΛΙΘΕΑ | KALLITHEA	9
				ΣΤΑΥΡΟΥΠΟΛΗ | STAVROUPOLI	3
2	560123,3276	4561429,516	PKM	ΚΑΛΛΙΘΕΑ | KALLITHEA 7,1km 3h	9
				ΣΤΑΥΡΟΥΠΟΛΗ | STAVROUPOLI 1,4km 25'	3
3	561000,2204	4564452,564	PK	ΚΑΛΛΙΘΕΑ | KALLITHEA	3
				ΣΤΑΥΡΟΥΠΟΛΗ | STAVROUPOLI	9
4	561623,7553	4565114,284	PKM	ΚΑΛΛΙΘΕΑ | KALLITHEA 2,2km 50'	3
				ΦΡΟΥΡΙΟ | FORTRESS 250m 5'	9
				ΣΤΑΥΡΟΥΠΟΛΗ | STAVROUPOLI 6,3km 2h	9
5	561588,2587	4565112,344	PKM	ΦΡΟΥΡΙΟ | FORTRESS 200m 4'	9
6	561720,8535	4565258,092	PK	ΚΑΛΛΙΘΕΑ | KALLITHEA	9
				ΣΤΑΥΡΟΥΠΟΛΗ | STAVROUPOLI	3
7	561716,8286	4566487,141	PKM	ΣΤΑΥΡΟΥΠΟΛΗ | STAVROUPOLI 2h 30'	3
9	561712,2423	4566484,214	PC		

The above data are also listed in an excel file.

Cycling route B2

Erymanthos (Forest Village) - Livaditi Waterfall – Erymanthos (Forest Village) | 13.3km | 1h 20'



Ποδηλατική διαδρομή Β2					
ΔΧ Ερύμανθου - Καταρράκτης Λειβαδίτη – ΔΧ Ερύμανθου | 13,3km | 1h 20'					
Α/Α	ΣΥΝΤΕΤΑΓΜΕΝΕΣ		ΕΙΔΟΣ ΣΗΜΑΝΣΗΣ	ΛΕΚΤΙΚΟ	ΚΑΤΕΥΘΥΝΣΗ
FID	POINT_X	POINT_Y			
0	559472,8469	4575588,05	PC		
1	559486,9353	4575588,199	PKM	ΚΑΤΑΡΡΑΚΤΗΣ ΛΕΙΒΑΔΙΤΗ | LIVADITIS WATERFALL 7,4 km 30'	3
2	559397,7737	4576266,304	PKM	ΚΑΤΑΡΡΑΚΤΗΣ ΛΕΙΒΑΔΙΤΗ | LIVADITIS WATERFALL 7,4km 35'	9
				ΔΑΣΙΚΟ ΧΩΡΙΟ ΕΡΥΜΑΝΘΟΥ | ERYMANTHOS WOOD VILLAGE 700m 5'	3
3	559123,4244	4576985,917	PK	ΚΑΤΑΡΡΑΚΤΗΣ ΛΕΙΒΑΔΙΤΗ | LIVADITIS WATERFALL	9
				ΔΑΣΙΚΟ ΧΩΡΙΟ ΕΡΥΜΑΝΘΟΥ | ERYMANTHOS WOOD VILLAGE	3
4	558809,7183	4577069,79	PK	ΚΑΤΑΡΡΑΚΤΗΣ ΛΕΙΒΑΔΙΤΗ | LIVADITIS WATERFALL	9
				ΔΑΣΙΚΟ ΧΩΡΙΟ ΕΡΥΜΑΝΘΟΥ | ERYMANTHOS WOOD VILLAGE	3
5	558140,3159	4577052,313	PKM	ΜΝΗΜΕΙΟ ΠΕΣΟΝΤΩΝ | WAR MEMORIAL 100m	3
				ΚΑΤΑΡΡΑΚΤΗΣ ΛΕΙΒΑΔΙΤΗ | LIVADITIS WATERFALL 4,5km 25'	9
6	558220,0752	4577094,194	PI	ΜΝΗΜΕΙΟ ΠΕΣΟΝΤΩΝ | WAR MEMORIAL	
7	556956,4447	4574742,705	PKM	ΔΑΣΙΚΟ ΧΩΡΙΟ ΕΡΥΜΑΝΘΟΥ | ERYMANTHOS WOOD VILLAGE 5,9km 1h	9
				ΔΑΣΙΚΟ ΧΩΡΙΟ ΕΡΥΜΑΝΘΟΥ | ERYMANTHOS WOOD VILLAGE 7,4km 1h 15'	3
8	557997,7934	4573475,69	PKM	ΔΑΣΙΚΟ ΧΩΡΙΟ ΕΡΥΜΑΝΘΟΥ | ERYMANTHOS WOOD VILLAGE 3,7km 40'	3
				ΚΑΤΑΡΡΑΚΤΗΣ ΛΕΙΒΑΔΙΤΗ | LIVADITIS WATERFALL 2,2km 10'	9
9	558581,9696	4573608,451	P		

The above data are also listed in an excel file.

Hiking route A2

Erymanthos - Leonidas Bridge - Preserved Monument of Nature - Erymanthos | 20.3km | 8h 30'

Πεζοπορική διαδρομή Α2					
ΔΧ Ερύμανθου – Γέφυρα Λεωνίδα – Διατηρητέο Μνημείο της Φύσης – ΔΧ Ερύμανθου | 20,3km | 8h 30'					
Α/Α	ΣΥΝΤΕΤΑΓΜΕΝΕΣ		ΕΙΔΟΣ ΣΗΜΑΝΣΗΣ	ΛΕΚΤΙΚΟ	ΚΑΤΕΥΘΥΝΣΗ
FID	POINT_X	POINT_Y			
	559480,403	4575591,321	PKM	ΓΕΦΥΡΑ ΛΕΩΝΙΔΑ | LEONIDAS BRIDGE 8,8km 3h	3
				ΔΙΑΤΗΡΗΤΕΟ ΜΝΗΜΕΙΟ ΤΗΣ ΦΥΣΗΣ | NATURAL MONUMENT 13,5km 5h	3
1	559401,3841	4576260,279	PKM	ΓΕΦΥΡΑ ΛΕΩΝΙΔΑ | LEONIDAS BRIDGE 8,1km 2h 45'	3
				ΔΙΑΤΗΡΗΤΕΟ ΜΝΗΜΕΙΟ ΤΗΣ ΦΥΣΗΣ | NATURAL MONUMENT 12,8km 4h 45'	3
				ΔΑΣΙΚΟ ΧΩΡΙΟ ΕΡΥΜΑΝΘΟΥ | ERYMANTHOS WOOD VILLAGE 700m 10'	3
2	559657,3669	4577095,651	PK	ΓΕΦΥΡΑ ΛΕΩΝΙΔΑ | LEONIDAS BRIDGE	9
				ΔΙΑΤΗΡΗΤΕΟ ΜΝΗΜΕΙΟ ΤΗΣ ΦΥΣΗΣ | NATURAL MONUMENT	7
3	560128,4623	4577987,238	PKM	ΓΕΦΥΡΑ ΛΕΩΝΙΔΑ | LEONIDAS BRIDGE 6km 2h 15'	3
				ΔΙΑΤΗΡΗΤΕΟ ΜΝΗΜΕΙΟ ΤΗΣ ΦΥΣΗΣ | NATURAL MONUMENT 10,7km 4h	3
				ΔΑΣΙΚΟ ΧΩΡΙΟ ΕΡΥΜΑΝΘΟΥ | ERYMANTHOS WOOD VILLAGE 2,8km 1h	3
4	559964,0999	4579115,39	PK	ΓΕΦΥΡΑ ΛΕΩΝΙΔΑ | LEONIDAS BRIDGE	3
				ΔΙΑΤΗΡΗΤΕΟ ΜΝΗΜΕΙΟ ΤΗΣ ΦΥΣΗΣ | NATURAL MONUMENT	3
				ΔΑΣΙΚΟ ΧΩΡΙΟ ΕΡΥΜΑΝΘΟΥ | ERYMANTHOS WOOD VILLAGE	3
5	560819,9062	4578850,167	P		
6	561911,6096	4578267,051	PKM	ΓΕΦΥΡΑ ΛΕΩΝΙΔΑ | LEONIDAS BRIDGE 50m 1'	3
				ΔΙΑΤΗΡΗΤΕΟ ΜΝΗΜΕΙΟ ΤΗΣ ΦΥΣΗΣ | NATURAL MONUMENT 4,6km 2h	3
				ΔΑΣΙΚΟ ΧΩΡΙΟ ΕΡΥΜΑΝΘΟΥ | ERYMANTHOS WOOD VILLAGE 10,5km 3h 45'	3
				ΔΑΣΙΚΟ ΧΩΡΙΟ ΕΡΥΜΑΝΘΟΥ | ERYMANTHOS WOOD VILLAGE 8,8km 3h	9
7	561888,3145	4578239,205	PI	ΓΕΦΥΡΑ ΛΕΩΝΙΔΑ | LEONIDAS BRIDGE	
					9
8	561724,7059	4578042,527	PK	ΔΙΑΤΗΡΗΤΕΟ ΜΝΗΜΕΙΟ ΤΗΣ ΦΥΣΗΣ | NATURAL MONUMENT	9
				ΔΑΣΙΚΟ ΧΩΡΙΟ ΕΡΥΜΑΝΘΟΥ | ERYMANTHOS WOOD VILLAGE	3
				ΓΕΦΥΡΑ ΛΕΩΝΙΔΑ | LEONIDAS BRIDGE	
9	561700,419	4578035,684	PKM	ΔΙΑΤΗΡΗΤΕΟ ΜΝΗΜΕΙΟ ΤΗΣ ΦΥΣΗΣ | NATURAL MONUMENT 4,2km 1h 50'	9
				ΔΑΣΙΚΟ ΧΩΡΙΟ ΕΡΥΜΑΝΘΟΥ | ERYMANTHOS WOOD VILLAGE 10km 3h 30'	9
				ΓΕΦΥΡΑ ΛΕΩΝΙΔΑ | LEONIDAS BRIDGE 500m 10'	3
10	561857,7856	4577593,33	P		
11	562133,4035	4577702,473	P		
12	563051,2134	4577735,51	PKM	ΔΑΣΙΚΟ ΧΩΡΙΟ ΕΡΥΜΑΝΘΟΥ | ERYMANTHOS WOOD VILLAGE 6,2km 2h	3
				ΔΙΑΤΗΡΗΤΕΟ ΜΝΗΜΕΙΟ ΤΗΣ ΦΥΣΗΣ | NATURAL MONUMENT 500m 10'	9
				ΓΕΦΥΡΑ ΛΕΩΝΙΔΑ | LEONIDAS BRIDGE 4,1km 1h 30'	3
13	563199,6944	4577983,736	PKM	ΔΑΣΙΚΟ ΧΩΡΙΟ ΕΡΥΜΑΝΘΟΥ | ERYMANTHOS WOOD VILLAGE 6,7km 2h 10'	3
				ΓΕΦΥΡΑ ΛΕΩΝΙΔΑ | LEONIDAS BRIDGE 4,6km 1h 35'	3
14	563181,4908	4577995,476	PI	ΔΙΑΤΗΡΗΤΕΟ ΜΝΗΜΕΙΟ ΤΗΣ ΦΥΣΗΣ | NATURAL MONUMENT	
15	562054,4319	4576453,035	PKM	ΔΑΣΙΚΟ ΧΩΡΙΟ ΕΡΥΜΑΝΘΟΥ | ERYMANTHOS WOOD VILLAGE 4km 1h 15'	3
				ΔΙΑΤΗΡΗΤΕΟ ΜΝΗΜΕΙΟ ΤΗΣ ΦΥΣΗΣ | NATURAL MONUMENT 2,7km 1h	9
16	561246,552	4575374,127	PKM	ΔΑΣΙΚΟ ΧΩΡΙΟ ΕΡΥΜΑΝΘΟΥ | ERYMANTHOS WOOD VILLAGE 2,1km 30'	3
				ΔΙΑΤΗΡΗΤΕΟ ΜΝΗΜΕΙΟ ΤΗΣ ΦΥΣΗΣ | NATURAL MONUMENT 4,5km 1h 15'	9
17	560216,5688	4575457,384	PK	ΔΑΣΙΚΟ ΧΩΡΙΟ ΕΡΥΜΑΝΘΟΥ | ERYMANTHOS WOOD VILLAGE	3
				ΔΙΑΤΗΡΗΤΕΟ ΜΝΗΜΕΙΟ ΤΗΣ ΦΥΣΗΣ | NATURAL MONUMENT	9

The above data are also listed in an excel file.

ΚΩΔΙΚΟΠΟΙΗΣΗ ΣΗΜΑΝΣΗΣ	
P	ΕΠΙΒΕΒΑΙΩΤΙΚΟ ΣΗΜΑ
PK	ΠΙΝΑΚΙΙΔΑ ΚΑΤΕΥΘΥΝΣΗΣ
PKM	ΠΙΝΑΚΙΔΑ ΚΑΤΕΥΘΥΝΣΗΣ ΜΕ ΧΛΜ ΚΑΙ ΧΡΟΝΟ
PI	ΠΙΝΑΚΙΔΑ ΠΛΗΡΟΦΟΡΙΑΣ
PC	ΚΕΝΤΡΙΚΗ ΠΙΝΑΚΙΔΑ ΜΕ ΧΑΡΤΗ

ΚΩΔΙΚΟΠΟΙΗΣΗ ΚΑΤΕΥΘΥΝΣΗΣ	
3	ΒΕΛΟΣ ΜΕ ΔΕΞΙΑ ΚΑΤΕΥΘΥΝΣΗ
9	ΒΕΛΟΣ ΜΕ ΑΡΙΣΤΕΡΗ ΚΑΤΕΥΘΥΝΣΗ

MARKING CODING

P: CONFIRMATION SIGN

PK: DIRECTION PLATE

PKM: DIRECTION PLANTS WITH KILOMETERS AND TIME

PI: INFORMATION PLATE

PC: CENTRAL SIGN WITH MAP

DIRECTION CODING

3: ARROW WITH RIGHT DIRECTION

9: ARROW WITH LEFT DIRECTION

Indicative marking budget

INDICATIVE BUDGET OF SUPPORT PIECES			
Dimension of the support pole	220cm	170 cm	140cm
Pieces	8	35	4
Cost/piece in €	46		
Total cost/piece in €	368	1610	184
Total cost in €	**2162**		

INDICATIVE BUDGET FOR PK, PKM	
Signs dimensions	25x15cm
Pieces	41
Cost/piece in €	88,35
Total cost in €	**3622,35**

INDICATIVE BUDGET FOR PI	
Signs dimensions	40x30cm
Pieces	4
Cost/piece in €	100
Total cost in €	**400**

INDICATIVE BUDGET FOR PC	
Signs dimensions	120x80cm
Pieces	4
Cost/piece in €	240
Total cost in €	**960**

INDICATIVE BUDGET FOR P	
Signs dimensions	10x10
Pieces	18
Cost/piece in €	1,5
Total cost in €	**27**

INDICATIVE BUDGET OF CONFIRMATION SIGNS WITHOUT THE SUPPORT PIECE	
Signs dimensions	10x10
Pieces max	373
Pieces min	112
Cost/piece in €	1,5
Total cost in € max	**559,5**
Total cost in € min	**168**

The above data are also listed in an excel file.

The indicative total budget for the marking: € 7,339.35 - € 7,730.85 + VAT.

Note: This amount includes the supply and placement of the plates. The design of signs and maps, vegetation cleaning works and technical interventions are not included.

Environmental impacts during the implementation of the project

Impacts on vegetation

The four paths tread on forest roads and existing paths, which for the most part are in very good condition and do not require significant interventions for vegetation cleaning and restoration work.

Impact on the landscape

The works that will be carried out for the creation of the routes will not alter the physiognomy of the landscape. Anthropogenic data will not be imported except for the placement of markings, which will be in accordance with the relevant legislation. Particular attention will be paid to the placement points, the discreet and elegant appearance, the dimensions and the materials that will be used in order for the interventions to be harmonized with the natural environment.

Sound disturbance

It will last for a certain period of time end will concern the works for cleaning vegetation and marking from the equipment that will be used (tools). It will stop when the work is completed.

Impact on the atmosphere

Due to the mild interventions that will take place the only effects that will be caused are related to the creation of dust during the works and will stop upon their completion.

Impact on the fauna

The habitats of the animals that thrive in the area may be disturbed due to the presence of people who will carry out the vegetation cleaning works and marking, as well as the noise that will result from them. The above effects will last for a certain period of time and will cease at the end of the work.

Impact on Natura 2000 Protected Areas

In a previous section of this project, the Natura 2000 Protected Network area and route layout are displayed in a Google Earth background. The route that falls under the Natura 2000 network is the Hiking Route A2, which does not need vegetation cleaning and restoration works. The effects will be minimal, as only one section of one of the four trails is in the Natura 2000 area and will be taken seriously to minimize nuisance.

Environmental impacts during the use of the thematic routes

Impacts on the vegetation

The effects on the vegetation during the operation phase of the project are predicted to be positive, as the restoration of the routes will contribute to their forest protection. Therefore no negative effects are expected.

Impact on the landscape

The only negative effects that could occur when using the network of thematic routes are the possible dumping of rubbish by hikers and cyclists. If information and environmental awareness actions are carried out, they could be reduced.

Sound disturbance

No adverse effects of noise are expected during the use of the themed routes, as visitors will enter either on foot or by bicycle, something that does not cause loud noise.

Impact on the atmosphere

No adverse effects on the atmosphere are expected during the use of the themed routes, as visitors will enter either on foot or by bicycle, something that does not burden the atmosphere.

Impact on the fauna

No significant impact on the fauna of the project area is expected to occur during the use of the network of thematic routes, as the routes move on existing paths or forest roads. Therefore, animals are familiar with the human presence in these areas.

Impact on Natura 2000 Protected Areas

No adverse effects are expected on Natura 2000 Protected Areas when using the Thematic Routing Network.

Conclusion

All routes are addressed to the general public, are interesting, have easy access and are safe for visitors. They are in good condition but all need proper signage with the necessary information (direction, time, distance). Three of the four are circular and at their starting point, Stavroupoli and Forest Village of Erymanthos, the possibility of food and accommodation is offered.

In the two cycling routes only the placement of signs is necessary, while in the hiking route Stavroupoli - Kallithea some restoration works are required. In the final part of the path, which enters the abandoned settlement of Kallithea, the vegetation is dense and in places the stone walls of the arable land maintained by the locals have slipped on the deck of the path.

The hiking route Erymanthos - Leonidas bridge - natural monument - Erymanthos is the most demanding of the others due to its overall length, but has gentle slopes and often the hiker encounters benches, kiosks and fountains where he/she can have enjoyable stops. The three paths that the route crosses are in good condition. They use only marking and optionally gentle restoration work (removal of stones and removal of small branches that interfere with the passage of hikers.

The cycling route starting and ending in Stavroupoli is the easiest of the four. It follows the cycling route starting and ending at the Erymanthos Forest Village, the hiking route Stavroupoli - Kallithea and finally the hiking route Erymanthos - Leonidas Bridge - Preserved Nature Monument - Erymanthos.

Access to the Prefecture of Xanthi

The city of Xanthi is easily accessible for visitors.
• At a distance of 41.2 km to 224 km from Xanthi there are three airports.

Kavala Airport: 41.2 km
Alexandroupolis Airport: 113 km
Thessaloniki Airport: 224 km

• The road network of Xanthi is connected to the axis of the Egnatia Highway.

Kavala: 53.4 km
Komotini: 48.2 km
Alexandroupoli: 100 km
Thessaloniki: 205 km

• There is a connection with Bulgaria through the vertical axis Komotini-Nymfaia.

• Transportation by intercity buses from and to Thessaloniki, Kavala, Komotini and Alexandroupolis.

The problem that the visitor will face is the lack of transport of the city of Xanthi with the mountainous settlements. For Stavroupoli there are itineraries with the buses of Xanthi, but they are not regular. The only way to get to the routes is to have your own vehicle or rent from a car rental company or use a taxi.

Useful area phones

Xanthi

Poison Center: 210 7793 777
Emergency Center (EKAV):166
Hospital: 25413 51100
Police Department: 25410 84116
Emergency telephone number: 100
Safety department: 25410 84138
Traffic police department: 25410 84125
Municipality of Xanthi: 25413 50000
Xanthi Fire Department: 2541 022199
Xanthi Forest Service: 25410 26500
Bus Services: 25410 22684
City Buses: 25410 77977
Hellenic Railways Organization: 25410 22581
Radio taxi: 25410 29977 / 72801-3

Stavroupoli

Health Center: 25420 22475
Police Department: 25420 22100
Stavroupolis Fire Department: 25420 22199
Stavroupolis Forest Service: 25420 22218

Sources of information:

Xanthi Forest Service, Municipality of Xanthi, Xanthi Ephorate of Antiquities, Naturagraeca, Greek Biotope/Wetland Centre, Rodopi Mountain Range Management Agency, Geodata, Region of Eastern Macedonia and Thrace (Strategic & Business Plan for Tourism Development of EMTH Region, 2015)

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