

Environment Impact Assessment (EIA) Report

PA 00237/07: Construction of a four lane road from Bieb Is-Sultan to Triq San Rokku i/c/w Smart City Project, from Bieb is-Sultan to, Triq Santu Rokku, Kalkara

1. BRIEF DESCRIPTION OF THE PROPOSAL

The Malta Environmental and Planning Authority (MEPA) requested an Environmental Impact Statement (EIS) to support PA 00237/07 for *Construction of a four lane road from Bieb Is-Sultan to Triq San Rokku i/c/w Smart City Project, from Bieb is-Sultan to, Triq Santu Rokku, Kalkara*, as per Schedule I, Category I, Section 2.1.1.1 of the EIA Regulations, 2007 (L.N. 114 of 2007). The application is for full development permission.

The EIS includes a description of the project and its surroundings, relevant legislation and policies, an assessment of impacts and a description of mitigation measures, as required by MEPA's Terms of Reference. The EIS was co-ordinated by Perit Mariello Spiteri from EMDP - Environmental Management Design Planning.

THE PROPOSED DEVELOPMENT

The proposed development is an infrastructural intervention proposing the construction of a Dual Two Way All Purpose (D2AP) road, linking Bieb is-Sultan, Ғaż-Ғabbar to Triq Santu Rokku, Kalkara. The proposed road is being defined as a 'missing link' of the current road network since it will provide a direct link in the southern part of the Grand Harbour, in particular to the SmartCity site, and a by-pass access to Kalkara. The link road will also serve as a connection to existing infrastructure given that the proposed development will include the construction of two new roundabout junctions at its ends, namely a four-arm roundabout at Bieb is-Sultan and a four-arm roundabout at the junction of Triq Santu Rokku with Triq Santa Liberata.

The link road will consist of a rural all purpose dual carriageway being 4 x 3.5m lanes in both directions (2 lanes to Kalkara and 2 lanes to Zabbar), separated by a central reserve of 1.5m width. The road will have 1.5m wide pedestrian footpaths and cycle lanes at both directions. The overall cross-section of the road would have a total width of 22m, with a capacity of more than 23,000 vehicles AADT (Annual Average Daily Traffic).

The proposed road will include street furniture including street lighting poles, signage and traffic barriers. Rubble masonry boundary walls will also be constructed at a maximum height of 1.2m above road level. The development will also include surface water runoff facilities and other underground services.

ALTERNATIVE SITE ASSESSMENT

Prior to the EIS, an Alternative Site Assessment (ASA) (Annex 2 to the EIS– Alternative Site Assessment) was formulated as a preliminary pre-requisite of the EIA process. The ASA also served as a scoping exercise where various options, methods of construction and routes were assessed in detail. This study established the likely impacts of the various options on the surrounding area/s, leading to the identification of the preferred option for the link road.

2. EIA CONSULTATION

As part of the EIA process, consultation with various consultees was carried out during the scoping and the reviewing stages. Public consultation was undertaken during the scoping and following the certification of the EIS, which also included a public hearing.

2.1 Consultation during Scoping

During the scoping stage, the Project Description Statement (PDS) was circulated to the following consultees and made available for public consultation on 2nd August 2007:

- Ғаз-Ғаббар Local Council (ҒLC);
- Kalkara Local Council (KLC);
- Isla Local Council (ILC);
- Birgu Local Council (BiLC);
- Bormla Local Council (BoLC);
- Xgħajra Local Council (XLC);
- Fgura Local Council (FLC);
- Malta Resources Authority (MRA);
- Superintendent for Cultural Heritage (SCH);
- Superintendent of Fortifications (SOF);
- Department of Agriculture – Ministry for Resources and Rural Affairs;
- Nature Group (NG);
- Din l-Art Ғelwa (DLҒ); and,
- Department of Public Health (DPH).

Comments received within the stipulated timeframes were from the Department of Public Health (DPH), MRA, Din l-Art Ғelwa, Moviment Graffiti and Fgura Local Council. These are inserted in Appendix 1 to this Report.

Three scoping meetings, chaired by MEPA, were held on the 20th and 22nd August 2007 at MEPA offices. The aim of these meetings is to assist MEPA in the drafting of the EIA Terms of Reference. Two meetings were held on the 20th August 2007. One meeting was held for government entities with the following invitees: Superintendent of Cultural Heritage, Superintendent of Fortifications and Director of Agriculture. For the second meeting, a number of local councils were invited, namely: Ғаз-Ғаббар, Kalkara, Xgħajra, Birgu, Bormla, Isla and Fgura Local Councils. For the meeting held on 22nd August, the following NGOs were invited: Nature Trust, Din l-Art Ғelwa, Flimkien għal Ambjent Aħjar, Friends of the Earth, Birdlife Malta, Ramblers Association, Fondazzjoni Wirt Artna, Light Pollution Awareness Group and BICREF. The minutes for these three meetings, which were also posted on the MEPA website, are being attached as Appendix 2 to this report.

The final Terms of Reference were issued on 12th September 2007.

2.2 Consultation during Review

The first draft EIS was submitted to MEPA on 25th September 2009 and circulated for review to the following consultees:

- Ғаз-Ғаббар Local Council (ҒLC);
- Kalkara Local Council (KLC);
- Isla Local Council (ILC);
- Birgu Local Council (BiLC);
- Bormla Local Council (BoLC);
- Xgħajra Local Council (XLC);
- Fgura Local Council (FLC);
- Malta Resources Authority (MRA);
- Superintendent for Cultural Heritage (SCH);
- Department of Agriculture – Ministry for Resources and Rural Affairs;
- Nature Group (NG);
- Din l-Art Ғelwa (DLH); and,
- Department of Environmental Health (DEH).

The EIS was also circulated for internal review within MEPA.

Within the stipulated consultation period, comments were received from the Department of Environmental Health. Comments made by MEPA and its consultees during the review stage were forwarded to the EIA Coordinator, the developer and the architect on 19th January 2010. These comments were addressed by

the EIA Coordinator and responses were submitted to MEPA on 1st March 2011, all of which can be found in an Annex 5 of the Technical Appendices to the EIS. These comments are inserted in Appendix 3 to this Report.

2.3 Consultation following Certification

The certified¹ EIS was published for a four-week public consultation period on 26th October 2010. A public hearing was held in the locality of Kalkara on 10th November 2010. The deadline for comments of the EIS was 17th November 2010. Written submissions were received from the general public and the GRTU. Minutes of the public meeting are inserted as Appendix 4 to this document. All comments were forwarded to the EIA Coordinator in November 2010 and the responses to said comments were received in March 2011 and included as an Addendum to the EIS accordingly.

3. EIA FINDINGS

The following characteristics of the site, assessment of impacts and mitigation measures were identified in the EIS (a summary of impacts is found in Section 10 of the EIS Coordinated Report).

3.1 LAND COVER AND LAND USE

The land-uses of the site and surroundings are noted in Figure 3.2 of the EIS Coordinated Report which consist of:

- Settlements;
- Workplaces;
- Places of worship;
- Agricultural production;
- Commercial;
- Recreational; and
- Natural areas.

The area of study mainly consists of a large tract of agricultural land. The EIS states that a measurable change to the present land uses on site – alterations and loss of present land-uses is unavoidable. The study area was also subdivided into the following nine distinct identity areas (Figure 3.13 of the EIS Coordinated Assessment):

- Identity Area 1: Residential Area;
- Identity Area 2: Commercial Land;
- Identity Area 3: Farmhouses;
- Identity Area 4: Glacis;
- Identity Area 5: Farmhouses;
- Identity Areas 6, 8 and 9: Agricultural Areas; and,
- Identity Area 7: Places of worship and residential area.

IMPACTS ON LAND USE

The proposed project partly intersects a number of commercial garages, an animal husbandry farm, a stretch of abandoned agricultural land, two scrap yards and an area of agricultural land, affecting a total area of approximately 19,000 sqm. The major negative effect of the proposed project is the loss of about 14,500 sqm of utilised agricultural land; negatively affecting some 24 farmers (the majority of whom till the land on a part-time basis). This would also lead to loss of soil, dismantling of rubble walls, uprooting of a number of trees and the destruction of a number of rural structures. In this regard, loss of agricultural activity is considered to be one of the negative impacts arising from the proposed development.

¹ Certification of the draft Environmental Impact Statement document is not an approval by the Environment Protection Directorate, but a declaration that the report has been satisfactorily compiled, prepared in a professional manner, and adequately meets the terms of reference issued by MEPA as per Regulation 24 of the EIA Regulations 2007 (L.N. 114 of 2007). Without prejudice to the Environment Protection Directorate's agreement with the conclusions of the documents, and the final decision on the proposal, the report can then be issued for public consultation.

Agricultural activity in the area will be negatively affecting production. Another impact related to the agricultural aspect of the area is land fragmentation, identified as being an irreversible major adverse impact.

Further to the loss of agricultural land, the proposal will also lead to the loss of a number of small commercial garages. However, impact has been considered to be of a temporary nature should the commercial garages be relocated to areas which are better suited for commercial facilities.

The EIS states that the proposed link road will have a number of indirect benefits, such as, the relocation of the animal husbandry farm located within Identity Area 4 and situated adjacent to the curtain of St. James Bastion, the removal of two scrap yards located within Identity Area 2, Tal-Fata area, and the clean up of the adjacent ditch.

EPD Note: *EPD does not agree with the conclusions of this section of the EIA and considers them as not acceptable given that:*

- *The removal of the farm does not need to be tied to the development, but rather to its intrinsic merits (e.g. as part of a planned improvement of the area surrounding the historic fortifications and their ancillary landscape);*
- *The EIS does not question the legality of the farm. If not, then the obligation to take action already there, with or without the proposed development. Also, if it is illegal, then one should be referring to removal and not relocation;*
- *Relocation implies commitment of an alternative location. Therefore, it has both benefits and adverse impacts. The EIS selectively mentions only the more palatable aspect;*
- *This also applies to the scrapyards and the cleanup of the ditch area mentioned in the EIS.*

MITIGATION MEASURES

- Implementation of good construction practice in accordance with the Environmental Management Construction Site Regulations, 2007;
- Formulation of a Construction Management Plan (CMP);
- Transplantation of protected trees; and,
- Appropriate disposal of soil.

RESIDUAL IMPACTS

Residual impacts for land-use have been identified in the EIS to range from significant adverse in relation to the loss of agricultural land, to significant beneficial in terms of accessibility, road diversion and land use change.

EPD Note: *EPD does not agree with the methodology used to determine the nature of the residual impacts, given that no details of such are provided in the EIS. For example, land take is most probably the impact that can be least mitigated, and also the one to be highly irreversible, therefore, the conclusion reached by the EIS, that is, that most impacts have moderate residual impacts is not being agreed with.*

3.2 ECOLOGY

The ecology baseline identified the following vegetation types in the study:

- *Vegetation related to disturbed ground:* These areas were noted in the vicinity of the western and north-western margins of the area of study (AoS). Much of the disturbance along the fringes of the AoS was inferred to consist of low-frequency, high-amplitude episodes and was mainly derived from disposal of construction debris and other dumping. Species of conservation significance, according to the EIS, include: *Acacia cyanophylla* (Blue –Leaved Acacia), *Ailanthus altissima* (Tree of Heaven), *Ceratonia siliqua* (Carob) and the *Ricinus communis* (Castor-oil Tree).

- *Agricultural areas*: These are mainly related to the cultivated areas of the AoS, which also include colonisation by species at its fringes and in the proximity of dry rubble walls. Species of conservation significance, according to the EIS, include: *Acacia cyanophylla* (Blue – Leaved Acacia), *Capparis orientalis* (Caper), *Ceratonia siliqua* (Carob), *Morus nigra* (Black Mulberry), *Pinus halepensis* (Aleppo pine), *Punica granatum* (Pomegranate), and the *Rhamnus alaternus* (Mediterranean Buckthorn).
- *Derelict Agricultural Area*: Some tracts of agricultural land were identified to be either derelict or fallow that the time of the survey since these area consisted in a relatively low proportion of the land cover. These areas were colonised by ruderal species, characteristic of the early stages of secondary succession, species associated with disturbed ground and infiltrated species from cultivated or ornamented areas. No species of conservation significance were recorded.
- *Aerohaline assemblage*: Located in the north-western boundary of the study area, this zone consisted in a rugged passageway approximately 80m in length and 2m in breadth at its widest point. The sheltered conditions promoted the growth of species generally associated with stable ecological conditions. These species represent dispersal events from adjacent agricultural areas and from assemblages colonising rocky coastal habitats, situated approximately one kilometre to the northeast of the area of study. Species of conservation significance, according to the EIS, include *Capparis orientalis* (Caper) and *Ceratonia siliqua* (Carob). Other species in the area include *Inula crithmoides* (Golden Samphire), *Opuntia ficus indica* (Prickly Pear), *Asparagus aphyllus* (Spiny Asparagus) amongst others.
- *Fragment of Rocky Steppe*: A localised surface exposure of Lower Coralline Limestone of very limited extent was noted close to the western margin of the area of study. This area was colonised by a remnant assemblage of species associated with rocky steppe and garigue habitats. The EIS outlines that it is unclear whether this represents a remnant patch of a former, more extensive community, or whether it represents the result of gradual accumulation of species from source populations closer to the coast. Species of conservation significance, according to the EIS, include *Capparis orientalis* (Caper) and *Phagnalon graecum ssp. ginzbergeri* (Eastern phagnalon).
- *Rupestral vegetation*: The walls of the ramparts of the fortification lines, close to the western boundary of the AoS, provided a stable, relatively undisturbed habitat. These areas were colonised by shrubs and other species characteristic of steep rocky slopes. Species of conservation significance, according to the EIS, include *Capparis orientalis* (Caper), *Phagnalon graecum ssp. ginzbergeri* (Eastern phagnalon) and the *Rhamnus alaternus* (Mediterranean Buckthorn).
- *Mixed plantation*: The glaxis of the fortification lines was harboured by a mixed plantation comprising various trees and herbaceous undergrowth. Species of conservation significance, according to the EIS, recorded from these areas include *Cupressus sempervirens* (Cypress), *Olea europaea s.l.* (Olive) and *Pinus halepensis* (Pine).
- *Fauna*: No direct surveys for fauna were made, but a number of species were noted as encountered during site visits. However, a survey was done specifically to observe birds and to assess which species occur or could potentially occur. The site was also visited once at dusk in mid-May for bat observations. Species included: common flower-associating insects (mainly Diptera, Hymenoptera and Coleoptera), *Rattus sp.* (rat), empty shells of terrestrial gastropods, the Maltese Wall Lizard *Podarcis filfolensis maltensis*, some species of geckoes, bats (namely the Maghreb Mouse-eared Bat *Myotis punicus* and *Myotis blythii punicus*; and one species of Pipistrelle *Pipistrellus sp.* The only avian species noted were *Passer hispaniolensis* (Spanish Sparrow), *Cisticola juncidis* (Zitting Cisticola) and *Sylvia melanocephala* (Sardinian Warbler).

With respect to the ecological resources in the area, the most valuable elements in the AoS are the field boundaries, especially those that consist of vegetated rubble walls, the footpaths that provide access to the fields, and the individual and the groups of shrubs and trees. The EIS states that these provide stable habitats for wildlife including reptiles, and presumably small mammals, as well as invertebrates and plants.

EPD Note: EPD notes that the following species are considered as 'invasive, alien or environmentally-incompatible species' as per the Trees and Woodlands Protection Regulations, 2011, and not 'species of conservation value' as stated in the EIS: *Acacia cyanophylla* (Blue –Leaved Acacia), *Ailanthus altissima* (Tree of Heaven), *Ricinus communis* (Castor-oil Tree), and therefore does not agree with the statement made in the EIS.

IMPACTS ON ECOLOGY

The main impacts identified in the EIS as either significant adverse or adverse during construction and no impact during operation, include:

- *Obliteration of habitat during excavation of site:* Excavation and construction will obliterate plant assemblages and sedentary or slow-moving fauna within the development footprint, and displace more fauna from their habitat. Impact is considered to be irreversible extending throughout the proposed footprint of the proposed development, its immediate margins as well as throughout the access routes and area of operations of excavation machinery. Impacts, however, are not expected to exert effects of considerable significance on biological diversity i.e. on ruderal assemblages and on faunal species. Obliteration of thickets associated with agricultural land is expected to exert more significant effects since such habitats provide a framework around which more complex communities are assembled. Dismantling of rubble walls is also considered to have a significant impact on ecological dynamics;
- *Generation of particular matter during excavation:* The proposed development is expected to generate considerable quantities of particulates during the excavation and construction stages. The redistribution of these materials by stormwater, provided they are controlled and mitigated against, is not expected to have significant effects on the ecology of the area. As for windborne particles, these emissions would enter adjacent habitats and may result in increased soil alkalinity and may also have effects on photosynthesis;
- *Storage and disposal of soil and construction material - redistribution of particulates:* It is expected that approximately 15,000 cbm of soil shall be removed.
- *Storage and disposal of soil and construction material – proliferation of ruderal species:* Impact is not expected to be significant, given the proliferation of ruderal species throughout the area of study;
- *Storage of possible contaminants – leakage of contaminants;*
- *Use of heavy plant – spillages of fuel and fallout from exhaust streams;*
- *Compensatory planning and land reclamation – leaching of pesticide and fertilizer, possible proliferation of alien species;*
- *Site illumination;*
- *General disturbance during excavation, construction and operational phase;*
- *Deposition of nitrogen; and,*
- *Impacts resulting from secondary effects of mitigation measures.*

MITIGATION MEASURES

- Possible mitigation involving the widespread regulation of the efficiency of catalytic converters in petrol engines to reduce deposition of nitrogen;
- Wash-down of dust during demolition/construction phase;
- Containment of particulates and channelling of storm water to secure sinks;
- Erection of chain-link fence to discourage dumping off-site;
- Insulation of stockpiles in order to minimise colonisation events;
- Secure storage of potential pollutants;
- Containment of spillages;

- Avoidance of persistent chemicals;
- Strict adherence to MEPA Guidelines for choice of species in landscaping;
- Use of downward facing lights, although such lights may still cause light pollution that may negatively influences wildlife; one solution is to make use of lights embedded in the roadway;
- Use of damping mechanisms to reduce effects of vibrations;
- Construction of tunnel-like culverts under the roadway to be considered; and,
- Planting of a buffering hedge or row of trees along the road.

RESIDUAL IMPACTS

The EIS identified the following residual impacts as having medium to high significance:

- Obliteration of habitats;
- Proliferation of indigenous ruderal species and alien species;
- Redistribution of biocides and fertilizer;
- Fallout of nitrogen from exhaust streams;
- General disturbance during both construction and operational phase; and,
- Road kill.

3.3 LANDSCAPE AND VISUAL AMENITY

Landscape Assessment

The landscape within the area of investigation can be characterised as being predominantly cultural with a combination of elements giving the area a distinct character that is quite unique. The 8 distinct landscape character areas, each determined because of predominant landscape elements are as follows (Figures 3.34 and 3.35 of the EIS Coordinated Assessment refer):

- *Character Area 1: Historic Military Earthworks – Category A – High landscape value due to the cultural significance of the fortifications which have been included as part of an “area of high landscape value of harbour fortifications” and as a Grade 1 feature;*
- *Character Areas 2, 4 and 6: Rural Landscape – Category B – Rural landscape evidences in some places signs of neglect and decline in landscape condition which generally comprise its quality;*
- *Character Area 3: Industrial Landscape – Category C – Urban quality and the architecture of the “industrial area” within this character area is considered as poor;*
- *Character Area 5: Urban Landscape – Category C – Urban landscape lacks coherence in terms of architectural grammar;*
- *Character Area 7: Religious Landscape – Category A - Capuchin convent is considered as a ‘building of outstanding architectural or historical interest that shall be preserved in its entirety...’ and is a Grade 1 building;*
- *Character Area 8: AEI/SSI – Category A – Character area consisting of Wied il-Kalkara. Only part of the uppermost slopes of the south eastern end of Wied il-Kalkara lie within this area and these are either developed or heavily degraded, despite being designated as a Level 4 AEI.*

Overall, the EIS states that the landscape in question can be considered as being Category A, having high scenic quality, a strong sense of place, behind generally unspoilt with a high distinctive character containing features of ecological and cultural significance.

Visual Amenity

Fourteen viewpoints (Figure 5.1 of the EIS Coordinated Assessment) to assess the visual impact of the proposed development were identified:

- Viewpoint 1: From St. James Bastion towards Ғаž-Ғаббар;
- Viewpoint 2: From St. James Bastion towards agricultural area;
- Viewpoint 3: From St. Louis Bastion towards agricultural area;
- Viewpoint 3 Alternative: From curtain between St. James Bastion and St. Louis Bastion towards agricultural area;
- Viewpoint 4: From St. Louis Bastion towards the Capuchin Convent;

- Viewpoint 4 Alternative: From curtain between St. James Bastion and St. Louis Bastion towards agricultural area;
- Viewpoint 5: From Triq Santa Liberata towards agricultural area;
- Viewpoint 6: From Triq Santu Rokku towards agricultural area;
- Viewpoint 7: From Triq il-Kapuċċini (Haż-Żabbar) towards St. Louis Bastion;
- Viewpoint 8: From agricultural area towards St. Louis Bastion;
- Viewpoint 8 Alternative: From agricultural area towards St. Louis Bastion;
- Viewpoint 9 & Viewpoint 9 Alternative: From agricultural area towards Capuchin Convent;
- Viewpoint 10: From Triq Bormla towards St. James Bastion.

IMPACTS ON LANDSCAPE AND VISUAL AMENITY

The landscape character of the area shall be adversely affected by the construction of the proposed link road however said impact is identified as being *low* in both significance and magnitude. The sensitivity of the landscape is considered to be high given its cultural/natural significance and unique character. The loss of a significant amount of agricultural land and land fragmentation are also deemed to be determining factors in the severity of this adverse impact. The EIS, however, also states that a number of indirect impacts may result from the construction of the proposed link road as the conflicting land uses currently present on site e.g. animal husbandry, scrapyards and light industry, would have to be demolished/removed to accommodate the proposed development. Overall impact of the proposed road is identified as being *moderate* in nature.

With respect to visual amenity, the impact of the proposed development on the visual amenity of the areas portrayed in the photomontages ranges between medium *beneficial to high adverse*, which translates as being a significant deterioration in the view, being a dominant and incongruous feature in the scene.

Residual impacts for landscape and visual amenity range from significant adverse, in terms of loss of agricultural land to beneficial in terms of demolition of a farm building that will slightly enhance the view from the bastions.

3.4 LAND COVER, AGRICULTURAL QUALITY AND PRODUCE

The EIS states that the area of study consists predominantly of a large tract of land that is agricultural in nature, currently 'awaiting classification of agricultural value'. The footprint of the proposed development shall pass through prime irrigated agricultural land, taking up some 14,500 square metres of land affecting approximately 24 farm holdings/farmers. The area through which the road will be constructed, known as Tal-Fata, consists in a whole stretch of mostly irrigated farmland that lies between the north-western fringes of Haż-Żabbar, towards the Cottonera Lines. Fields are relatively large and most of the agricultural area in question is under cultivation, with field plots being well tended and crops grown annually and regularly. A number of derelict parcels can be seen on the northern part of the study area. A detailed description of all the fields analysed as per Figure 3.36 of the EIS is found in Table 3.11 of the same document.

The overall assessment of the site in question shows that the area is of the highest agricultural value set within a historical context, namely due to the following:

- The entire area of Tal-Fata is unencumbered by greenhouses, which factor is seen as an added aesthetic bonus to the agricultural landscape of the site;
- It has few intrusive agricultural buildings;
- It is set within the setting of the historic Cottonera Lines;
- It allows full views of the bastions and the Mediterranean Sea;
- It has few alien trees;
- Nearly the entire area is under active cultivation;
- The soil is of a relatively good quality; and
- Irrigation water from boreholes is available.

Soil

The soil present at the Tal-Fata area is a Xerorendzina, which in most sections reaches levels of 0.5 metres in depth, occurring in a non-uniform manner. Soil in the area had no sign of being subject to erosion (neither from water nor wind). It was also noted that the general condition of the soil was analysed and it was determined that it was strongly alkaline, which is normal for a Maltese soil.

IMPACTS ON AGRICULTURE

The EIS identified a number of positive and negative impacts as follows, with significance adverse impacts identified particularly during the construction phase, namely in terms of loss of agricultural land:

- Proposed new link road can positively impact the farming community by increasing easy access to their fields therefore facilitating the tilling of fields, whilst enhancing better delineation of fields due to adjacent rural structures. However this cannot be manifested during the construction phase given that the agricultural activity shall be disrupted;
- A temporary and permanent loss of agricultural production;
- A permanent loss of agricultural land;
- The permanent division of the Tal-Fata area into two large blocks of land;
- The permanent introduction of traffic pollution into the heartland of the Tal-Fata area; and,
- An increase in the danger of land speculation unless stringent conditions to ensure that no development occurs on the road periphery are in place.

MITIGATION MEASURES

- Landscaping scheme;
- Restoration of rubble walls; and,
- Agricultural rooms, boreholes and water tanks falling within footprint of road are to be reconstructed and/or re-drilled close to and within the particular property of the owner suffering the loss.

EPD Note: *One of mitigation measures listed above, that is the reconstruction of agricultural rooms, boreholes and water tanks falling within the footprint of the road would in itself have adverse impacts on the environment, the aquifer, and the undeveloped rural landscape.*

RESIDUAL IMPACTS

The EIS states that the residual impacts will depend on the measures relating to drainage, land acquisition and loss of farming facilities that may be agreed, especially since the proposed development shall include a radical change of land-use from a stretch of prime agricultural land to a new road. Residual impacts related to the spillages of chemicals are also envisaged. Significance for residual impacts in terms of agricultural range from significant adverse for loss of agricultural land and agricultural production to beneficial in terms of facilitated access to agricultural land and restoration of rubble walls.

3.5 GEOLOGY, GEOMORPHOLOGY, HYDROGEOLOGY AND HYDROLOGY

The study was based on field surveys and subsurface investigation in relation to geology, geomorphology, hydrology and hydrogeology of the site.

Geology

The site for the proposed road is characterised by the outcropping of the following (Figure 3.37 of the EIS Coordinated Assessment):

- The Xlendi Member (which is about 15m thick, hard and compact, is good for construction material, aggregates and polished stone, such as Malta Marble) is limited to the northern section new the Triq Santu Rokku roundabout;
- The Il-Mara Member (which represents the top of the Lower Coralline Limestone Formation and is about 2.5m thick) is found on the southern section and part of the northern section of the proposed link road. This rock is usually hard and compact, good for production of aggregates; and,
- The Lower Globigerina Limestone can be found in the central section of the investigation area.

Core drilling has revealed a few fractures in the limestone bedrock, with a fracture frequency of about 0 to 5 fractures occurring within 3m, generally horizontal to sub-horizontal. The Rock Quality Designation, determined on the cores is high and close to the percentage rock core sample recovery. The limestone analysed has high fissure permeability. From a geotechnical and geomechanical point of view, the limestone bedrock shows discreet to excellent characteristics, and there is no evidence of heterogeneous areas or poor quality formations, which could cause geotechnical problems to the proposal.

Geomorphology

The proposed development extends in a North-South direction, with topographic heights that vary from 48 metres above sea level, at the proposed Bieb is-Sultan roundabout, up to a maximum height of 58m above sea level in its central section, and down again northwards to the minimum height of about 43m above sea level at the Triq Santu Rokku proposed roundabout. The central part of the studied area shows relatively higher topography, determining a smooth slope gradient that ranges from about 2-3% in the southern section and about 4-5% in the northern section. Wied il-Kalkara is found to the north of the site.

Hydrology

The mean sea-level aquifer is the main characteristic of the survey site, located at a mean depth of about 40-50 metres from current ground surface, corresponding to a few metres above mean sea level. Some water reservoirs and boreholes are also present in the area of study and mainly utilised for agricultural purposes.

IMPACTS ON SOIL, GEOLOGY, HYDROLOGY AND HYDROGEOLOGY

The EIS identified an increased surface water run-off and flooding that may occur during construction and operation. Furthermore, the consequent loss of soil is considered to be a *significant* potential problem because of its importance as a natural resource, particularly for agricultural activities. From a hydrological point of view, the potential impacts as a result of the proposal are mainly related to superficial water runoff and flooding along the slopes, which is in fact rather poor during the year and active only in wet season and during rainfall events of particular intensity and short duration.

MITIGATION MEASURES

- Some temporary containing structures and/or increased excavation and backfilling measures, can be expected especially during excavation and backfilling measures to prevent potential gravity-induced instability on the northern and southern part of the road;
- A recycle and re-use policy of all the excavated material and removed soil e.g. any top soil cover that will be removed is to be used for landscaping works and also to increase soil depths within effected fields surrounding the site; inert limestone material generated from trench excavation and vertical profiling can be used as formation fill or infill to trenches after proper crushing off site at licensed recycling facilities and reuse of rubble wall material;
- Installation of specific storm-water systems, that channel the natural water runoff downhill during intense rainfall events; and,
- Construction of suitable culverts.

RESIDUAL IMPACTS

The EIS considered that both during construction and operational phase of the proposed four lane road there will be no major residual impacts envisaged on the geology and hydrogeology of the area.

3.5 ARCHAEOLOGICAL SITES AND HISTORICAL/CULTURAL FEATURES

The cultural heritage study was based on the area of study shown in Figure 3.39 of the EIS Coordinated Assessment Report, which also included a surface visual survey. Figure 3.40 of the same document identifies the following features present on site:

Within the area of influence:

- *Cottonera Lines*: The closest known sites to the area for the proposed development, to the west. Four of the bastions, three gates, and four curtains, are incorporated within the buffer zone surrounding the road. Fortifications have been included as part of an 'Area of High Landscape Value of Harbour Fortifications' and scheduled as Grade 1;
- *Capuchin Convent*: Scheduled as Grade 1, the area includes a cloistered convent, a church, and extensive gardens with a large reservoir, all built upon land granted to the Capuchin Friars back in 1736;
- *Roads and Pathways*: These include the *Strada dei Capuccini*, today known as Triq Santa Liberata; a flight of steps; a rock-cut pathway amongst others in the area.
- *Rural Structures and Remains*: Given the agricultural nature of the area, the following features have been identified: a water cistern/water mill scheduled as Grade 2; a number of small rural storage holdings; and a number of farm houses and some farm units. Rubble walls also characterise most of the landscape, given the agricultural nature of the area and were categorised into two: those found in a good state of preservation (usually built in a higher standard and present a better construction technique than the remaining walls); and those which have either collapsed, have been found containing ashlar blocks incorporated with them, or do not present any typical construction technique.

Known features of archaeological/cultural heritage importance, found outside the area of influence:

- *Cart Ruts (GH_0022)*: Several cart ruts were identified to the north of the area of study, located on rocky terrain close to the area known as Il-Wileg. These features comprise at least four pairs of cart-ruts which run in a SE-NW direction for a length of approximately 75 m and are grouped into two distinct sets found at about 35 m apart. These features are currently scheduled as Class B features as per Govt. Notice 930 of 2002;
- *Punic Tombs*: Further to the east, five tombs discovered in 1932, in a field known as Tal-Patri close to Triq San Anard within the limits of Haż-Żabbar. These features are currently designated as Class E.
- *Early Christian Catacombs (SM_115)*: To the east of the area of study, residential structures were built above a number of rock-cut catacombs, which resulted to be a cluster of Palaeochristian catacombs. Their exact location is currently not known, and they are currently designated as Class E.

IMPACTS ON ARCHAEOLOGY AND CULTURAL HERITAGE

During the construction phase, three main issues were identified in the EIS as possibly having some degree of impact on the cultural heritage of the area: dispersal of fines, excavation of bedrock and heavy vehicle access routes and heavy plant and truck generated oil leakages. With respect to the dispersal of fines, during site preparation, excavation and construction of the proposed road, dust pollution might directly affect the nearby bastions. Impact is considered to be *minor* if adequate regular monitoring of the pollution, conservation and cleaning measures are carried out by conservators during the nearby development works in progress. With respect to the excavation of bedrock, this is required in a number of areas along the site proposed for development and thus, should the necessary attention not given; this intervention could directly have negative impacts on the foundations of the bastions, and thus appropriate mitigation measures would be required. The last two impacts are considered to be properly mitigated through adequate mitigation measures (e.g. a detailed Construction Management Plan).

During the operational phase, the only impact identified by the EIS is the visual impact on the historical landscape namely in the form of light pollution, which as identified as being slightly adverse.

MITIGATION MEASURES

- Vibrations to be limited during rock-cutting operations to minimise impacts on any known cultural heritage in the area;
- Ground-Penetrating Radar (GPR) survey; and,

- Monitoring of dust pollution on the nearby historical structures must be carried out for a period of time, prior to the commencement of works, during the execution of the proposed development and following completion of works on site.

RESIDUAL IMPACTS

The EIS states that re-use of the material from the dismantled rubble walls will result in a *minor* residual impact. Sensitive landscaping will contribute to some extent to reducing the impact on the cultural landscape through residual impacts will remain. However, the EIS states that no significant residual impacts are anticipated if the mitigation measures presented for the impacted archaeological sites are implemented.

3.6 AIR QUALITY

The EIS states that the annual average air-borne pollutant concentrations (2003-2005) for three localities neighbouring the proposed road project (i.e. Bormla, Fgura, Ħaż-Żabbar) indicate that:

- Annual averages for NO_x do not exceed the EU guideline value for the annual average concentration of the gas which is 40µg/m³. In general, it can be said that the localities only manifest moderate exposure to the pollutant;
- None of the sites exceed the WHO Air Quality SO₂ guidelines of 50µg/m³ annual average for health safety. This can be regarded as low to moderate exposure;
- The EU target value for benzene concentrations is 5µg/m³. None of the locations exceeds this value after 2003 and as can be seen there was an improvement (due to a lowering in amount of benzene) in petrol after that year in all areas; and,
- It is not possible to compare the data gathered with a long term exposure limit of ozone as it does not exist.

On-site monitoring in relation to the EIS has shown that:

- The average concentration of benzene was found to be 1.1µg/m³ which is well within the limit annual mean value of 5 µg/m³;
- The average concentration of nitrogen dioxide at the monitoring site was found to be 26.1µg/m³ which is well within the limit annual mean value of 40µg/m³.
- The concentration of particulate matter exceeds the daily limit value of 50µg/m³ for PM₁₀ on 36 out of 42 days. A similar situation for PM_{2.5} exists – whilst it is problematic to identify the sources of PM_{2.5} it can be presumed that the high levels of PM₁₀ in the area are the result of traffic flows in the surrounding areas, finishing work of new buildings in the area as well as entrainment of particulates from the dry bare fields at the time of sampling (late spring – summer).

IMPACTS ON AIR QUALITY

In this regard, the main environmental impacts include: loss of amenity/nuisance impacts of dust emissions from construction works; and air quality impacts due to exhaust emissions from traffic.

During the construction phase, the main emissions during construction are likely to be dust and particulate matter generated during construction or from the handling of construction materials. If proper mitigation measures are not actively implemented, then emission levels for particulate matter cannot be controlled to an acceptable level ensuring that any residual impacts would not increase significantly from the present levels which already exceed the limits set for both PM₁₀ and PM_{2.5}.

The impact on local air quality produced by vehicle exhaust emissions from traffic using this section of road is likely to be moderately significant. Nevertheless, the impact is unlikely to change significantly as a result of the proposal. The improvement may result in better traffic flow which may lead to a reduction in ground level concentrations of the pollutants of concern. This implies that future traffic flows along this section are anticipated to be around 23,000 vehicles per day (2025 – DMRB).

MITIGATION MEASURES

- Formulation of a Construction Management Plan (CMP), including a dust management plan;
- Construction vehicle on-site speeds are limited to an appropriate level;
- Original road surfaces are retained for vehicle movements as far as practicable until removal is required for resurfacing or due to realignment;
- Drop heights are minimised when handling material (including during recycling activities, if relevant);
- Recycling of materials would take place off-site;
- Use of suitable screening methods, as necessary, e.g. stone walls, fences (including temporary screens), bunds, etc.;
- Areas of remaining and progressively constructed new road sections and any temporary hard-standing areas are regularly swept to prevent dust accumulation;
- Weather conditions (wind direction and speeds) are monitored, by a nominated individual or individuals, with respect to sensitive locations and potential dust nuisance;
- Plant to be subject to regular maintenance; and,
- Minimisation of dust emissions through appropriate demolition practices.

RESIDUAL IMPACTS

The EIS stated that the majority of the air quality residual result during both the construction and operational phase are considered to be high and adverse, particularly during the operations phase.

EPD Note: *The Environment Protection Directorate is concerned about the levels of PM₁₀ and PM_{2.5} that resulted from the EIS studies, albeit it is evident (from said results and from the justification provided by the EIA Coordinator) that the proposed project cannot be considered to be responsible for the high PM₁₀ values found in the area given that the project is not yet in operation. The EIA Coordinator provided the following possible explanations for the high levels of PM₁₀ and PM_{2.5} as follows:*

- *The area being downwind from the Marsa Power Station;*
- *The presence of a number of agricultural plots which were dry due to climatic conditions at the time of monitoring and thus could lead to dust entrainment;*
- *The presence of a vulcaniser close to the monitoring station;*
- *The presence of aluminium works being carried out close to the monitoring station; and,*

At the time of sampling construction works were in progress on a number of apartments situated close to the area of study. Mounds of loose construction material could be noted on some of the balconies which could have also contributed to dust generation.

3.7 NOISE AND VIBRATION

The noise assessment associated with the existing prevailing background noise levels and expected noise levels undertaken based on the parameters of BS 4142:1997. Six locations (Figure 3.69 in the EIS Coordinated Assessment refers) were chosen in order to take measurements for the prevailing background noise levels. The results identified that the background noise in the area is in line with what is expected in slightly busy street, with the Ħaż-Żabbar area having higher background noise.

IMPACTS ON NOISE AND VIBRATIONS

The EIS states that the noise generated during construction due to road works including all machinery will not affect the majority of the populated residential areas as by the time noise arrives at various localities, it will lose enough intensity to be similar to the existing daily background noise levels. It was also predicted that during a typical work day, 20 return trips will be generated by trucks during the construction phase. These movements are expected to generate an equivalent continuous sound level of 55 dB(A) which according to BS 4142:1997 is highly likely to generate complaints from residents living along the route the trucks will adopt.

During operation, it is expected that the background noise will increase by around 7 dB(A) during peak hours; whilst some 3 to 4 dB(A) can be expected when traffic volumes are less. With respect to the former, an increase of 7 dB(A) is considered to be just above marginal significance and thus less likely for complaints, whilst the increase of 4 dB(A) or less is considered to be of marginal significance.

In line with BS 6472:1992, the option of a new road will result in less noise and vibrations arriving to the residents than that of the upgrading the existing road.

MITIGATION MEASURES

- The use of trucks which generate the minimum noise levels possible, i.e. basic sound power of 80dB(A) or less; and,
- The use of a route for the passing trucks at least 50m away from Kalkara – this is possible by making the site accessible only from the Bieb is-Sultan area, therefore ensuring that construction traffic does not enter Cottonera, but skirts Ħaż-Żabbar and uses the route to reach Tal-Barrani road via the outskirts of the Bulebel Industrial Estate.

RESIDUAL IMPACTS

The EIS states that during the construction phase, there will be a slight impact on nearby residential properties due to noise emissions from on-site traffic and other activities. With respect to vibration, mitigation measures shall be taken to reduce vibrations from on site plants and machinery. During operation, traffic noise levels would be expected to decrease at a number of locations in the vicinity of existing primary routes as a result of the proposed development. In the case of vibration, the proposed road development is not expected to give rise to vibration levels in the locality that is either significantly intrusive or capable of giving rise to structural or even cosmetic damage.

3.8 EXISTING INFRASTRUCTURE AND UTILITIES

No existing utility services are located along the proposed route of the link road or in the area of study. Service utilities are present on the northern and southern side of the proposed development (in the existing roads), in underground trenches and overhead aerial lines. Street lighting is also provided at both ends of the proposed link road.

3.9 PUBLIC HEALTH

The EIS identifies the following risks which could possibly arise during the building of the road (i.e. construction phase):

- Increased dust and noise by digging and carting of soil and earth;
- Increased fumes and noise caused by diesel engines carting materials away from the site;
- Increased particulate matter dispersed during the construction phase, namely excavation;
- Accidents to personnel involved in the clearing procedures; and,
- Dangers posed by the diversion of traffic and pedestrians away from the site during key stages of work.

During operation, the following hazards may be generated:

- Increased risk of noise and fumes from traffic to local dwellers and pedestrians as well as motorists utilising the road; and
- Loss of a stretch of arable land on which farm animals and crops could be raised.

Once the development is operational, benefits for the resident population may include:

- Easy access to Smart City sites of employment, commerce and education. This could result in an amelioration of the living conditions for several hundreds of people;
- Avoidance of the current congested road (noise, traffic, fumes) since it passes close to two schools;
- A reduction in farm rodents and parasites on the arable land.

EPD Note: EPD does not agree with some of the conclusions of this section, e.g. the claim that the development will lead to a reduction in farm rodents and parasites on arable land is not considered to be legitimate as it is not clear as to how the said proposal will actually contribute to this.

3.10 SOCIAL AND ECONOMIC

The EIS states that main concern from a social perspective is the development of Phase A of the South Harbour Link Road, since this would divert significant traffic on Fgura, therefore adversely affecting both Fgura and Marsaskala. The EIS also states that it is important that a commitment is taken vis-à-vis the route connecting Ricasoli to Tal-Barrani as proposed.

The economic impact of the project stems from the reason why this road is being proposed - SmartCity Malta cannot operate within the construction of the link road given the amount of vehicles attracted to the area by it and other similar developments. The positive impacts on the Maltese economy through job creation and GDP contribution are expected to be significant. The costs to build the road and the negative impacts on the local farming community although significant to them are considered as very minor when compared to the overall benefits to the community in general.

EPD Note: 1) EPD notes that there is no indication with respect to the impacts that the consequential commitment/development, i.e. the rest of the Master Plan from Smart City to Tal-Barrani, will have on the site and its surroundings. It should be stressed that this is not covered by the current EIA; however the EIA Coordinator is suggesting commitments that in themselves would be premature in the absence of a major EIA update or a separate EIA for the development as a whole

3.11 ENERGY ASSESSMENT

The EIS states that street lighting is recommended for this type of road development, since it should make it safer for both motor vehicles and pedestrians. Light pollution and light trespass are being recognised as real effects of excessive or poorly designed exterior lighting. In order to reduce such instances, the EIS is proposing the following:

- Use of cut-off luminaires so that bare lamps are not visible in roadway lighting fixtures, except from directly beneath them; and,
- Designing lighting installations that provide the minimum amount of light needed for safety.

3.12 WASTE

The waste generated by the proposed development can be described as follows:

During construction

- Site clearance including removal of soil;
- Removal of dry stone (rubble) walls;
- Demolition of any existing structures;
- Excavation to formation or required level;
- Presence of employees on site during the development;
- Maintenance and refuelling of heavy machinery on site; and
- Other activities.

During operation, maintenance and landscaping works shall be the only activities that generate waste.

With respect to mitigation measures, the EIS suggests a number of mitigation measures, namely related to the reuse of soil and rubble, and environmentally safe management of waste. Thus, no residual impacts have been identified.

3.9 CUMULATIVE IMPACTS

Cumulative impacts identified in the EIS are as follows:

- The new high amount of visitors expected to frequent the area on a daily basis – if the proposed stretch of road were not to be built, then the amount of traffic passing through Cottonera and its environs and/or within Ħaż-Żabbar will be significant;
- Even though the project *per se* does not present a significant major impact concerning PM₁₀, the area is particularly sensitive to projects, which could affect ambient air quality albeit in small quantities;
- Some potential for cumulative effects of multiple major construction projects occurring simultaneously in the vicinity of the proposed link road – these could exacerbate both noise and vibration levels, however in the case of the latter, it is not believed that it would result in worsening the situation; and,
- Loss of utilised agricultural land that shall affect negatively the character of the area.

3.10 PLANNING, POLICIES AND LEGISLATION

The EIS considers the relevance of national legislation and Maltese planning policy to the proposed development. The following is list of main regulations to which the construction and operation of the proposed road should conform to:

3.10.1 National Legislative and Regulatory Framework

Development Planning Act, 1992 (now superseded by the Environment and Development Planning Act, 2010)

- Environmental Impact Assessment Regulations, 2007,
- Environmental Management Construction Site Regulations, 2007.

Environment Protection Act, 2001 (now superseded by the Environment and Development Planning Act, 2010)

- Air Quality:
 - **Legal Notice 216 of 2001:** Ambient Air Quality Assessment and Management Regulations, 2001;
 - **Legal Notice 224 of 2001 (as amended by LN 231 of 2004):** Limit values for Sulphur Dioxide, Nitrogen Dioxide and Oxides of Nitrogen, Particulate Matter and Lead in Ambient Air Regulations, 2001; and,
 - **Legal Notice 163 of 2002:** Limit Values for Benzene and Carbon Monoxide in Ambient Air Regulations, 2002.
 - **Legal Notice 11 of 2003:** Ozone in Ambient Air Regulations, 2003;
 - **Legal Notice 292 of 2007:** Arsenic, Cadmium, Mercury, Nickel and Polycyclic Aromatic Hydrocarbons in Ambient Air Regulations, 2007;
 - **Legal Notice 225 of 2001:** Limitation of Emissions Volatile Organic Compounds Regulations, 2001;
 - **Legal Notice 291 of 2002:** National Emission Ceilings for Certain Atmospheric Pollutants Regulations, 2002;
- Waste Management:
 - **Legal Notice 337 of 2001:** Waste Management (Permit and Control) Regulations;
 - **Legal Notice 128 of 1997:** Deposit of Wastes and Rubble (Fees) Regulations, 1997;
 - **Legal Notice 139 of 2001:** Sewer Discharge Control Regulations, 2002;
 - **Legal Notice 106 of 2007:** Waste Management (Activity Registration) Regulations, 2007;
 - **Legal Notice 158 of 2002:** Waste Management (Batteries and Accumulators) Regulations, 2002;
 - **Legal Notice 166 of 2002:** Waste Management (Polychlorinated Biphenyls and Polychlorinated Terphenyls) Regulations, 2002;
 - **Legal Notice 161 of 2002:** Waste Management (Waste Oils) Regulations, 2002;
 - **Legal Notice 168 of 2002:** Waste Management (Landfill) Regulations, further amended by L.N. 289 of 2002, L.N. 70 of 2007, and L.N. 146 of 2007.
- Noise:
 - **Legal Notice 193 of 2004:** Assessment and Management of Environment Noise Regulations;
 - **Legal Notice 64 of 2002:** Noise Emission in the Environment by Equipment for Use Outdoors Regulations, 2002;

- Nature Protection:
 - **Legal Notice 1 of 1994:** Environment Protection (Preventative and Remedial Measures) Regulations;
 - **Legal Notice 160 of 1997:** Rubble Walls and Rural Structures (Conservation and Maintenance) Regulations
 - **Legal Notice 12 of 2001:** Trees and Woodland (Protection) Regulations;
 - **Legal Notice 311 of 2006:** Flora, Fauna and Natural Habitats Protection Regulations; and,
- Other:
 - **Legal Notice 217 of 2001:** Freedom of Access to Information on the Environment Regulations.
 - **Legal Notice 126 of 2008:** Prevention and Remedying of Environmental Damage Regulations, 2008.

Fertile Soil (Preservation Act), 1973:

- **Legal Notice 104 of 1973:** Preservation of Fertile Soils Regulations.

Malta Resources Authority Act, 2001:

- **Legal Notice 203 of 2002:** Protection of Groundwater against Pollution caused by Certain Dangerous Substances Regulations;
- **Legal Notice 23 of 2004:** Quality of Water for Human Consumption Regulations, 2004;
- **Legal Notice 139 of 2002:** Sewage Discharge Regulations.
- **Legal Notice 194 of 2004:** *Water Policy Framework Regulations 2004;*
- **Legal Notice 340 of 2001:** *Urban Wastewater Treatment Regulations 2001;*
- **Legal Notice 17 of 2009:** *Quality of Water Intended for Human Consumption Regulations 2009;* and
- **Legal Notice 339 of 2001:** *Quality Required of Surface Water intended for the Abstraction of Drinking Water Regulations, 2001*

Authority for Transport in Malta Act, 2009

The Motor Vehicle Regulations of 1994 (L.N. 128 of 1994).

Occupational Health and Safety Authority Act.

3.10.2 Local Planning Policy

Structure Plan Policies:

- Waste: PUT 13;
 - Public Transport: PTR 04
 - Rural Conservation Areas: RCO 1, RCO 2, RCO 4, RCO 10, RCO 11, RCO 12, RCO 21, RCO 22, RCO 27, RCO 28 and RCO 29.
 - Cultural Heritage: UCO 7, UCO 10, UCO 12, UCO 13, and UCO 14;
 - Archaeology: ARC 1, ARC 2, and ARC 6.
- *Space for Waste: the Waste Management Subject Plan (SWM2, SWM3, SWM7, SWM10)*
- *Solid Waste Management Strategy*
- *Grand Harbour Local Plan, 2006 – Kalkara: GT06; GT03;*
- *South Malta Local Plan, 2006 – Kalkara: SMIA 01; SMIA 02; SMCO 10*

Policy and Design Guidance, 2007: In terms of building design, building height, access, parking requirements, and residential amenity.

Guidelines on Trees, Shrubs, and Plants for Planting and Landscaping in the Maltese Islands, 2002

3. EPD COMMENTS AND CONCLUSIONS

A. CRITIQUE OF THE EIA

As part of the EIA process undertaken for this proposal, the following issues have been noted:

- i. **'Hybrid' system for the evaluation of impacts:** The Leopold and Canter Methods for impact assessment, on their own merits, are essentially two dimensional cross-referencing matrix models, and are probably one of the best known matrix methodologies available for predicting the impact of a project on the environment. The Leopold matrix provides a simple way to summarise and rank environmental impacts, and to focus on impacts that are considered to be the most significant. This EIS made use of a 'hybrid' system involving both the Leopold and the Canter method for impact assessment through the use of one matrix. Whilst the matrices used for this EIS appear to provide a clear numerical value for the impact based on factual information, the magnitude and significance designated for each impact is inherently subjective, especially since they were applied across the board for all environmental characteristics. The results thus appear to give an accurate scientific assessment of impacts, despite being based on calculations that are wide open for interpretation. Furthermore, the EIS fails to provide adequate cross-referencing between the impact assessment tables derived from this system and the discussion of impacts in the Coordinated Assessment.
- ii. **Mitigation measures:** The EIS Coordinated Assessment lists a number of mitigation measures which are not practically enforceable or dependent on strategic-level factors that are beyond the applicant's control, for example the widespread regulation of the efficiency of catalytic converters in petrol engines to reduce deposition of nitrogen to decrease impacts on terrestrial ecology or the widespread regulation of the efficiency of catalytic converters in petrol engines to reduce deposition of nitrogen.
- iii. **Weak impact/mitigation/residual link:** The summary of impacts table presents a number of impact/mitigation/residual flows which do not follow one another. There are a few instances in the EIS where an impact is given no mitigation measure, for example the loss of utilised agricultural land is being identified as an impact of direct, adverse and irreversible nature with no mitigation measures
- iv. **Technical errors/omissions:** For example, invasive alien species as per the Trees and Woodlands Protection Regulations, 2011, such as *Acacia cyanophylla* (Blue-Leaved Acacia), *Ailanthus altissima* (Tree of Heaven), *Ricinus communis* (Castor-oil Tree) are listed in the EIS as species of conservation value.

B. RECOMMENDATION VIS-A-VIS PROPOSED DEVELOPMENT

The EIS has predicted a number of potential impacts on the environment as a result of the proposed development, some of which have residual impacts of major significance. The mitigation measures proposed in the EIS are aimed at minimising the predicted impacts, however despite the mitigation measures, major negative impacts, both short-term and residual, have been identified. Important residual impacts are as follows:

- i. Loss of habitat and degradation leading to loss of circa 15,000 sqm of utilised agricultural land, loss of produce, fragmentation of utilised agricultural land; abandonment of utilised agricultural land, abandonment of utilised agricultural land and loss of rural structures – Significant Adverse;
- ii. Air quality impact on public health due to PM_{2.5} – Adverse;
- iii. Air quality impacts due to emissions from traffic using the selected route - Adverse
- iv. Social impacts due to in terms of agricultural disturbance and pollution/public health – Adverse; and
- v. Landscape and visual impact due to fragmentation of agricultural plots and impacts related to the views from the bastions – Adverse.

The Environment Protection Directorate acknowledges the declared importance of the proposed highway development in terms of ancillary infrastructure serving the strategic SmartCity (Malta) project, and further recognises the existence of Local Plan commitments in this regard. Nevertheless, the Directorate is concerned about the significant impact on the environment as summarised above, particularly the land fragmentation in the Tal-Fata area, together with the loss of approx. 15,000m² of prime cultivated agricultural land, together with soil and rubble walls. EPD considers these as significant and irreversible adverse impacts that shall be caused by this development proposal.

Furthermore, the Directorate notes that the proposed road is just one segment of a much more extensive project that also envisages additional link roads and inter-related modifications/connections to the highway network linking Smart City Malta to Tal-Barrani/Hal Tarxien, as per Transport Malta's proposed Master Plan. The full implications of the transport link between Smart City Malta and Tal-Barrani are considered to be unknown, given that to date the detailed assessment only covers the stretch from Bieb is-Sultan to Santu Rokku. In this regard, the Directorate is not convinced that the current proposal in isolation would effectively resolve any major traffic issues to the extent of really outweighing the predicted adverse impacts. In such circumstances, it cannot be excluded that the altered traffic patterns introduced by the *ad hoc* development of the Bieb is-Sultan to Santu Rokku segment may actually precipitate an increased dependence on other components of the Master Plan which have not yet been subjected to the required assessment processes. In this regard, the wider cumulative impacts of the project, as well as the full implications arising from consequential development, cannot be considered as having been conclusively determined.

In the absence of more thorough studies covering the entire Master Plan, the Directorate is also not sufficiently reassured that the proposed link road will not just be shifting the traffic problem onto other areas *en route*, thereby compounding the associated congestion and air quality issues elsewhere (e.g. Fgura or Hal Tarxien).

In the light of all the above-mentioned factors, the Directorate is not convinced that the claimed benefits would outweigh the observed and potential impacts of the development. Therefore, in the EPD's opinion, the current proposal is premature and potentially prejudicial to the proper assessment of evidently related highway projects which are in the pipeline. Therefore, at this stage, the EPD is not in a position to recommend the application favourably.

Appendix 1: Scoping comments submitted to MEPA during scoping consultation (02/08/07-23/08/07).

Reference	Comment	EPD Response
<p>Department of Public Health</p> <p>Email (13/08/07)</p>	<p>With reference to your e-mail dated 2nd August 2007, we would like to have the following issues related to public health included in the terms of reference for this development.</p> <ol style="list-style-type: none"> 1. Impacts on the general public from activities during construction/upgrading works, in this regard to noise, vibration, air pollution and any mitigation measures to be taken during the construction and upgrading process. 2. The EIA is also to include any proposed actions to be taken as to prevent/minimise noise, vibration and air pollution to residential areas in the near vicinity to the proposed link road. 	<p>Noted and included in the EIA TORs.</p>
<p>Malta Resources Authority</p> <p>Email (27/08/07)</p>	<p>Reference is being made to your email dated 2nd August, 2007 and the PDS of the project in caption.</p> <p>Kindly find the information the Water Directorate wishes to see included within the TOR.</p> <ol style="list-style-type: none"> 1. Information on how the proposed development will alter the surface water hydrology of the area. 2. Any perceived impacts on groundwater resources. 3. Any mitigation measures for the loss of recharge in addition to the surface runoff collection facilities described below. 4. Information on surface runoff collection facilities that are to be incorporated within the proposed road network Further details should be provided regarding flood water management since it is evident that the road will pass through a major green belt and thus generate higher runoff rates. Reservoir capacity and location as well as ancillary connections to each reservoir should be indicated. 5. Information on any drainage design facilities Any details on any proposed soak-a-ways vis-à-vis proposed soak-a way volume and depth is required. Any proposals for the management of any drainage grills and gratings should be included. Also measures to mitigate possible aquifer pollution caused by 	<p>Noted and included in the EIA TORs.</p>

- soak-a-ways should be put forward.
6. Underground services: Further information on 'underground services' mentioned in the PDS is to be included.
 7. Service tunnels: More information should be provided on the service tunnels being proposed.
 8. Sewerage tunnel and proposed road: With the proposed road be affected in any way with the proposed sewerage tunnel that is presently being planned by the WSC?

Din Helwa
Letter
(04/09/07)

I-Art Re: Meeting of 22nd August 2007, at MEPA Boardroom, to discuss Terms of Reference for the EIA on PA237/07 – Link Road from Bieb Is-Sultan to Triq Santu Rokku, Kalkara.

Noted and included in the EIA TORs.

Din I-Art Helwa would like to see the following issues, form part of the EIA for the proposed road:

- 1) Choice of Variant: 3 Variants were proposed, with one being presented as the most popular choice. We would like to see a study on all three Variants, and possibly others before any one is singled out.
- 2) Visuals of the proposals should be supplied, with Sections to show the gradients of the different Variants.
- 3) Studies on the impact on the historical, archaeological, ecological and agricultural landscape of the area.
- 4) Studies on the future development of the area vis a vis the new road; whether it will encourage further development, and in that case, which variant would provoke the least impact.
- 5) Trees and landscaping should be included in the overall design of the new road.
- 6) Lighting design to be sympathetic to the landscape.

Moviment Graffitti
Email
(04/09/07)

Moviment Graffitti is hereby putting forwards its suggestions which have been decreed as being important issues to be taken into consideration in the compilation of an Environmental Impact Assessment for the Construction of a two lane road from Bieb is-Sultan to Triq Santu Rokku i/c/w Smart City Project. (PA 237/07)

Noted.

Moviment Graffiti's major concerns regarding the proposed project and which as a result are observed to merit greater consideration include the:

- sustainable use of agricultural land and the livelihood of the farmers' community
- historical preservation of the site (such as the surrounding bastions and trench)
- conservation of protected trees
- conservation of the aquifer
- impact on the irrigation system by the demolition of boreholes and reservoirs
- disturbance of the area through pollution and significant increase in traffic flow.

In this regard, Moviment Graffiti is proposing that due examination is made with regards to the endorsement of an efficient transportation system to ferry people to and from SmartCity. Such measure would help to reduce the negative impact of pollution and traffic congestion in the area.

Fgura Local Council

(Letter 25/09/2007) –

Apart from issues related to the nature of the project and road construction, feedback from the Fgura Local Council related to the following:

Noted.

Primary concerns

Due to the extent and affects said project is to have on the environment an EIS is to be prepared. Although the project is still in embryonic stage a number of issues will have to be address. Primarily the undersigned is of the professional opinion that the following should form an integral part of the EIS required:

- Noise pollution;
- Air pollution (dust emissions);
- Air pollution (gaseous pollutions);
- Traffic generation;
- Vibration;
- Detailing of the nodes (roundabouts at each end of the link road);
- Visual impact on the landscape;
- Light pollution;
- The production and disposing of waste material;
- Health/safety issues;

- Protection/conservation of areas of historic/environmental importance;
- Protection of areas of ecological importance;
- Protection of areas of scientific importance; and,
- Any changes (dangers such as contamination) to the water table.

Other issues include: vehicular traffic and services.

Appendix 2: Scoping meeting minutes – 20th and 22nd August 2007

PA 237/07– Construction of a two lane road from Bieb Is-Sultan to Triq San Rokku i/c/w Smart City Project

Scoping Meetings with Identified Stakeholders – Minutes of meeting

Monday 20th August - MEPA Boardroom, 10.00hrs

Government Entities – Cultural Heritage and Agriculture

MEPA: Vincent Gauci (VG), Joseph Gauci (JG), Charlene Smith (CS), Joseph Magro Conti (JMC), Kevin Borda (KB), Stephen Saliba (SS), Richard Lia (RL), Annie Falloon (AF).

ADT: Mario Ellul (ME), Joe Briffa (JB)

Superintendence of Fortifications: Stephen C. Spiteri (SCS)

Superintendence of Cultural Heritage: Mark Anthony Mifsud (MAM)

Department of Agriculture: Invited yet no representative present.

VG introduced the meeting by indicating its scope that is to inform the Terms of Reference (TOR) for the Environmental Impact Assessment (EIA). Any issues which the attendees or the general public may wish to be included in the TOR must be submitted to MEPA by the 3rd September. Comments may be submitted by email (eamalta@mepa.org.mt).

ME introduced the project and gave a brief presentation to those present.

JMC asked for the reasoning behind the choice of Variant 2 (i.e. the option closer to the Cottonera fortifications). ME replied that this was identified following consultations with the Agricultural Department, and that the area chosen close to the fortifications was of a low agricultural value, and thus the option was shifted in order to have a lesser impact on the agricultural land. SS commented that this area is constituted by mainly unused fields, and therefore this would have been the main reason behind this choice from the agricultural perspective. ME confirmed that consultations with this Department have revealed that there is little or no workable soil in the area, and it is shallow in nature. JMC confirmed that Variant 2 is not an option.

ME continued further describing the alternative routes for this project. SS stated that the impact on the landscape, particularly the historical landscape would be significant. JMC pointed out that in the Variant 2 route there may be the remains of a French insurgence blockade battery which has to be confirmed.

VG reiterated the scope of the meeting, that is, that it should highlight any environmental issues of concern so as to be included in the Terms of Reference for the EIS.

With respect to the discussion of alternatives, ME confirmed that the applicant is open to new proposals in relation to alternatives and that if other options are proposed, these can be discussed. In this regard, JMC suggested for a new variant to be introduced between Variant 1 and 3. MAM asked whether Variant 3 would need more leveling in comparison with the other variants and ME confirmed that the terrain is difficult to work with.

Various points on the alternative routes were raised. SCS stated that from the developer's point of view, the one real option is Variant 3 given that, as confirmed by JMC Variant 2 in cultural heritage terms is a

non-starter, while Variant 1, which keeps the landscape intact, is considered as being problematic by ADT. SCS also asked whether each one of the variants would impinge on the landscape and as pointed out by JMC on a scheduled area.

VG stated that both the project and the EIA should strike a balance between the destruction of agricultural land and the impact on the landscape of the area. JMC confirmed that another possible option would be an intermediate route between Variant 1 and 3. RL also confirmed that a variant which is a non-starter should not be a variant in the first place.

VG asked on what grounds was Variant 1 discarded, and ME replied by discussing the technical and environmental constraints related to this route.

The closeness to the fortifications was one of the main issues of concern from both JMC and SCS. The lower end of the road is in close proximity to Bieb is-Sultan. VG stated that it is for this reason that the EIA should be clear with respect to alternatives, with an exhaustive discussion of these. SCS suggested that the removal of the illegal farm in proximity to Variant 2 could be replaced by fields in order to compensate for the loss of land in another variant. JMC stated that that a form of comprehensive planning/heritage gain would be eventually imposed, given the importance of the landscape and the heritage assets in the area.

SCS and MAM further stressed on the importance of the historical landscape of the area, SCS stating that the landscape itself predates the fortifications and MAM stating that it is one of the cultural landscapes that is still intact.

With respect to the agricultural land, VG given that there are different types of agricultural land present on site as confirmed by the applicant, the EIS needs to discuss all possible alternatives in order to provide a complete assessment of these. RL commented that one needs to balance between the loss of workable land and soil and the heritage landscape. VG asked ADT what were the concerns of the Agricultural Department. ME stated that the main concerns were as follows:

1. The fragmentation of the land-holdings;
2. No access to freshwater;
3. Problems occurring from such fragmentation.

ME confirmed that the Agricultural Department was pushing for Variant 2, which is unacceptable from a heritage point of view as confirmed by SCS.

SCS also pointed out that the landscape includes features dating back to the 17th century; therefore the road construction would in actual fact challenge the rest of the landscape and have a significant impact on the landscape.

JG and CS closed the meeting. A reminder about closing date for submissions (3rd September 2007) was given.

PA 237/07– Construction of a two lane road from Bieb Is-Sultan to Triq San Rokku i/c/w Smart City Project

Scoping Meetings with Identified Stakeholders

Monday 20th August - MEPA Boardroom, 14.00hrs

Local Councils

MEPA: Joseph Gauci (JG), Charlene Smith (CS), Annie Falloon (AF)

ADT: Mario Ellul (ME), Joe Briffa (JB)

MIIT: Mark Portelli (MP)

Kalkara LC: Michael Cohen (MC)

Xgħajra LC: Anthony Valvo (AV)

Fgura LC: Dieter Falzon (DF)

Birgu, Bormla, Isla and Zabbar LCs were invited, no representatives present.

Meeting introduced by JG and CS; indicating its scope that is to inform the Terms of Reference (TOR) for the Environmental Impact Assessment (EIA). Any issues which the attendees or the general public may wish to be included in the TOR must be submitted to MEPA by the 3rd September. Comments may be submitted by email (eiamalta@mepa.org.mt).

ME introduced the project and gave a brief presentation to those present.

MC asked how the end of the proposed road, next to Bieb is-Sultan will link to the rest of the road network. ME replied that a junction will be proposed, possibly with 2 adjoining roundabouts. Traffic considerations, in particular with respect to roundabouts and traffic impact are being studied in the TIS (Traffic Impact Statement) for the Smart City Development.

JG, CS and MP pointed out that the EIS rather than the TIS would point out the environmental impacts of the proposed project. The TIS discusses the technical considerations with respect to traffic related issues.

ME provided a clarification by providing background information on the traffic network related to Smart City. Application (PA 237/07) forms part of a series of applications related to the improvement of the road network in connection with the Smart City development.

MC made further comments on the impact of the proposed road on the traffic network; JG and MP pointed out that these would be clarified by the Smart City TIS.

DF inquired on the status of the application and which of the variants is presented in the application. ME stated that for the applicants, Variant 3 is the preferred option, therefore plans are based on the Variant 3 option. Further, JG clarified that the EIA would discuss all the proposed alternatives.

AV pointed out that traffic needs to be diverted out of Cospicua.

Another issue that was discussed was enforcement of the conditions once permit is granted. MC stated that such enforcement is a problem, particularly during the construction phase.

Meeting was concluded with a general agreement on the principle of the link road.

JG and CS closed the meeting. A reminder about closing date for submissions (3rd September 2007) was given.

PA 237/07– Construction of a two lane road from Bieb Is-Sultan to Triq San Rokku i/c/w Smart City Project

Scoping Meetings with Identified Stakeholders

Monday 22nd August - MEPA Boardroom, 14.00hrs

NGOs

MEPA: Joseph Gauci (JG), Charlene Smith (CS), Joseph Magro Conti (JMC), Kevin Borda (KB)

ADT: Mario Ellul (ME), Joe Briffa (JB)

MIIT: Mark Portelli (MP)

Flimkien għall-Ambjent Aħjar: Astrid Vella (AV)

Din l-Art Felwa: Maria Grazia Cassar (MGC)

Moviment Graffiti: David Pisani (DP)

Nature Trust Malta, Friends of the Earth, Fundazzjoni Wirt Artna, Birdlife Malta, Ramblers Association, Light Pollution Awareness Group, Bicref were invited but no representatives were present.

Meeting introduced by JG and CS; indicating its scope that is to inform the Terms of Reference (TOR) for the Environmental Impact Assessment (EIA). Any issues which the attendees or the general public may wish to be included in the TOR must be submitted to MEPA by the 3rd September. Comments may be submitted by email (ejamalta@mepa.org.mt).

ME introduced the project and gave a brief presentation to those present.

DP commented that the number of projects related to Smart City development should have been treated holistically and one single study adopted, by taking into consideration other projects such as the SSTP and the South Harbour Link Road. MP and JG clarified this point by stating that the SSTP is a project having per se a different nature.

With respect to the policy related to the link road in the Grand Harbour Local Plan, JG stated that the principle of the link road has been set up in the local plan since 2000 and recent amendments in the local plan further stressed the need for the construction of the link road.

MGC made an enquiry related to the 3 variants; ME clarified that these 3 variants and other possible variants will be discussed exhaustively in the EIS. MGC stated that whilst Variant 1 is closer to the built up area of Zabbar, the other 2 Variants might lead to the encroachment of further development along the line of the road. AV pointed out that Variant 1 seems to be respecting the contour lines and the topography of the area.

ME provided further insight into the discussion of alternatives that was carried out in the PDS; explained the difficulties related to each of the alternatives, particularly with respect to Variant 1 which apart from being the longest route of the 3 proposed, it would also affect more agricultural land and farmhouses in the area.

AV commented that the TORs for the EIS should include a thorough landscape assessment, that takes into consideration the landscape and visual impacts of each of the alternatives proposed.

JG asked the developer what technical constraints exist with respect to Variant 1. ME confirmed that technically and from a transport point of view, this variant is not the preferred option.

AV also raised the issue of vehicle emissions and whether there would be variations from one alternative to another. ME confirmed that the topography of the area would not produce significant changes in vehicle emissions from one variant to another.

DP pointed out that it seems that one of the applicant's main issues of concern is feasibility rather than the issue of emissions. ME discussed issues related to feasibility and AV confirmed that traffic accidents, together with the design of junctions and the presence of buildings should be taken into consideration at the design stage of the road.

DP also asked whether alternatives, such as the use of the existing road network. ME replied that it was considered, but it is not possible, one of the reasons listed being that the traffic flow would need to pass from areas such as Bieb is-Sultan, and given that it is scheduled property (as confirmed by JMC), it is not possible to carry out any modifications.

DP asked whether the possibility of an overpass was considered, given that this would decrease the impacts on the agricultural land. JMC and AV replied that such an option would have extensive visual impacts on the landscape and the Cottonera fortifications. AV stated that Variants 2 and 3 would have a significant impact on the visual amenity, the topography and the historical landscape of the area. The TORs for the EIS should include models of the proposed road, supplemented by photomontages, given that the historical elements of the landscape such as the glacis and the bastions are still preserved.

DP also asked whether the proposal will cater for Smart City. JG replied that the South Harbour Link Road was first thought to by-pass the Three Cities to lead to Ricasoli Industrial Estate, which if still running, would have still needed a new link road. JMC confirmed that there is a need for the road even due to the fact that the area is presently heavily trafficked, especially during peak hour. The road would serve as a relief from Cottonera, as intended in the local plan. ME also pointed out that the road would improved traffic management of the surrounding area.

JG also pointed out that the development of the road in this area presents the opportunity for improving the cultural heritage/visuals of the area.

In conclusion, DP stated that the least impact on agriculture and heritage should be sought. AV continued stating that Variant 2 is not acceptable since it affects the counterscarp of the bastions. AV also asked what is present in the area of Bieb is-Sultan. ME stated that there are industrial buildings in the area, including tyre services and a vulcanizer which would need some form of demolition works. AV suggested that the roundabout that links Variant 2 to the rest of the network should be amended to link Variant 1 instead.

MGC asked what landscaping measures are being considered, given the presence of the fortifications in the area. ME replied that this would be dealt with in the EIA, whilst AV pointed out that landscaping between main arteries and residential areas is an issue of concern given that they are considered a strong buffer against noise and dust.

JG and CS closed the meeting. A reminder about closing date for submissions (3rd September 2007) was given.

Appendix 3: Public Consultation comments submitted to EPD during EIA Review

Comments

Environmental Health Directorate (Email) – 23/11/2009

With reference to the above mentioned proposal, please note that following review of the Environment Impact Statement submitted by the developer, this Department would like to submit the following comments and recommendations regarding this proposed development :

The three main forms of pollution generated by the project during the construction and operation phase and that may have an adverse effect on public health are Air and Dust Pollution, Noise and Vibration.

Air Quality

Pollutants such as sulphur dioxide, nitrogen oxides, carbon monoxide, lead, benzene and fine particulate matter (PM₁₀) resulting from vehicular exhaust and road works on site which include heavy machinery used in digging and heavy vehicles carrying away waste products would contribute to poor air quality on the Area of Influence.

In view of this all proposed mitigation measures aimed at reducing substantially the impacts of construction pollution on air quality are to be strictly adhered to .Moreover adequate air quality monitoring and gauging the effects on sensitive locations from potential dust nuisances is to be carried out throughout the construction phase of the project. Given that exposure to dust pollution will last throughout the whole development process, a dust management plan for the project is highly recommended. Mitigation measures in order to reduce negative impacts on air quality during the operational phase must also be incorporated.

Any other mitigation measures regarding air pollution are also to be taken by applicant if so required to mitigate other unpredicted impacts which may have a negative effect on public health.

Noise and Vibration

Although as stated in the EIS submitted, the noise expected to be generated on road works including all machinery is not expected to affect the majority of the populated residential areas and the minor increases in sound levels during the construction and later utilization of the proposed new road are not expected to have any untoward effects on the health of the residents, however the noise generated by trucks passing through residential areas may generate complaints from residents in affected areas. As such all proposed mitigation measures are to be strictly implemented regarding any negative impacts due to noise and vibration.

Moreover although as stated in EIS, the selected option as to where to locate the road poses the lowest cause for concern due to vibration, however vibration must be monitored both during construction and operation at various sensitive points to ensure that there is no risk to public health from this potential hazard. Moreover the appropriate mitigation measures are to be taken by developer if vibrations pose a hazard/nuisance.

It is being suggested that besides this, other additional mitigating measures are to be taken by applicant if so required to mitigate any unacceptable air, dust, noise and vibration nuisances that may arise during the construction period.

With regards to waste created during the construction and the operational phases of the project, the developer is to abide by the proposed waste management plan and to the proposed waste handling procedures respectively.

It is recommended that all proposed mitigation measures are to be strictly implemented by the applicant so as to mitigate to the maximum any possible adverse impacts on public health especially with regards to any negative impacts on the Area of Influence. Although from the studies carried out it has resulted that no cumulative impacts nor any indirect impacts are envisaged due to this project, any other unpredicted impacts and nuisances which may arise and that may have a significant adverse effect on public health should be immediately addressed by the applicant and the necessary mitigation measures taken. All relevant complaints lodged should be investigated and remedial action taken immediately.

All complaints lodged and actions taken are to be recorded and such records are to be readily available to the Competent Authorities when requested.

The recommended monitoring and management of the site should also be carried out throughout all stages of the project.

Applicant is to apply for the necessary permit from the Superintendent of Public Health if a cesspit is constructed at the 'contractor's compound' proposed to be located in a section of the carriageway of Triq il-Kunsill ta' l-Ewropa.

Kindly be informed that Legal Notice 17 of 2009-Water Intended for Human Consumption Regulations, 2009 as amended by LN 242 of 2009 has revoked LN 23 of 2004-Quality of Water Intended for Human Consumption Regulations, 2004.

Appendix 4: Minutes of Public Hearing dated 10/11/2010

PA237/07 – Construction of a four lane road from Bieb Is-Sultan to Triq San Rokku i/c/w Smart City Project.

Public Consultation Meeting held on 10th November 2010

Mr Alex Camilleri explained the purpose and structure of the public consultation meeting. Submissions from the public may be sent to eamalta@mepa.org.mt or mailed to MEPA by Wednesday 17th November 2010.

Perit Mariello Spiteri gave a presentation on the Environmental Impact Assessment related to the proposed project to connect Cottonera to Smart City.

The public raised the following queries:-

Name	Comments/Queries	Responses to queries by Transport Malta or EIA Coordinator
Mr Michel Cohen, Mayor, Kalkara Local Council	The construction of such a wide road next to the priests' convent through Santu Rokku, would create segregation between residents from nearby villages unless traffic lights are introduced. The heavy vehicular traffic brought on by the vehicles passing to and from Smart City will have a negative impact on the convent and surrounding area.	N/A.
	Kalkara already suffers from flooding problems coming from Triq il-Kapuċċini and this development is expected to worsen the problem.	Measures are being taken to make sure that runoff rain water does not end up in the valley and spoil ecology.
	Dust pollution and invasion of insects from dried weed species in the summer months, are already an existent problem on this site.	N/A.
	There should be the possibility to modify the proposed plans due to the negative impact which would be caused to the existent boreholes.	Details of such boreholes should be sent in writing to MEPA (EIA Team)
Mr Anthony Valvo Mayor, Xgħajra Local Council	Expropriation must be carried out due to the negative impact on residents and property owners. Same concerns as per Kalkara LC with specific reference to access to existing schools (St Edwards and De La Salle).	Noted.

Mayor, Fgura Local Council	Heavy road traffic will result from such a project. Hompesh Road and Fgura Road are already engulfed in fumes today and increasing the amount of traffic will just make the situation worse.	Noted.
Mr Charles Scerri Mayor, Bormla Local Council	Bormla Road which is the main road will be negatively affected. There should be an adequate information system advising drivers about new access arrangements.	Noted.
David Pisani, Żminijietna	There have been a number of missing aspects reflected in the process:- a) Social; farmers not consulted by ADT; b) Traffic; was the reform of the public transport not considered? c) The illegal scrapyard has absolutely nothing to do with the EIA, and thus its removal shouldn't be used as a mitigation tool; d) Money is not a mitigation measure.	a) A questionnaire was circulated and one-to-one meetings were held with some farmers; b) Representatives of MTA said that without this new road public transport wouldn't even cope with employees travelling to work at Smart City with office hours, let alone visitors going to and fro at shorter intervals.
Mr Stefan Buontempo MP	The public should have been consulted when the concept of Smart City was originally being planned.	Noted.
Prof Mario Vassallo	Carried out the social impact studies of the EIA. He opposed the project due to his claim that people living/working in this area will be subjected to high level of pollution throughout the works, and suggested that a solution having less impact should be found.	Noted.
Mr Karmenu Farrugia	The public was not well informed of the project. Scattered meetings were held. Site notices were affixed to the property of owners of land/property without any form of dialogue.	Noted.
Mr Manuel Delia Ministry for Infrastructure, Transport and Communications	Conflicts with Prof Vassallo	N/A.
Mr Saviour Camilleri, Fgura Local Council	This should be seen as part of a longer road. For 12 years, Fgura has been heavily subjected to constant traffic. The thought of an expected increase of a minimum of 6000 vehicles passing through daily, is unbearable. Even just a fraction of this would make a heavy impact on the residents in the area.	Noted.

Anon	What will the height of the newly erected rubble walls be?	1.2 metres.
Prof Mario Vassallo	How are the traffic diversions which are being proposed as a temporary measure going to function alongside the present traffic pressure? He suggested having a holistic process addressing the whole road upgrading project with the required phasing.	Noted.
Mr Joseph Fenech	Will the height of the rubble walls be measured from the level of the road or the level of the field?	N/A
Student - Architecture Dept representative	An option would be to create bus routes/bus lanes through the towns themselves for better movement and transport connections.	Perit David Vassallo said that hybrid buses are planned for such a scheme.
Mr Charles Grech	Low rubble walls invite trespassers. MEPA should consider suggesting a solution if height can't be changed. He suggested planting native trees with thorns on the perimeter.	Noted.
Mr Raymond Mercieca Farmer/Property owner.	With such a project, output of crops will diminish. Who will compensate for the loss of clientele once the produce decreases?	Noted.
Anon	It is a known fact that property appreciates in time and therefore land owners who are compensated by government will be settling for a loss. This is unjust for people who wish to leave their property to their children/family.	The process of expropriation is compensated by government.
Mr Anthony Fenech	The proposed road will have to accommodate parking bays for trucks of farmers that need to leave their trucks outside the gate of their land.	Noted.