

**9th ANNUAL (2016)
AND 17th SEMI ANNUAL
ENVIRONMENTAL
MANAGEMENT REPORT
01.01.2016 - 31.12.2016**

Environment Department OLYMPIA ODOS S.A.



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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 ninth annual and seventeenth Semi Annual Environmental Management Report and covers the period 01.01.2016 to 31.12.2016.



The above mentioned semi annual and annual reports shall be publicized on the internet site <http://www.olympiados.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. Tables 1 & 2 below briefly present the Project's works progress in the 1st and 2nd half of 2016.




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

G.U.	SECTION	ACTIVITY	PROGRESS
1-3 & 35	EL-KO & PBP	Irrigation system installation.	In progress.
		Signing installation.	In progress.
		Steel barriers installation.	In progress.
		Anti-skidding layer at Thiva I/C.	Completed.
		Finishings in MOMC building.	In progress.
4-15	EL-KO	Traffic Management.	Continuous process.
		Works at Toll Stations (N. Peramos, Pachi, Ag. Theodoroi)	In progress.
		Works at parking areas (Kineta, N. Peramos, Ag. Theodoroi).	In progress.
		Safety barriers installation.	Completed.
		Irrigation system installation.	In progress.
		H/M works at the motorway's open sections.	In progress.
		Planting.	In progress.
		Slope stability and restoration works.	In progress.
		Asphalt restoration works.	In progress.
		Works at EL-KO Administration building.	Completed.
16-17	KO-PA	Traffic Management.	Continuous process.
		Storm-protection works: Box culverts construction (L115, L120, etc). Drainage construction (8+500 – 8+800, 14+250 – 14+950, etc).	In progress.
		Retaining walls construction (R291, G110, G288 etc).	In progress.
		Bridges, Over-Passes, Under-Passes construction (A123, A133, A223, A232, K119, K121, K124, K125, B120, B126, B225, etc).	In progress.
		Toll Stations: Construction of Zevgoliatio FTS building (Toll Administration Building, Tunnel. Canopy, FTS Plaza), 18+800.	Completed.

		Pavement works : PST-CDF layers construction (7+700 – 10+500, 15+100 – 15+900, 18+430 – 19+600, etc).	In progress.
		Asphalt works: 1+600 – 6+500, 7+700-10+700, 18+400-19+000.	In progress.
		E/M works at G.U. 16-17.	In progress.
18-21	KO-PA	Traffic Management.	Continuous process.
		Retaining walls construction (R274, R221, R222, G213, G224, G226, G242, G244, etc).	In progress.
		Storm-protection works: Box culverts construction (L204, L207, L208, L213, L220, L209, L226, L259, etc).	In progress.
		Bridges, Over-Passes, Under-Passes construction (K201, K202, K237, B204, B209, B210, B239, etc).	In progress.
		Melissi & Xylokastro Lane Cover.	In progress.
		East Derveni Lane Cover C004.	In progress.
		T7 & T8 Derveni tunnels.	In progress.
		Sykia service building.	In progress.
		Pavement works (PST-CDF layers construction & asphalt works)	In progress.
		Concrete barriers construction (N.J.)	In progress.
22-25	KO-PA	Traffic Management.	Continuous process.
		Earthworks / embankments at G.U. 22-25.	In progress.
		Retaining walls construction (G323, G309, G321, G591, R535, R539, R548, R560, R589, etc).	In progress.
		Bridges, Over-Passes, Under-Passes construction (K244, K247, K264, K243, K507, A513, K341, K502, K514, etc).	In progress.
		Mavra Litharia Tunnel: Left & right branch final lining.	In progress.
		Akrata Tunnel: Phase B' completion, final lining.	In progress.
		E/M building at Akrata Tunnel.	In progress.
		E/M works at G.U. 22-25.	In progress.
26-29	KO-PA	Traffic Management.	Continuous process.
		South & North frontal of T015 Tunnel – water drainage, if need be.	Continuous process.

		Daily monitoring of convergences displacement conducted by electronic topographical equipment in comparison with the referenced values and the warning and alarm levels at Platanos Tunnel 15 (South & North portal).	Continuous process.
		Geo-mechanical and structural monitoring of Platanos village.	Continuous process.
		Storm-protection works: Box culverts construction (L401, L402, L411, L412, L415, L416, etc).	In progress.
		Retaining walls construction (G407, G409, G412, G416, G418, G420, R406, R408, etc). Gabion walls, friction plates.	In progress.
		Tunnels: T015 left, Excavation Phase A', Excavation Phase B', East portal lining, west portal lining.	In progress.
		Tunnels: T015 right, Excavation Phase A', Excavation Phase B', East portal lining, west portal lining.	In progress.
		Lane Covers construction (Platanos, Temeni, Eliki, etc).	In progress.
		Bridges, Over-Passes, Under-Passes construction (B269, B278, A296, A297, K270, K271, K299, K298, K277, K279, K283, etc).	In progress.
		Pavement works : PST-CDF layers construction (80+580-80+990, 79+460-79+950, 89+990-90+100, etc).	In progress.
		Asphalt works: 76+640-77+000, 80+000-80+160, etc.	In progress.
		E/M works: 81+015-81+156, etc.	In progress.
30-34	KO-PA	Traffic Management.	Continuous process.
		Daily monitoring of convergences displacement conducted by electronic topographical equipment in comparison with the referenced values and the warning and alarm levels at Tunnel 26.	Continuous process.
		T26 Panagopoula tunnel: Southwest, Northwest, Southeast, ventilation tunnel, Tunnels T24, T25.	In progress.
		Embankments / Cuts: 90+100 - 91+300, 98+000 – 100+000, 102+500 – 109+500, 90+100-91+300, 93+300-94+100, etc).	In progress.
		Storm-protection works: Box culverts construction (L504, L571, L573, L518, L583, L532, etc).	In progress.
		Retaining walls construction (R504, R506, R070, G510, G512, G515, G519, etc). Slope stability.	In progress.
		Bridges, Over-Passes, Under-Passes construction (B303, B304, K306, K307, K309, K310, K311, K313, K337, K327, etc).	In progress.

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Pavement works : PST-CDF layers construction (90+100-91+300, 93+300-94+100, 98+000-100+000, etc).	In progress.
Asphalt works: 90+100-91+300, etc.	In progress.
E/M works: 90+100-95+500, etc	In progress.



WC Buildings – Finishing works



Tunnel Platanos/North Bore – Installation of E/M infrastructures



MOMC Building & Surrounding area



B269 – Construction of left backwall



MOMC main building at Nea Peramos



K317 – Installation of deck slab waterproofing



Portal of T13A (West) & Escape Tunnel Exit



Overpass A215 – Pouring abutment A2



Tunnel Akrata T13B



O383 – Construction of cutting area



Tunnel Akrata 13A – Ventilation system



TABLE 2 – PROJECT'S WORKS PROGRESS IN THE 2nd HALF OF 2016

PROGRESS OF WORKS (DECEMBER 2016)			
G.U.	SECTION	ACTIVITY	PROGRESS
1-3 & 35	EL-KO & PbP	Installation of Irrigation system.	In progress.
		Placement of Vertical signs.	Completed.
		Placement of Metal Guardrails.	Completed.
		Antiskid layer at Thivon I/C	Completed.
		Construction works at MOMC Complex.	Completed.
4-15	EL-KO	Traffic Management.	Continuous process.
		Construction works at Toll Stations (N. Peramos, Pachi, Ag. Theodoroi).	Completed.
		Construction works at Parking areas (Kineta, N. Peramos, Ag. Theodoroi).	Completed.
		Finishing works for Metal Safety Barriers.	Completed.
		Marking and Signing works.	Completed.
		Installation of Irrigation system.	In progress.
		Open air E/M works.	Completed.
		Planting Works.	In progress.
		Slope stability and remedial works.	Completed.
		Rehabilitation works of asphalt pavement.	In progress.
		Reconstruction works at the Administration building of EL-KO.	In progress.
16-17	KO-PA	Traffic Management.	Continuous process.
		Flood protection works: Construction of box culverts.	Completed.
		Construction of Bridges, Overpasses, Underpasses.	In progress.
		Toll Stations: Construction of the building – FTS Zevgolatio (TAB, Tunnel, Canopy, FTS Plaza).	Completed.
		Construction of Toll Stations: Zevgolatio LTS, Kiato LTS.	In progress.
		Construction of Technical Base: architectural works, E/M infrastructures, steel structures.	Completed.

		Pavement works (PST-CDF layers) & Asphalt works.	Completed.
		Construction of safety barriers & fencing.	Completed.
		E/M works on the open motorway.	Completed.
18-21	KO-PA	Traffic Management.	Continuous process.
		Construction of retaining structures / retaining walls (R278, R279, G284, G033, R238, R239, G242, G245, G275, etc).	In progress.
		Flood protection works: Construction of box culverts (L217, L212, L218, L225, etc).	In progress.
		Construction of Bridges, Overpasses, Underpasses (K221, K202, K206, K222, A215, B240, etc).	In progress.
		Melissi, Xylokastro & Derveni Lane Covers.	In progress.
		Derveni Tunnels T7 & T8.	Completed.
		Pavement construction (PST-CDF & asphalt works) in GU 18-21.	In progress.
		Asphalt works in GU 18-21.	In progress.
		Construction of New Jersey barriers.	In progress.
22-25	KO-PA	Traffic Management.	Continuous process.
		Construction of earthworks / embankments in G.U. 22-25.	In progress.
		Construction of retaining structures / retaining walls (G323, G309, G321, G591, R535, R539, R548, R560, R589, etc).	In progress.
		Construction of Bridges, Overpasses, Underpasses (K512, K510, A344, A508, B343, etc)	In progress.
		Tunnel Mavra Litharia: Civil & E/M works	Completed.
		Tunnel Akratas: Civil & E/M works	Completed.
		Construction of E/M buildings in Tunnels.	In progress.
		E/M works in GU 22-25.	In progress.
26-29	KO-PA	Traffic Management.	Continuous process.
		T015 South & North bore – waters pumping where needed.	Continuous process.
		Daily monitoring of convergences displacement conducted by electronic topographical equipment in	Continuous process.

		comparison with the referenced values and the warning and alarm levels at Platanos Tunnel 15 (South & North bore).	
		Geomechanical and structural monitoring of Platanos village.	Continuous process.
		Flood protection works: Construction of box culvert (L402, L415, L444, etc).	In progress.
		Construction of retaining structures / retaining walls (G445, R489, R414, R415, R417, etc).	In progress.
		Tunnels: T015 Left, Lining west portal, Finishing west portal.	In progress.
		Construction of Bridges, Overpasses, Underpasses (B269, K281, K282, K286, K288, B289, A294, A296, etc).	In progress.
		Pavement works: construction of PST-CDF layers (67+150-68+777, 67+150-68+777, 69+000-69+360, etc).	In progress.
		Asphalt works: 69+000 – 69+370, 69+370-69+500, 69+500 – 69+600, 69+600 – 70+645, 78+100 – 78+220, etc.	In progress.
30-34	KO-PA	Traffic Management.	Continuous process.
		Daily monitoring of convergences displacement conducted by electronic topographical equipment in comparison with the referenced values and the warning and alarm levels at Tunnel 26.	Continuous process.
		Panagopoula Tunnel T26: Ventilation tunnel.	In progress.
		Earthworks / Cut: 98+000 - 100+000, 90+100 – 91+300, 93+300 – 94+100, 98+000-100+000, etc.	In progress.
		Flood protection works: Construction of box culverts (L571, L516, L527, etc).	In progress.
		Construction of retaining structures / retaining walls (R518, G525, etc).	In progress.
		Construction of Bridges, Overpasses, Underpasses (B304, K305, K306, K307, K310, K312, K314, K318, K323, B328, B331, etc).	In progress.
		Pavement works: construction of PST-CDF layers (90+100-95+500, 95+500-102+600, 107+000-109+000, etc).	In progress.
		Storm water drainage: 90+100-95+500, 95+500-	In progress.

102+600.

Hydraulic Works: 95+500-102+600. In progress.

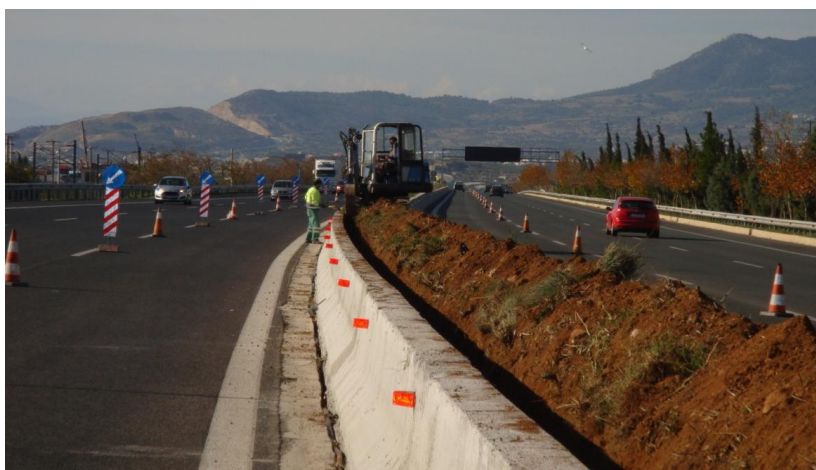
Construction of Toll Stations: Rio & Arachovitika In progress.

Asphalt works: 95+500 – 98+000, 98+000-100+000, 100+000-102+500, 100+800-101+300, 101+300-101+400, etc. In progress.

E/M works in Tunnels: Panagopoula tunnels (T24, T25, T26). In progress.
Construction of Tunnel Service Building.

E/M works: 95+500-102+600, 102+600-107+000, 107+000-109+000, etc. In progress.

The photos below, present the progress of the project's works :



Planting works

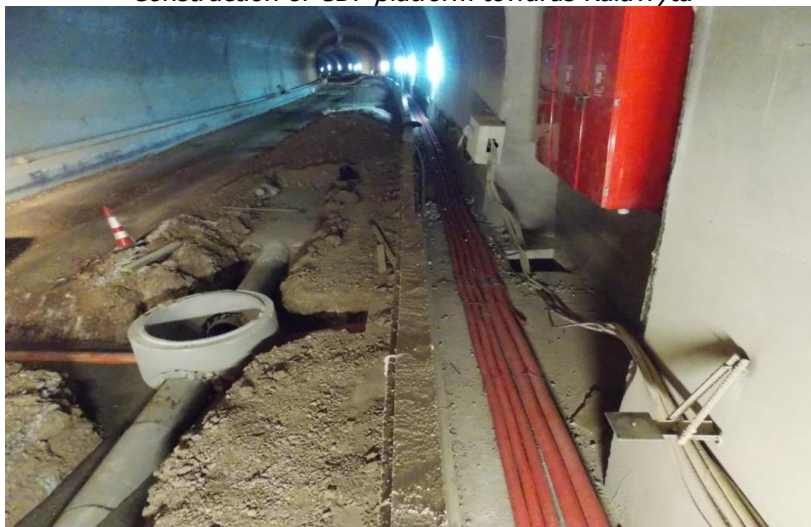


Installation of irrigation pipes

Section: Korinthos - Patra



Construction of CDF platform towards Kalavryta



Construction of drainage system at Platanos tunnel – East portal/South bore



Waterproofing & reinforcement placement at Platanos tunnel- West portal/South bore



Completion of FRP strips installation at K305



Frontal tolls and toll station at Rio



Steel safety barrier installation at k.p. 22+000 to k.p. 29+500



L218 – Construction of box culvert



Archaeological findings at k.p. 36+500 to k.p. 37+000



G272 – Wall construction



C004 – Construction of CDF layer



Concreting of drainage ditches at k.p. 10+000 to k.p. 14+000



R289 – Construction of the reinforced soil wall



Asphalt works at k.p. 47+350 to k.p. 47+500



Construction of noise barriers at k.p. 39+776.5 to k.p. 39+835

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 Toll Station
2. CMD 126393/16.02.2007, as amended and currently applies via Decision 171503/04.11.2013 (ΑΔΑ: ΒΛ1Ψ0-Α3Γ) Elefsina - Korinthos (excluding Kakia Skala section)
3. CMD 108569/18.10.2006, Kakia Skala
4. CMD 92073/16.05.1994, as amended and currently applies via Decision 168168/15.05.2013 (ΑΔΑ: ΒΕΝΔ0-ΖΦ1), Isthmos - Ancient Korinthos I/C
5. CMD 104892/16.06.2006, as amended and currently applies via CMD 172996/03.06.2014 (ΑΔΑ: ΒΙΥ10Α56) and then Decision No 151752/08.09.2015 (ΑΔΑ: ΒΜΙ8465ΦΘΗ-ΓΦΙ), Ancient Korinthos I/C - Patra By-Pass K1 I/C
6. CMD 16049/12.08.2013, as amended and currently applies, Patra By-Pass

2. ENVIRONMENTAL PERMITTING AND ENVIRONMENTAL MANAGEMENT

2.A ENVIRONMENTAL PERMITTING

The Project's Owner (EYDE/KESP/P&VE) submitted via doc. No ΚΕΣΠ/ΠΕ-ΒΕ/Γ/Φ21/11205/31-10-2016 the Update Files of Environmental Terms regarding the road sections in a) Elefsina - Korinthos, b) Kakia Skala, c) Korinthos' Detour, d) Korinthos - Patra and e) Patra's By- Pass.

Due to the fact that the existing ETAD's Update Files were submitted on time, i.e. two months before the existing ETADs' expiration, and according to art. 5 of L. 4014/2011 for the period between the timely submission of the ETAD Update Files and the completion of the updating procedure by issuing the relevant decision, the existing ETADs are maintained.

- b. Environmental Impact Study (EIS) was elaborated and approved (acc. to L.4014/2011) in order to obtain Environmental Approval for the requested Borrow-pits - Quarries & Deposit-pits for the completion of the KO-PA section's construction. The approval process was completed with the issuance of a new ETAD (ΑΔΑ: ΒΙΥ10-Α56).

Based on the above, the Peloponnese-W. Greece-Ionion Decentralised Administration granted four (4) permits for sand extraction from Krathis, Foinikas, Meganitis and Selinountas rivers. Also, sand extraction works were held only from Finikas, Meganitis and Selinoudas rivers.

It should be noted that, the Constructor, via doc. No QES/MFR/ECH/ADM/L/2016/010615/8-8-2016, QES/MFR/ECH/ADM/L/2016/010457/29-6-2016 and QES/MFR/ECH/STA/L/2016/010712/6-9-2016, informed the Department of Natural Resources of PWGIDA and the Project's Owner (EYDE/KESP/P&VE) that it does not intend to develop and exploit the quarries in "Agrilitzes", "Tsampa" and "Albani" (Paliovouna or Klokova) respectively.

- c. The following studies were submitted to DIPA/YPAPEN (either directly or through EYDE/KESP/P&VE) for environmental licensing:
 - For the installation and operation of infrastructure and support worksite at "Chondra Litharia", Mun. of Xylokastro - Evrostini
 - For the operation of three (3) borrow-pits at "Zorzi", "Desi or Souri" and "Vamvakies"
 - For the organisation and operation of infrastructure and support worksite at "Potami" 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

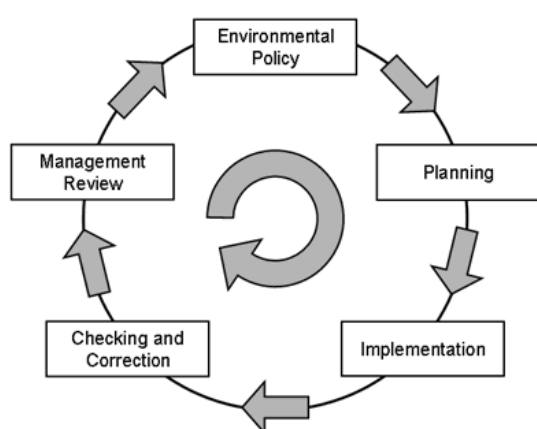
f. EYPE/MEECC (now DIPA/MEECC) approved the following Designs (TED, EIS):

- For the operation of three (3) mobile process machineries at “Chatzis”, “K. Mavriki” and around K.P. 77+000 of KO-PA (No 100479/25-1-2016],
- EIS for installation and operation of borrow-pit at “Soussana”, Athikia, Korinthos (Nr 20298/18-4-2016],
- TED for the exploitation of aggregates quarry (borrow-pit) at “Zorzi”, Sikyonies (Nr ΔΑΜΑΥ-Β/Φ.28.30/172179/546/24-5-2016]
- TED for the exploitation of aggregates quarry (borrow-pit) at “Hondra Litharia”, Xylocastro (Nr ΔΑΜΑΥ-Β/Φ.28.31/172180/545/11-7-2016),
- For the operation of Pollution Retention Tanks along KO-PA (Nr 9412/13-7-2016 by DIPA/YPEN)
- TED for the exploitation of aggregates quarry (borrow-pit) at “Desi or Souri”, Xylocastro-Evrostini (Nr ΔΑΜΑΥ-Β/Φ.28.31/172180/545/11-7-2016),
- Amendment of Decision Nr 176354/19-11-2014 (ΑΔΑ: ΩΩΗΥΟ-ΚΤΟ) for the Approval of a Technical Environmental Design (TED): "Installation and operation of an asphalt production unit within the worksite in the location of SOUSSANA in Athikia, Korinthos Municipality, for the construction requirements of the "Korinthos - Patra" motorway", concerning the installation and operation of a 2nd asphalt production unit.
-
- In the framework of complying with the Concession Agreement environmental requirements, the approved environmental terms and the required environmental permits:
-
- a. 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

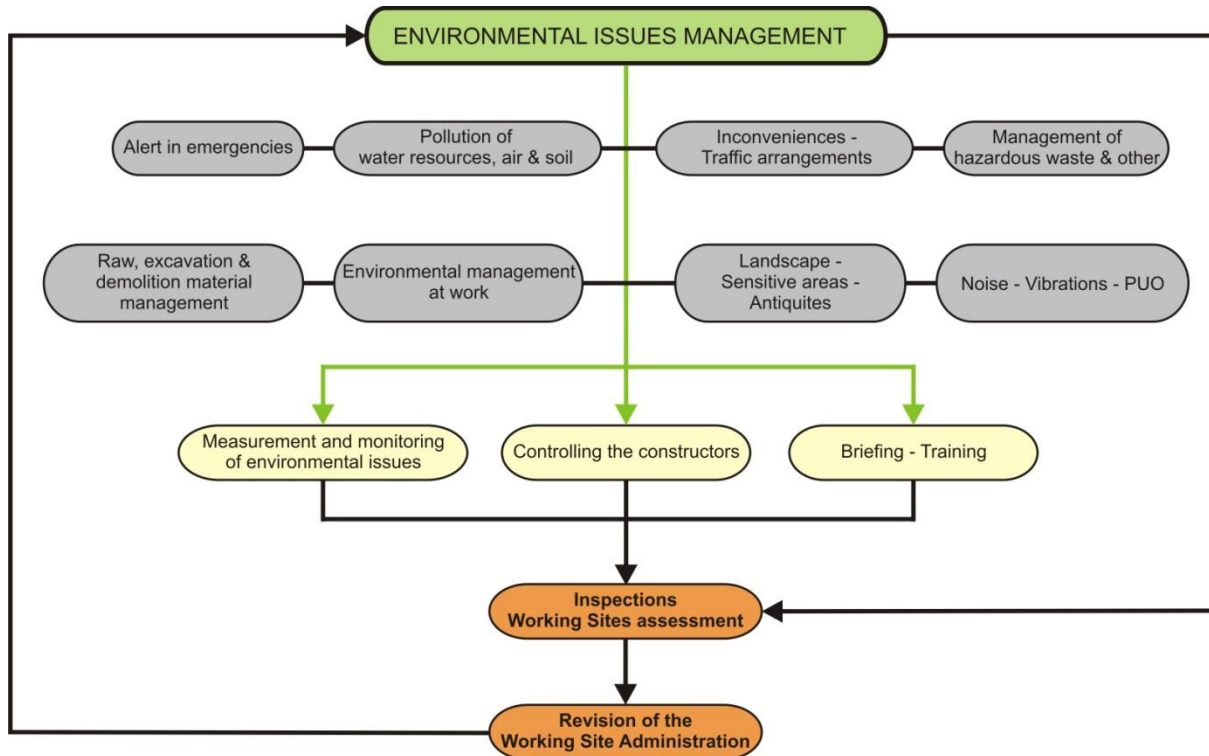
The EMP includes the organizational structure, planning actions, duties allocation, technical methods, procedures as well as processes for the development, implementation, achievement, revision and support of the Constructor's environmental policy as well as the compliance with the Project's environmental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

The EMP constitutes the basic and overall 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 and finally



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.

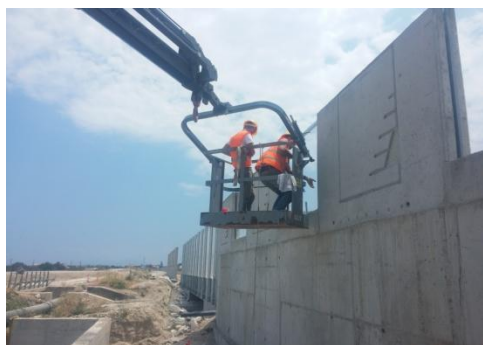
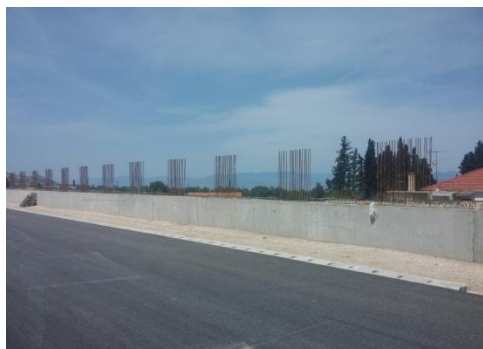
Table 3 provides the updated noise-barriers locations:

TABLE 3: POINTS OF NOISE-BARRIERS IMMEDIATE INSTALLATION				
NOISE-BARRIER		BRANCH	MINIMUM LENGTH	SOUND-BARRIER HEIGHT
from K.P.	to K.P.			
7+822,5	7+956,5	to Patra	134	3
20+566,5	20+796,3	to Korinthos	230	3,5
26+804,2	26+866,2	to Patra	62	4,5
26+059,0	26+231,5	to Korinthos	172	4,5
26+524,2	26+705,0	to Korinthos	182	4,5
37+176,6	37+240,6	to Korinthos	64	4,5
39+142,1	39+241,6	to Patra	100	4,5
40+070,3	40+174,5	to Patra	104	3,0
39+776,5	39+834,1	to Korinthos	58	3,5
40+074,2	40+160,3	to Korinthos	86	4,0
44+920,5	44+986,2	to Korinthos	70	4,5
53+709,1	53+879,3	to Patra	168	4,5
53+880,1	53+964,3	to Korinthos	100	4,0
59+152,0	59+192,0	to Patra (south)	40	4,5
59+180,1	59+241,8	to Patra (south)	62	4,5
59+379,9	59+535,3	to Patra (south)	156	4,5
59+535,3	59+607,2	to Patra (south)	72	3,5
59+152,0	59+242,0	to Patra	90	4,5
59+375,8	59+612,0	to Patra	236	4,5

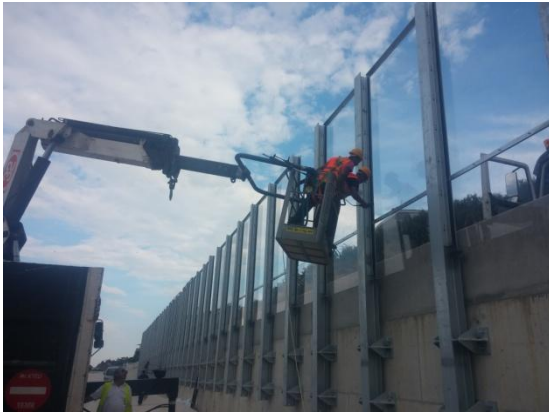
76+078,8	76+186,8	to Patra	110	3,5
82+453,8	82+541,8	to Patra	88	3,0
83+645,4	83+718,4	to Korinthos	74	3,5
88+494,3	88+590,3	to Patra	96	4,5
91+440,0	91+623,7	to Patra	184	3,0
91+816,7	91+943,8	to Patra	128	3,0
96+183,6	96+259,6	to Patra	76	4,0
96+957,5	97+017,5	to Korinthos	60	3,0
97+192,6	97+424,6	to Patra	232	3,0
97+772,5	97+831,5	to Patra	58	3,0
97+104,9	97+254,9	to Korinthos	150	3,0
98+852,6	98+964,9	to Patra	110	3,0
98+710,9	98+797,0	to Korinthos	88	3,0
107+843,6	107+990,6	to Korinthos	144	3,5
111+590,9	111+713,9	to Korinthos	122	3,5
111+794,9	111+879,0	to Patra	84	4,0
111+879,0	111+968,2	to Patra	90	3,0
111+713,9	111+922,1	to Korinthos	208	3,5
112+825,9	112+889,3	to Patra	66	3,0
114+555,8	114+681,7	to Korinthos	126	3,0
114+770,5	114+852,4	to Korinthos	82	3,0
115+353,1	115+429,2	to Korinthos	76	3,0
115+676,6	115+721,1	to Korinthos	44	3,5
115+701,7	115+769,3	to Patra	68	3,5
115+769,3	115+883,4	to Patra	114	3,0
115+721,1	115+841,4	to Korinthos	120	3,5
116+746,1	116+812,0	to Patra	66	3,0
118+006,6	118+190,5	to Patra	184	3,5
117+484,3	117+527,6	to Korinthos	43	3,5
117+527,6	117+686,4	to Korinthos	160	4,5
117+686,4	117+739,1	to Korinthos	53	4,0
117+739,1	117+773,7	to Korinthos	34	3,5
118+137,9	118+237,4	to Korinthos	100	3,5
118+190,5	118+362,9	to Patra	172	3,0
118+67,1	118+767,1	to Patra	110	3,0
118+237,4	118+327,2	to 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 3700 m² of noise barriers in the following sections of “Korinthos-Patra”:

s/n	From K.P.	To K.P.	Branch
1	7+822	7+956	Patra
2	26+524	26+705	Korinthos
3	40+070	40+174	Patra
4	53+702	53+880	Patra
5	91+440	91+623	Patra
6	91+815	91+945	Patra
7	96+955	97+017	Korinthos
8	97+104	97+254	Korinthos
9	97+190	97+314	Patra
10	98+710	98+798	Korinthos
11	107+843	107+990	Korinthos
12	115+350	115+433	Korinthos
13	115+676	115+839	Korinthos
14	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 which also determined the barrier type to be used, the barriers’ installation along EL-KO section was completed. Subsequently, measurements were conducted and the relevant reports were prepared regarding the effectiveness of the applied noise barriers (along EL-KO and “Isthmos Bridge” village) which were approved (No 51820/22-12-2015 and 3006/09-02-2016) by KAPA Dir./ Dep. for Noise, Vibrations & Radiation.

Based on the latest report , we can draw the conclusion that in all cases of noise barriers installation , a total compliance with the limits in force has been achieved. The only case of non compliance (Km 74+492 to Km 74+958 direction towards Athens) is definitely due to the increased traffic of the side road in immediate vicinity of the noise barrier installed.

This latest report is the Appendix 4 of the present report.



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.

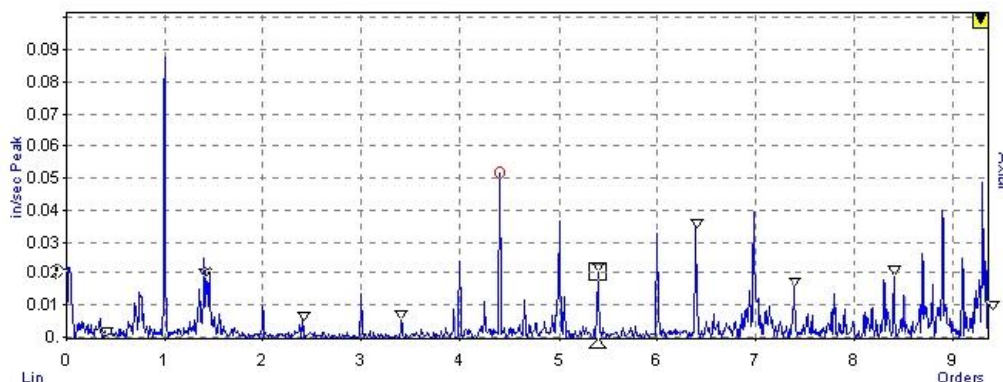
- Use of horizontal scotias on the narrow walls (they facilitate the wall's visual integration into the natural environment by breaking up its surface while also being compatible with the vehicles' horizontal direction).
- Alternation of walls and transparent panels so as to avoid - to the extent possible - 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.



The above stations coordinates are as follows:

Location	Latitude	Longitude
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 MSS is foreseen within the year 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 temperature 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 conclusions :

Regarding the **monthly** variation of pollutants, according to the available data, the following conclusions can be drawn:

- Patra and Korinthos stations do not share common features regarding the monthly variation of SO₂, CO and PM₁₀.
- In both stations, as expected, the secondary pollutant ozone (O₃) reaches greater values during the summer period. The increased values in ozone concentration during the summer months are due to the increased sunlight that these months present, both in duration and in intensity, given that this pollutant is formed through photochemical processes, in which solar radiation plays a determining role.
- In both stations, nitrogen dioxide presents a small divergence from the average, without a clear monthly variation.
- In both stations the PM₁₀ present the highest value in April.
- Regarding benzene, there are common features between the stations.

Regarding the **daily** variation of pollutants, according to the available data, the following conclusions can be drawn:

- Patra and Korinthos stations do not share common features regarding the daily variation of SO₂. In Patra station, the lowest values are recorded during the weekend.
- Regarding CO in Patra, the highest values for both stations are recorded on Mondays and Tuesdays and in Korinthos Sunday and Monday.
- Regarding ozone, the highest values for both stations are recorded on weekends.

- Regarding NO₂, the lowest values for both stations are recorded on weekends.
- Patra and Korinthos stations do not share common features regarding the daily variation of PM.

Regarding the **hourly** variation of pollutants, according to the available data, the following conclusions can be drawn:

- In Patra station, the primary pollutant SO₂ reaches higher values around noon (12 - 16) in comparison to the rest of the day. In Korinthos the primary pollutant SO₂ reaches higher values in the afternoon between 12:00 and 18:00.
- In both stations, the primary pollutant CO has common features regarding the hourly variation with the lowest in the period 24:00 - 07:00.
- In both stations, nitrogen dioxide NO₂ reaches its highest values during morning hours (7-9 in Patra station and 8-10 in Korinthos station). High values in Korinthos station are also recorded from 19:00 to 20:00.
- In Patra station, the daily maximum for O₃ is reached in the early afternoon (14-15), that is when the solar radiation intensity and temperature reach their maximum. In Korinthos station the daily maximum for O₃ is reached in the early afternoon (15-17), when the solar radiation intensity and temperature reach their maximum.
- In Patra station, PM₁₀ present a peak in the evening (20:00 - 22:00). In Korinthos station PM₁₀ reaches an exceptionally high morning peak between 07:00 and 08:00, which cannot be further evaluated, which has been observed during 2015.

Regarding **limit values**:

- The maximum 8-hour ozone value, of 120µg/m³, was exceeded three times in both stations (once in Patra and twice in Korinthos). This value should not be exceeded more than 25 days per calendar year on average every three years.
- Maximum daily average PM₁₀ value was exceeded 8 times in Patra and 11 in Korinthos. The limit value should not be exceeded more than 35 times a year. It is noted that exceedances for Patra were observed the following dates: 17/2/2016, 29/2/2016, 7/4/2016, 8/4/2016, 14/4/2016, 12/5/2016, 8/11/2016 and 20/12/2016. According to the Air Pollution Levels Report of Region of Western Greece respective exceedances were observed also in stations in Patra, while the exceedance were related to the African dust phenomenon in four occurrences (17/2/2016, 29/2/2016, 12/5/2016, 8/11/2016). In Korinthos the exceedances were observed the following dates: 23/3/2016, 8/4/2016, 14-16/4/2016, 18-20/4/2016, 23-24/5/2016 και 1/12/2016. Both in Korinthos the March and April occurrences were related with the African dust phenomenon.

These stations are in operation and are monitored by the OLYMPIA ODOS OPERATION S.A.

Meteorological Stations:

As part of the Motorway's Management & Communications System, two (2) meteorological stations were installed, one after Elefsina Toll Station, at K.P. 28+145 (to Patra) and the other in Kakia Skala, at K.P. 48+315 in the median reserve between "Skyrona" and "Thisea" tunnels (to Elefsina).

The meteorological stations include suitable sensors and update Motorway's Management & Communications System, to which they are connected, of the following:

- Asphalt state - temperature/ water
- Wind direction and speed
- Humidity
- Visibility
- Precipitation - rainfall levels.

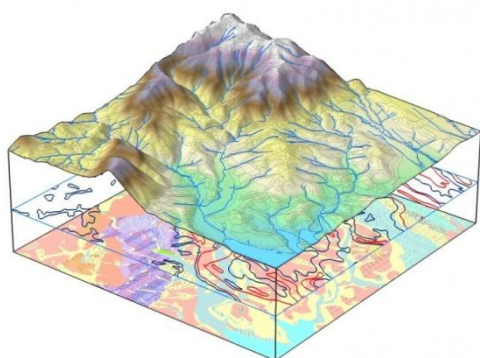
The meteorological stations are parametrised and the software that controls them is located at N. Peramos MOMC. The stations' data are constantly registered digitally.



3.D WATER MONITORING

Requests have been submitted to the competent Water Public Services pertaining to the permit for the excavation/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



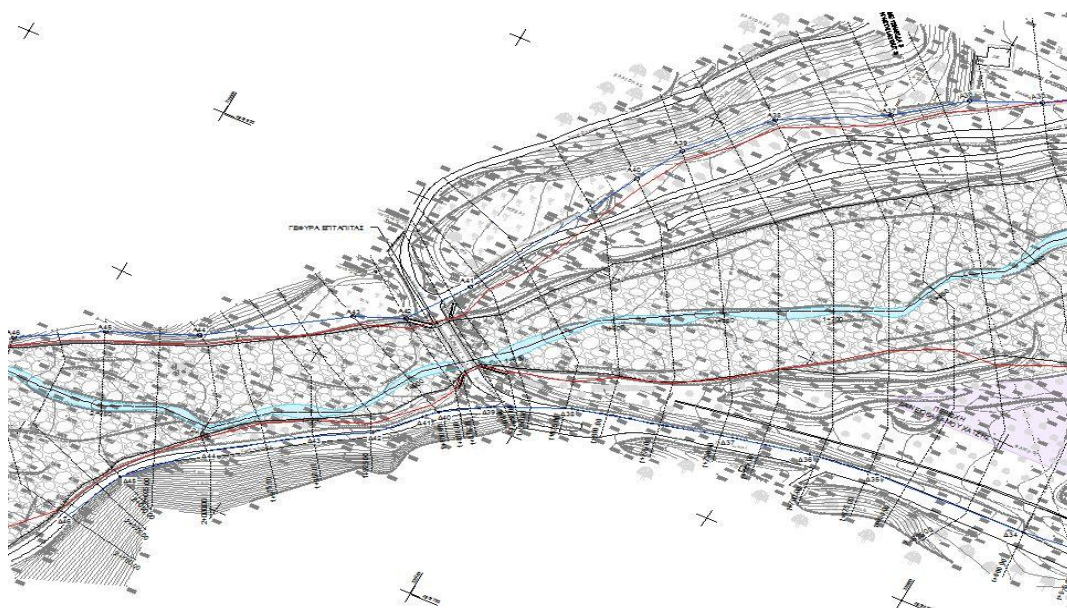
Towards enforcing article 5 law 3010/2002 (as amended via L. 4258/2014 and currently applies) and in accordance with the provisions of article 11.2.1 of the Project's Concession Agreement, the CJV proceeded in the elaboration of stream delineation designs (*D. Sotiropoulos & Co, L.S. Lazaridis & Co*) 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 delimitation 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.



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



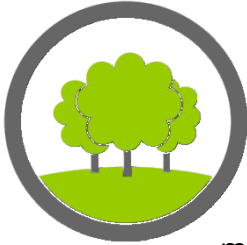
Akrata TB

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.



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-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) 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 submitted for approval to the project's Independent Engineer. The planting process is foreseen to be completed according to the approved works 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

During the summer of 2015 a forest fire that took place near the Patra by Pass tunnels, partially destroyed the vegetation of the slopes.

In autumn 2016, the Concessionaire, after drafting a landscape report, re instated the vegetation by planting approx. 6300 bushes and 950 trees. An irrigations system of 7,600 m length has been established.

- 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 natural 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 were completed in December 2016

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.

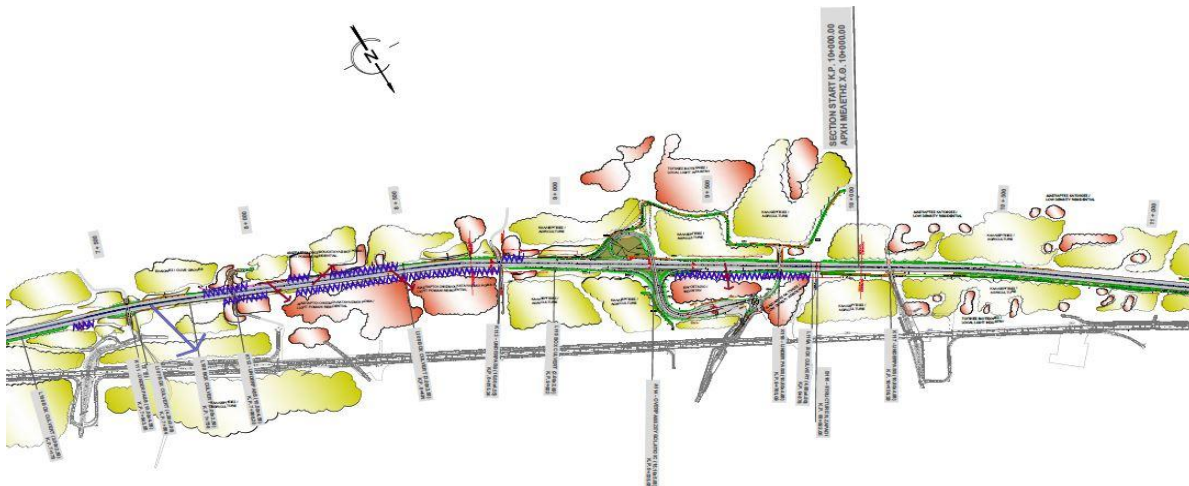
The planting is designed with the main target of adjusting the new plants to the existing vegetation. Trees and bushes are planted taking into account the volume they will take at the final stage of their development.

The proposed planting takes into account the following fundamental principles:

- Traffic safety
- Planting - landscape relationship
- Road equipment

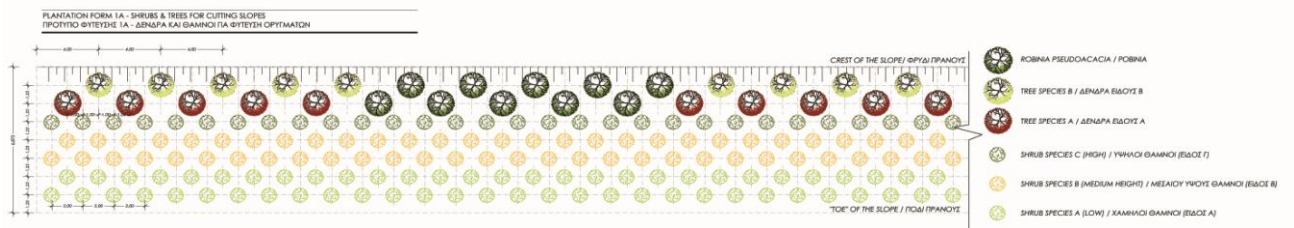
During the arrangement of the various greenery (medium, high) to be planted, the following is taken into account:

- 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.

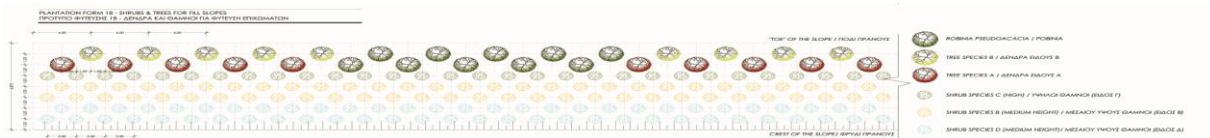


The species to be planted are selected based on the following:

- 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 45 parking areas.

Cleaning

During 2016, 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.



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 2016:

- 4,132,542 km were travelled by Patrols and Interventions teams (about 11,291 per day) for supervising the road network, of which 1,900,447 during the second semester of 2016
- 25,411 incidents were managed with the Company's assistance (of which 13,610 during the second semester 2016), as indicatively: 12,356 (of which 6,983 during the second semester 2016) immobilized vehicles (mechanical failure, flat tyre, out of fuel, abandoned), 10,648 (of which 5,424 during the second semester 2016)

obstacles on the pavement, 1,308(of which 719 during the second semester 2016) accidents (46 with victims and 1,262 with material damages of which 23 and 696 respectively during the second semester 2016), 618 user problems (pedestrians, vehicles moving in the opposite direction, non authorized users, dangerous traffic violations) of which 308 during the second semester of 2016, 132 traffic congestions (of which 57 during the second semester of 2016) and 349 other emergency incidents (fire, adverse weather conditions, etc.) of which 119 during the second semester of 2016, out of which:

- 14,910 (of which 7,887 during the second semester 2016) were dealt with immediately by the Company, as they were detected by company or subcontractors vehicles.
- 10,501 incidents (of which 5,723 during the second semester 2016) 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 34' 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 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 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.



Archaeological place Ag. Georgios or Brouma (Kerynia)

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



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 01/01/2016 - 31/12/2016.

TABLE 3	
TRAINING TYPE	TRAINING TIME (HOURS)
SPECIALISED TRAINING	70
GENERAL TRAINING	40




Good Practice Guide

ΜΟΛΥΝΣΗ ΕΔΑΦΟΥΣ ΚΑΙ ΥΠΕΔΑΦΟΥΣ ΛΟΓΩ ΑΤΥΧΗΜΑΤΟΣ

1) Τι είναι μόλυνση εδάφους και υπεδάφους λόγω ατυχήματος;
 Η μόλυνση του εδάφους (ή των υδάτων ως αποτέλεσμα σπείνισης) είναι ανθρώπινο ελάττωμα. Παράδειγμα: Ρίξη των σωληνώσεων σε μονάδα παρασκευής, διαρροή καυσίμου νιζήλα κατά την πλήρωση φορτηγού αγγείου, ανατροπή κάδου...

2) Πώς μπορεί να αποτραπεί η μόλυνση λόγω ατυχήματος;
 Εξασφαλίζετε ότι οι αποθηκευτικοί χώροι τσιμέντων της προετοιμασίας (μη διατεταγμένα, δοχεία συλλογής), φροντίζετε για την τακτική απομάκρυνση του πλεονάζοντος πετρελαίου από ποταμιότομα φορεία συλλογής απορριμμάτων.
 Μην πετάτε λάδια δοχεία στο έδαφος (ή σε ποτάμια).
 Έχετε απορροφητικά υλικά κοντά σε επικινδύνους περιοχές.



3) Σε περίπτωση διαρροής λόγω ατυχήματος
 α) Σε ποτάμια
 Χρησιμοποιείτε τα κύματα διαχείρισης διαρροής τα οποία περιλαμβάνουν:
 • Απορροφητικά χημικά, διαφόρων μεγεθών (για την απορρόφηση διαρροών χημικών και υδραυλικών ελαίων).
 • Χημικά φράγματα (για την δημιουργία στεγανής ζώνης στο νερό):

1) Φοράτε γάντια
 2) Απομονώστε τις κηλίδες (με χημικά φράγματα εάν αυτό απαιτείται)
 3) Χρησιμοποιείτε απορροφητικά χημικά
 4) Καθαρίστε
 5) Τοποθετήστε τα απόβλητα σε αναλώσιμους σάκους
 6) Περίστε τα γάντια και τους σάκους σε δοχεία επικινδύνων απορριμμάτων.
 β) Σε μη διατεταγμένα επιφάνεια (πλάνα εργασιών, ολάνες ακροδεξιάς...)
 Χρησιμοποιείτε τα κύματα διαχείρισης διαρροής (ή απορροφητική σκόνη ή κόκκους, υλικά τα οποία πρέπει να απλωθούν απευθείας σε όλη την επιφάνεια διαρροής.
 Η διαδικασία χρήσης τους είναι η ίδια με την περιγραφόμενη παραπάνω.
 γ) Σε διατεταγμένα επιφάνεια
 Φροντίστε το μολυσμένο έδαφος και απομακρύνετε το σε δοχεία επικινδύνων απορριμμάτων.

4) Σύσταση αναφοράς περιβαλλοντικού συμβάντος
 Συμπληρώστε το έγγραφο βελτίωσης ενεργειών (βλέπε έντυπο "Αναφορά Συμβάντος", AKFG03001)

Quality Environment Safety
Ref.: INE GDX ENV XXXX AKF G 02016 A-

Good Practice Guide

ΟΔΗΓΙΕΣ ΠΡΟΣ ΚΑΤΑΣΚΕΥΑΣΤΕΣ & ΥΠΕΡΓΟΛΑΒΟΥΣ

1 Ο Υπεργολάβος οφείλει να αυστηρεί τα μηχανήματα που προσαρμόζονται για εργασία στους εργασιολογικούς χώρους σύμφωνα με τις οδηγίες του κατασκευαστή, προκειμένου να αποφευχθεί η υπερβολική καταπόνηση και πιθανές διαρροές καυσίμου και λιπαντικών και η εκπομπή καυσαερίων να διατηρείται στα χαμηλότερα δυνατά επίπεδα.

2 Ο Υπεργολάβος οφείλει να διατηρεί σε άριστη κατάσταση τις διατάξεις και συσκευές μείωσης του θορύβου λειτουργίας των μηχανημάτων και επιπλέον να επενδύει την προσοχή των μεριστών στην αποφυγή της άσκοπης χρήσης των συσκευών ηχητικής προειδοποίησης (σφίγγες, κόρνες).




3 Κατά την διάρκεια των εργασιών εκσκαφής, φόρτωσης, εκφόρτωσης και οδοστρωσίας, θα καταβάλλεται κάθε δυνατή προσπάθεια από τους μεριστές των αντιστοίχων μηχανημάτων και τους οδηγούς των φορτηγών, προκειμένου να ελαχιστοποιείται η παραγωγή σκόνης.

4 Τα φορτηγά του Υπεργολάβου που χρησιμοποιούνται για την μεταφορά προϊόντων εκσκαφών και καθαρισμών, πρέπει να είναι εφοδιασμένα με κατάλληλα καλύμματα καρότσας, τα οποία θα χρησιμοποιούνται για τον περιορισμό της ρύπανσης από σκόνη κατά την κίνηση τους.



5 Οι διαδρομές που θα χρησιμοποιούνται για την κίνηση των φορτηγών και των μηχανημάτων του Υπεργολάβου για τις ανάγκες του Έργου - κυρίως εκτός εργασιών χώρων - θα επιλέγονται με γνώμονα την ελαχιστοποίηση της όλησης της κυκλοφορίας και των παρικών της περιοχών που γεννιάζο με τους χώρους αυτούς.

6 Η απόρριψη των προϊόντων εκσκαφών και καθαρισμών θα γίνεται (κατόπιν συνεννόησης με την Εταιρεία) σε αδειοδοτημένους κατάλληλους χώρους και θα λαμβάνεται από τον Υπεργολάβο μέριμνα, για την επαρκή ταυμίωση της πύμησης της ενδεδειγμένης διαδικασίας.

7 Ο Υπεργολάβος θα λάβει τέλος ιδιαίτερη μέριμνα ούτως ώστε τα υλικά, ο εξοπλισμός και οι μεθοδολογίες που θα χρησιμοποιήσει κατά τις εργασίες που θα πραγματοποιήσει να επιβαρύνουν το περιβάλλον το λιγότερο δυνατό.

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10 CORPORATE SOCIAL RESPONSIBILITY ACTIONS

Olympia Odos is more than a motorway. It is its own people who work every day , use it and live along its course.

All these are the main actors of the Project!

Our main target is to constantly cooperate with the local communities and to support every developmental effort within three fields : sports, environment, culture.
In parallel, baring our corporate social responsibility and given the current financial crisis, we support organizations needs.

Along these lines we have embarked in activities in the following fields during 2016:

Environmental education visits in the worksites of the project, hosting pupils from primary and secondary education schools of Achaia in cooperation with the respective heads of Environmental Education .

Tree Planting Program in areas close to the motorway

Let's do it Greece: Olympia Odos has been the national sponsor of this nationwide cleaning effort

We keep Greece clean and beautiful: a cooperation with Sky channel to distribute 10.000 degradable plastic bags

Support of the Hellenic Paralympic Commission and Paralympic Team

Olympia Odos has been a proud official supported of the athletes of the national Paralympic Team in their way to the Rio 2016 Paralympic Games.

Sports event support

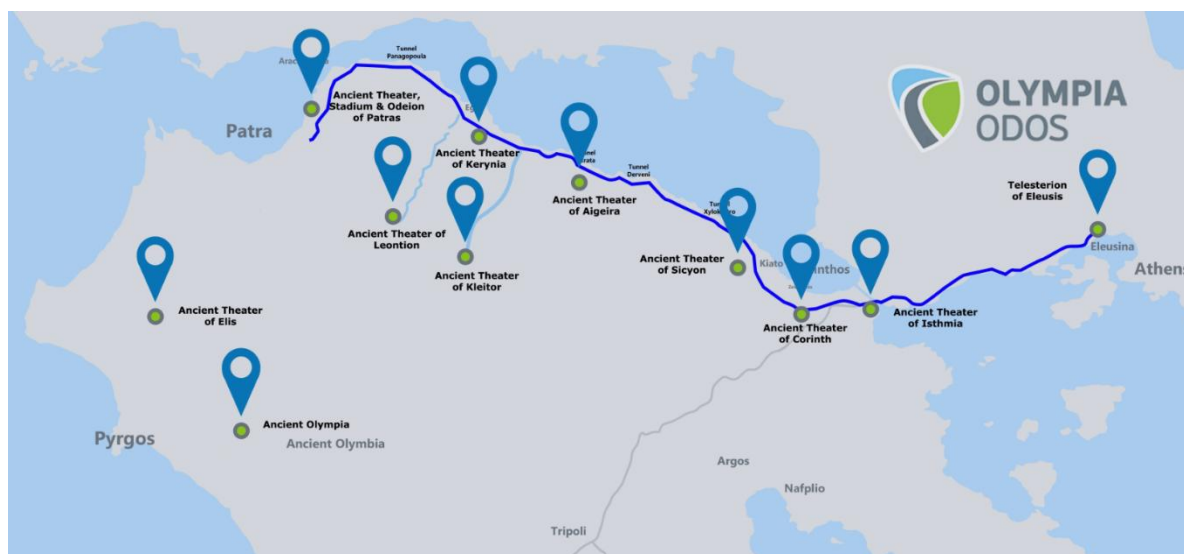
Olympia Odos has supported a number of sports events in the prefectures of Attica, Korinthos and Achaia.

Cultural - Environmental Olympia Odos Route

Olympia Odos, as a member of "DIAZOMA" Association, that deals with the restoration and enhancement of the ancient theaters along the country, actively participate in the creation of the Cultural Route to archaeological sites and their environmental significance areas along the motorway.

Our ambition is the Cultural Route of Olympia Odos to become a branded tourism product, to attract Greek and foreign visitors. The main role of our connection with DIAZOMA is to create an eponymous sustainable cultural product for all areas along the road.

In 2016 we supported the visit of pupils to the Ancient Corinth site .



Supporting the “Observatory of Western Greece and Peloponnesus Road Axes”

Olympia Odos supports the newly-established “Observatory of Western Greece and Peloponnesus Road Axes”, that deals with research and studies on the socioeconomic effects of large infrastructure projects in the region's economy.

The Observatory is a strategic tool which documents scientific methods and modern infrastructure of informative systems (GIS, geodatabase etc.) It collects and processes data, and provides a systematic and reliable information service for the areas affected by the operation of major projects infrastructure.

It is interesting the research study of the phenomenon of social exclusion, poverty and inequality, along with the development of accessibility in the region, business mobility, the impact on the land, the tourism / rural development etc.

The web site of the organization is www.poadep.gr

Road Safety

Vinci Awareness campaign on the effects of drowsiness in driving

R.S.I. - IOAS: Supporting the operation of Road Safety Institute (R.S.I. - IOAS), which is placed in the University of Patras. The Centre is a hub of education and awareness for citizens of Western Greece.

In addition, Olympia Street, in the context of corporate social responsibility in 2016 supported initiatives and activities organized by local authorities or public organizations and associations through sponsorships and donations:

- ARCHELON
- SOPSY Patras
- ALMA ZOIS
- SOS Children's Villages
- Monastery of Agia Paraskevi Megara
- Efthimio Corinth Rehabilitation Center
- Social Municipality Grocery of Patras
- FLOGA
- MAXHTES
- KIVOTOS AGAPIS





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

According to the certified construction expenses of the project for 2016, the expenses related to environmental protection for the year 2016 are up to the amount of 2,994,165 euros (value without VAT). This amount corresponds to the 0.5% 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. Bag filters used in asphalt and cement production sites
4. Oil traps/oil separators
5. Anti dust measures
6. Volatile emissions / dust measurements
7. Water quality measurements, vibrations measurements
8. Slopes planting
9. Personnel related costs from the Allottees

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 250,000 euros that are related to the waste management of the operation of the motorway and the fees to environmental consultants.

According to the 2017 planning and forecast, the environmental protection expenses is up to 2,500,000 euros. These expenses include the expense categories as of 2016 as well as sound protection measures, environmental monitoring activities.

