11th ANNUAL (2018) AND 21th SEMI ANNUAL **ENVIRONMENTAL MANAGEMENT REPORT** 01.01.2018 -31.12.2018

Environment Department OLYMPIA ODOS S.A.

OLYMPIA ODOS

Contents

APPENDICES

APPENDIX 1 SECTION: ELEFSINA - KORINTHOS (EXCLUDING KAKIA SKALA)

APPENDIX 2 SECTION: ANCIENT KORINTHOS I/C - K1 PATRA BY-PASS I/C

APPENDIX 3 QUANTITY DATA PERTINENT TO THE ENVIRONMENTAL PROTECTION MEASURES DURING CONSTRUCTION AND OPERATION

APPENDIX 4 AIR QUALITY REPORT

APPENDIX 5 ACOUSTIC ENVIRONMENT MONITORING PROGRAM

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 DIPA/MEEC.This is the Eleventh Annual and Twenty oneth Semi Annual Environmental Management Report and covers the period 01.01.2018 to 31.12.2018.

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 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/KSESP through Monthly Progress Reports, which are elaborated by APION KLEOS CJV as required by the contractual document.

Please note that on 07-09-2017 the Project's Independent Engineer issued – under C.A. Art. 18.5.1 (g) – the Works Completion Certificate for the T1 Design-Construction Period Total Deadline ($WCC_{\tau 1}$) and on 09-03-2018 he issued the WCC for the C.A. art. 18.1.5 works.

Tables 1 & 2 below depict the progress of the Project's works during the 1st and 2nd half of 2018 respectively.


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
Κόρινθος
Αθήνα
Πύργος

TABLE 1 – PROJECT'S WORKS PROGRESS IN THE 1st HALF OF 2018

G.U.	SECTION	ACTIVITY	PROGRESS
1-3 & 35	EL-KO & PBP	Traffic Management.	Continuous process.
		Irrigation system installation.	Completed.
		Steel barriers installation. (ΜΣΟ 13).	Completed.
4-15	EL-KO	Traffic Management.	Continuous process.
		Marking and signing works.	Completed.
		H/M works at the motorway's open sections.	Completed.
		Irrigation system installation.	Completed.
		Culvert and structure restoration works	Completed.
		Asphalt restoration works.	In progress.
		Works at EL-KO Administration building.	In progress.
16-17	KO-PA	Traffic Management.	Continuous process.
		Storm-protection works: Box culverts construction	Completed.
		Bridges, Over-Passes, Under-Passes construction	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.
		Asphalt restoration works.	In progress.
18-21	KO-PA	Traffic Management.	Continuous process.
		Retaining walls construction (R282, G255, G283, G249, G279, etc).	Completed.
		Bridges, Over-Passes, Under-Passes (K203, K206, K214, B211, etc).	Completed.
		Box culverts construction (L110, L115, L119, L120,etc.).	Completed.
		Public Toilets at G.U. 19.	Completed.

		Drainage works (Lykoporia I/C).	Completed.
18-21	**KO-PA**	Asphalt works in Local Roads.	Completed.
		Asphalt works at G.U. 19.	Completed.
		E/M works at G.U. 19.	Completed.
22-25	**KO-PA**	Traffic Management.	Continuous process.
		Earthworks/embankments at G.U. 22-25.	Completed.
		Bridges, Over-Passes, Under-Passes (A344, A508, B343, etc).	Completed.
		Asphalt works at G.U. 22-25.	Completed.
		E/M works at G.U. 22-25.	Completed.
26-29	**KO-PA**	Traffic Management.	Continuous process.
		Storm-protection works: Box culverts construction (L416, L444, etc).	Completed.
		Retaining walls construction (G486, R458, etc.).	Completed.
		Bridges, Over-Passes, Under-Passes (K290, K291, K302, etc).	Completed.
		Asphalt works at Local Roads: Kalavrita I/C, etc.	Completed.
		Asphalt works: 69+500-74+700 (AK), 69+500-71+500 (ΔK), 75+660-83+700 (ΔK), 74+700-83+700 (AK), etc.	Completed.
		Tertiary irrigation network & planting	Completed.
30-34	**KO-PA**	Traffic Management.	Continuous process.
		Embankments/Cuts :93+300 - 94+100, 94+100 – 95+500, etc.	Completed.
		Storm-protection works: Box culverts construction (L504, L507, L580, etc.).	Completed.
		Retaining walls construction (R572, G510, etc.).	Completed.
		Bridges, Over-Passes, Under-Passes (K306, K326, etc.).	Completed.
		Tertiary irrigation network & planting	In progress
		Signing works (90+100-109+000).	Completed.
		Asphalt works at G.U. 30-34.	Completed.
		E/M works: 90+100-95+500, etc.	Completed.

Rehabilitation works at culvert S050

Planting at K.P. 76+450

Planting at Aigio I/C West

Planting at k.p. 90+700

Fencing at side roads

A223 – Replacement of safety barriers and placement of safety guardrails

SR003L – Completion of works

B131 – Construction of decantation tank

TABLE 2 – PROJECT'S WORKS PROGRESS IN THE 2nd HALF OF 2018

Γ.Ε.	ΤΜΗΜΑ	ΔΡΑΣΤΗΡΙΟΤΗΤΑ	ΠΡΟΟΔΟΣ
1-3 & 35	**EL-KO & PBP**	Irrigation system installation.	Completed
		Steel barriers installation (ΜΣΟ 13).	Completed
4-15	**EL-KO**	Marking and signing works.	Completed
		H/M works along open motorway.	Completed
		Irrigation system installation.	Completed
		Culverts and structures restoration works.	Completed
		Asphalt restoration works.	Completed
		Works at EL-KO Management Building.	Completed
16-17	**KO-PA**	Storm-protection works: Box culvert construction.	Completed
		Construction of Bridges, Over- & Under-Passes.	Completed
		Construction of Toll Stations : Zevgolatio & Kiato Lateral Toll Stations.	Completed
		Construction of Technical Base: architectural works, E/M infrastructure, steel constructions.	Completed
		Construction of safety barriers & fencing.	Completed
		H/M works along open motorway.	Completed
		Asphalt restoration works.	Completed
18-21	**KO- PA**	Construction of retaining walls (R282, G255, G283, G249, G279, etc).	Completed
		Construction of Bridges, Over- & Under-Passes (K203, K206, K214, B211, etc).	Completed
		Construction of box culverts (L110, L115, L119, L120, etc).	Completed
		Public WC at GU 19.	Completed
		Draining works (Lykoporia I/C).	Completed
		Asphalt works along the Local Roads.	Completed

		Asphalt works at GU 19.	Completed
		E/M works at GU 19.	Completed
22-25	**KO- PA**	Earthworks/embankments at GU 22-25.	Completed
22-25	**KO- PA**	Construction of Bridges, Over- & Under-Passes (A344, A508, B343, etc).	Completed
		Asphalt works at GU 22-25.	Completed
		E/M works at 22-25.	Completed
26-29	**KO- PA**	Storm-protection works: Construction of box culverts (L416, L444, etc).	Completed
		Construction of retaining walls (G486, R458, etc).	Completed
		Construction of Bridges, Over- & Under-Passes (K290, K291, K302, etc).	Completed
		Asphalt works along the Local Roads: Kalavryta I/C, etc.	Completed
		Asphalt works: 69+500-74+700 (AK), 69+500-71+500 (ΔK), 75+660-83+700 (ΔK), 74+700-83+700 (AK), etc.	Completed
		Tertiary irrigation network & planting.	Completed
30-34	**KO- PA**	Embankments/cuts: 93+300 - 94+100, 94+100 – 95+500, etc.	Completed
		Storm-protection works: Construction of box culverts (L504, L507, L580, etc).	Completed
		Construction of retaining walls (R572, G510, etc).	Completed
		Construction of Bridges, Over- & Under-Passes (K306, K326, etc).	Completed
		Tertiary irrigation network & planting.	Completed
		Signing works (90+100-109+000).	Completed
		Asphalt works at GU 30-34.	Completed
		E/M works: 90+100-95+500, etc.	Completed

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

In the framework of respecting the Concession Agreement environmental requirements, the approved environmental terms and the required environmental permits, requests were submitted, when required, in order forest and archaeological permits and opinions, permits to use water from drillings etc. to be issued.

a. Cooperation has completed with the Public Utility Organizations/ Archeological Services in order to relocate various networks located within the Project.
b. Permits have been received from Peloponnese, W. Greece & Ionian Islands Decentralised Administration, Water Resources Directorate for 2 new water drillings, so as to cover the irrigation, fire fighting and other needs that shall arise in the Project's short-term parking areas along EL-KO section.

c. Measurements programmes were conducted regarding the effectiveness of the installed noise barriers along Drepano-Rio section of Korinthos-Patra road project.

   This programme was approved by KAPA Dir./MEECC via doc. No 25591/08-06-2018. According to the results of the approved measurement programme:

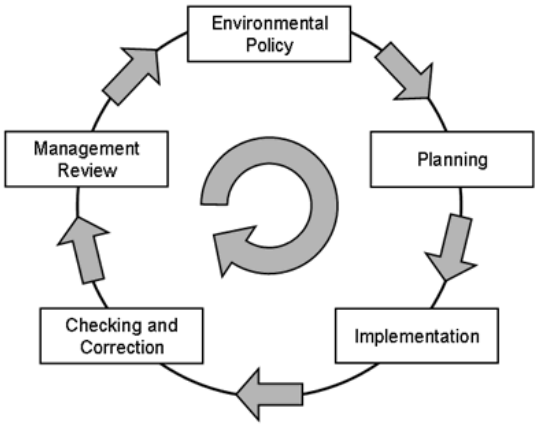
   (a) In all locations were noise barriers were installed, the set noise limits were fully abided by, whereas
   (b) No exceedances were identified in the other check points.

   The noise barrier installation points are the ones cited in Table 10 of the Constructor's 1th annual and 19th semi-annual environmental management report.

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.
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:

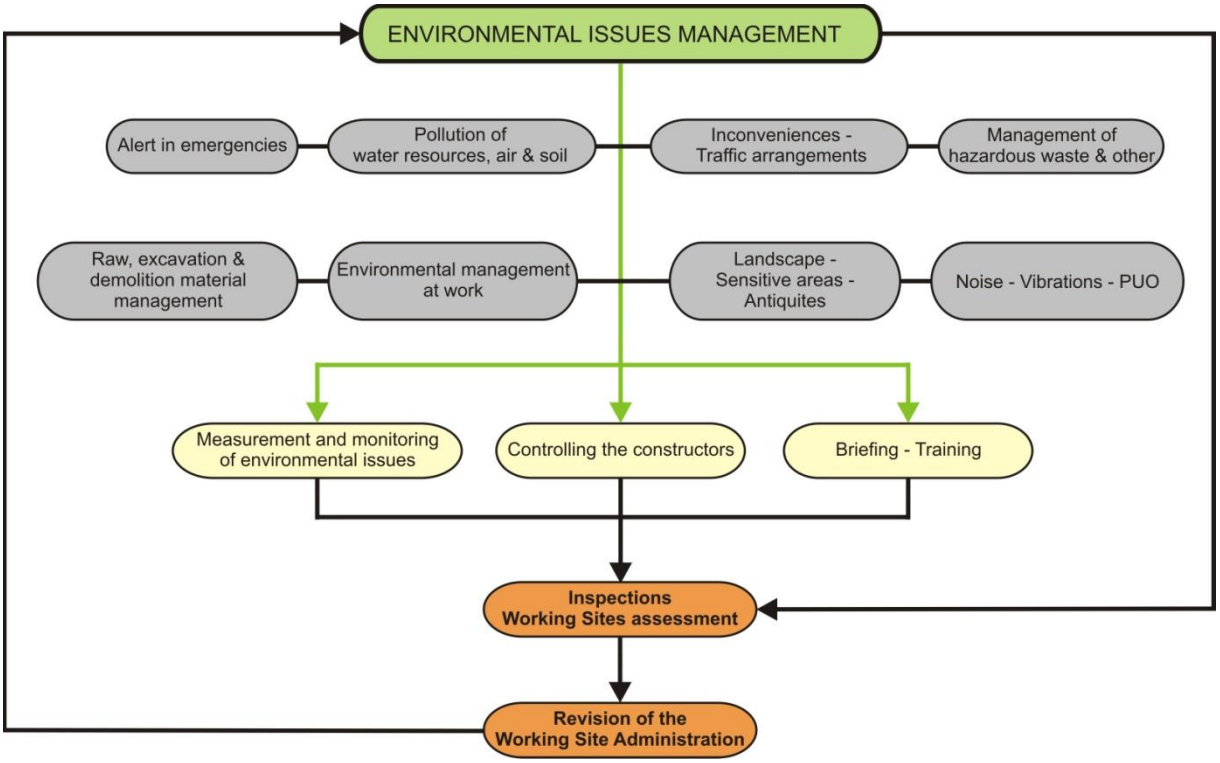
- controlling, monitoring and dealing with the environment impact of the project
- optimum management of liquid and solid waste of the Project
- promotion of best practices to reduce energy and resources consumption

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



Furthermore,in October 2018,the Integrated Management System (IMS) of Olympia Odos SA was successfully inspected by the international agency TÜV HELLAS (TÜV NORD). The development of the company's Integrated Management System meets the following objectives:

- Ensures the quality of the service provided to its customers, in accordance with the **ISO 9001:2015** standard;
- Protects the health and safety of the employees of the Project, by applying the **OHSAS 18001:2007** international standard;
- Protects the environment and in general monitors the observance of the environmental terms of the Project, by meeting the requirements of the **ISO 14001:2015** international standard.

The scope of application of the certification pertains to the **motorway concession management**, which includes, in particular, the financing of the Project, the operation and maintenance of the motorway and the management of the Motorists Service Stations.

Thanks to the development of an Integrated Management System and the relevant certification, Olympia Odos proves its commitment to provide qualitative services evidently oriented to the recognition of and the effective response to the needs of the customers / drivers, to create an efficient environmental management system for the

Project, as well as to see to a high-level health and safety system for its employees and all the people working on the Project.

The Integrated Management System fully complies with the philosophy of the concession company, as this is expressed through its vision and values.

TÜV HELLAS
TÜV NORD GROUP

CERTIFICATE

Management system as per
ISO 14001 : 2015
Environmental Management Systems - Requirements with guidance for use
In accordance with TÜV HELLAS (TÜV NORD) S.A. procedures, it is hereby certified that

OLYMPIA ODOS S.A.
4, Rizariou Str.
152 33 Chalandri
Hellas

applies a management system in line with the above standard for the following scope

"OLYMPIA ODOS" MOTORWAY CONCESSION MANAGEMENT and more specifically:
- Financing of the Project
- Heavy Maintenance of Motorway Assets (Pavement, Structures, Slopes, Electromechanical Equipment, Tolling Equipment, Road Equipment)
- Monitoring of Contract for Motorway Operation, Toll Collection and Routine Maintenance Performance
- Motorists Service Stations Management

Certificate Registration No. 042 18 0067
Audit Report No. EM-1060/2018

Valid from 2018-11-15
Valid until 2021-11-14
Initial certification 2018

TÜV HELLAS (TÜV NORD) S.A. Certification Body

Athens, 2018-11-15

This certification was conducted in accordance with the TÜV HELLAS (TÜV NORD) S.A. auditing and certification procedures and is subject to regular surveillance audits.

TÜV HELLAS S.A. 282, Mesogeion Ave., 155 62 Cholargos, Athens, Greece

TÜV HELLAS
TÜV NORD GROUP

CERTIFICATE

Management system as per
ISO 9001 : 2015
Quality Management Systems-Requirements

In accordance with TÜV HELLAS (TÜV NORD) S.A., procedures, it is hereby certified that

OLYMPIA ODOS S.A.
4, Rizariou Str.
152 33 Chalandri
Hellas

OLYMPIA ODOS

applies a management system in line with the above standard for the following scope

"OLYMPIA ODOS" MOTORWAY CONCESSION MANAGEMENT and more specifically:
- Financing of the Project
- Heavy Maintenance of Motorway Assets (Pavement, Structures, Slopes, Electromechanical Equipment, Tolling Equipment, Road Equipment)
- Monitoring of Contract for Motorway Operation, Toll Collection and Routine Maintenance Performance
- Motorists Service Stations Management

Certificate Registration No. 041 18 0184
Audit Report No. E-1990/2018

Valid from 2018-11-15
Valid until 2021-11-14
Initial certification 2018

TÜV HELLAS (TÜV NORD) S.A. Certification Body

Athens, 2018-11-15

This certification was conducted in accordance with the TÜV HELLAS (TÜV NORD) S.A. auditing and certification procedures and is subject to regular surveillance audits.

IAF ESYD

TÜV NORD TÜV HELLAS SYSTEM CERTIFICATION

TÜV HELLAS S.A. 282, Mesogeion Ave., 155 62 Cholargos, Athens, Greece

TÜV HELLAS
TÜV NORD GROUP

CERTIFICATE

Management system as per
ELOT 1801:2008/BS OHSAS 18001:2007
Occupational Health and Safety Management Systems - Requirements

In accordance with TÜV HELLAS (TÜV NORD) S.A, procedures, it is hereby certified that

OLYMPIA ODOS S.A.
4, Rizariou Str.
152 33 Chalandri
Hellas

OLYMPIA ODOS

applies a management system in line with the above standard for the following scope

"OLYMPIA ODOS" MOTORWAY CONCESSION MANAGEMENT and more specifically:
- Financing of the Project
- Heavy Maintenance of Motorway Assets (Pavement, Structures, Slopes, Electromechanical Equipment, Tolling Equipment, Road Equipment)
- Monitoring of Contract for Motorway Operation, Toll Collection and Routine Maintenance Performance
- Motorists Service Stations Management

Certificate Registration No. 047 18 0048
Audit Report No. OH-0409/2018

Valid from 2018-11-15
Valid until 2021-03-11
(until 2021-11-14 in case of migration to ISO 45001:2018)
Initial Certification 2018

TÜV HELLAS (TÜV NORD) S.A. Certification Body

Athens, 2018-11-15

This certification was conducted in accordance with the TÜV HELLAS (TÜV NORD) S.A. auditing and certification procedures and is subject to regular surveillance audits.

ESYD

TÜV NORD TÜV HELLAS SYSTEM CERTIFICATION

TÜV HELLAS S.A. 282, Mesogeion Ave., 155 62 Cholargos, Athens, Greece

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

3.A NOISE MONITORING

- Korinthos Patra section

According to the results of the approved measurement programme:

(c) In all locations where noise barriers were installed, the set noise limits were fully abided by, whereas
(d) No exceedances were identified in the other check points.

Table 3 provides the updated noise-barriers locations:

TABLE 4:
POINTS OF NOISE-BARRIERS IMMEDIATE INSTALLAITON

NOISE BARRIER		DIRECTION	MINIMUM LENGTH	SOUND-BARRIER HEIGHT
From k.p.	To k.p.			
0+812,6	0+919,6	Κόρινθος	107	4,5
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
111+968,2	112+186,0	Patra	218	3,5
112+825,9	112+889,3	Patra	66	3,0
114+555,8	114+681,7	Korinthos	126	3,0
114+829,3	114+852,4	Korinthos	54	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:

S/N	From k.p.	To k.p.	Direction
1	0+812	0+920	Korinthos
2	7+820	7+956	Patra
3	20+560	20+800	Korinthos
4	26+804	26+866	Patra
5	26+059	26+231	Korinthos
6	26+522	26+705	Korinthos
7	37+175	37+240	Korinthos
8	39+142	39+242	Patra
9	39+776	39+835	Korinthos
10	40+070	40+174	Patra
11	40+074	40+158	Korinthos
12	44+918	44+991	Korinthos
13	53+702	53+880	Patra
14	53+880	53+964	Korinthos
15	59+152	59+192	Patra (south)
16	59+180	59+242	Patra
17	59+379	59+609	Patra
18	76+076	76+186	Patra
19	82+452	82+539	Patra
20	83+645	83+718	Korinthos
21	88+494	88+590	Patra
22	91+440	91+623	Patra
23	91+815	91+945	Patra
24	96+182	96+261	Patra
25	96+955	97+017	Korinthos
26	97+104	97+254	Korinthos
27	97+190	97+314	Patra
28	97+772	97+831	Patra
29	98+710	98+798	Korinthos
30	98+850	98+965	Patra
31	107+843	107+990	Korinthos
32	111+591	111+922	Korinthos
33	111+794	111+968	Patra
34*	111+968	112+186	Patra
35	112+825	112+889	Patra
36	114+550	114+683	Korinthos
37	114+758	114+810	Korinthos
38	115+350	115+433	Korinthos
39	115+676	115+839	Korinthos

40	115+700	115+883	Patra
41	115+721	115,841	Korinthos
42	116+746	116+712	Patra
43	118+004	118+125	Patra
44	117+484	117+774	Korinthos
45	118+138	118+250	Korinthos
46	118+125	118+364	Patra
47	118+657	118+767	Patra
48	118+250	118+327	Korinthos

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

All of KO-PA section's noise barriers have been delivered to OLYMPIA ODOS S.A. who in turn assigned their constant monitoring to OLYMPIA ODOS OPERATION S.A.

- Existing Sections (EL-KO & PBP)

Noise barriers along both EL-KO and PBP sections are all constructed and now delivered to OLYMPIA ODOS S.A. who in turn assigned their constant monitoring to OLYMPIA ODOS OPERATION S.A.

The selection of the locations where the 24hour acoustic measurements of the program were executed was based on the implementation of the sound protection measures (sound barriers) for the protection of sensitive receivers and residential uses, in selected receivers within settlement boundaries and/or complaints locations (reference points) requested by the competent Environment Service (KAPA) of the Ministry of Environment.

For the acoustic measurements, special self-motored noise stations, properly formed, were used - so as to meet the requirements of the new European noise directive.

Within the frame of the noise level recording program in the various road sections, **46** measurements (23 in June and 23 in September 2018) were conducted in the road section "Elefsina-Korinthos", **99** measurements in the road section "Korinthos - Patra" and **17** measurements in the section "Patra Bypass".
Based on the above, **the RTN monitoring program for 2018 includes in total 162 24-hour acoustic measurements.**

All measurements were conducted in typical week days, i.e. Monday to Friday (excl. weekends and national holidays). During the measurements it was not raining, nor was there any strong wind, whereas all microphones that were used were equipped with proper wind shield.

Particular attention during the measurements was paid to ensure that there would not be any local sources that could affect the measurement, other than the road traffic nose (e.g. construction works, local mechanical equipment, etc.).
It is noted that:

- in the frame of selecting an appropriate period to start the recordings in the road section **"Elefsina - Korinthos"**, the months **June and July** were already used for the program of 2017 (A' Semester), in order to establish the representativeness of the values of the level of L_{DEN} & L_{night} indexes, which relate greatly to AADT 2017.
  In more detail, the comparison shows the relevance of the prices, and the ADT in the months selected for the implementation of the program (June, July 2017) ranging at 118-120% of the ADDT 2017, with the percentage (%) of the Heavy Vehicles ranging at 108-110% of AADT 2017.

- In the frame of selecting the proper time period for the launch of the recordings at the road section **"Elefsina-Korinthos"** within September (B' Semester); additionally in the frame of the 2017 program the representativeness of the measurements execution period had been verified. Apart from this verification, especially for the period September 2018, upon completion of the acoustic measurements, a comparison was run additionally between the the load recordings of the September period (ADT 2018) and AADT 2017 that was then available. In this comparison, the representativeness of the period with the AADT was also confirmed.
  For the measurements of September 2018 in that road section, it arose that September 2018 ADT ranges at 98-99% of AADT 2017 for all vehicles and at 118%-121% of AADT 2017 for heavy vehicles, which fact confirms the unfavourable scenario noise conditions for both periods.

Examining the results of the 24hour acoustic measurements and the detailed hourly fluctuation, it can be verified that:

- in the road section **"Elefsina Korinthos" no exceedance is observed in the established limits of the sensitive receivers that were being examined and which were within settlement boundaries, with the single exception of Location L3, where significant participation of the adjacent network is noted.**
  Exceedances in the established limits are noted also in some receivers which are **out of settlement boundaries** and are mostly due to the increased traffic load of the adjacent network.
- in the road section **"Korinthos - Patra"** **full compliance with the established limits is noted in all the cases where sound barriers have been installed**.

- in the road section **"Patra Bypass"** full compliance of the receivers with the established limits is noted in the selected check points, with the exception of location **L125**, where the sensitive receiver is within the settlement boundaries, but upon his demand **(based on the letter of EYDE/KESP/EPP, ref.no. EPP/P1/F4/7013/11-5-10)**, the provided sound barrier has not been constructed.

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

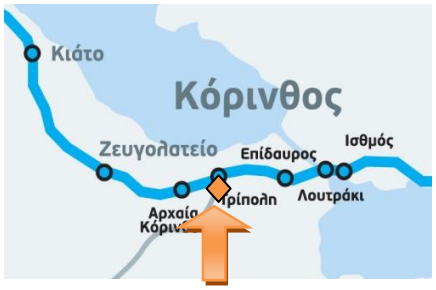
During the Project's execution, due care is given to minimise vibrations caused by the construction activities to buildings and sensitive locations within the Project's zone of influence.

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).

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. 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 C.A.'s environmental requirements, three (3) permanent Air Pollution & Meteorological Data stations were constructed and put to operation to monitor the impact of the motorway on the wider region.
Three (3) of them have already been delivered to the Concessionaire since 2016 and now operate under the Operator's supervision.



Station at Tripoli H/C

Station at Aigio MSS

Station at Glafkos IC

Based on the latest air quality report which can be found as Appendix 4 of the present report, we can draw the following coclusions :

The available data for drawing safe conclusions come from all three stations (Korinthos, Aigio and Patra), which were operational during the entire 2018.
During the first semester, it was noted that there was extensive transport of African dust in Greece, mostly in March and in April; this phenomenon affected among others the areas crossed by the motorway "Elefsina-Korinthos-Patra".
The African dust, which appears even more frequently in Greece during the last years, is due to the desertification phenomenon recorded in Sahara. Specifically in Sahara, the arid areas extend against the arable lands at a staggering and incalculable rate, resulting in the dramatic increase of the dust amounts transported in the atmosphere.

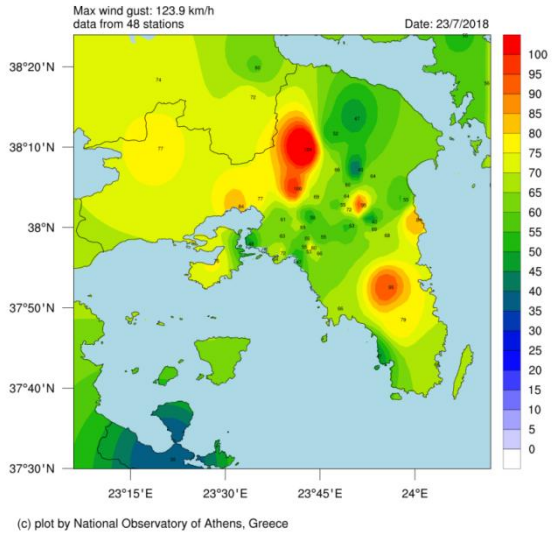
During B' Semester and specifically on Monday 23 July 2018 in the wider area of Gerania Mountains strong west winds were blowing. These west katabatic winds resulted in the **significant rise of the temperature (>37°C) and in low levels of humidity**, creating thus ideal conditions for the occurrence and fast spreading of a fire, which soon turned into a wildfire, burning in total a surface of 56,133m^2.

Satellite image through Sentinel-2 (Source: Hellenic Observatory)

According to the network of the automatic meteorological stations of the Hellenic Observatory, the wind gusts on 23 July 2018 in areas which were near the fire exceeded 90km/h.

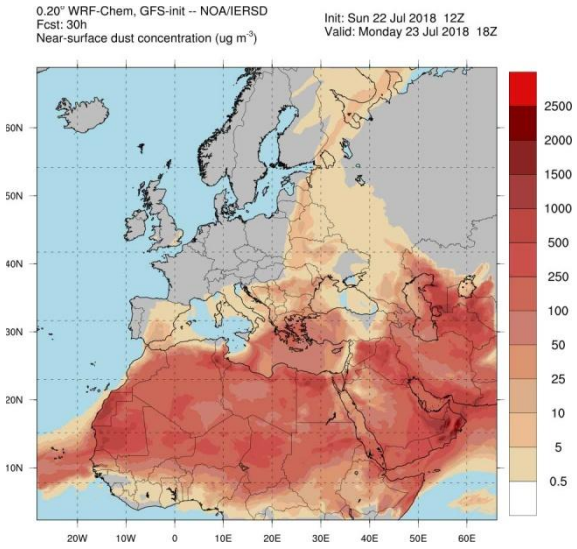
Indicatively, the following locations are mentioned: **Isthmos Korinthos 101 km/h, Kryoneri Korinthia 100 km/h, Penteli - Hellenic Observatory 95 km/h, Elefsina 84 km/h and Agioi Theodoroi 76 km/h (See pic. 8.4).**

It's worth noting that the Observatory meteorogolical stations in Isthmos, Agioi Theodoroi, Penteli & Ano Liosia recorded wind gusts on Monday 23/07 that were the highest that have been recorded during the last 8 years that the said stations have been installed and are in operation; in many of them, it was regardless of the wind direction.



Wind speed on 23/07/2018 (Source: Hellenic Observatory)

It is noted that on that same day (23/07/2018) high concentration of African dust was observed above Greece.



Dust concentration in the afternoon of 23/07/2018 ***(Source: Hellenic Observatory)***

Regarding **limit values:**

- During 2018, with regard to the **monthly**, as well as the **daily** variation of pollutants (SO_2, CO, NO_2, O_3) and according to the available data, no exceedance cases were observed according to the legislation in force.
- The highest daily average value of PM_{10}during A' semester was exceeded 3 times in Korinthos, 6 times in Aigio and 17 times in Patra, whereas during B' semester 1 time in Korinthos and 2 times in Patra. The limit value should not be exceeded more than 35 times a year.

In Korinthos the exceedances were noted on 26/03/2018, 17 & 18/04/2018 and 18/10/2018; in Aigio on 02/02/2018, 05&26/03/2018 and 14, 17 & 18/04/2018; in Patra on 07/02/2018, 05, 07, 17, 18, 22 & 26/03/2018, 12, 13, 14, 15, 16, 17, 18, 19 &30/04/2018 23/05/2018, 19/10/2018 and 13/12/2018

According to the Air Pollution Value Reports both by the Hellenic Observatory and by Western Greece Regional Authority (http://www.pde.gov.gr/gr/enimerosi/ anartitea/ airpollutionofpatras.html), respective exceedances were noted in stations installed in Korinthia, as well as inside the city of Patra (Drosopoulou square and Georgiou square stations).

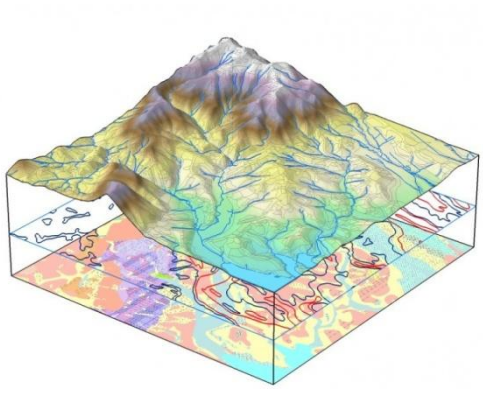
The exceedances in the maximum daily average is in summer mostly due to (a) the phenomenon of the African Dust Transport, which affected all the Regions which the motorway "Elefsina-Korinthos-Patra' crosses. (b) the high temperatures, (c) the solar radiation, (d) the increased tourist flow and (e) fires, whereas in winter, apart from the above, the increased use of firewood for domestic heating plays also a significant role

3.D WATER MONITORING

Permits have been received from Peloponnese, W. Greece & Ionian Islands Decentralised Administration, Water Resources Directorate for 2 new water drillings, so as to cover the irrigation, fire fighting and other needs that shall arise in the Project's short-term parking areas along EL-KO section.

s/n	Name	Mun.	K.P.
1	"Kyras Vrysi"	Loutraki-Ag. Theodoroi	78+050
2	"Tripoli I/C"	Korinthos	84+300

New drilling was performed at "Kyras Vrysi" and then Peloponnese, W. Greece & Ionion Decentralised Administration's Dir. for Water Resources issued the water use permit via doc. No 205073/17-10-2018 (ΑΔΑ: ΩΟΤΓΟΡ1Φ-1ΗΟ).



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.

The Constructor has now fulfilled his obligations out of the C.A. regarding stream delineation

3E . ENERGY AND CLIMATE CHANGE

I. Power Consumption

The LED upgrade project was completed in September for the tunnels of Kakia Skala, and Thiseas Tunnel in the direction to Athens. The remaining 3 tunnels (Gerania, Efgalinos, Aithra) were completed already in early August.
At the same time, in September, the installation of LEDs in the tunnels of Permetric Patras began, which was completed according to the program at the end of December. In addition, tunnels have been dyed to help in the efficiency of lighting. Prior to painting, all tunnels were extensively tested for cracks and repaired if needed. A dedicated recycling company handled all the old luminaires. The materials after disassembly were loaded into special recycling bins, and then transferred to special recycling units, thus no waste was discardeded in the process.
The energy consumption according to the first measurements in both Kakia Skala and

In order to optimize consumption, at the same time as changing the lights, tunnel dimmers were tuned to match the proper lighting, and the tunnels were checked for cracks and repaired and finally stained. The light color helps to illuminate and the final consumption is less.

Consumption measurements show that in the case of Kakia Skala current consumption is 35% of the previous one, while in the case of Permetric Patras, 30%.
Indicatively, in Patras Perimetric the maximum installed instantaneous consumption is less than 500 kW when the previous one with the conventional light technology was about 2500 kW installed power.

The result is due both to the state-of-the-art LED technology, which allows savings of nearly 50% for the same brightness, but also to a more accurate design of tunnel lighting on the latest standards, fine-tuning of the photometers, tunnel dyeing and modern control system that allows much more light levels (practically 10 sets, but 12 are used) when we had 6 levels previously).

In addition, the best-expected performance will allow the system even when it gets old the performance of the LED lights is slightly reduced again to be more efficient than the original design.
The above results significantly reduce the energy footprint of the motorway, surpassing the initial estimates.
In addition to the above, the current 16 LED tunnel image have a superior lighting performance, and this not only offers environmental benefits but also a better and safer environment for users.

After the full implementation of LED lamps in all tunnels of the existing parts of the motorway, the benefit in the reduction of CO2 emissions is monitored.

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 was 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 materials recycling, mineral oil, batteries, vehicle tyres, hazardous materials, polluting substances, area restoration, excavation and demolition products, waste coming from the heavy maintenance etc are presented in Appendix 3 of this Report.

Since the first semester of 2016, 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 was paid during construction of sections passing by geologically sensitive zones, as in those areas stability problems might emerge at the formations. In those sections as slight interventions as possible were conducted.

c. Ecosystems - Vegetation

In the areas where the structures are constructed, and mostly in the areas where bridges are constructed, all the necessary precautions were taken in order to avoid any impact on the riverside ecosystems. All possible efforts were made in order to use the fewer possible quantity of concrete. Where possible the use of gabions was preferred and the proper application/use of additives (e.g. betonite), which were 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 were taken in order to avoid dust emissions (infusion of earth materials, trucks covered by dust).
In some case the cleared vegetable materials were cut and temporary stored in mounds in order to create organic fertilizer for future use in planting technical activities.
After clearance, excavation, collection and temporary deposition of the superficial

fertile soil layer followed.

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 was dealt with (by the local Working Sites) with great success by use of the following measures.

Control of the dust release was affected through simple management methods and the impact level greatly depended 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 applied in the case of non-asphalt-paved routes i.e., asphalt paving where feasible, stabilized pavement infrastructure, water soaking and traffic regulations (*aiming to reduce dust in the dry season and traffic-induced 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) were covered. The vehicles entering or leaving the working site were clean.
- It was forbidden for the trucks to pass through settlements during quiet hours,
- Liquid rather than dry concrete was used in the mixing and preparation,
- All machinery and equipment used in works were in good condition and fulfilled 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 conducted in parallel and now fast-track under the extremely tight completion time-schedule,
- the water resources available along the Project during summer season were limited,

any impact after the above measures were deemed slightly negative with a very short-term effect and could be dealt with technical means.

In any event, the local Working Units were 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 were conducted normally. Each measurement lasted 24 hours and run through one calendar day so that the findings could be directly compared to the maximum rates / target aims set by the current legislation.

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 design findings.
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 was prepared according to the Design Investigation Standards (DIS). During the 1st half od 2018 most of the planting (>95%) in the areas indicated by the design has been done.
The designs aimed at describing the prevailing conditions on site and the nature of the problems which arose 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 was 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.

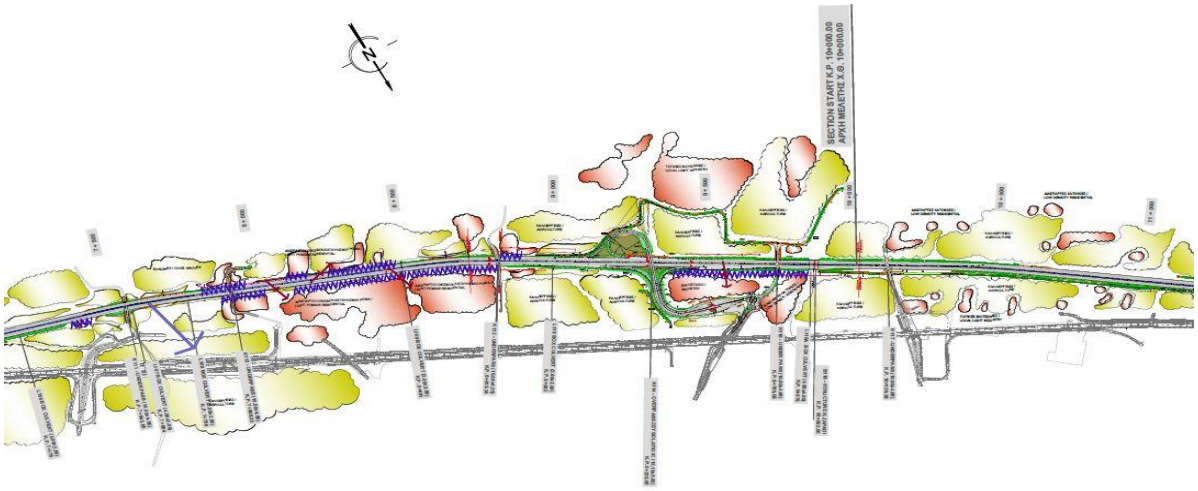
The proposed planting took into account the following fundamental principles:

- Traffic safety
- Planting – landscape relationship
- Road equipment

During the arrangement of the various greenery (medium, high) to be planted, the following was 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.



According to the design's finding, planting is completed.

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 29 interchanges and their branches, as well as of the parking areas.

In the frame of green maintenance the Operator is responsible for the irrigation in the Project, which is carried out either through the installed network of the project or through water trucks.
The water comes from the irrigation network of Attiki Odos, the municipal network of N. Peramos and from 10 in total water borehalls (1 in N. Peramos I/C, 1 in Tripoli I/C, 1 in Ancient Korinthos I/C, 1 in Tarsina (ELKO 1), 1 in Ano Loutro (KO-PA 3), 1 in Krathis (KO-PA 4), 1 in Egio MSS (KO-PA 5), 1 in Volineos (KO-PA 6) and 2 in Patra Bypass).

Cleaning
During 2018, 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 29 interchanges, the toll stations (lanes, booths, pavement, surrounding area, buildings), in the tunnels and in the 22 parking areas (washing, sweeping, waste removal from bins and surrounding areas).
It is noted that cleaning pertains to the entire cross section as well as the wider area within the fencing of the motorway.

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

During the operation of the working sites, all fire prevention measures were 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 was organised, was controlled and approved by the competent Fire Service before the beginning of the works.
More specifically, fire management measures were 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 2018:

- **5,151,513 km** were travelled by Patrols and Interventions teams (about 14,114 per day) for supervising the road network, of which 2,360,788 km during the second semester,

- **19,459 incidents** were handled with the Company’s assistance, such as: 12,245 immobilized vehicles (mechanical failure, flat tire, lack of fuel, abandonment), 5,253 obstacles on the pavement, 932 road accidents (53 with injured and 879 with

material damage), 598 user problems (pedestrians, vehicles moving in the opposite direction, non authorized users, dangerous traffic violations), 71 traffic congestions and 360 other emergency incidents (fire, adverse weather conditions, etc.) out of which:

- 10,268 were handled immediately by the Company, since they were detected (located) by its own vehicles, or by its subcontractors' vehicles
- 9,191 incidents were handled within 13' on average by the Company, since they were otherwise detected (phone, cameras etc.), while regarding the response of the subcontractors respectively: 20' for light vehicles and 37' for heavy 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.

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 the 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 was in direct contact and collaboration with the competent archaeological services along the motorway..

Works in the positions indicated in the Concession Agreement (article 13.1) and where there was a significant potential of Antiquities being revealed have been accomplished.

9 TRAINING – AWARENESS RAISING

Environmental training aimed 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 was organizing training and briefing seminars whereas all internal inspections were accompanied by the training and briefing of all competent persons at working sites regarding issues and developments pertaining to the environment.

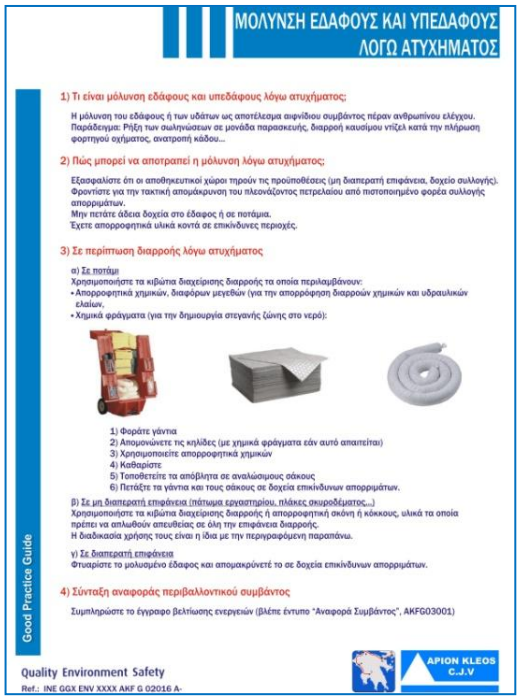
Each working site's environmental engineers were regularly organising meetings with all parties involved in the Project's construction, providing them with the suitable training and briefing.

The Construction Joint Venture's Environmental Department in cooperation with the project engineers conducted 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 were 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 was 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 01/01/2018 - 31/12/2018.

TABLE 3	
TRAINING TYPE	TRAINING TIME (HOURS)
SPECIALISED TRAINING	15
GENERAL TRAINING	10



10 CORPORATE SOCIAL RESPONSIBILITIES ACTIONS

In order to boost local development, Olympia Odos has supported a series of institutions and events, such as the Patras IQ Innovation and the Patras Development Forum, while at the national level has collaborated with the Greek Gastronomy Guide, which aims to promote the goods and the values of the Greek culinary culture. At the same time, supports the work of of Western Greece and the Peloponnese Road Axis Observatory, aiming to promote the socio-economic effects of major transport projects in Region's economy.

For Olympia Odos, culture and the environment are two sectors that are closely linked to the goals of sustainable development. Olympia Odos passes through a significant cultural and natural heritage part of our country, linking emblematic monuments and archaeological sites, as well as areas of particular natural beauty and environmental value. Protecting this wealth, Olympia Odos sypports Elefsina in the action program as the "European Capital of Culture 2021" and has developed a solid partnership with "DIAZOMA" Association for the promotion and protecrion of ancient theaters.

At the same time, Olympia Odos continues to support the voluntary movement "Let's do it Greece", with environmental actions and also SKAI, for the project "Clean Greece"

Recognizing education and innovation as equally important pillars of sustainable development, Olympia Odos supported actions local Institutions, such as the Kalogeropoulion Foundation of Corinth and the Assos Cultural and Folk dance club, as well as events such as TEDx Patras and the Olympiada of Educational Robotics.

The sport sector is also a sector of action for the company, counting many years of collaboration with the Hellenic Paralympic Committee as an Official Supporter, while at the local level, the company supported sports organizations and events such as Patras Cycling Club, Patras Sailing Club, the Hellenic Association of Anonymous basketball companies, the Hellenic Federation of Archery etc.

Our approach is also important in the field of social solidarity, through the support of dozens initiatives and institutions at local level. Among others, the company supported Institutions such as Alma Life, SOS Children's Villages, Patras Mental Health Association, Patras Family Association, Smile of the Child and Corinth Efthimeio Center, municipal social departments, voluntary organizations and associations.

An important pillar of Olympia Odos Sustainable Development Strategy is to raise public awareness and responsible driving behavior. Olympia Odos implemented educational actions in the framework of events and supports actions in the frame of "Pan-European Day Without Fatal Accident" events, organized by the Hellenic Motorway and Infrastructure Authority (HELLASTRON).

11 EXPENSES OF THE PROJECT RELATED TO ENVIRONMENTAL PROTECTION MEASURES AND ACTIONS

According to the certified construction expenses of the project for 2018, the expenses related to environmental protection for the year 2018 are up to the amount of 405.748 euros (value without VAT). This amount corresponds to the 0.1% of the total certified expenses for the construction of the project.

The afore mentioned expenses are related to

1. Work site studies
2. Sedimentation tanks construction
3. Personnel related costs from the Allottees
4. planting and restoration

The expenses related to the management of waste of the construction activities are not presented in this report.

The total of the construction related expenses as well as the type of construction activities and the progress of the project, are incorporated in the reports that the Concessionaire and the Construction J.V. are dully submitting to the competent authorities and the Independent Engineer.

Along with the environmental expenses related to the construction of the project, we must add another 3,000,000 euros , expenses undertaken by OLYMPIA ODOS OPERATION S.A. and OLYMPIA ODOS S.A. the Concessionaire of the project. These are related to the waste management of the operation of the motorway , the implementation of the environmental management programs , part of the cost related to the change of the tunnels lighting with LED technology and the fees to environmental consultants.

According to the 2019 planning and forecast, the environmental protection expenses are up 1,000,000 euros.These expenses are related to environmental monitoring activities, planting.