



ΣΥΜΒΟΥΛΟΙ ΠΟΛΕΟΔΟΜΙΑΣ – ΚΥΚΛΟΦΟΡΙΑΣ – ΠΕΡΙΒΑΛΛΟΝΤΟΣ
PLANNING – TRANSPORT AND ENVIRONMENTAL CONSULTANTS

**NON-TECHNICAL ABSTRACT OF A SUPPLEMENTARY ASSESSMENT
OF THE ENVIRONMENTAL IMPACT OF ALTERNATIVE OPTIONS FOR
DRAINAGE WORKS WHICH WILL BE CARRIED OUT IN CONJUNCTION
WITH THE CONSTRUCTION OF THE LINK ROAD BETWEEN THE PORT
OF LIMASSOL AND THE LIMASSOL-PAPHOS MOTORWAY**

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NON-TECHNICAL ABSTRACT

This Environmental Impact Study examines stormwater drainage solutions for the West Limassol Area and particularly for the LMW (Limassol West) drainage basin as defined by the SALA (Sewerage Board of Limassol-Amathus) “Master Plan” and which appears in Plans 1 and 2, and it is supplementary to the “Environmental Impact Assessment Study for the Construction of the Link Road between Limassol Port and the Limassol-Paphos Motorway” of July 2004 by the firm Environmental Management Consultants and by A.F Modinos & S.A Vrahimis.

The need to design and evaluate alternative stormwater drainage solutions for the western area of Limassol has arisen because of the planned construction of the road linking the Limassol-Paphos motorway with the port of Limassol, a road of primary importance. The construction of this project offers a unique opportunity to coordinate a major road-building project with a major drainage project, as happened in the case of Timagia Avenue (Sp. Kyprianou) in Larnaca.

The stormwater drainage study concerns the water from the western area of Limassol, rainwater from the new road which is to be constructed, rainwater from Milton Road which is located to the east of the primary road which is being constructed, as well as rainwater from the southern area of Zakaki.

Currently, the rainwater from Milton Road (MLT drainage basin) is carried by the Milton Road underground pipeline to Makria lake. The final plan for drainage of the water from Milton Road envisages transporting it to the sea via an open channel. An Environmental Study into this drainage system and the discharge of the water from Milton Road into the sea was carried out in 2002, and this system does not constitute part of the subject of the current study.

This study examines not only the drainage of stormwater from the LMW drainage basin but also the drainage of Milton Road because, with the alternative solutions being studied, the volume of water going into Makria lake and the sea will increase.

The alternative solutions which have been examined in relation to the planned road are as follows:

Option 1: The installation of an underground sewer (8m x 2m in cross-section) beneath the road surface of the link road between Limassol Port and the Limassol-Paphos motorway to carry the stormwater and discharge it into the sea in the Lady's Mile area using gravitational methods. Creation of a small retention pond at Polemidia.

Before Lady's Mile, the underground sewer drains into an open channel (bed level 2.8m below sea level) which form a depression before finally discharging into the sea. The installation of two small pumps at the open channel's outlet into the sea is proposed, in order to pump out stagnant water.

The construction of a further small, closed sewer which will collect the storm water from the road drains and which will be linked to the Milton Road system (it will discharge the water into the sea via an open channel when the Milton Road drainage system is complete).

The construction of a small pumping station ($0.3\text{m}^3/\text{s}$) on the Port roundabout. The pumping station will channel water from the southern area of Zakaki and the Port's inner channel into the sea via the large underground sewer (it should be noted that this water is currently transported to Makria Lake). This pumping station will be used to lower the water table in the area which – especially during the winter months – is particularly high, and it will incidentally help to clean out the underground sewer.

This option is also proposed as an alternative solution with relevant changes to the dimensions of the central underground sewer and of the retention pond.

Option 2: The installation of an underground sewer beneath the road surface of the link road between Limassol Port and the Limassol-Paphos motorway as far as the proposed Port roundabout or thereabouts, and the construction of a large pumping station ($70\text{m}^3/\text{s}$) in the area of the Port roundabout to channel the large volume of sewer water towards the sea. The creation of a small retention pond in Polemidia.

The construction of a further small, closed sewer which will collect the storm water from the road drains and which will be linked to the Milton Road system (it will discharge the water into the sea via an open channel when the Milton Road drainage system is complete).

Also, the creation of a second open channel between the Port roundabout and Lady's Mile beach to transport and discharge the stormwater into the sea in the Lady's Mile area.

This option is also proposed as an alternative solution with corresponding variations to the dimensions of the central underground sewer, the pumping station and of the retention pond.

Option 3: Channelling the stormwater into the Kouris River and into the sea. The main underground sewer will be constructed beneath the old Limassol-Paphos road towards the Kouris. The construction of a retention tank before the stormwater is channelled into the Kouris, and of at least one pumping station.

The creation of a further small, closed sewer which will collect the stormwater from the road drains and which will be linked to the Milton Road system (it will discharge the water into the sea via an open channel when the Milton Road drainage system is complete).

Option 4: Channelling the stormwater into retention ponds in other locations, and into the sea. It is proposed that the greatest volume of stormwater would be channelled into various strategically placed retention ponds using gravity-driven surface flow of the stormwater.

The creation of a further small, closed sewer which will collect the stormwater from the road drains and which will be linked to the Milton Road system (it will discharge the water into the sea via an open channel when the Milton Road drainage system is complete).

The environmental impact of each Option during both the construction stage and the operational stage was evaluated. Based on the results of the evaluation, **Option 1** was selected. The positive impacts of **Option 1** are as follows:

1. Protection of the area under study (the LMW drainage basin) from the occurrence of severe flooding events and from standing water.
2. The impacts from the construction of the central underground sewer will coincide with those related to the construction of the proposed road.
3. The construction of the central pipeline which will channel water from the LMW drainage basin into the sea is favourable to urban development, as this project will constitute a significant intervention in stormwater management and flood-protection in the area.
4. The majority of the Project uses gravitational methods and the construction of pumping stations is kept to a minimum.
5. The stormwater ends up in its natural recipient - the sea - without lots of additional infrastructure projects, as the work is coordinated with the construction of the new primary road linking the Limassol-Paphos motorway with Limassol Port.
6. Completion of the proposed project will result in the removal of the standing water near Limassol Port which is caused by the area's low level (in the Zakaki area near the road which goes round the Port).
7. Solving the problem of standing water is expected to reduce the negative impacts (foul smell, build up of mosquitoes) which have prevailed up to the present day, with the result that the area can be developed residentially.
8. The construction of the retention pond in the Polemidia area will have a positive effect on the area's appeal, as the presence of water gives an exceptional character and acts as a pole of attraction.
9. The retention pond could constitute a significant development project in stormwater management and the development of the ecological characteristics of the wider area where, it is believed, it will function as a significant wetland environment in the area under study.
10. Since the retention pond removes solid particles by sedimentation, it is a good method of limiting pollution.
11. If the collected stormwater is used rationally, and correctly distributed and used for irrigation and/or to replenish the water table, then the benefits are even greater, especially if we consider the value of water in Cyprus and the new conditions prescribed in the greater Limassol area.