18 TH SEMI ANNUAL **ENVIRONMENTAL MANAGEMENT REPORT** 01.01-30.06.2017

Environment Department OLYMPIA ODOS S.A.

OLYMPIA ODOS

Contents

APPENDICES

A. INTRODUCTION

Based on the Concession Agreement (article 11.2.2& 16.2), as amended and applied with L. 4219/2013 (Gov. Gaz. 269/A/11-12-2013), OLYMPIA ODOS S.A. is obliged, throughout the entire Concession Period to deliver to the Service, a semi annual environmental report. In addition to that, an annual environmental report incorporating the data of the two semi annual reports is submitted to EYPE/MEPPW.This is the eighteenth Semi Annual Environmental Management Report and covers the period 01.01.2017 to 30.06.2017.

During this period, Korinthos-Patras Motorway, a vital road axis, has been completed and opened to traffic along its entire length of 120km, thus making Olympia Odos a safe 202km motorway.

Olympia Odos is one of the major projects of national strategic importance for the economic and social development of the Peloponnese, Western Greece and Epirus, since it links these three Regions with Athens and the port of Patras.

Korinthos-Patras Motorway is one of the most difficult projects constructed in Greece these last years, because of its construction method: **the longer part of the route follows the ancient alignment, meaning that the construction activity along 120km was developing under traffic.** At the same time, large structures were required due to the particularly unstable geological environment along the North coastline of the Peloponnese, while a series of difficulties had to be overcome, such as the crossing of many cities and the simultaneous construction of the Railway Line (ERGOSE).

Olympia Odos is a **modern motorway** with two traffic lanes and an emergency lane per direction, 12 new tunnels of a total length of 12km, 209 bridges, overpasses and underpasses, 29 interchanges that safely connect the motorway to the remaining road network and the roadside areas. Many of the 350 large structures and the 400 retaining structures are impressive constructions that smoothly integrate the motorway into the landscape and offer superb views to the users.

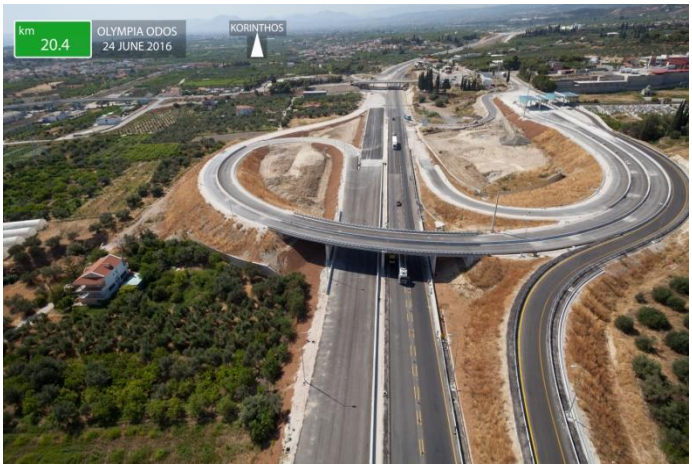
The remaining works, final arrangement of the interchanges, service roads and four sites that are still to be released due to archeological surveys, expropriations and interface with the railway, will be completed by August 31, 2017; this date is the contractual milestone for the completion of the Project.

The project significantly contributed to the local economies by **directly employing more than 3,000 people in the construction and 600 employees in the operation of the motorway, and by supporting multiple employed people as an indirect economic impact.**

The above mentioned semi annual and annual reports shall be publicized on the internet site http://www.olympiaodos.gr created and maintained by the Concessionaire, in accordance with the Concession Agreement.

During the motorway's construction and operation, both the constructor as well as the operator comply with all pertinent provisions, as they are recorded in the Greek Legislation, ensuring the same for their contractors and subcontractors.

Note: all appendices of the present report have been submitted to the Special Environment Service (DIPA) of the Ministry of Reconstruction of Production, Environment and Energy, responsible for the environmental supervision of the OLYMPIA ODOS project and are available upon request.



The work's progress of the Design-Construction Project contractual scope is notified to the Concessionaire, the Independent Engineer and EYDE/MK/EPP through Monthly Progress Reports, which are developed by APION KLEOS CJV as required by the contractual document. Table 1 below briefly present the Project's works progress in the 1st half of 2017.


Γ.Ε. 30-34
Γ.Ε. 26-29
Γ.Ε. 35
Γ.Ε. 18-21
Γ.Ε. 22-25
Γ.Ε. 1-15
Γ.Ε. 16-17
Πάτρα
Πύργος
Κόρινθος
Αθήνα

TABLE 1 – PROJECT'S WORKS PROGRESS IN THE 1st HALF OF 2016

G.U.	SECTION	ACTIVITY	PROGRESS
1-3 & 35	**EL-KO & PBP**	Traffic Management.	Continuous process.
		Irrigation system installation.	In progress.
		Steel barriers installation. (ΜΣΟ 13).	In progress.
		Traffic Management.	Continuous process.
		Marking and signing works.	Completed.
		H/M works at the motorway's open sections.	Completed.
4-15	**EL-KO**	Irrigation system installation.	In progress.
		Culvert and structure restoration works	In progress.
		Asphalt restoration works.	In progress.
		Works at EL-KO Administration building.	In progress.
		Traffic Management.	Continuous process.
		Storm-protection works: Box culverts construction	Completed.
		Bridges, Over-Passes, Under-Passes construction	In progress.
16-17	**KO-PA**	Toll Stations: Construction of Zevgolatio FTS building (Toll Administration Building, Tunnel. Canopy, FTS Plaza),	Completed.
		Toll stations construction: Zevgolatio & Kiato lateral tolls.	Completed.
		Technical Base construction: architectural works, E/M infrastructures, steel constructions.	Completed.
		Safety barriers & fencing construction.	Completed.
		H/M works at the motorway's open sections.	Completed.
		Traffic Management.	Continuous process.
18-21	**KO-PA**	Retaining walls construction (R282, G255, G283, G249, G279, etc).	In progress.
		Bridges, Over-Passes, Under-Passes (K203, K206, K214, B211, etc).	In progress.
		Box culverts construction (L110, L115, L119, L120,etc.).	In progress.
		Public Toilets at G.U. 19.	In progress.

		Drainage works (Lykoporia I/C).	In progress.
		Asphalt works in Local Roads.	In progress.
18-21	**KO-PA**	Asphalt works at G.U. 19.	In progress.
		E/M works at G.U. 19.	In progress.
		Traffic Management.	Continuous process.
		Earthworks/embankments at G.U. 22-25.	In progress.
22-25	**KO-PA**	Bridges, Over-Passes, Under-Passes (A344, A508, B343, etc).	In progress.
		Asphalt works at G.U. 22-25.	In progress.
		E/M works at G.U. 22-25.	In progress.
		Traffic Management.	Continuous process.
		Geo-mechanical and structural monitoring of Platanos village.	Continuous process.
		Storm-protection works: Box culverts construction (L416, L444, etc).	In progress.
26-29	**KO-PA**	Retaining walls construction (G486, R458, etc.).	In progress.
		Bridges, Over-Passes, Under-Passes (K290, K291, K302, etc).	In progress.
		Asphalt works at Local Roads: Kalavrita I/C, etc.	In progress.
		Asphalt works: 69+500-74+700 (AK), 69+500-71+500 (ΔΚ), 75+660-83+700 (ΔΚ), 74+700-83+700 (AK), etc.	In progress.
		Traffic Management.	Continuous process.
		Embankments/Cuts :93+300 - 94+100, 94+100 – 95+500, etc.	In progress.
		Storm-protection works: Box culverts construction (L504, L507, L580, etc.).	In progress.
		Retaining walls construction (R572, G510, etc.).	In progress.
		Bridges, Over-Passes, Under-Passes (K306, K326, etc.).	In progress.
30-34	**KO-PA**	Drainage works: 90+100-109+000.	In progress.
		Hydraulic works: 90+100-109+000.	In progress.
		Parking area construction (99+228, 99+574, etc.).	In progress.
		Safety barriers & fencing construction. (90+100-109+000).	In progress.
		Signing works (90+100-109+000).	In progress.
		Asphalt works at G.U. 30-34.	In progress.
		E/M works: 90+100-95+500, etc.	In progress.

Rehabilitation works at culvert C27

Construction of Pump Station at k.p. 88+040

Finikas riverbed arrangement – Construction of M2-A3 gabion baskets

CSC – Customer service building Rio tolls

Overpass A344 at Arachovitika I/C

B211 (SR KP 32+763) - Construction of precast beams

K.p. 33+300-37+000 R.B. - Fencing works

K.p. 33+300-37+000 R.B. - Installation of steel safety barriers

K.p. 52+400-52+810 R.B. - Asphalt works

O530 53+174-53+247 L.B..: Drilling of piles

Installation of side signs

Safety barriers at SR 004L

R293 – Construction of retaining wall

Interchange of Lykoporia – Installation of cables, bases and lighting poles

SR033L – Asphalt works of service road

B PROGRESS OF THE ENVIRONMENTAL AGENDA

1. GENERAL

Appendix A of Annex 2 of the Concession Agreement states the Common Ministerial Decisions (CMD) and the Law comprising the Project's environmental licensing and forming the main framework for the monitoring of the progress of the Project's environmental issues.

More specifically :

1. Law 2338/1995, Thiva I/C – Elefsina FTS
2. CMD 126393/16.02.2007, Elefsina – Korinthos (excluding Kakia Skala section), as amended and currently applies via Decision 4281/26.01.2017 (ΑΔΑ: Ω4ΛΠ4653Π8-8ΝΑ)
3. CMD 18112/20.09.1996, Kakia Skala, as amended and currently applies via Decision 4281/26.01.2017 (ΑΔΑ: Ω4ΛΠ4653Π8-8ΝΑ)
4. CMD 92073/16.05.1994, Isthmos – Ancient Korinthos I/C, as amended and currently applies via Decision 4281/26.01.2017 (ΑΔΑ: Ω4ΛΠ4653Π8-8ΝΑ),
5. CMD 104892/16.06.2006, Ancient Korinthos I/C – Patra By-Pass K1 I/C as amended and currently applies via Decision 25406/25.05.2017 (ΑΔΑ: 62ΘΚ4653Π8-7ΨΖ) ,
6. CMD 16049/12.08.2013, Patra By-Pass, as amended and currently applies via Decision 6666/26.01.2017 (ΑΔΑ: ΩΛΝ64653Π8-ΠΛΣ).

2. ENVIRONMENTAL PERMITTING AND ENVIRONMENTAL MANAGEMENT

2.A ENVIRONMENTAL PERMITTING

Environmental Impact Study (EIS) was elaborated and approved (acc. to L.4014/2011) in order to obtain Environmental Approval for the 3 requested Borrow-pits for the completion of the KO-PA section's construction. The approval process was completed with the issuance of a new ETAD (ΑΔΑ: 62ΘΚ4653Π8-7ΨΖ).

It should be noted that, the Constructor, via doc. QES/MFR/ECH/ADM/L/2016/010615/8-8-2016, QES/MFR/ECH/ADM/L/2016/010457/29-6-2016, QES/MFR/ECH/STA/L/2016/010712/6-9-2016 and QES/MFR/ECH/STA/L/2017/011573/7-3-2017 informed the responsible services (Department of Natural Resources of PWGIDA, Project's Owner EYDE/KESP/P&VE, DIPA/YPEN) that it does not intend to develop and exploit the quarries in "Agrilitses", "Tsampa" ,"Albani" (Paliovouna or Klokova) and "Psili Rahi #2 & #3» respectively.

The following Designs (STID,EIS,TDS) were approved by DIPA.YPAPEN (former EYPE/YPEKA):

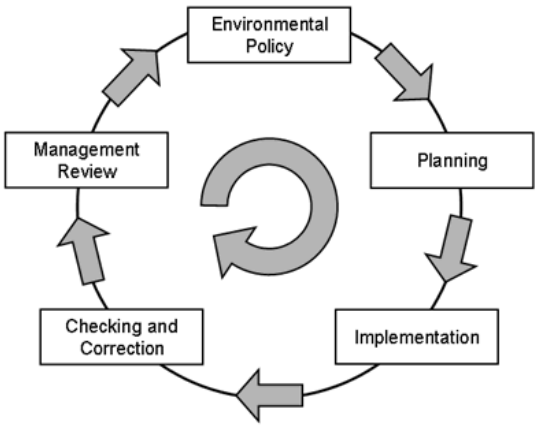
- Organization and operation of infrastructure and support worksite at "Potami" Aigialia,
- Technical Exploitation Design of aggregate quarry (borrow pit) at "Vamvakies", Aigialia
- For the construction and operation of one (1) Flood Detention Pond in Akrata's MSS of KO-PA Motorway
- For the construction and operation of five (5) Flood Detention Ponds in KO-PA Motorway and
- For the operation of three (3) borrow-pits at "Zorzi", "Desi or Souri" and "Vamvakies"

- In the framework of complying with the Concession Agreement environmental requirements, the approved environmental terms and the required environmental permits:

- Requests are submitted, when required, in order for forest and archaeology related permits and official opinions to be issued.
- Cooperation is in progress with the Public Utility Organisations in order to relocate various networks located within the Project.

2.B ENVIRONMENTAL MANAGEMENT

In the construction as well as in the operation phase, the procedures and directives for the works' environmental management are implemented by the Constructor, aiming at the in compliance with the terms and constraints of the above decisions.
APION KLEOS submits to OLYMPIA ODOS S.A. monthly reports regarding the progress of the construction related works.



Within the framework of the contractual obligations, the Constructor has developed an Environmental Management Plan (EMP) for the Project in accordance with ISO 14001:2004.
The Operator in order to comply with the Project's environmental terms and the implementation of an Environmental Policy has developed an Environmental Management Plan for:

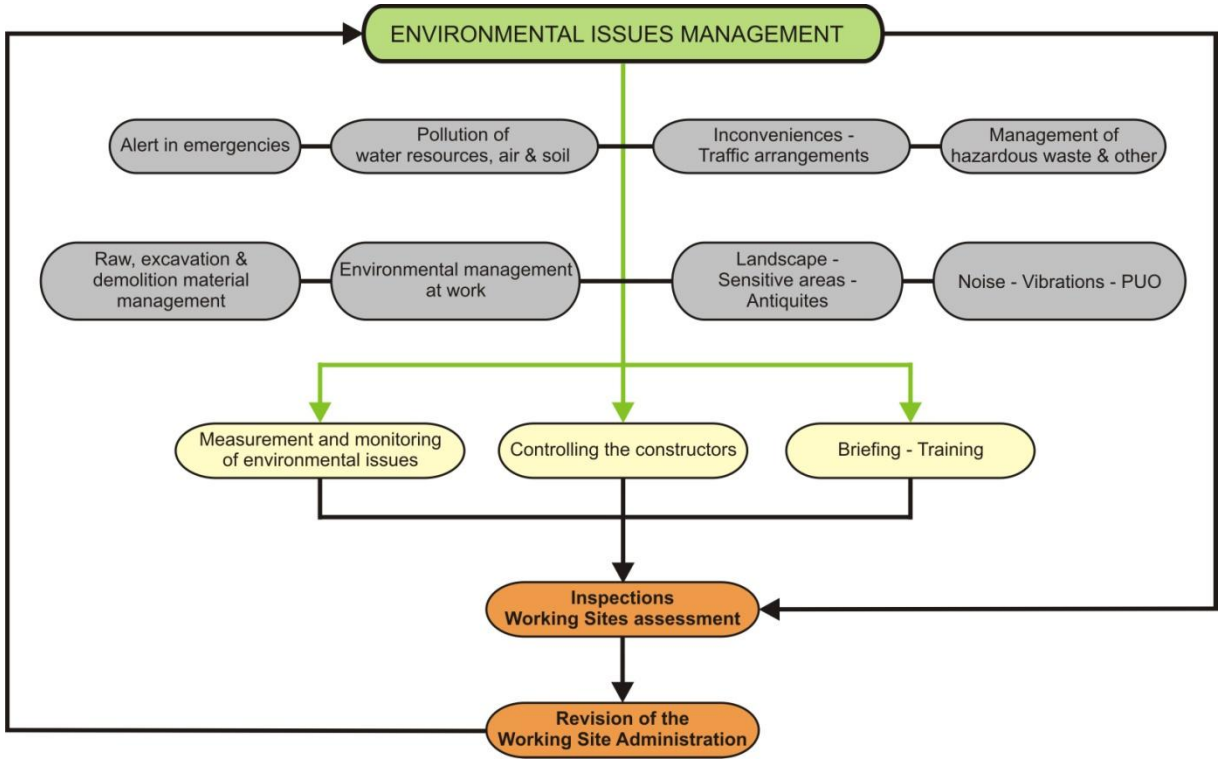
- controlling, monitoring and dealing with the environment impact of the project
- optimum management of liquid and solid waste of the Project
- promotion of best practices to reduce energy and resources consumption

The EMP includes the organizational structure, planning actions, duties allocation, technical methods, procedures as well as processes for the development, implementation, achievement, revision and support of the Constructor's environmental policy as well as the compliance with the Project's environmental terms.

The EMP constitutes the basic and overal framework for the management of environmental issues, whereas the procedures and directives area tool for the rational handling/ management of each environmental issue, taking into account the pertinent legislation and the decisions applicable to each case.

The advantages from implementing the EMP pertain to the following:

- saving natural resources (reduced consumption of raw materials, energy, water etc),
- reducing the waste and by-products process and disposal cost, minimizing fines due to law violations,
- reducing insurance costs by reducing the potential risks and having contingency plans


ENVIRONMENTAL ISSUES MANAGEMENT
Alert in emergencies
Pollution of water resources, air & soil
Inconveniences - Traffic arrangements
Management of hazardous waste & other
Raw, excavation & demolition material management
Environmental management at work
Landscape - Sensitive areas - Antiquites
Noise - Vibrations - PUO
Measurement and monitoring of environmental issues
Controlling the constructors
Briefing - Training
Inspections Working Sites assessment
Revision of the Working Site Administration

3. ENVIRONMENTAL PARAMETERS MONITORING PROGRAMME (NOISE MONITORING TRAFFIC LOAD VIBRATIONS, AIR QUALITY, WATER

3.A NOISE MONITORING

- Korinthos Patra section

In cooperation with TTA & E S.A., the locations along KO-PA section where noise-barriers must be promptly installed were updated leading to the respective amendment of the Final Special Acoustic Designs for the Calculation and Implementation of noise barriers.

Table 3 provides the updated noise-barriers locations:

TABLE 3:

POINTS OF NOISE-BARRIERS IMMEDIATE INSTALLAITON

NOISE BARRIER		DIRECTION	MINIMUM LENGTH	SOUND-BARRIER HEIGHT
From k.p.	**To k.p.**			
7+822,5	7+956,5	Patra	134	3
20+566,5	20+796,3	Korinthos	230	3,5
26+804,2	26+866,2	Patra	62	4,5
26+059,0	26+231,5	Korinthos	172	4,5
26+524,2	26+705,0	Korinthos	182	4,5
37+176,6	37+240,6	Korinthos	64	4,5
39+142,1	39+241,6	Patra	100	4,5
40+070,3	40+174,5	Patra	104	3,0
39+776,5	39+834,1	Korinthos	58	3,5
40+074,2	40+160,3	Korinthos	86	4,0
44+920,5	44+986,2	Korinthos	70	4,5
53+709,1	53+879,3	Patra	168	4,5
53+880,1	53+964,3	Korinthos	100	4,0
59+152,0	59+192,0	Patra (south)	40	4,5
59+180,1	59+241,8	Patra (south)	62	4,5
59+379,9	59+535,3	Patra (south)	156	4,5
59+535,3	59+607,2	Patra (south)	72	3,5
76+078,8	76+186,8	Patra	110	3,5
82+453,8	82+541,8	Patra	88	3,0
83+645,4	83+718,4	Korinthos	74	3,5
88+494,3	88+590,3	Patra	96	4,5
91+440,0	91+623,7	Patra	184	3,0
91+816,7	91+943,8	Patra	128	3,0
96+183,6	96+259,6	Patra	76	4,0

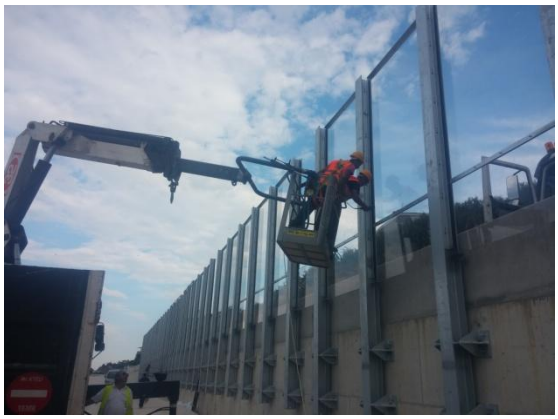
96+957,5	97+017,5	Korinthos	60	3,0
97+192,6	97+424,6	Patra	232	3,0
97+772,5	97+831,5	Patra	58	3,0
97+104,9	97+254,9	Korinthos	150	3,0
98+852,6	98+964,9	Patra	110	3,0
98+710,9	98+797,0	Korinthos	88	3,0
107+843,6	107+990,6	Korinthos	144	3,5
111+590,9	111+713,9	Korinthos	122	3,5
111+794,9	111+879,0	Patra	84	4,0
111+879,0	111+968,2	Patra	90	3,0
111+713,9	111+922,1	Korinthos	208	3,5
112+825,9	112+889,3	Patra	66	3,0
114+555,8	114+681,7	Korinthos	126	3,0
114+770,5	114+852,4	Korinthos	82	3,0
115+353,1	115+429,2	Korinthos	76	3,0
115+676,6	115+721,1	Korinthos	44	3,5
115+701,7	115+769,3	Patra	68	3,5
115+769,3	115+883,4	Patra	114	3,0
115+721,1	115+841,4	Korinthos	120	3,5
116+746,1	116+812,0	Patra	66	3,0
118+006,6	118+190,5	Patra	184	3,5
117+484,3	117+527,6	Korinthos	43	3,5
117+527,6	117+686,4	Korinthos	160	4,5
117+686,4	117+739,1	Korinthos	53	4,0
117+739,1	117+773,7	Korinthos	34	3,5
118+137,9	118+237,4	Korinthos	100	3,5
118+190,5	118+362,9	Patra	172	3,0
118+67,1	118+767,1	Patra	110	3,0
118+237,4	118+327,2	Korinthos	90	4,5

After KAPA Dir./ Dep. for Noise, Vibration & Radiation approved the Special Calculation & Implementation Acoustic Designs for "Korinthos-Patra Motorway", which cover the full update and detailed calculation for mapping the environmental traffic noise under EU Guideline 2002/49/EK and CMD No 211773/2012, their construction/installation has already been completed of 10000 m^2 of noise barriers in the following sections of "Korinthos-Patra":

S/N	From k.p.	To k.p.	Direction
1	7+820	7+956	Patra
2	20+560	20+800	Korinthos
3	26+804	26+866	Patra

4	26+059	26+231	Korinthos
5	26+522	26+705	Korinthos
6	37+175	37+240	Korinthos
7	39+142	39+242	Patra
8	39+776	39+835	Korinthos
9	40+070	40+174	Patra
10	40+074	40+158	Korinthos
11	44+918	44+991	Korinthos
12	53+702	53+880	Patra
13	76+076	76+186	Patra
14	82+452	82+539	Patra
15	91+440	91+623	Patra
16	91+815	91+945	Patra
17	96+955	97+017	Korinthos
18	97+104	97+254	Korinthos
19	97+190	97+314	Patra
20	98+710	98+798	Korinthos
21	107+843	107+990	Korinthos
22	115+350	115+433	Korinthos
23	115+676	115+839	Korinthos
24	115+700	115+883	Patra

The noise barriers proposed in the above Designs are of the same type as the ones already approved and constructed for “Elefsina-Korinthos” and “Patra By-Pass”.



- Existing Sections (EL-KO & PBP)

Following the "Special Acoustic sound barriers design" approved by EYPE/MEECC via document No 122052/8.3.2010 and KAPA Dir./Noise, Vibrations & Radiation Dep. document No 110987/6-5-2015, the installation of sound barriers at EL-KO section was completed and delivered to OLYMPIA ODOS S.A.

In compliance with the Special Conditions of Contract and the approved Environmental Terms of the Project, Olympia Odos Operation, within the first semester 2017 has carried out a road traffic noise monitoring program in the section "Elefsina-Korinthos" (EL-KO).
This program includes 24/7 acoustic measurements of the following RTN indexes:

- Percentage indexes L_1, L_{10}, L_{50}, L_{95}, L_{95}, maximum L_{max} and minimum values L_{min},
- L_{10} (18 h.)
- energy equivalent average sound level L_{Aeq}(08.00-20.00) according to legislation in force (MD17252/20-5-92 (GG B395/13-6-92)
- energy equivalent average sound level L_{Aeq}(24h) and
- indexes $L_{de,}$, L_{day}, L_{d-e}, $L_{evening}$ & L_{night} according to MD 211773/2012 (GG 1367/27-4-2012).

In PBP section, most of the sound barriers have already been completed and their installation is planned to be completed within the exclusive deadline defined by the Concession Agreement.

Noise Barriers locations at PbP

More specifically, taking into account the aesthetic/architectural requirements and the restrictions imposed by the constructions' static adequacy and road safety elements, the barrier surfaces created with transparent sheets used as much as possible are obviously not making the residents of the areas behind them feel "caged".

The barriers' formulation was based on the following architectural design principals:

- Selection of the proper dimensions for the vertical walls and combination with the transparent panels they support so as to achieve the best possible proportion of transparent and non-transparent parts of the overall barrier superstructure.

- Use of horizontal scotias on the narrow walls (they facilitate the wall's visual integration into the natural environment by breaking up its surface while also being compatible with the vehicles' horizontal direction).

- Alternation of walls and transparent panels so as to avoid – to the extent possible – a monotonous repetition of one single pattern.

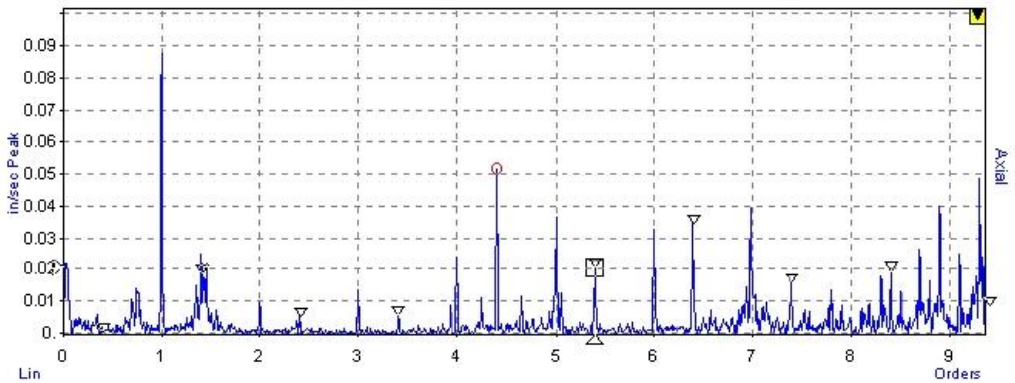
- The reinforced concrete non-transparent panels have been placed with proper width variation so as to give a sense of varying degrees of density. This is done in an attempt to distract the viewer from any single part of the construction and make him/her see the whole picture.

Please also note that protective measures have been taken to prevent birds from crashing on the barrier's transparent parts. To that end, suitable bird images have been stuck on the panels following the successful methods used in other similar cases.

Stickers are the most widespread method in Europe since it requires no a priori selection of potential sections to paint. Rather, one can a posteriori apply the stickers on the locations where birds are establish to fly and hence there is a risk of them crashing on the panel.

3.B TRAFFIC LOAD VIBRATIONS

- During the Project's execution, due care is given to minimise vibrations caused by the construction activities to buildings and sensitive locations within the Project's zone of influence.



To that end, the installation is foreseen – at critical points – of measurement and recording systems of all significant variables of the phenomenon (soil movement,

speed and acceleration). The local working sites will keep complete records of the recorded data.

In parallel, the Operator carries out traffic counts at the Project's toll plazas. More specifically, each month the company drafts an operation report, including precise traffic data, i.e. number of vehicles passing through all toll plazas and the traffic composition; said report is duly submitted to the competent supervising Services of the Ministry of Infrastructures, Transport and Networks. The company has at its disposal both the primary and the processed traffic data.

3.C AIR QUALITY AND METEOROLOGICAL DATA MONITORING

Complying with the Concession's Agreement environmental requirements, the relevant technical specifications were determined referring to the procurement, installation and commissioning of two (2) permanent Air Quality & Meteorological Data measurement stations to monitor the impact of the motorway on the wider region.

Station at Tripoli Semi-I/C

Station at Glafkos I/C

The above stations coordinates are as follows:

Location	Latitude	Longtitude
TROPOLI SEMI-I/C	37°55'6.49"B	22°54'28.38"A
GLAFKOS I/C	38°12'13.34"B	21°46'16.88"A

Please note that the installation of one (1) more permanent Air Pollution & Meteorological Data station in Egio (direction to Patra) is on progress and its completion is foreseen until 31-8-2017.

Please see below the Glafkos I/C and Tripoli Semi-I/C stations' pollution values:

Station	Suspended particles PM10 & PM2.5	CO	NO NO2 NOx	SO2	O3	BTEX
Korinthos	x	x	x	x	x	x
Glafkos	x	x	x	x	x	x

The following meteorological parameters are also cited:

- Wind direction and speed
- Atmospheric rtemperature and relevant humidity
- Sunshine
- Precipitation

Based on the latest air quality report which can be found as Appendix 5 of the present report, we can draw the following coclusions :

During the first semester of 2017, regarding the **monthl**y, as well as the **daily** variation of pollutants (SO_2, CO, NO_2, O_3, $A\Sigma_{10}$, and $A\Sigma_{2,5}$) and according to the available data, no exceedance cases were observed according to the legislation in force.

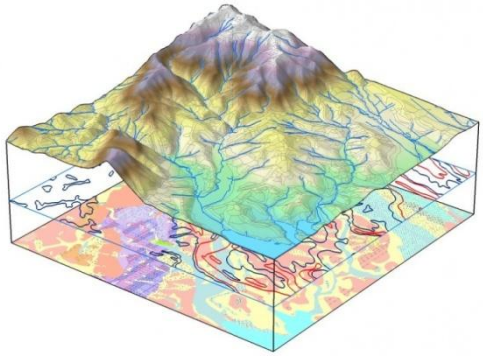
Regarding limit values, the maximum daily average PM_{10} value was exceeded 1 time in Korinthos and six (6) times in Patra. The limit value should not be exceeded more than 35 times a year. In Korinthos the exceedance was observed on 13/05/2017, whereas in Patra on 26/2/2017, 29 & 30/4/2017, 13&14/5/2017 and 30/6/2017. In both stations the exceedances were attributed to African dust.

An extensive results analysis of the pollutants in Korinthos and Patras stations, as well as the drawing of safe conclusions, are only possible upon data collection from the measurements carried out during the second semester 2017.

3.D WATER MONITORING

Requests have been submitted to the competent Water Public Services pertaining to the permit for water use of water drilling works, so as to cover the irrigation, fire fighting and other needs that shall arise in the Project's short-term parking areas along KO-PA section. These requests are accompanied with the equivalent hydro-geological designs and technical reports.

s/n	Name	K.P.
1	EL-KO 1	13+750
2	KO-PA 2	28+750
3	KO-PA 3	39+150
4	KO-PA 4	62+700
5	KO-PA 5	87+300
6	KO-PA 6	111+100

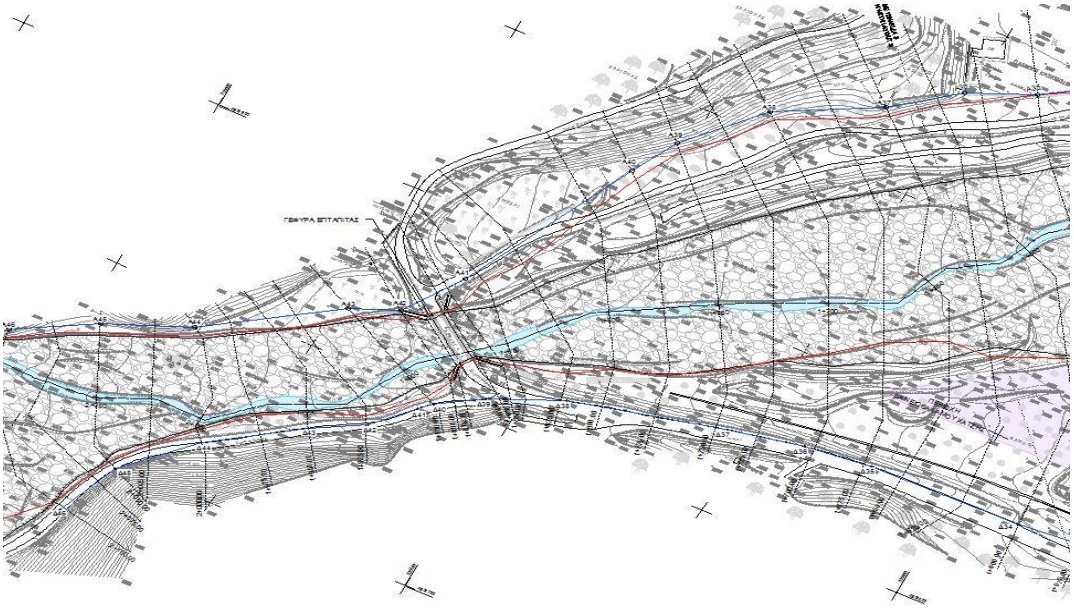


Towards enforcing article 5 law 3010/2002 (as amended via L. 4258/2014 and currently applies) and in accordance with the provisions of article 11.2.1 of the Project's Concession Agreement, the CJV proceeded in the elaboration of stream delineation designs (*D. Sotiropoulos & Co, L.S. Lazaridis & Co*) for the stream's section extended along the Projects construction zone or abutted to it and along Korinthos - Patras section for five hundred meters downstream excluding the cases where downstream to the Road Project and up to 500m. HSRL/OSE structures exist or another delimination is in place. The designs have been submitted to the Technical Services of the local Prefectural Administrations for approval and any other administrative act necessary in order to be rendered fully effective.

Within the year the following partial delineation designs were submitted to the Technical Works Department in Korinthos P.A:

1. "Dritsa" stream (k.p. 4+229), around L103 structure's position
2. "Dristiliza" stream (k.p. 8+491), around L109 structure's position
3. "Gourgourotis" stream (k.p. 11+660), around L116 structure's position
   "Filiza" stream (k.p. 13+882), around L120 structure's position

The delineation designs for the rest KO-PA section's streams are under way.



3E . ENERGY AND CLIMATE CHANGE

In order to minimize the high energy costs of the project and in the meantime contribute to the battle against climate change, Olympia Odos has launched an extensive energy saving program which shall be implemented in several phases. The first phase of its implementation concerns the older tunnels lighting system, situated in Eleysina-Korinthos and Patras-by-Pass sections, which have the highest energy consumption of Olympia Odos motorway. Beginning of 2016, we have conducted a detailed power consumption measurement campaign for each tunnel in Kakia Skala and Patra-by-pass. These measurements permitted to clearly identify the consumption sources and period (lights, jet fans, buildings, pumps…) and concluded that replacing the HPS lighting by LED would generate important savings.

I. Power Consumption

Using the historic power consumption and billing information for years 2012, 2013, 2014 up to August 2015, the consumption and associated cost reach on average per year for the existing section tunnels in Kakia Skala and Patras by Pass, can be seen bellow. At the same time, a study for replacing the currently installed HPS (High Pressure Sodium) lamps in the existing sections was carried out.

The LED lamps are more durable and they don't burn, but just fading slightly while aging. The initial tests show that they will last more than projected with minimal maintenance while offering a very good lighting result, even if they lose some lighting intensity this can be compensated using the dimming (HPS lamps don't have this function).

According to our studies the yearly savings in the electricity bill after the implementation of the LED technology in the Existing Tunnels of our Project is:

	Kakia Skala		Patra by Pass		ALL	
Electricity consumption HPS (kWh)	5,522,400		6,445,200		**11,967,600**	
Electricity consumption LED (kWh)	2,340,000		1,502,600		**3,842,600**	
Yearly difference (kWh)	3,182,400	-58%	4,942,600	-77%	**8,125,000**	**-68%**
(consumption only for lighting						

II. Pilot Implementation - Tunnel "Skiron" at Kakia Skala and reduction of CO2 emissions

A pilot implementation to assess the efficiency of the dimmable LED lighting approach was carried out for one short (360m) tunnel, 'Skiron' at Kakia Skala from K.P. 48+690 to K.P. 49+050.

Before the HPS luminaries' replacement, a power consumption meter was installed at Skiron tunnel, to log measurements between 5 of December 2016 up to 6 February 2017. Subsequently power measurements were conducted for two months in order to assess the cost and energy efficiency of the new installation.

Further to the energy and cost savings, a very big difference will be in the total energy footprint since the CO_2 emissions will be much lower using the LED technology. Greece's carbon intensity for the fuel mixture for electricity production is 369 gram/kWh (for the given period), based on the data provided by IPCC 2014:

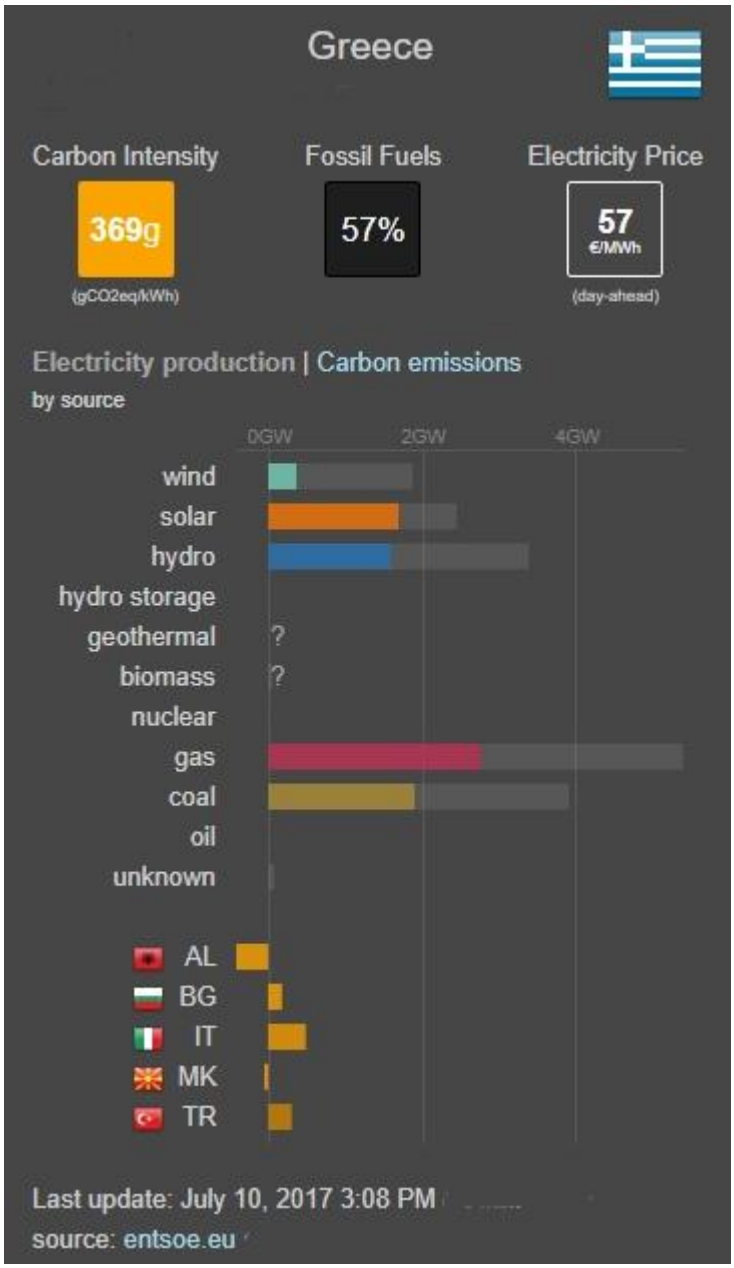


Figure: Fuel mixture for electricity production in Greece

Source: https://www.electricitymap.org/?wind=false&solar=false&page=country&countryCode=GR

Taking into account the projected savings in KWh using the LED technology and the above fuel mixture, there will be a substantial difference on the CO_2 emissions:

KWh	CO_2 gr/kWh	CO_2 Emissions (tn)
8,125,000	369	2998

4 ENVIRONMENTAL MANAGEMENT, WASTE MANAGEMENT, HAZARDOUS AND NON HAZARDOUS MATERIALS

During the motorway's construction and operation, both the constructor and the operator as well as the cooperating contractors and sub-contractors comply with all pertinent provisions, according to the Greek Legislation. Joint Venture APION KLEOS in the frame of its Environmental Management Plan has developed procedures for the management of waste.

We prioritize the measures and actions towards an effective and rational waste management for the sustainable use of resources and the prevention of downgrading or the restoration, preservation or improvement of the environment.

Waste management is primarily based on sorting waste (prevention, re-use, recycle, recover, final disposal) and their environmentally proper management. The ultimate goal is an more effective management of natural resources and waste by reducing the produced waste, re-using it, recycling and recovering it and managing it environmentally properly thereby reducing as much as possible the risk to human health and the environment.

The respective "Hazardous Waste Management Procedure" has been prepared for the management of waste, documenting the existing legislative framework and the means/ directives for their management.

Patras OMC

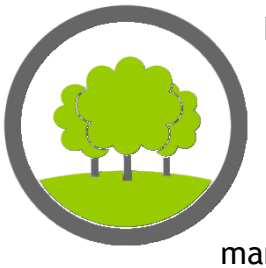
Akrata TB

The results of the Project's environmental performance, such as material recycling, mineral oil, batteries, vehicle tyres, hazardous materials, polluting substances, area restoration, excavation and demolition products etc management are presented in Appendix 4 of this Report.

Since the first semester of 2017, Olympia Odos has been registered to the Electronic Waste Registry and submits digitally its reports regarding the waste production associated with the operation of the project, according to the JMD 43942/4026/2016 (B' 2992) and article 42 of the law 4042/2012 (A' 24).

5 ENVIRONMENTAL IMPACT RESPONSE MEASURES DURING CONSTRUCTION

a. Geomorphology - Soil



In order to protect the soil from fuel leaks etc special areas with sealed floor and graded collection drain that ends in a sedimentation basin are provided in order to swill the machinery.

In the machinery maintenance or in other suitable and safe area, used oils from black oils change are temporarily stored. The management of the used oils is in accordance with the provisions of PD 82/2-3-2004. By the PD is given priority to collect and dispose used oils for regeneration treatment.

All necessary measures are taken in order to avoid erosion or filtration at the slopes during the tunnel construction and the water and clay supply to the final acceptor. The sediment before being disposed is being treated in apposite sedimentation tanks.

b. Geology

Special attention shall be paid during construction of sections passing by geologically sensitive zones, as in those areas stability problems might emerge at the formations. In those sections shall intervene as little as possible.

c. Ecosystems - Vegetation

In the areas where the technical structures are constructed, and mostly in the areas where bridges are constructed, all the necessary precaution are taken in order to avoid any impact on the riverside ecosystems. All possible efforts are made in order to use the fewer possible quantity of concrete. Where possible the use of gabions is preferred and the proper application/use of additives (e.g. betonite), which are used in order to add improved features to the boring effluents during the borings.

Especially during the dry period, in the construction phase, all the necessary measures are taken in order to avoid dust emissions (infusion of earth materials, trucks' load covered with nets).
In some case the cleared vegetation originated materials are cut and temporarily stored in mounds in order to create organic fertilizer for future use in planting technical activities. After clearance, excavation, collection and temporary disposal of the superficial fertile soil layer follows.

d.Dust emissions avoidance and reduction

During the Project's execution aerial pollutants are released and especially dust from the working sites. Depending on the distances from the nearest buildings (e.g. residencies) they could have adverse implications. This dust release is dealt with (by the local Working Sites) with great success by use of the following measures.

Control of the dust release is affected through simple management methods and the impact level greatly depends on the control measures applied at the source as follows:

- Sprinkling and often – effective clearing of routes within the site and the excavation areas,
- Interventions at the work surface – front where necessary, focusing on the excavations,

- Rain-water run-off to prevent particles from re-entering the atmosphere,
- Maximum speed limits along all non-asphalt-paved surfaces,
- Along the routes of the road building vehicle, the usual control methods are applies in the case of non-asphalt-paved routes ie, asphalt paving where feasible, stabelised pavement infrastructure, water soaking and traffic regulations (*aiming to reduce dust in the dry season and traffic-indiced erosion in the wet season)*,

- Sprinkling during transfer and deposit of sand, aggregates or/and excavation materials significantly reduces released dust,
- According to greek law, all trucks transfering loose materials (e.g. excavation products) are covered. The vehicles entering or leaving the working site are clean.
- It is forbidden for the trucks to pass through settlements during quiet hours,
- Liquid rather than dry concrete is used in the mixing and preparation,
- All machinery and equipment used in works are in good condition and fulfill the manufacturer's specifications, thus minimising dust release.

Combined, the above measures comprise the so-called Best Management Practises. Given that:

- it is a linear project with many construction activities being conducted in parallel and now fast-track under the extremely tight completion time-schedule,
- the water resources available along the Project during summer season are limited,

any impact after the above measures are deemed slightly negative with a very short-term effect and can be dealt with.

The benefits from the project's timely completion will reach the residents of the areas temporarily "affected" as well as all other used (visitors, tourists etc) and will positively influence all financial parameters and activities in the areas (road safety, accessibility, faster transportation of people and goods, reduced transportation costs etc).

In any event, the local Working Units are conducting PM10 Dust Measurements under standardized ELOT EN 12341 method, with a certified sampler, by a certified firm.

During the measurements, the motorway's construction activities are conducted normally. Each measurement lasts 24 hours and runs through one calendar day so that the findings can be directly compared to the maximum rates / target aims set by the current legislation.

Atmospheric PM10 measurements are covered by the current Official Implementation Field of Certification (No 329-3). The methodology to estimate suspended particles has a certified accuracy measurement and it provides a full depiction of the pollution's changes over time along with a good mapping of an area's pollution levels.

The measurements findings reports can be found at the local Working Units' offices while they have also been copied to the Project's Independent Engineer.

6 VEGETATION – PLANTING - ROAD CLEANING

The vegetation and planting pertain to the environmental integration and protection of the areas adjacent to the project.

- Existing Sections

In order to facilitate the fulfillment of the above obligations, a Final Planting Design (*S. Voutsinos & Co*) for the surrounding areas, the respective I/Cs, slopes and median strips was elaborated for Elefsina – Korinthos section. This design was approved by the Project's Independent Engineer. The planting process has been completed according to the approved time-schedule.
The planting of Patra By-Pass is in very good shape due to the "recent" construction and maintenance for the last period of time.

Current state of PBP

- New Sections

The Planting Design focuses on the aesthetic incorporation of the new Korinthos-Patra Motorway and the secondary Local Road Network works into the wider narutal environmental of the area they are passing through.

The Planting Design is prepared according to the Design Investigation Standards (DIS).

Please note that all planting designs concerning the road project Korinthos-Patra have been completed.

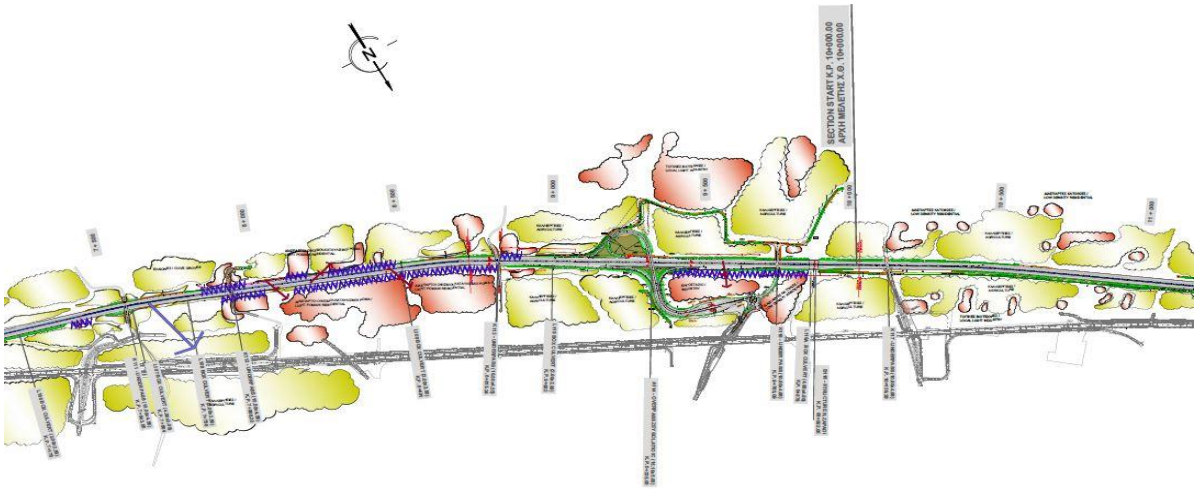
It aims at describing the prevailing conditions on site and the nature of the problems which have arisen due to the road's construction. The proposed planting interventions aim to the best possible restoration of the damages caused to the landscape by the Motorway's construction.
The planting is designed with the main target of adjusting the new plants to the existing vegetation. Trees and bushed are planted taking into account the volume they will take at the final stage of their development.

The proposed planting takes into account the following fundamental principles:

- Traffic safety
- Planting – landscape relationship
- Road equipment

During the arrangement of the various greenery (medium, high) to be planted, the following is taken into account:

- ensuring the area's unobstructed function
- the area's general and specific ecological conditions
- the area's aesthetic requirements
- creating natural continuity of the area's flora.



The species to be planted are selected based on the following:

- Their properties (final dimensions, τάσεις, hardwood, evergreen, flowering season, flowers colour etc.)
-The area's ecological data
- The functional aim they are intended to fulfill (decoration, soil retention, groups, growth etc.)
- The local micro-climate
- Ensuring aesthetic harmony and biological equilibrium between the species comprising the groups, growths etc.
- The dimensions of the area and each separate location
- The species' market availability
- The species' locality and that they represent the surrounding area.

Cut & embankment planting standards

The OLYMPIA ODOS OPERATION S.A. (Operator) personnel and the competent subcontractors carried out regular trimming, weeding and cleaning works for the most part of the project, and specifically of 97 km of central reserve, 402 km of shoulders and of the 28 interchanges and their branches, as well as of the parking areas.

Cleaning

During the first semester of 2017, the Operator's personnel in collaboration with external subcontractors carried out and still does regular cleaning works along the entire project (202 km), in the 28 interchanges, the toll stations (lanes, booths, pavement, surrounding area, buildings), in the tunnels and in the 45 parking areas (washing, sweeping, waste removal from bins and surrounding areas).

It is noted that cleaning pertains to the entire cross section until the expropriation limits.

7 MANAGEMENT OF EXTRAORDINARY INCIDENTS, ENVIRONMENTAL ACCIDENT, GREEN AREAS FIRE

During the operation of the working sites, all fire prevention measures are taken in order to prevent fire coming potentially from working machinery, working teams, transportation of explosives and to minimize the danger of fire being expanded to adjacent areas. The way according which the fire belt is organised, was controlled and approved by the competent Fire Service before the beginning of the works.

More specifically, fire management measures are taken in order to protect forest areas on both sides of the road.

Every year before the commencement of the fire period, the Operator of the Project sees to clean the shoulders and the boundaries of the road from greens that may be the cause of a fire.

The Concessionnaire has also appointed a specialized forestry expert to develop a report on the condition of the vegetation and on the fire protection measures that need to be taken.

The Concessionaire, undertook a series of forest fire prevention measures along the Korinthos Patra NNR within the boundaries of the project.

This intervention has been decided in order to effectively deal with the results of the suspension of the construction activity on our Project and despite the fact that every year before the commencement of the fire period, the Operator of the Project sees to clean the shoulders and the boundaries of the road from greens that may be the cause of a fire.

Within the framework of elaborating the fire hoses designs along the EKPPT motorway, maps were prepared depicting the forest land for “Elefsina – Korinthos”, “Ancient Korinthos I/C – Patra By-Pass K1 I/C”.

In the framework of road safety, Olympia Odos Operation S.A. has Patrollers and Intervention Teams patrolling the Project with specially marked vehicles dealing with incidents (immobilized vehicles, accidents, traffic problems etc.) by implementing temporary signage to safely arrange traffic and assist the emergency services (Police, Fire Brigade and Paramedics). In this framework, during the 1st semester of 2017:

- 2,099,629 (about 11,600 per day) kilometers of Patrols and Interventions were covered to supervise the road network

- 11,062 incidents were handled with the Company's assistance, such as: 5,715 immobilized vehicles (mechanical failure, flat tire, lack of fuel, abandonment), 4,261 obstacles on the pavement, 539 road accidents (20 with injured and 519 with material damage), 256 user problems (pedestrians, vehicles moving in the opposite direction, non authorized users, dangerous traffic violations), 52 traffic congestions and 239 other emergency incidents (fire, adverse weather conditions, etc.) out of which:
    - 6,343 were handled immediately by the Company, since they were detected (located) by its own vehicles, or by its subcontractors' vehicles
    - 4,719 incidents were handled within 13' in average by the Company, since they were otherwise detected (phone, cameras etc.), while regarding the response of the subcontractors respectively: 19' for light vehicles and 38' for heavy vehicles

Patrol vehicles

The Operator's competent personnel (Intervention Teams) implement on a daily basis temporary signage for incidents and for the safe execution of works carried out on the road either by the Operation Company or the Construction Joint Venture. Regarding Korinthos-Patra NNR special attention is paid due to it features (no central reserve) and the sections with steep turns and limited visibility.

The Operator has action plans related to the protection of the environment either within routine maintenance or emergency and abnormal situations.

B.1 Congestion
B.2 Road Accident
B.3 Immobilized vehicle
B.4 Problem on the pavement
B.5 Problem on infrastructure or equipment

B.6 Problem with user
B.7 Other emergency incidents
B.8 Adverse weather conditions
B.9 Large scale incident in tunnel
B.10 Incident on Korinthos-Patra NNR

The Constructor shall work and cooperate closely with the Environmental Service and other departments of OLYMPIA ODOS S.A. in the application of the procedures – directives for the management of such issues.

8 ANTIQUITIES

Under he principle that cultural heritage and antiquities along the motorway shall be protected, a principle that constitutes prerequisite for the construction of the road, the Constructor has direct contact and collaboration with the competent archaeological services. According to the Concession Agreement and the Design – Construction Contract, Construction Joint Venture is responsible for the execution of archaeological investigations pursuing a recommendation by the pertinent archaeological service.
Works in the positions indicated in the Concession Agreement (article 13.1) and where there is a great potential of Antiquities being revealed have commenced.

Works in the Archeological site of Asopos - Mouliki (K.P. 17+200, side road)

Appendix 3 herein presents detailed information / actions taken to protect antiquities and photogaphs.

9 TRAINING – AWARENESS RAISING

Environmental training aims to reinforce knowledge and raise awareness about the environment, to develop the necessary skills, to form the right behaviour, to activate and make informed decisions and responsible actions.

Audit/ inspection is a tool of the environmental management system, including the systematic, substantiated, periodic and objective assessment of the performance of the working sites, the environmental protection management system and processes.

The Construction Joint Venture is organizing training and briefing seminars whereas all internal inspections are accompanied by the training and briefing of all competent persons at working sites regarding issues and developments pertaining to the environment.

Each working site's environmental engineers are regularly organising meetings with all parties involved in the Project's construction, providing them with the suitable training and briefing.

The Construction Joint Venture's Environmental Department in cooperation with the project engineers conduct regular inspections, give the necessary instructions or directions pursuant to the Project's EMP regarding any arising environmental issue. To fulfill that goal, special reports are developed documenting the test results, proposing measures to deal with any environmental issues identified and accompanied by a complete photographic survey.

Environmental training during the Project's construction is divided in 2 categories. The first one pertains to the specialized environmental training of the staff related to the Project's environmental management (environment engineers, foremen in sensitive areas) and the second one to the general environmental training of the whole staff. Table 3 describes the whole number of hours (persons x time) for environmental training during 01/01/2017 – 30/06/2017.

TABLE 3	
TRAINING TYPE	TRAINING TIME (HOURS)
SPECIALISED TRAINING	35
GENERAL TRAINING	20