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Jordan Schools Construction & Rehabilitation Program

Environmental Scoping Statement / Aqaba

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CDM International Inc.

In association with
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ACRONYMS AND ABBREVIATIONS

ASEZA	Aqaba Special Economic Zone Authority
DOA	Department of Antiquities
EA	Environmental Assessment
EMP	Environmental Management Plan
FIDIC	International Federation of Consulting Engineers
MOE	Ministry of Education
MSDS	Material Safety Data Sheets
USAID	United States Agency for International Development

1. INTRODUCTION

The Ministry of Education (MOE) of Jordan with the cooperation of the United States Agency for International Development (USAID) is currently implementing the Jordan Schools Construction and Rehabilitation Program. For the Aqaba region, this program includes the immediate construction of 3 new schools and renovation of 14 others. CDM International is the Project Manager and Engicon is providing consulting services on environmental issues.

In accordance with Jordanian and USAID regulations, an Environmental Assessment (EA) for the proposed project is being prepared. The EA process includes holding a Scoping Session to identify and discuss the significant environmental issues associated with the project activities. Participants in the session generally include representatives of government, public and private institutions, as well as other stakeholders that have expertise or interest in the project's environmental issues. The results of the session are incorporated into this Scoping Statement, and will be included into the Environmental Assessment report.

1.1 SCOPING OBJECTIVES

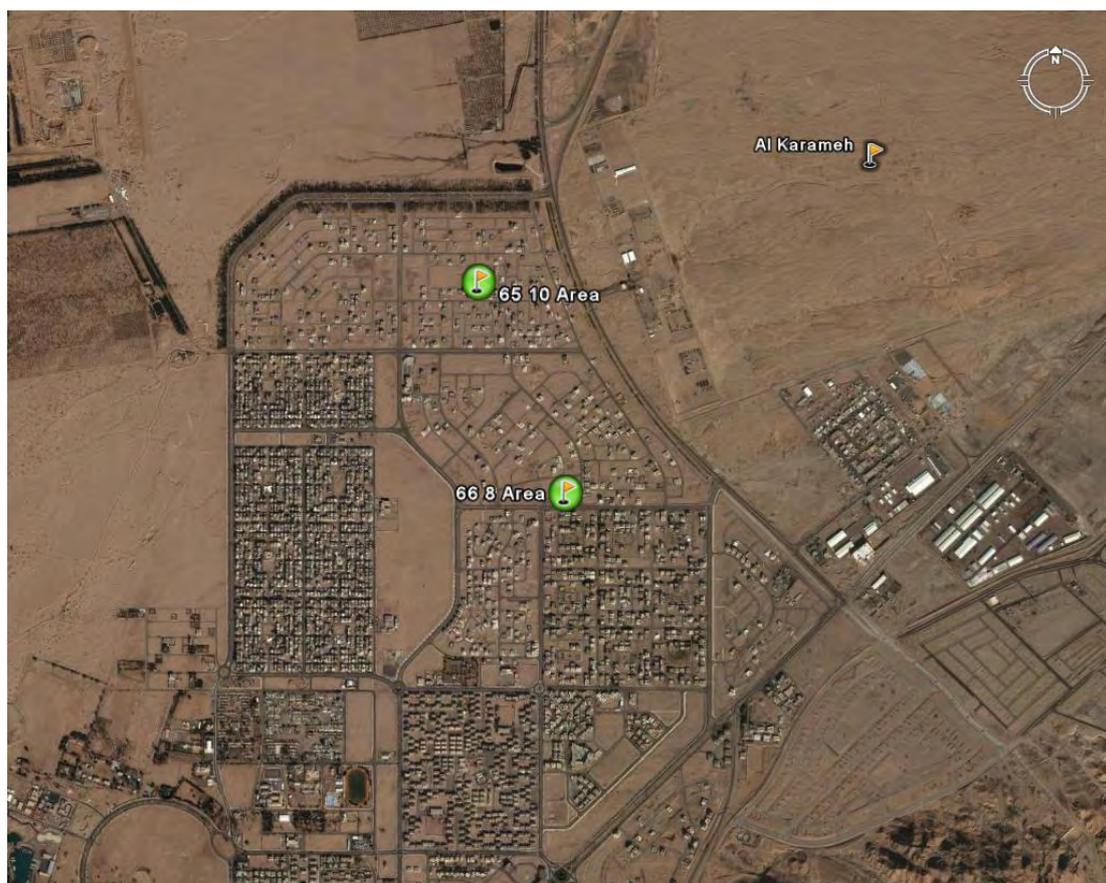
The objectives of the Scoping Statement, as required by USAID environmental regulations 22CFR 216.3 (a) 4, are summarized as follows:

- Determine the scope and significance of issues to be analyzed in the EA
- Identify the significant and non-significant environmental issues that will be analyzed further in the EA, including direct and indirect environmental effects.
- Provide a schedule and methodology for preparation of the EA.
- Provide a description of the environmental analysis to be conducted and the disciplines required.

1.2 PROJECT DESCRIPTION

The project under study consists of the construction of 3 schools with a fast-track schedule to be located in the city of Aqaba. The schools will be distributed as shown in Figure 1.1 below and described in the sections that follow. The location "66 8 Area" refers to the 8th Region School, the location "65 10 Area" refers to the 10th Region School while Al Karameh refers to Al Karameh Comprehensive School.

Figure 1.1: Location of Proposed Schools in Aqaba



1.2.1 8th Region Secondary Boys School

The aim for building the 8th Region Secondary Boys School is to solve the overcrowding problem in surrounding schools, such as Faisal 1st Basic Boys School, Abdullah Bin Qays School, and Al-Hussein Bin Ali Secondary School. The average number of students per class in these schools currently reaches 44. Moreover, the proposed location for building this new school is due to the lack of public schools in the 8th and the 3rd regions, where the nearest school, which is Faisal II Basic Boys School, is 2 km away from students' homes.

The school will be designated as Secondary Boys, for grades 4th to 12th, with a proposed number of 24 classes. The area of the land where the school will be built is 15,396 m².

The 8th Region Secondary Boys School will be situated on a main road 500 m away from a police station. The location is in a quiet residential area where many of the houses are currently under construction. The land parcel is flat with no vegetation and is covered with sand and rocky cobbles (Figures 1.2 and 1.3).

Figure 1.2: Land Area of Proposed 8th Region Secondary Boys School



Figure 1.3: 8th Region School Location on a Main Road in a Residential Area



1.2.2 10th Region Secondary Comprehensive Girls School

The purpose for selecting the 10th Region for constructing the school is to solve the overcrowding problem in the surrounding schools, including the 8th Region Secondary Girls School, Khadeejah Bent Khwailed Secondary School, and Sawari Comprehensive School. The average number of students per class in these schools reaches 45. The current challenge faced by the area's residents is that the nearest school to the students' homes is 2 km away, which is the 8th Secondary Girls School.

The requested school type is secondary comprehensive, with grades ranging between 1st and 12th and the number of classes is 30. The land plot where the school is going to be built has an area of 8,350 m².

The proposed land plot for the new school is located in a residential area and is surrounded by secondary roads but no main roads. The plot is flat with no vegetation cover (Figures 1.4 and 1.5).

Figure 1.4: Land Area of Proposed 10th Region Secondary Comprehensive School



Figure 1.5: 10th Region School Location in a Residential Area



1.2.3 Al Karameh School

Al Karameh Area is an ongoing housing project aimed at resettling around 6,160 inhabitants who will be transferred from the North Shallala area. The North Shallala is a quarter in Aqaba characterized by a high poverty rate. It is expected that around one third of the population transferred (1,920) will be children who would require at least 2 schools in that area. One school is currently being built temporarily for girls while a second awaits commencement. This will be the proposed Al Karameh School under discussion.

The school will be built on a 9-dunum site located at the heart of Al Karameh residential area (Figure 1.6). The terrain in the area is flat with no vegetation cover.

Figure 1.6: Completed Housing Facilities in Al Karameh Area



1.3 DESCRIPTION OF STUDY AREA

The study area is Aqaba city located in the south of Jordan on the Red Sea (Figure 1.7). What follows is a brief review of the elements that will be covered in greater detail in the EA.

Figure 1.7: Location Map of Jordan and Aqaba Governorate



1.3.1 Population and Housing

In 2004, the city of Aqaba had a population of approximately 80,135 inhabitants, 45,018 of which were male and 35,117 female comprising 14,749 families¹. By the end of 2007, the population is expected to increase to approximately 88,052 inhabitants, of which 49,466 would be male and 38,586 female comprising 16,206 families. These estimates were based on a mean annual growth rate of 3.19% for Aqaba Governorate.

In the Governorate of Aqaba, the population is young with those aged 0-14 years comprising 43.3% of the total population, compared to 37.7% in the Kingdom².

According to the 2004 Census, the number of buildings in Aqaba City was 9,968 whereas the number of households was 20,692.

¹ Preliminary Results of the Population and Housing Census for 2004 published by the Department of Statistics

² Employment and Unemployment Survey of 2005, Department of Statistics

1.3.2 Climate

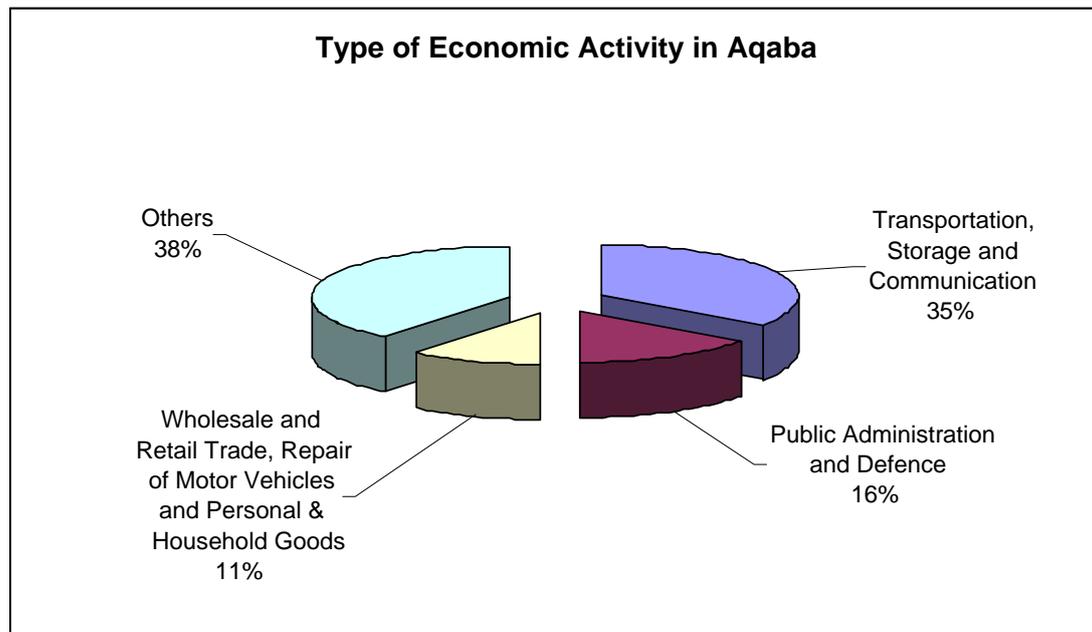
Aqaba city is characterized by very hot and dusty weather in summer, with temperatures reaching up to 46°C and a mildly cold dry winter with low temperatures reaching around 5°C. The mean annual temperature is estimated at around 25°C. Between 2001 and 2005, the amount of rainfall in Aqaba ranged between 7.8 to 21.9 mm. The wind direction is northerly to north-westerly³.

1.3.3 Economic Activity

In the Governorate of Aqaba, the unemployment rate is estimated to be 15.3. This is slightly higher than the overall unemployment rate in the country, which is approximately 14.8. There is a major difference in unemployment rates between males and females, such that the male unemployment rate is 12.9 while the female unemployment rate is 35.4⁴.

Regarding economic activity, the main sector in Aqaba is the “Transportation, Storage and Communication” sector, with a participation of 34.6% from the working population, followed by “Public Administration and Defence” at 15.5% and “Wholesale & Retail Trade, Repair of Motor Vehicles and Personal & Household Goods” at 10.6% (Figure 1.8).

Figure 1.8: Type of Economic Activity in Aqaba



³ Jordan Meteorological Department Website (www.jmd.gov.jo)

⁴ Employment and unemployment Survey of 2005, Department of Statistics

1.3.4 Education

For the scholastic year 2006/2007, the Governorate of Aqaba registered 32,672 students, of which 17,101 were females and 15,571 were males. The Governorate houses 109 schools with 18 schools for girls, 30 schools for boys and 61 comprehensive⁵. Comprehensive is defined as a school hosting girls and boys between the 1st and 3rd grade and girls only between the 4th and 12th grade.

⁵ Ministry of Education, Aqaba Education Directorate, General Education Situation for 2006/2007

2. SIGNIFICANT AND NON-SIGNIFICANT ENVIRONMENTAL ISSUES

This section presents the environmental issues for the Project, which were identified prior to and following the Scoping Session. These issues, as well as the methods used to evaluate their significance, are described herein, along with comments made by the participants during the discussion.

2.1 SCOPING PROCESS

The scoping process serves to identify the significant and non-significant environmental issues that will be addressed in detail within the EA. Based on the results of a preliminary Environmental Review, a list of significant environmental issues for the Project was developed. A Pre-Scoping Brief available in English and in Arabic (Appendix A) was distributed to all participants in the Scoping Session. The Brief described the proposed project, as well as the relevant environmental issues that were identified during the preliminary investigations

Invitations to the Scoping Session were sent out to 38 agencies, such that a total number of 48 people attended (Appendix B). The session was held on February 28, 2007, from 9.00 am to 2.00 pm, at the Aqaba Gulf Hotel in Aqaba city.

Following opening remarks by the MOE, Aqaba Special Economic Zone Authority (ASEZA), and USAID, the Project Manager, CDM, presented the Project Description, focusing on the new learning system and the concept design of the proposed schools. After that, a presentation on the identified environmental issues associated with the Project was made by Engicon. This was followed by a discussion period designated for technical issues. The session was held in Arabic language in order to maximize participation of all attendees and remove any obstacles to communication.

The environmental issues presented were divided into three categories: Construction, Socio-economic, and Public Health & Safety. Following an open discussion, the participants met in three breakout groups to discuss the relevant issues in greater detail. The breakout group topics were devoted to the three categories presented earlier. Following presentation of the conclusions in each of the breakout groups, the participants filled out an Environmental Issues Questionnaire (Appendix C).

The Scoping Session allowed people who have an interest in or expertise on the environmental issues pertaining to the Jordan Schools Project to learn more about the project and to voice their opinions on the identified as well as other issues of concern.

2.2 PRELIMINARY LIST OF ENVIRONMENTAL ISSUES

The following is a list of the environmental issues related to the proposed schools that were identified prior to the Scoping Session. The list contains the issues described in the Pre-Scoping Brief and the Environmental Issues Questionnaire:

Construction Issues	Socio-economic Issues	Public Health and Safety Issues
Occupational safety and health	Interaction between students / classes	Communicable disease prevention
Worker sanitation	Student psyche inside the classroom	Potable water supply and distribution
Traffic	Monitoring of student behaviour by supervisors	Sanitary facilities
Noise	Employment and economic development	Indoor and outdoor safety issues for students
Dust pollution	Land use	Injury from car accidents
Water demand	Archaeological resources	Protection from intruders
Soil and water pollution	Traffic	Safety in workshops for males and females
Water stagnation	Travel time to and from school	Provisions for physically challenged students
Waste generation		Earthquake protection measures
Employment opportunities		

2.3 DETERMINATION OF ISSUE SIGNIFICANCE

At the end of the Scoping Session, participants were requested to fill out an Environmental Issues Questionnaire in which they were able to evaluate the identified issues pertaining to the Project, during both construction and operation.

The level of significance of each issue was rated according to an evaluation scheme ranging from "Irrelevant Issue"(0) to "Strongly Agree" (5). The responses were given by filling in from 0 to 5.

Twenty nine (29) questionnaires were collected at the end of the Session, compared to a total number of forty five (45) participants (excluding the presenters and organizers). However, all the participants of the Scoping Session had the opportunity

to voice their opinions on the environmental issues, whether during the open discussion or the breakout group sessions. This Scoping Statement incorporates the opinions expressed during discussions and breakout groups, in addition to the results of the questionnaires, aiming at determining each issue's significance.

In summary, most of the issues that were identified in the Pre-Scoping Brief were rated by the participants as significant, either during construction or operation. Appendix D contains the detailed minutes of the Scoping Session as well as a summary of the questionnaire responses.

2.4 RESULTS OF THE ANALYSIS

Although the questionnaire differentiated between the schools, the results of the responses indicated that there was little difference in terms of the significance of the issues. Therefore, the sections that follow show the results of the 3 schools together, unless a major difference between the 3 schools was noted.

2.4.1 Construction Issues

The environmental impacts during the construction phase of a project are usually negative. Fortunately, most of these impacts are temporary and can be mitigated by taking the necessary precautions.

2.4.1.1 Occupational Safety and Health

Forty one percent (41%) of the respondents thought that there are possible risks to the health and safety of the workers onsite, while 31% were neutral concerning this issue. However, a respondent pointed out that measures to mitigate those risks are already covered in the general and special conditions of the International Federation of Consulting Engineers (FIDIC).

Other respondents also emphasized that this impact would become negative in case of not following the general conditions of safety and not providing the requirements for safety as provided by the Civil Defence. On the other hand, one respondent stated that there will always be safety risks during construction.

The breakout group concluded the following:

- It is essential to follow:
 - Conditions of public safety.

- Conditions of the Civil Defence.
- Conditions of the insurance companies.
- A surrounding fence is required.
- Obstacles and waste from excavation must be removed; the public should not be exposed to it.
- Any visitor to the site must be provided with a helmet and special shoes in accordance with the Special Conditions of FIDIC.

2.4.1.2 Workers Sanitation

Around 90% of the participants agreed (35% of them strongly) that workers' hygiene on site does have an impact on the environment. In addition, one respondent stated that it is essential to keep the sanitary facilities clean, and to drain them through septic tanks or specialized pits. Another pointed out that these facilities should be available until the construction is completed. The tanks would then be emptied in coordination with the municipality. A third stated that those impacts are only temporary and can be handled on a continuous basis.

The breakout group participants agreed that sanitary facilities should be provided onsite to the workers.

2.4.1.3 Traffic

For the 8th School Region, 45% agreed and 28% strongly agreed that generated traffic from construction activities will negatively affect the normal traffic in the area, whereas for the 10th School Region, 38% strongly agreed and 35% agreed on the same statement.

One respondent stated that the movement generated from traffic will not be exceptional, while another suggested that the negative impact from traffic could be minimized by specifying certain hours for personal vehicle movement during the construction period. Another suggestion made was setting up a time schedule for supplying and transporting materials to the site in order to control the traffic situation.

As for the breakout group, it was suggested that works must be limited to the site in order to avoid traffic congestion and disruption in movement of vehicles.

2.4.1.4 Noise

For noise resulting from construction activities, 70% of the participants agreed (25% strongly) that this issue will drastically affect the residents of the neighbouring areas. However, one respondent commented that although noise is expected, it will be bearable. Another respondent added that excavation should not cause too much noise because the soil is not rocky.

A few participants suggested that the noise impact may be mitigated through specifying the working hours during daytime, in addition to choosing an appropriate time frame for execution.

During the breakout group discussion, the participants stressed that commitment should be made by the contractor to all that is mentioned in the General Conditions of the FIDIC otherwise a Special Conditions annex should be issued.

2.4.1.5 Dust Pollution

Regarding the issue of dust, over 80% agreed that dust generated from excavation and construction related activities will have a high negative impact on neighbouring areas. One respondent stated the pollution will be worst during summer and when the *khamasin* wind occurs.

During the breakout group discussion, some participants suggested that a cover must be placed on trucks transporting construction material. Additional mitigation measures proposed by the participants include the use of water hoses to reduce the flying dust, as well as committing to public safety issues. Defining the responsibility of the contractor and the engineer in this regard is also important.

2.4.1.6 Water Demand

Over 40% of the respondents disagreed that there would be any burden on water resources resulting from construction, while around 28% were neutral or thought it was irrelevant. Only about 30% agreed that there would be a burden on water resources.

Moreover, in the breakout group discussion, it was stated that no impact on water supply is expected because water is always available or at least could be provided at all times.

In addition, few participants stated that water is available 24 hours a day in Aqaba and on a continuous basis, while others said that water is available in limited quantities and that the contractor should request a temporary meter during construction.

As a result, the issue of water demand has been considered as insignificant and will not be analyzed further in the EA. However, and as water conservation is always a priority in Jordan, it will be included in the Environmental Management Plan (EMP).

2.4.1.7 Soil and Water Pollution

Over 40% of the respondents disagreed that there would be a chance of soil or water pollution due to construction activities, while another 40% were either neutral or thought that this issue is irrelevant. Only 20% agreed that there may be soil and water pollution.

Participants in the breakout group agreed that groundwater pollution is not expected. Nevertheless, commitment should be made by the contractor to avoid soil contamination. If, however, contamination should take place as a result of spills in oil, paint, solvents or other liquids, then the contaminated soil must be removed immediately and disposed of properly. Tyres should not be used as material for burning.

Although one participant pointed out that there are no nearby surface or ground water sources, another participant said that the contractor must still apply precautionary measures.

Two participants stated that the remnants of construction material such as cement and water might affect the soil. Another opinion was that the possibility for pollution will not be from construction material but from the chemicals used in the finishing. Therefore, the contractor has to dispose of these on a continuous basis.

In conclusion, this issue has been considered insignificant and will only be addressed in the EMP.

2.4.1.8 Water Stagnation

Regarding water stagnation, which may occur especially during curing and mixing of cement and near the sanitary facility, the responses were conflicting as around half

agreed that it will provide a breeding place for disease-carrying insects, while the other half disagreed that it was a matter of concern.

Varying opinions emerged concerning this impact. A participant stated that the engineer has to study the issue of water stagnation during construction and after termination (having sufficient slopes to avoid stagnation). Other participants thought that water stagnation is a real problem in Aqaba especially during summer, and due to the fact that the sites are close to houses. Moreover, the construction site should be well organized and kept.

In the breakout group discussion, it was also stated that this impact should be avoided.

Contrary to what was mentioned in the discussions, a participant pointed out that as the region is very hot and dry, water will evaporate very quickly and would therefore not have sufficient time to stagnate, concluding that this impact is not significant. This impact will therefore be addressed only in the EMP.

2.4.1.9 Waste Generation

Almost 90% of the respondents agreed that construction waste will pose a nuisance on the neighbouring areas of the new schools. Only 7% disagreed. This issue is therefore significant.

In the breakout group discussion, the participants agreed that commitment must be made by the contractor to dispose of the solid waste generated immediately, and in the areas designated by the authorized parties.

Moreover, few participants stated the same point clarifying that the contractor is the party responsible for getting rid of the waste, transporting all construction debris away from the site. Other participants strongly agreed that construction waste will constitute a nuisance on neighbouring areas and will have a negative impact unless it is dealt with on a continuous basis.

2.4.1.10 Employment Opportunities

Regarding employment, 86% of the respondents agreed that job creation will present a positive impact in the surrounding areas during construction.

One respondent however pointed out that during construction, employment opportunities will be available to males more than females due to the nature of work in construction activities.

The discussion during the breakout group stage contradicted the results of the questionnaire. The participants agreed that it will be difficult to hire workers from the same region; however, priority must be given to those living inside Aqaba. In addition, two participants agreed that it is not always the case that employees are hired from the local community, and that often foreign workers are assigned for such works.

2.4.2 Socio-economic Issues

A development project can produce many socioeconomic benefits for the community that will house its facilities. These could range from job creation to decreasing the daily transport time to a similar facility situated further away, in this case, the school.

2.4.2.1 Interaction between Students

All of the respondents to the questionnaire agreed (76% of them strongly) that there are concerns regarding interaction between students and the different grades. During the breakout group discussion, participants agreed that students should be physically separated according to their age groups, making it easier for teachers and counselors to deal with the children. This issue was of special concern regarding students between the 1st and 3rd grades, who create little trouble and may be physically harmed by older students.

According to the Ministry of Education, the division of age groups is as follows:

- 1st to 3rd grade
- 4th to 7th grade
- 8th to 12th grade

However, a number of participants commented that the age difference within these groups is quite high and proposed a different division:

- 1st to 3rd grade
- 4th to 6th grade
- 7th to 9th grade

- 10th to 12th grade

The participants also proposed that the groups should be separated during recesses and have their own facilities. This is especially important for the youngest group from grades 1 to 3.

2.4.2.2 Student Psyche

Over 90% of the respondents believe that the student's psyche inside the classroom is important (62% strongly believe). This is reflected in the color of the walls, lighting, temperature, and the amount of dust in the room. In their questionnaires, the respondents also emphasized that these elements urge the student to concentrate better, to interact with others, and to participate in activities. Providing a joyful environment will also encourage the student to approach education with enthusiasm and interest. Regarding children with special needs, this matter has been dealt with separately in Section 2.4.3.8.

Color of the Walls

The participants in the breakout group discussion stressed the need for bright colors in the classroom, such that different colors can be used for each grade and thus the students can sense the difference in their environment as they advance in levels. One of the participants also proposed to have colorful drawings on the walls of the lower grades.

Lighting

Using sunlight in the classrooms in winter is not problematic in Aqaba. During summer, however, the issue gets more complicated as the weather becomes hotter and the sun rays much brighter. Curtains or shutters are generally used during that time. The participants agreed that there needs to be a way for utilizing sunlight during the summer as well. This can only be done by finding a solution to the heat problem.

Temperature

Since it gets very hot in the summer in Aqaba, most of the participants prefer to have an air conditioning system in the schools. However, they are aware that the operating costs for such a system would be quite high and cannot be covered by this project. Several suggestions were made, such as increasing the fees or asking parents for funding. These proposals may not prove to be feasible nor sustainable and the issue of the heat may have to be solved through other innovative solutions. Fans,

insulation, and shades were proposed as alternatives. The layout of the building can also be a factor, i.e. taking into account wind direction and the position of the sun.

Dust

The participants agreed that dust in the classroom is a an issue of concern though some stated that it is not as problematic as it used to be due to the changes in the area and the various wind breaks that have been constructed. However, this issue cannot be ignored and needs to be addressed properly. The amount of dust generated from using chalk was also raised, such that wiping boards instead of regular blackboards were suggested.

2.4.2.3 Monitoring Student Behavior

Almost 80% of the respondents agreed (around 50% strongly) that monitoring student behavior by the supervisors is an important issue. Proposals made by the participants during discussions include placing a supervisor's room opposite to classrooms and easily accessible to them, installing a camera system (This suggestion was highly controversial and was rejected by many), and ensuring monitoring of toilet facilities, as well as entrances and exits to the school. Some indicated that monitoring of boy students is more necessary than female students.

2.4.2.4 Employment and Economic Development

Over 85% of the respondents agreed that building the schools will contribute to employment and economic development in the area. This may happen if the staff at the school is selected from the local communities, including secretaries, teachers, principals, counselors, administrative employees, and supervisors.

2.4.2.5 Land Use

Although over 60% of the participants agreed that building the schools will affect land use in the surrounding areas, there was no clear idea on how this will occur. Some stated that there will be an increase in housing construction around the school, although this is already happening at present. Others said that the presence of the school will affect the nature of the surrounding buildings.

However, there were some concerns regarding the increased noise around the school which may lower the value of the land. This may be offset by connection of the area to services which will raise its value.

One major issue was raised during the open discussion was in relation to the 8th Region School. It was noted that a mosque is planned on part of the land proposed for the school (After the session, this issue was discussed with ASEZA and it was agreed that the mosque be built on a different plot while the land allocated for the school will remain as described).

2.4.2.6 Archeological Resources

More than 40% of the respondents do not believe that school construction will cause any damage to archaeological resources while around 30% were neutral and 7% thought it was irrelevant. However, the participants, including the representative of Aqaba Department of Antiquities (DOA), agreed that the Department needs to conduct a site visit to confirm that there are no resources of archeological value. Since then, Aqaba DOA has been informed of the exact locations of the schools and are currently investigating the sites to ensure that there are no known sites of archeological value. The Department should also be informed if, during construction, any archeological findings are made. This will be included in the Environmental Management Plan (EMP).

2.4.2.7 Traffic

Around 60% of the respondents believe that there will be traffic congestion during dropping off and picking up hours around the schools. The extent of the traffic will depend on the location of the entrance and the exit of the school, i.e. whether it is on a main or a secondary road. One respondent suggested having a parking lot for parents waiting for their children and dropping them off.

During the breakout group discussion, the participants stressed the importance of having the entrances and exits on the secondary road and not the main road. This applies to the 8th Area School, which is the only one of the three schools located on a main road. Care should be taken when locating the entrances and exits to separate those entering the school premises from those leaving in order to reduce congestion.

2.4.2.8 Travel Time

The majority of the respondents (over 85%) agreed that the new schools will decrease the travel time for students. This will make it easier for students to reach the school earlier and therefore avoid delays in the morning queues. Most importantly, reducing the time and effort needed from the parent to drop off and pick

up their children will be a major positive impact. The respondents stressed that this issue is dependent on the location of the students' houses and whether they are in fact closer to the new school than their old one.

2.4.3 Public Health and Safety

An essential requirement for building any school is to provide a safe and healthy environment for the students, teachers, and all workers at the school.

2.4.3.1 Communicable Disease Prevention

An overwhelming 90% of the respondents (around 40% of them strongly) believe that there is a relation between the school facilities and the spread of disease.

Few respondents stated that the spread of communicable diseases depends to a great extent on the cleanliness of the school facilities, and one way of avoiding this impact would be to monitor and maintain those facilities. One respondent suggested using Arabic toilets instead of the regular ones, thus reducing the risk of spreading disease.

An important issue was brought out, which is the need for public awareness concerning disease prevention, such that one participant emphasized the need to perform workshops and stressed the necessity of monitoring by the school's administration and teachers.

The most common communicable diseases mentioned during the breakout group discussion were measles, hepatitis A, the flu and chicken pox. In order to prevent spreading of diseases, there should be a special room for medical examination where a student suspected of infection may wait until the doctor arrives without exposing other students. Cleanliness of the sanitary facilities, as well as the building in general is essential.

2.4.3.2 Potable Water Supply and Distribution

Less than half the respondents (41%) believed that the method of potable water distribution may pose a risk on the student.

The breakout group agreed that the best way to distribute water is by providing water coolers. Other participants suggested that water coolers must be provided on each floor. However, one participant stressed that the coolers should not be located in the

hallways because they will obstruct the passage and this is very dangerous especially during an emergency. Other participants agreed and thought this might be risky especially when crowding of students occurs, in particular when the school has many age categories. One suggestion was to locate the cooler near the sanitary facilities. In addition, it was emphasized that water reservoirs should be appropriately designed and located.

2.4.3.3 Sanitary Facilities

Almost all the respondents (93%) agreed (over half of them strongly) that sanitary facilities may be a cause of odors and contamination in the schools. One respondent suggested that sanitary facilities be placed at a distance from classrooms; however, another stated that if it was placed inside the school building it will be serving a larger number of students.

Many participants preferred the use of Arabic toilets, as opposed to the regular ones, as they are more hygienic. The participants believe that although, in principle, the regular toilets decrease the impact of odor, the difficulty in cleaning and maintaining them renders them more problematic than the Arabic ones and will consequently increase the risk of odor and insect breeding in the school premises. In any case, there was unanimous agreement that whatever type of toilet used, odors will always be an issue. Therefore, the participants proposed locating the facilities on the southern side to reduce their impact, as the prevailing wind in Aqaba is northerly. Ventilators inside the toilets were also suggested.

Monitoring the facilities and their maintenance were also of great concern for most of the participants.

2.4.3.4 Indoor and Outdoor Safety Issues

Over 80% of the respondents agreed that there is a risk of accidents to students in their school. Most of the participants emphasized the fact that Aqaba's climate is very hot, which raises the risk of sunstrokes, especially when students are playing or standing for long hours in the sun. Therefore, many participants stressed the need for shaded areas and that this issue should be monitored by the schools' administration office.

Regarding tripping and falling, some of the participants stated that the crowding of students increases the risk of accidents and others pointed out that stairs are also a cause for concern.

Following are mitigation measures proposed by the breakout group concerning different safety issues:

- There should be several entrances/exits for the school.
- Material coating for the walls and desks should be harmless.
- Ensure that there are no sharp corners that students may be exposed to.
- There should be safety precautions for the gas bottles stored and used in the school.
- The location, height, and type of electricity sockets should take into account safety of the students and employees at the school.
- Stairs should have a railing. It is preferable to have two sets of stairs at each end of the hallway.
- Protection on windows needs to be installed.
- Avoid placing coolers along the hallway.
- Use anti-slip tiles on the floor.
- Drainage system for each storey to ensure dry floors, as well as tilting of the floors to ensure proper drainage.
- Apply the Jordanian Codes for Protection from Fires as well as the National Fire Protection Association (NFPA) standards.
- Ensure involvement of the Civil Defense during all phases of the design.
- Install fire escapes as well as fire alarm and fire fighting systems.
- Kindergartens and the first grade should be located on the ground floor.
- Provide shaded areas in the courtyard.

2.4.3.5 Injury from Car Accidents

More than 80% of the respondents believe that there is a risk of injury from car accidents for the students. Traffic awareness is therefore vital. The following mitigation measures were suggested by the participants:

- No exits on the main roads.
- A parking lot for cars and buses.
- School safety signs to be placed outside the school.
- Minimum speed bumps, zebra crossing for students, low noise areas, etc.
- A pedestrian bridge and sidewalks.
- Speed bumps on the main streets that are close to the schools.

2.4.3.6 Protection from Intruders

Among all participants, 45% agreed and 28% strongly agreed that intruders to the school are a cause for alarm. Many teachers admitted that this is sometimes a problem, especially in girls' schools. It was recommended that a high fence be built around the school. A gate and a guardhouse that can oversee all entry points should also be provided, in addition to locking the gates properly. An alarm system can also be provided.

2.4.3.7 Safety in Workshops

Over 70% of the respondents (only 14% of them strongly) agreed to the significance of safety in workshops. One respondent thought that this issue is more important at boys' workshops than girls' workshops due to nature of the work done there (carpentry and iron smithery). Another stated that in case of heavy equipment and sharp objects, this issue definitely raises some safety concerns. Two other respondents emphasized that if safety concerns are strictly applied and necessary provisions are taken, then risk in workshops would be minimal. Monitoring was also seen as a necessity.

As for the breakout group discussion, this issue was also considered to be important, especially regarding the use of butane gas.

2.4.3.8 Provisions for Students with Special Needs

Without exception, all of the respondents to the questionnaire (69% of them strongly) agreed that there should be facilities in the new schools for students with special needs. Moreover, it was agreed by the breakout group that this was a major issue of concern and that all facilities should be provided to ensure that these students do not face any problems while at school.

One teacher proposed installing an elevator that can be supervised and only used by the physically challenged students but this was rejected by all other participants as impractical. Relating to this suggestion, a participant stated that the classrooms of students with special needs may be put on the ground floors. Another two participants said that students with special needs may be grouped together, which was not supported by the other participants. Another proposal was to provide these children with easily accessible corridors and restrooms.

A representative of MOE stressed that one of the most important requirements of the Ministry is to provide all needed facilities for students with special needs, in order to enable them to continue their education. This should be done by adhering to the Code for Construction Requirements for the Physically Challenged published by the Ministry of Public Works and Housing, which will be described in the EA.

2.4.3.9 Earthquake Protection Measures

More than 95% of the respondents (around 70% of them strongly) believe that there is a need for earthquake protection measures in the school.

A representative of the MOE stressed the importance of designing according to the Jordanian Code for Earthquakes since this is a requirement of the Ministry. Many participants stated that certified codes and this code should be applied when designing, especially that Aqaba is seismically a very active area and is always threatened by earthquake events.

One participant recommended referring to the study of Dr. Majdi Barjous from the Natural Resources Authority, which studied the possible earthquakes at Aqaba.

2.5 OTHER ISSUES OF CONCERN

During the Scoping Session, a number of issues that had not been previously identified were raised. These issues came up during open discussions and breakout group meetings. The following is a list of these issues:

- Chemicals in laboratories should be stored and disposed of in a safe manner. There should be Material Safety Data Sheets (MSDS) regarding all chemicals found in the laboratories accessible to all students.
- There should be a place for cold storage in the canteen to prevent food from spoiling.

- Regarding the use of grey water, using it directly for irrigation will cause contamination. Using it in toilets will likely lead to human exposure. For example, how will the water in the flush be separated from that used for washing? In summary, it was concluded that zero contact with the grey water is a must in order to utilize it.
- Flood mitigation measures should be taken into consideration when designing the school.

3. CONCLUSIONS OF SCOPING

Most of the environmental issues were considered to be significant while others were added. Only few were considered as insignificant. However, all of the issues that were considered insignificant will be further addressed in the EMP. Tables 3.1, 3.2, 3.3 and 3.4 below summarize the findings the scoping process and determine the significance of each of the issues discussed according to the relevant category, as well as whether they will be subsequently addressed in the EMP.

Table 3.1: Significance of Construction Issues

Issue	Significance	Will be addressed in the EMP
Occupational health and safety	Significant	Yes
Workers sanitation	Significant	Yes
Traffic	Significant	Yes
Noise	Significant	Yes
Dust pollution	Significant	Yes
Water demand	Insignificant	Yes
Soil and water pollution	Insignificant	Yes
Water stagnation	Insignificant	Yes
Waste generation	Significant	Yes
Employment opportunities	Significant	No

Table 3.2: Significance of Socioeconomic Issues

Issue	Significance	Will be addressed in the EMP
Interaction between students/ classes	Significant	Yes
Student psyche inside the classroom	Significant	Yes
Monitoring of student behavior by supervisors	Significant	Yes
Employment and Economic development	Significant	Yes
Land Use	Significant	Yes
Archaeological Resources	Insignificant	Yes
Traffic during operation	Significant	Yes
Travel time to and from school	Significant	No

Table 3.3: Significance of Public Health & Safety Issues

Issue	Significance	Will be addressed in the EMP
Communicable disease prevention	Significant	Yes
Potable water supply and distribution	Insignificant	Yes
Sanitary facilities	Significant	Yes

Issue	Significance	Will be addressed in the EMP
Indoor and outdoor safety issues	Significant	Yes
Injury from car accidents	Significant	Yes
Protection from intruders	Significant	Yes
Safety in workshops for males and females	Significant	Yes
Provisions for physically challenged students	Significant	Yes
Earthquake protection	Significant	Yes

Table 3.4: Other Issues

Issue	Significance	Will be addressed in the EMP
Food preservation	Significant	Yes
Flood risks	Significant	Yes
Grey water use	Significant	Yes

4. PROPOSED ENVIRONMENTAL ASSESSMENT METHODOLOGY

The EA will deal with all the issues identified as significant throughout the Scoping Process. These issues will be analysed and discussed for the three schools separately. The results of the EA will be incorporated into the engineering study in order to contribute to the design process.

4.1 DATA SOURCES AND ANALYSIS

Most of the data pertaining to the environmental conditions at the project site and vicinity have been collected during the Scoping Stage. Further details on socioeconomic conditions and climate will be obtained for the EA.

Original sampling or fieldwork such as soil samples or water samples are not considered to be necessary for the purposes of the EA, which will rely on existing data already collected.

4.2 DISCIPLINES REQUIRED

The following experts are expected to participate in the preparation of the EA:

- Environmental Assessment Team Leader.
- Project Manager / Architect.
- Environmental Scientist / Geologist.
- Field Assistant.

4.3 PROPOSED EA REPORT OUTLINE

The following proposed EA Report Outline is based on the guidelines in USAID Handbook 3, Appendix 2D, Part 216.6 (c):

The resultant EA report will incorporate all the findings of the environmental investigations described thus far. The report structure will be as follows:

Executive Summary: This section summarizes the report's conclusions, any areas of ongoing discussion and any outstanding issues to be resolved.

1. Introduction

1.1. Objective and Scope of Work

1.2. Environmental Assessment Requirements

2. Project Description

3. Environmental Laws & Regulations: This section will include the applicable institutional and regulatory framework in Jordan, including related standards, laws and regulations, in addition to US regulations for foreign country assistance.

4. Environmental Setting: This section provides a brief description of the environment in the project area, which will be affected by the proposed project or any of the alternatives. The amount of data and analyses included in this section will be in keeping with the relative significance of the impact. More general, background information will be summarized or referenced. The following are the subsections:

4.1. Biophysical Environment

4.1.1. Location and Climate

4.1.2. Geomorphology and Geology

4.1.3. Land Use

4.1.4. Archeological Findings

4.1.5. Biodiversity System

4.1.6. Prevalent or Adaptive Vegetation

4.2. Socioeconomic Context

4.2.1. Population and Major Economic Activities

4.2.2. Quality of Life and Infrastructure

4.2.3. Cultural Issues

4.2.4. Prevalent Architectural Images

4.2.5. Health and Other Community Services

4.2.6. Educational Services

4.2.7. Transportation

4.2.8. Water and Electricity Supply

5. Environmental Impacts: This section includes the environmental impacts of the proposed action. Most of this section concentrates on the significance of short-term and long-term effects of the proposed project, and direct and indirect effects.

Other considerations will include possible conflicts between the proposed project and any other land-use plans and policies, energy requirements, conservation measures, and socio-economic impacts. The following are the subsections:

5.1. Assessment of Overall Impacts

5.2. Expected Environmental Impacts

5.2.1. Construction

5.2.1.1. Socioeconomic

5.2.1.2. Public Health and Safety

5.2.1.3. Pollution, Consumption, and Waste

5.2.2. Operation

5.2.2.1. Socioeconomic

5.2.2.2. Public Health and Safety

6. Environmental Management Plan: will outline the steps needed in order to ensure construction and operation of the project in accordance with the recommendations of the EA. It will also delineate responsibilities for each measure.

6.1. Proposed Mitigation Measures

6.1.1. Design

6.1.2. Construction

6.1.3. Operation

The report will also appendix the following:

- List of Preparers: The names and qualifications of the people responsible for preparing the EA.
- Bibliography of references used.
- List of meetings held and names of attendees.
- Any relevant technical data not included in the main report.

4.4 SCHEDULE

Work on the EA is scheduled to commence after approval of this Scoping Statement (expected 2 weeks after this submission) and the final EA will be submitted three

weeks after approval of scoping statement. The following table summarizes the main activities in the EA and the expected duration of effort required for each.

Schedule for EA Activity

Activity	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Gathering Data						
Conducting Environmental Issues Analysis						
Developing Mitigation and Monitoring Plan						
Preparation of Draft EA Report						
Client Review						
Preparation of Final EA Report						

Appendix A
Pre-Scoping Brief



United States Agency
For International Development



The Hashemite Kingdom of Jordan
Ministry of Education

Jordan Schools Construction & Rehabilitation Program

Pre-Scoping Brief / Aqaba

February 2007

CDM International Inc.

and
Engicon



1. Introduction

The Ministry of Education (MOE) of Jordan with the co operation of the United States Agency for International Development (USAID) is implementing the *Jordan Schools Construction and Rehabilitation Program*. The Program aims to provide by 2008 up to 28 new schools with approximately 18 classrooms each. This will immediately benefit about 18,200 students. The Program will also renovate around 100 existing schools. In this session, the proposed immediate construction of 2 new schools and renovation of 12 others in Aqaba Governorate are discussed. CDM International is managing the project in cooperation with Engicon. An Environmental Assessment (EA) for the proposed project is currently under preparation in accordance with Jordanian and USAID regulations.

2. Scoping Objectives

The purpose of the scoping process is to identify the significant and non-significant environmental issues that will be addressed by the environmental assessment. This Pre-Scoping Brief provides a summary of the proposed project and presents the preliminary environmental issues that have been identified.

The Scoping Session will require the participants to discuss the identified environmental issues and suggest others that may be relevant. The participants will also propose preventive and mitigation measures for these issues. The session will serve as a medium for the community to voice their opinions and concerns regarding the project and fill in any remaining gaps. The results of the Scoping Session will be incorporated into the Scoping Statement and the Environmental Assessment.

3. Project Area

The project area is Aqaba city located in the south of Jordan on the Red Sea. In 2004, the city had a population of 80,135 inhabitants, of which 45,018 were male, 35,117 female and 14,749 families. By the end of 2007, the population is expected to increase to approximately 88,052 inhabitants, of which 49,466 are male, 38,586 female and 16,206 families. The above estimates are based on a mean annual growth rate of 3.19% for Aqaba City, according to the Department of Statistics General Census for 2004.

3.1 Climate

Aqaba city is characterized by very hot and dusty weather in summer, with temperatures reaching 46°C and a mildly cold dry winter with temperatures reaching around 5°C. The mean annual temperature is estimated at around 25°C. Between 2001 and 2005, the amount of rainfall in Aqaba ranged between 7.8 to 21.9 mm. The wind direction is northerly to north-westerly.

Figure 1: Location Map of Jordan

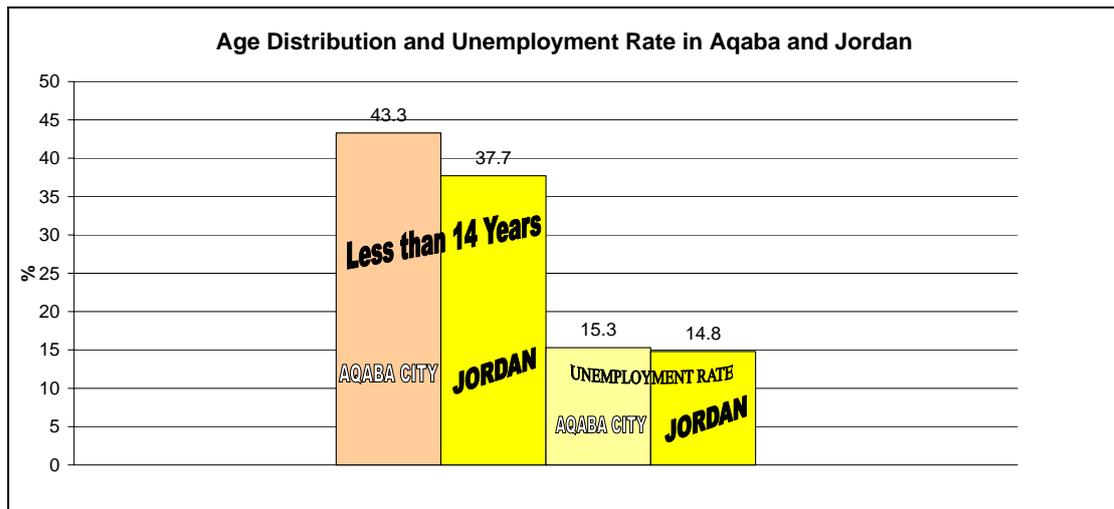


3.2 Education

For the scholastic year 2006/2007, the Governorate of Aqaba registered 32,672 students, of which 17,101 were females and 15,571 were males. The Governorate houses 109 schools with 18 schools for girls, 30 schools for boys and 61 co-ed. Co-ed is defined as a school hosting girls and boys between the 1st and 3rd grade and girls only between the 4th and 12th grade.

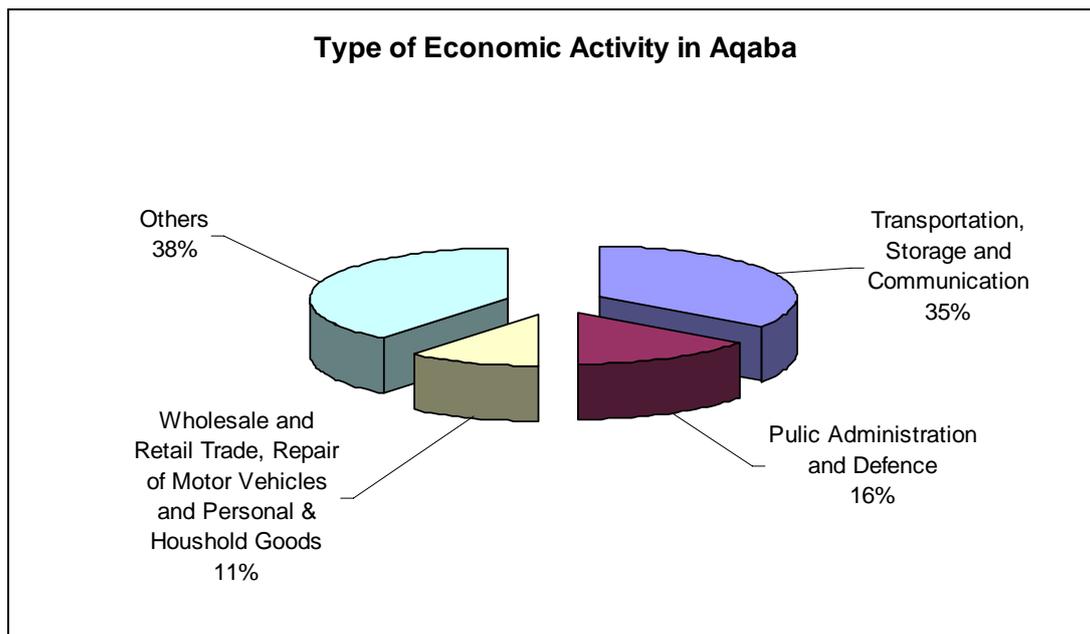
3.3 Economic Activity

In the Governorate of Aqaba, the population is young with those aged less than 14 years consisting of 43.3% of total population. In Jordan, this rate is slightly less at 37.7%. As for the unemployment rate, it is estimated to be 15.3. This is slightly higher than the overall unemployment rate in the country, which is approximately 14.8. There is a major difference in unemployment rates between males and females in Aqaba, such that the male unemployment rate at 12.9 while the female unemployment rate is 35.4.



Source: Department of Statistics, Employment and Unemployment Survey of 2005

Regarding economic activity, the main sector in Aqaba is the “Transportation, Storage and Communication” sector, with a participation of 34.6% from the working population, followed by “Public Administration and Defence” at 15.5% and “Wholesale & Retail Trade, Repair of Motor Vehicles and Personal & Household Goods” at 10.6%.



Source: Department of Statistics, Employment and Unemployment Survey of 2005

4. Proposed Project

The project under study consists of the construction of 2 schools with a fast-track schedule to be located in the city of Aqaba. The schools will be distributed as shown in Figure 2 below and described in the sections that follow. The location “66 8 Area” refers to the 8th Region School while the location “65 10 Area” refers to the 10th Region School.

Figure 2: Location of the 2 Proposed Schools



4.1 8th Region Secondary Male School

The aim for building the *8th Region Secondary Male School* is to solve the crowding problem in surrounding schools, which are Faisal 1st Basic Male School, Abdullah Bin Qays School, and Al-Hussein Bin Ali Secondary School. The average number of students per class in these schools currently reaches 44. Moreover, the proposed location for building this new school is based on the lack of public schools in the 8th and the 3rd regions, where the nearest school, which is Faisal II Basic Male School, is 2 km away from students' homes.

The school will be designated as secondary male, for grades 4th to 12th, with a proposed number of 24 classes. The size of the land where the school will be built is 8,350 m².

The 8th Region Secondary Male School will be situated on a main road 500 m away from a police station. The location is in a quiet residential area where many of the houses are currently under construction. The land parcel is flat with no vegetation and is covered with sand and rocky cobbles (Figure 3).

Figure 3: Land Area of Proposed 8th Region Secondary Male School



4.2 10th Region Secondary Co-Ed School

The purpose for selecting the 10th Region for constructing the school is to solve the crowding problem in the surrounding schools, which are the 8th Region Secondary Female School, Khadeejah Bent Khwailed Secondary School, and Sawari Comprehensive School. The average number of students per class in these schools reaches 45. The current challenge faced by the area's residents is that the nearest school to the students' homes is 2 km away, which is the 8th Secondary Female School.

The proposed school name is *10th Region Secondary Co-Ed School*, which will be located in the 10th region of Aqaba. The requested school type is secondary co-ed, with grades ranging between 1st and 12th and the number of classes is 30. The land plot where the school is going to be built has an area of 10,050 m².

The proposed land plot for the new school is located in a residential area and is surrounded by secondary roads but no main roads. The plot is flat with no vegetation cover (Figure 4).

Figure 4: Land Area of Proposed 10th Region Secondary Co-Ed School



5. Preliminary Environmental Issues

After visiting the sites and conducting a preliminary research of existing information on the project, many environmental issues proved to be of concern to the construction of the proposed schools. These issues are presented below, and will be discussed during the session. Other issues identified during the Scoping Session discussion will also be added. Mitigation and preventive measures for issues of concern will be proposed.

For the purpose of the Scoping Session and the Breakout Groups, the environmental issues have been distributed into three categories as follows: Construction, Socioeconomic, and Public Health & Safety Issues. Each issue must be evaluated for its potential significance taking into consideration both direct and indirect impacts.

5.1 Construction Issues

In general, the environmental impacts during the construction phase of a project are usually negative. Fortunately, most of these impacts are temporary and can be mitigated by taking the necessary precautions. For this project, the following issues relating to construction activities were identified:

- Occupational safety and health
- Workers sanitation
- Traffic
- Noise
- Dust pollution
- Water demand
- Soil and water pollution
- Water stagnation
- Waste generation
- Employment opportunities
- Timing of construction activities

5.2 Socioeconomic Issues

A development project can produce many socioeconomic benefits for the community that will house its facilities. These could range from job creation to decreasing the daily transport time to a similar facility situated further away, in this case, the school. The following were the main issues identified during the preliminary research phase:

- Interaction between students / classes
- Student psyche inside the classroom (color of walls, lighting, temperature, dust)
- Monitoring of students by supervisors

- Employment and economic development
- Land use
- Archaeological resources and cultural heritage
- Traffic
- Travel time to and from school
- Maintenance of the school building
- Watering of the green areas
- Energy saving
- Water conservation for irrigation and toilets (Grey water use, water saving devices, xeriscaping)
- Use of school for after hour activities

5.3 Public Health & Safety Issues

An essential requirement for building any school is to provide a safe and healthy environment for the students, teachers and all workers at the school. For that purpose, a list of elements that need to be tackled has been prepared. The final list developed after the Scoping Session should be comprehensive. The following were the identified issues:

- Communicable disease prevention
- Potable water supply and distribution
- Sanitary facilities
- Cleanliness of school building
- Indoor and outdoor safety issues for students (tripping, falling, sunstroke)
- Car accident prevention
- Protection from intruders
- Safety in workshops for males and females
- Provisions for physically challenged students
- Earthquake protection measures

6. Preliminary Description of Scoping Statement

The items to be included in the Scoping Statement are based on Jordanian and USAID environmental regulations. The results of the Scoping Session will be evaluated and incorporated into the Scoping Statement. The Environmental Assessment for the project will be based on the Scoping Statement.

The statement will include the following main items:

- Brief description of the project.
- Description of the site.
- Proceedings of the Scoping Session (including participants, agenda and activities, etc.).
- Results of the Scoping Session including the questionnaires, highlighting significant and non-significant issues.
- Proposed methodology for the EA including proposed table of contents and schedule.

Appendix B
List of Agencies Invited and Attendees to the Scoping
Session, Letter of Invitation, and Agenda

List of Agencies Invited to the Scoping Session

1. Ministry of Education
2. United States Agency for International Development:
3. Consolidated Consultants
4. Aqaba Special Economic Zone Authority
5. Ministry of Environment
6. Ministry of Health
7. USAID support program: AZM
8. USAID support program: ESP
9. USAID support programs: Save the Children
10. Ministry of Social Development
11. Ministry of Tourism & Antiquities / Directorate of Archaeology
12. Ministry of Planning & International Cooperation
13. Ministry of Interior/Public Security Directorate and Relevant Governors
14. Ministry of Water & Irrigation
15. Water Authority of Jordan
16. Ministry of Energy & Mineral Resources
17. Ministry of Awqaf & Islamic Affairs
18. Civil Defence
19. Aqaba Municipality
20. Aqaba Education Directorate
21. Natural Resources Authority
22. Electricity Sector Regulatory Commission
23. Jordan Environment Society
24. Friends of the Environment Society
25. Royal Society for the Conservation of Nature
26. General Union for Voluntary Societies
27. Friends of Archaeology
28. General Federation of Jordanian Women
29. Friends of the Earth
30. Jordan Society for Sustainable Development
31. Jordan Society for the Prevention of Road Accidents
32. United Nations Development Programme
33. World Health Organization
34. Petra News Agency
35. Jordan TV

36. Al Rai Newspaper
37. Adustour Newspaper
38. Al Ghad Newspaper
39. Representatives of the local community (including parents, teachers and principals)

List of Attendees to the Scoping Session

Agency/Organization	Name
Al Balqa' University / Aqaba College	Nedal Al Oran
Al Qweira Secondary Female School	Sara Njadat
Al Qweira Secondary Female School	Tagreed Al Hweiti
Aqaba Education Director	Talal Mohamad Al Bdoor
Aqaba Health Director	Dr. Ibrahim Al Ma'ya'
ASEZA	Eng. Omar Al- Rousan
ASEZA	Dr. Saleem Al Mughrabi
ASEZA	Eng. Khawla Fakhouri
ASEZA	Eng. Iman Al-Khouz
ASEZA	Eng. Osama Hayajneh
ASEZA	Shireen Abu Al Ez
ASEZA / Local Community Development	Karima Al Thabet
ASEZA/Planning Engineer	Eng. Samah Abdel Khaleq
Civil Defence	Mohamad Ameen Al Nawaiseh
Civil Defence	Engineer Faisal Al Shamayleh
Consolidated Consultants (CC)	Ruba Al Khouri
Consolidated Consultants (CC)	Omar Amawi
Education Support Proqramme	Gabi Foead Hallaq
Fatimah Al Zahra' School	Manal Ibrahim Mohamad Al Jaber
General Federation of Jordanian Women/Aqaba Branch	Najat Sameeh Al Hlawi
Headmistress/Fatima Al Zahra' School	Subhiyeh Mohammad Saeed Al Kabariti
Headmistress/Princess Bassma School	Najah Abdel Fattah Ismail
Headmistress/Secondary Eighth School	Kholoud Mahmud Al Esali
Jordan Environment Society	Ghazi Al Amareen
Jordan Environment Society/Aqaba	Baker Mohamad Obeidat
Jordan Society for the Prevention of Roads Accidents	Mohamd Saleem Abu Mousa
Jordan TV	Bassem Abu Hamad
Jordan TV/Local News	Ali Hussien
Jordan TV/Local News	Qassem Al Sayyed
Jordan TV/Local News	Yousef Mashaqbeh

Agency/Organization	Name
Ministry of Education	Eng. Rula Nawaf Jaradat
Ministry of Education	Eng. Maysoun Ahmad Al Hiyari
Ministry of Education	Eng. Jasser Atyeh
Ministry of Education	Monther Al Qaraen
Ministry of Education/Engineering Studies Manager	Eng. Iman Arabiyat
Ministry of Tourism & Antiquities	Ruba Saleem Al Qsous
Parent/Princess Bassma School	Alia Hussien Salman Al Qwiedat
Parent/Secondary Eighth School	Sa'ed Zawaeideh
School Health Supervisor/Aqaba Health Directorate	Dr. Hussein Abdel Kareem Al Dmeissi
Secondary Ayla School	Jehad Khader Abu Ajamyeh
Secondary Ayla School	Ismaeel Kamel Al Sheikh Theeb
Secondary Ayla School for Boys	Ziad Musbah Al Farran
Shrouq Project	Habeeb Ghazaleh
Teacher/Secondary Eighth School for Girls	Fatima Abdel Kareem Al Rawashdeh
That Al Sawari School	Najwa Ahmad Mohamad Harzallah
USAID	Dr. Amal Hijzzi
USAID	David Bruns
USAID	Dr. Issam Omar

**Jordan Schools Construction and Rehabilitation Programme -
Environmental Scoping Session**

ورشة عمل لتقييم الأثر البيئي - برنامج انشاء و ترميم مدارس الاردن

Registration of Participants

تسجيل المشاركين

Agency/Organization الجهة	Name الاسم	
USAID	د. آمال عازي	①
ولي / مدرسة بنت منة بنت سويح	سعد الزراري	②
البحر الشعبي فرع القبة	م. سميح العبدوي	③
ASEZA	م. أسماء هياينة	④
USAID	David Bruns	⑤
USAID	Issam Omar	⑥
مدرسة ذات الصواري حرم أ	نور احمد محمد الله	7
مدرسة فاطمة الزهراء	سكندر ابراهيم محمد الحار	8
مدير التربية والتعليم/ القبة	طلال محمد البدر	9
مرفأ صفة مدرسة (صفاة لقصبة)	د. حسين طيب بركم لرس	10
معلم مدرسة بنت منة بنت سويح للبنات	فاطمة عسكريم الرواس	11
ESP	هاكيتي نجاد حلات	12
مدرسة ايلة الثانوية	مروان فهد ابو كحيم	13
مدرسة ايلحة الثانوية للبنات	زيداد المسبح العزان	14
ASEZA / مهندس تخطيط	م. سماح عبد الجانود	15
اقاد المستشارين الهندسة والبيئة	م. رزي العوري	16
لجنة منطقة القبة	د. سليم المغزي	17
مدير الدراسات الإنشائية / الوزارة الرئيسي	م. أسماء عريضة	18

Jordan Schools Construction and Rehabilitation Programme -
Environmental Scoping Session

ورشة عمل لتقييم الأثر البيئي - برنامج انشاء و ترميم مدارس الاردن

Registration of Participants

تسجيل المشاركين

Agency/Organization الجهة	Name الاسم	
جمعية لبيد الاردن / العقبة	بكر محمد عبيدات	28
مركز التري والتعلم	ع. طارق عبيدات	29
الذرية (العقبة)	فهد العرابي	30
الدفاع المدني	الرائد محمد اسعد الزاوي	31
الدفاع المدني	الملازم المهندس فضل القضاة	32
مدرسة مدرسة لبيد	نجاح عبد الفتاح راس نعل	33
وليام جود لبيد	علياء هنين سلمان بوعوضان	34
مدرسة مدرسة فاطمة الزمراء	هبة محمد عبد اللطيف	35
اتحاد لبيد (CC)	عمر عاوي	36
الدفاع المدني	محمد عاوي	37
لبيد لبيد / العقبة	رضيا للمعالي	38
مدرسة العقبة / العقبة	د. د. الفهم لبيد	39
مدرسة مدرسة فاطمة الزمراء	بلود محمد العتيبي	40
وزارة السياحة والآثار	روبا لبيد القوس	41
متروك	حميد عزال	42
الجمهورية الاردنية للقوات المسلحة	محمد لبيد الواسطي	43
مدرسة لبيد لبيد	احمد لبيد لبيد	44
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United States Agency
For International Development

وزارة التربية و التعليم
الأردن

To:

إلى:

Subject: Environmental Scoping Session
Project: Jordan Schools Construction and
Rehabilitation Program

الموضوع: ورشة عمل تقييم الأثر البيئي
المشروع: برنامج إنشاء وإعادة تأهيل مدارس في
الأردن

Dear Sirs,

تحية طيبة وبعد،

The Ministry of Education of Jordan with the cooperation of the United States Agency for International Development (USAID) is executing the *Jordan Schools Construction and Rehabilitation Program*. This Program, for the Aqaba region includes the immediate construction of 2 new schools and the renovation of 12 others. CDM International is the Project Manager, and Engicon, is providing consulting services on environmental issues.

تقوم وزارة التربية و التعليم بدعم من الوكالة الأمريكية للتعاون الدولي (USAID) بتنفيذ برنامج إنشاء وإعادة تأهيل مدارس في الأردن. ويتضمن البرنامج إنشاء مدرستين وترميم ١٢ مدرسة في منطقة العقبة. تقوم شركة سي دي إم (CDM) العالمية بإدارة هذا البرنامج، كما تقوم شركة المستشار للهندسة بتزويد الخدمات الاستشارية البيئية.

To this effect our Team, is preparing an Environmental Impact Assessment to evaluate the anticipated effects that the project may have on the environment and the community, as well as how the physical and cultural environment will impact our projects. As part of this process a Scoping Session will be held to encourage discussion of the possible pertinent environmental issues that have been identified.

يجري في الوقت الحالي تحضير دراسة حول التقييم البيئي ومدى تأثير هذا المشروع على البيئة. وكجزء من عملية التقييم وتقليل التأثيرات السلبية المحتملة على البيئة، ستعقد ورشة عمل يقوم المشاركون من خلالها مناقشة القضايا البيئية المتعلقة بالمشروع.

Therefore, we are pleased to invite you to participate in this Scoping Session, which will be held on 28/2/2007 between 9 am and 1:30 pm, Aqaba Gulf Hotel. We kindly request that you inform us of the names of one or two representatives who will be attending. Please notify in advance Ms. Lama Bashour (Engicon) by telephone 06/4602120 or fax 06 4602130. Enclosed please find a copy of the Scoping Session's agenda.

وعليه يسرنا أن نوجه لكم الدعوة للمشاركة في هذه الورشة التي ستعقد يوم الأربعاء الموافق ٢٠٠٧/٢/٢٨ ما بين الساعة التاسعة صباحا والواحدة والنصف من بعد الظهر في فندق خليج العقبة راجين التكرم بتسمية شخصين من طرفكم للحضور والاتصال للتأكيد مع السيدة لمى بشور (شركة المستشار للهندسة) على هاتف رقم (٠٦/٤٦٠٢١٢٠) أو فاكس رقم (٠٦/٤٦٠٢١٣٠). مرفق طيه نسخة عن جدول أعمال الجلسة.

Please be advised the Session will be conducted in Arabic.

يرجى التكرم بالعلم بأن الجلسة ستعقد باللغة العربية.

Yours sincerely

وتفضلوا بقبول فائق الاحترام،

Dr. Ahmad Al-Battah

د. أحمد البطاح

Secretary General of
Administrative And Financial Affairs
Ministry of Education

امين عام الشؤون الإدارية والمالية
وزارة التربية و التعليم

جدول الأعمال

ورشة عمل للدراسة البيئية الخاصة برنامج
إنشاء وإعادة تأهيل مدارس الأردن
فندق خليج العقبة
٢٠٠٧/٢/٢٨

تسجيل الحضور	:	٩,٠٠ - ٩,١٥ صباحاً
الافتتاح:	:	٩,١٥ - ٩,٣٠ صباحاً
كلمة مندوب وزارة التربية والتعليم كلمة مندوب الوكالة الأمريكية للتعاون الدولي	:	
وصف المشروع ومكوناته	:	٩,٣٠ - ٩,٥٠ صباحاً
استعراض للشؤون البيئية الأولية المتعلقة بالمشروع	:	٩,٥٠ - ١٠,١٠ صباحاً
استفسارات ومناقشات	:	١٠,١٠ - ١٠,٤٥ صباحاً
إستراحة	:	١٠,٤٥ - ١١,٠٠ صباحاً
استكمال الاستفسارات والمناقشات	:	١١,٠٠ - ١١,٣٠ صباحاً
تقسيم إلى فرق عمل:	:	١١,٣٠ - ١٢,٣٠ ظهراً
• الشؤون الاجتماعية والاقتصادية • الشؤون المتعلقة بأعمال التنفيذ • الشؤون المتعلقة بالصحة والسلامة العامة	:	
استعراض نتائج فرق العمل	:	١٢,٣٠ - ١٢,٤٥ ظهراً
تعبئة إستمارة الآثار البيئية	:	١٢,٤٥ - ١,١٥ ظهراً
اختتام الجلسة	:	١,١٥ - ١,٣٠ ظهراً
وجبة غذاء	:	١,٣٠ ظهراً



AGENDA

Environmental Scoping Session for Jordan Schools Construction and Rehabilitation Programme

Aqaba Gulf Hotel
28/02/2007

- 9.00 – 9.15 am** : Registration of Participants
- 9.15 – 9.30 am** : Opening Remarks
Ministry of Education
USAID
- 9.30 – 9.50 am** : Project Description
- 9.50 – 10.10 am** : Presentation of Identified Environmental Issues
- 10.10 – 10.45 am** : Questions and Discussion
- 10.45 – 11.00 am** : Coffee Break
- 11.00 – 11.30 am** : Questions and Discussion Continued
- 11.30 – 12.30 pm** : Breakout Groups:
- Socioeconomic Issues
 - Construction Issues
 - Public Health & Safety Issues
- 12.30 – 12.45 pm** : Presentation of Results of Breakout Groups
- 12.45 – 1.15 pm** : Filling Out of Environmental Assessment Questionnaire
- 1.15 – 1.30 pm** : Concluding Remarks
- 1.30 pm** : Lunch

Appendix C
Environmental Issues Questionnaire

Environmental Scoping Questionnaire

Name: _____ Agency: _____

Instructions:

Please answer this questionnaire by evaluating each item according to the shown evaluation scheme below. Please fill in the item response by writing its grade (0-5) inside the box (Please use 8 for 8th school and 10 for 10th school).

Evaluation scheme

Irrelevant Issue	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
0	1	2	3	4	5

Any further comments such as possible mitigation measures would also be useful. Please feel free to include them in the provided space for each item separately.

Construction Issues

1. Occupational safety and health: Are there any possible risks to the health and safety of the workers on the site? If you agree, please specify.

Response ⁸ ¹⁰ Comment: _____

2. Workers sanitation: Do you believe that the workers' hygiene on site may have an impact on the surrounding environment? (Ex. toilet facilities, adequacy of water supply, etc)

Response ⁸ ¹⁰ Comment: _____

3. Traffic: Will generated traffic as a result of construction vehicles have a high negative impact on the normal traffic in the area?

Response ⁸ ¹⁰ Comment: _____

4. Noise: Do you think the noise from construction activities will drastically affect the residents of the neighboring areas?

Response ⁸ ¹⁰ Comment: _____

5. Dust pollution: Do you think that the dust generated as a result of excavation and other activities have a high negative impact on the neighboring residents?

Response ⁸ ¹⁰ Comment: _____

6. Water demand: Will the increase in water demand during construction create a burden on the water supply in the city of Aqaba?

Response ⁸ ¹⁰ Comment: _____

7. Soil and water pollution: Is there a chance of soil or water pollution as a result of construction activities?

Response ⁸ ¹⁰ Comment: _____

8. Water stagnation: Is stagnation of water, which may provide a breeding place for disease-carrying insects, a major issue of concern in this project?

Response ⁸ ¹⁰ Comment: _____

9. Waste generation: Will generation of construction waste pose a nuisance on the neighboring areas?

Response ⁸ ¹⁰ Comment: _____

10. Employment opportunities: Will job creation present a significant positive impact on the local community where the project will be located?

Response ⁸ ¹⁰ Comment: _____

Socio-economic Issues

1. Interaction between students / classes: Are there any concerns about students interacting with each other outside of their classes, particularly regarding different grades?

Response ⁸ ¹⁰ Comment: _____

2. Student psyche inside the classroom (color of walls, sunlight, temperature, dust): Do you think these issues are important. If you agree, please specify.

Response ⁸ ¹⁰ Comment: _____

3. Monitoring of student behavior by supervisors: Do you think it is important that the school supervisors be able to achieve proper monitoring of the students?

Response ⁸ ¹⁰ Comment: _____

4. Employment and economic development: Will the school contribute to employment and economic development in the area?

Response ⁸ ¹⁰ Comment: _____

5. Land use: Will the project affect the land use in the surrounding areas?

Response ⁸ ¹⁰ Comment: _____

6. Archaeological resources: Do you think that any sites of archeological value may be uncovered or damaged by this project? If you agree, please specify.

Response ⁸ ¹⁰ Comment: _____

7. Traffic: Will traffic congestion during dropping off and picking up hours have a significant impact on the neighboring area?

Response ⁸ ¹⁰ Comment: _____

8. Travel time to and from school: Will the location of the new schools decrease the travel time for students significantly?

Response ⁸ ¹⁰ Comment: _____

Public Health & Safety Issues

1. Communicable disease prevention: Is there any relation between the school facilities and the spread of disease? If you agree, please specify.

Response ⁸ ¹⁰ Comment: _____

2. Potable water supply and distribution: Will the schools present any increased stress on water supply? If you agree, please specify.

Response ⁸ ¹⁰ Comment: _____

3. Sanitary facilities: Is there a possibility that odor and contamination be caused by the sanitary facilities? If you agree, please specify.

Response ⁸ ¹⁰ Comment: _____

4. Indoor and outdoor safety issues for students (tripping, falling and sunstroke): Is there a risk of accidents to students in the school? If you agree, please specify.

Response ⁸ ¹⁰ Comment: _____

5. Injury from car accidents: Is there a threat to students from being hit by passing cars on their way to and from school?

Response ⁸ ¹⁰ Comment: _____

6. Protection from intruders: Are intruders to the school a cause for alarm

Response ⁸ ¹⁰ Comment: _____

7. Safety in workshops for males and females: Are there any safety concerns regarding the school

Response ⁸ ¹⁰ Comment: _____

8. Provisions for physically challenged students: Should there be facilities for the physically challenged students?

Response ⁸ ¹⁰ Comment: _____

9. Earthquake protection measures: Should there be special safety measures in the school to protect from seismic activities?

Response ⁸ ¹⁰ Comment: _____

Other Comments:

استبيان الورشة البيئية

الاسم: _____

الجهة: _____

التعليمات:

الرجاء تعبئة الاستبيان من خلال وضع الإجابة في الخانة العاشرة) وتكون الإجابات من رقم (٠-٥) كالآتي:

٥	٤	٣	٢	١	صفر
أوافق بشدة	أوافق	حيادي	أعارض	أعارض بشدة	لا يوجد علاقة

إذا أردت إضافة أية ملاحظات مثل اقتراح إجراءات وقائية أو تخفيفية، هنالك بند مخصص لذلك الغرض عند كل سؤال.

أ. القضايا المتعلقة بأعمال التنفيذ

(١) سلامة وصحة العمال: هل هنالك أية مخاطر على صحة وسلامة العمال في الموقع؟ إذا توافق، الرجاء التحديد.

الإجابة: ^٨ ^{١٠} نظات: _____

(٢) نظافة العمال: هل تعتقد بأن النظافة الشخصية للعمال في الموقع قد يكون لها تأثير على البيئة المحيطة (مثلاً: دورات المياه، مصدر الماء الملانم)؟

الإجابة: ^٨ ^{١٠} نظات: _____

(٣) حركة السير: هل زيادة حركة السير التي تنتج عن الجرافات والمركبات الخاصة بعملية التنفيذ سيكون لها تأثير سلبي على حركة السير العادية في المنطقة؟

الإجابة: ^٨ ^{١٠} نظات: _____

(٤) الضجيج: هل تعتقد أن الضجيج الناتج عن نشاطات التنفيذ سيسبب أي ضرر على سكان المناطق المجاورة؟

الإجابة: ^٨ ^{١٠} نظات: _____

(٥) تلوث ناتج عن الغبار: هل تعتقد أن الغبار الذي سينتج عن عمليات الحفر وأي أعمال أخرى عند التنفيذ سيكون لها أثر سلبي على السكان المجاورين؟

الإجابة: ^٨ ^{١٠} نظات: _____

(٦) زيادة الطلب على المياه: هل سيؤدي زيادة الطلب على المياه خلال فترة التنفيذ إلى ضغط على الموارد المائية في مدينة العقبة؟

الإجابة: ^٨ ^{١٠} نظات: _____

(٧) تلوث التربة والمياه: هل هناك إمكانية لتلوث المياه (السطحية أو الجوفية) والتربة كنتيجة لأعمال التنفيذ؟

الإجابة: ^٨ ^{١٠} نظات: _____

(٨) ركود المياه في برك: هل إمكانية ركود المياه تعتبر ذات أهمية بالغة بالنسبة للمشروع قيد الدراسة، علماً بأنها قد تشكل بيئة ملائمة لنمو الحشرات التي تنقل الأمراض؟

الإجابة: ^٨ ^{١٠} نظات: _____

(٩) **النفائات الصلبة الناتجة عن أعمال التنفيذ:** هل من الممكن أن تسبب النفائات الناتجة عن أعمال التنفيذ إزعاجاً للمناطق المجاورة؟

الإجابة: ^٨ ^{١٠} نظات: _____

(١٠) **فرص العمل:** هل من الممكن أن تشكل فرص العمل الجديدة الناتجة عن أعمال التنفيذ تأثير إيجابي على المجتمع المحلي المتواجد في منطقة المشروع؟

الإجابة: ^٨ ^{١٠} نظات: _____

ب. الشؤون الإجتماعية والإقتصادية

(١) **التفاعل بين الطلاب / الصفوف:** هل هناك أي أهمية لتفاعل الطلبة معاً خارج صفوفهم؟

الإجابة: ^٨ ^{١٠} نظات: _____

(٢) **نفسية الطالب داخل الصف (من حيث ألوان الجدران، أشعة الشمس، درجة الحرارة):** هل تعتقد أن لهذه الأمور أي أهمية في المشروع؟ إذا توافق، الرجاء التحديد.

الإجابة: ^٨ ^{١٠} نظات: _____

(٣) **تسهيل مراقبة الطلاب من قبل المدراء والمشرفين:** هل تعتقد أنه من المهم تسهيل مراقبة الطلاب من قبل المدراء والمشرفين؟

الإجابة: ^٨ ^{١٠} نظات: _____

(٤) **فرص العمل والتنمية الإقتصادية للمنطقة:** هل ستؤمن المدرسة فرص العمل وتساهم على التنمية الإقتصادية في المنطقة؟

الإجابة: ^٨ ^{١٠} نظات: _____

(٥) **إستعمالات الأراضي:** هل سيؤثر المشروع على كيفية استخدام الأراضي في المناطق المجاورة؟ إذا توافق، الرجاء التحديد.

الإجابة: ^٨ ^{١٠} نظات: _____

(٦) **المناطق الأثرية والتراثية:** هل تعتقد أنه يمكن أن يؤدي المشروع الى تخريب لأية مناطق أثرية؟ إذا توافق، الرجاء التحديد.

الإجابة: ^٨ ^{١٠} نظات: _____

(٧) **حركة السير:** هل ستؤدي زيادة حركة السيارات عند بداية ونهاية الدوام الى أزمة سير في المناطق المجاورة؟

الإجابة: ^٨ ^{١٠} نظات: _____

(٨) **وقت الرحلة من وإلى المدرسة:** هل سيقبل موقع المدارس الجديدة وقت الرحلة من وإلى المدرسة؟

الإجابة: ^٨ ^{١٠} نظات: _____

ج. القضايا المتعلقة بالصحة والسلامة العامة

- (١) الوقاية من الأمراض المعدية: هل هناك أية علاقة بين مرافق المدرسة وإنتشار الأمراض؟ إذا توافق، الرجاء التحديد.
الإجابة: ^٨ ^{١٠} نظرات: _____
- (٢) توفير وطريقة توزيع مياه الشرب: هل تعتقد بأن توزيع مياه الشرب في المدرسة قد ينتج عنها أية مخاطر للطلاب؟ إذا توافق، الرجاء التحديد.
الإجابة: ^٨ ^{١٠} نظرات: _____
- (٣) مرافق الحمامات والمراحيض: هل هناك أية احتمالية أن تكون دورات المياه والمراحيض سبب لروائح كريهة أو أي تلوث في المدرسة؟ إذا توافق، الرجاء التحديد.
الإجابة: ^٨ ^{١٠} نظرات: _____
- (٤) أمور السلامة الداخلية والخارجية للطلبة (عركلة، وقوع، ضربة الشمس): هل هناك أي خطر لوقوع حوادث للطلبة في المدرسة؟ إذا توافق، الرجاء التحديد.
الإجابة: ^٨ ^{١٠} نظرات: _____
- (٥) الإصابات الناجمة عن حوادث السير: هل هناك خطر حوادث مع السيارات المارة عند تنقل الطلاب من وإلى المدرسة؟
الإجابة: ^٨ ^{١٠} نظرات: _____
- (٦) الحماية من الدخلاء: هل هناك مخاوف من دخلاء من خارج المدرسة؟
الإجابة: ^٨ ^{١٠} نظرات: _____
- (٧) السلامة في مشاغل البنين والبنات: هل هناك أية مخاطر ناتجة عن المشاغل داخل المدرسة؟
الإجابة: ^٨ ^{١٠} نظرات: _____
- (٨) تسهيلات للمعوقين جسدياً: هل تعتقد أنه يجب الإهتمام بتوفير تسهيلات للطلبة المعوقين جسدياً؟
الإجابة: ^٨ ^{١٠} نظرات: _____
- (٩) الحماية من الزلازل: هل هناك ضرورة للحماية من الزلازل؟
الإجابة: ^٨ ^{١٠} نظرات: _____

د. ملاحظات أخرى:

Appendix D
Minutes of the Scoping Session & Questionnaire Results

Crash Notes on the Scoping Session at Aqaba Gulf Hotel Construction and Rehabilitation of Jordan Schools

Speech of the representative of MOE (Mr. Talal Bdoor)

Building schools in the area of Aqaba requires the following:

1. A geological study
2. Medical facilities for students
3. Facilities for disabled and physically challenged students
4. Covered courts with umbrellas – for protection from sunlight / UVA, UVB
5. Colors of walls
6. Air-conditioned gymnasiums
7. Providing fences that are high enough in order to provide protection, particularly concerning females
8. Geological impact is important; resisting earthquakes
9. The environment of the school, considering students with special needs, specifying corridors for them

Speech of the representative of ASEZA (Dr. Saleem Mughrabi)

- The project must consider regulations of both USAID and ASEZA
- Socio-economic condition must be considered
- Students with special needs (meeting their needs when designing courts, or classrooms for better movement and transport)
- Suggesting a certain uniform for females or males
- Public health and safety (during buses' movement, the roadway, transport of students)
- Meeting people's financial capabilities
- Students' safety indoors (concerning facilities, providing ramps in amphitheatre, best way for transportation of students)
- Aqaba has a very hot climate with scarce water resources, therefore water conservation is essential. Aqaba has experience with reusing treated wastewater and gray water.
- Crops species: since the area is very hot and could be considered a desert, it is important to choose crops that require small amount of water, in order to be able to deal with the area's characteristics. This must be considered for the school's landscape design
- Concerning school's equipments, it is important to include computer laboratories and electronics since today's generation requires this.
- Considering the lighting and ventilation system in order to find solutions for the dust issue.

- The suggested design must provide a model school that achieves the goal of sustainability in the Kingdom.

Speech of the representative of USAID (Mr. David Bruns)

- USAID had always supported different projects around Jordan, but only last five years it became involved in education, pre-school, KG's
- For the suggested project, USAID is providing \$55 US millions
- This project considers community involvement such as: teachers, principles, and parents. Whatever participants suggest will be considered in the design
- Impacts will involve both short-term and long-term
- A report will be returned to you to assure you we took your consideration

Speech of representative of USAID (Dr. Amal Hijazi)

- We are interested in the opinion of all parties concerning different issues, such as: public health, sites, and ideas of alternative sites or new suggested sites
- The preliminary report will be submitted to the Ministry of Education and ASEZA
- The chance given for public participation, in order to give a feedback is going to be 10 days
- The environmental application is following the guidelines of two parties, ASEZA and USAID in Washington.

Presentation of the Project (Eng. Sana'a Batarseh, CDM)

Presentation of Environmental Issues (Ms. Lama Bashour, Engicon)

Audience's comments

Ms. Najah Isami, Director of Prince Basma School

- We have 1400 students, 35 sections; we feel we exist in a hotel or hospital. Classrooms are exactly opposite each other, why not have a U shape design? Moreover, having one or two floors will be more comfortable for teachers and the Administration of the school.
- Shaded areas are necessary
- Medical facilities must exist on each floor or wing at least, in order to reduce the noise and the continuous movement of students
- A clinic inside the school is essential with a permanent nurse for emergency cases, but inside the school building is better.
- Colors chosen must be attractive; designing physical educational facilities would differ from libraries.

Dr. Hussein Al Dmeiss.: Aqaba Health Directorate

At the beginning of each school year, we do medical check for students, and vaccination. In some schools, there isn't any available space for a medical clinic, and the physician would end up doing the checkups inside the library.

Eng Samah Abd-Al-Khaleq, ASEZA

Please take note that a mosque is planned to be constructed in the 8th region, on the land suggested for the school.

Dr. Akram Ma'ya: Aqaba Health Director

There should be a specialist for outdoors environment, and checking indoor environment and any problems with it and surrounding it, taking samples of water for testing, and cleaning of water tanks.

Sa'ed Zawaydeh: Parent, Secondary Eighth School

There is a limited capacity for each school. Having a classroom of 45 students will certainly affect the educational environment. How did you anticipate the number of students for any school?

Response: Eng. Sana'a Batarseh, CDM

The project uses certain design forms for estimating the required area needed for each student in the classroom. The process of estimating the number is based on a scientific

procedure, the surrounding schools were studied, and they predicted the increasing number of students based on the growth rate of the region.

Dr. Omar Amawi, Consolidated Consultants

The project has social goals, and upon choosing the lands, estimates were made for the population in the area, but there are certain limitations. Limits did exist during the preliminary design, maximum height allowed, there are some areas not being utilized or were not fully taken advantage of, for example it is does not make sense to require 60 parking lots when the number of staff in that school will be a maximum of 35!

Response: Dr. Saleem Mughrabi, ASEZA

The authority might accept any suggestion that will serve the goal and need but only if it is justified.

Response: Eng. Samah Abdul Khaliq, ASEZA

The authority is flexible, it takes every school separately, and they study case by case. It will be assumed that there will be a parking lot for each classroom, for each administrative, there is going to be a parking lot for each 100m² from the administrative areas.

Mohammad Al Nawaiseh, Civil Defense

Any plans passed by the ASEZA, must be given to the Civil Defense department afterwards, to check on the entrances and exists, the laboratories to check on the fire systems and the safety concerns.

Eng. Faisal Al Shamayleh, Civil Defense

A question was asked to the designers: what code are you designing?

Mohammad Saleem, Jordan Association for prevention of Road Accidents

- a. He suggested that for all schools that exist on main roads, bridges and underpasses must be constructed in order to manage the traffic properly.
- b. Since the project aims at enhancing the equity of education, then it must be noted that there is a shortage of teachers, and some teachers are teaching subjects which they are not specialized in. He is concerned with raising the equity of all students; therefore, it is important to concentrate on the human resources, which is complimentary to the educational process.

Infrastructure Commissioner of Aqaba: Engineer Omar Al-Rousan

The development in the region is very fast; therefore, a fast development in education must be taking place, in a way that the environmental and climatic conditions would be convenient. Providing a convenient environment for students would lead us to an educational environment that would serve as a model, as Aqaba is a Model for development.

Dr. Saleem Mughrabi, ASEZA

The suggested model involves all educational period, from first till twelfth grade. All studies say that it is a must that students would be separated according to their age distribution, because they differ in their concepts and values. A bad example that best serves this case is *Hussein School*, where the students of tenth grade are the worst all over Aqaba city; this school has plenty of negative issues.

Photographic Documentation



Head Table with Ministry of Education, USAID, and ASEZA Representatives



Scoping Session Participants



Questions and Discussions



Breakout Group: Public Health & Safety



Breakout Group: Construction Issues



Breakout Group: Socioeconomic Issues

Findings of the Breakout Group: Construction Issues

1. Occupational Health and Safety:

(a) It is essential to follow:

- The conditions of public safety
- Conditions of Civil Defense
- Conditions of insurance companies

(b) The site's safety is important. A fence at entrance and exit is required.

(c) Obstacles and wastes from excavation must be removed; the public should stay away from it.

(d) Any visitor to the site must be provided with a helmet and special shoes (Special Conditions of FIDIC). In summary special conditions of the contracting FIDIC should be applied.

2. Workers Sanitation:

On site sanitary facilities should be provided to the workers.

3. Traffic:

The works must be limited to the site in order to avoid traffic congestion and disruption in movement of vehicles.

4. Noise:

Commitment should be applied to all that is mentioned in the general conditions of the contracting FIDIC otherwise a special conditions annex should be issued.

5. Dust pollution:

A cover must be placed on trucks transporting construction material.

6. Water demand:

No impact on water supply is expected because water is always available or at least could be provided at all times

7. Soil and water pollution:

Groundwater pollution is not expected. But commitment should be made by the contractor to avoid soil contamination and if however contamination took place such as: oil, paint, etc. then soil must be removed immediately, and disposed of properly. Tyres should not be used as a material for burning.

8. Water stagnation:

This should be avoided.

9. Waste generation:

Commitment must be made by the contractor to dispose of the solid waste generated immediately, and in the areas designated by the authorized parties.

10. Employment opportunities:

It will be difficult to hire workers from the same region; however, priority must be given to those living inside Aqaba.

11. Timing:

Construction during regular working hours during any time of the year is acceptable.

Regarding renovation, since it is expected that execution might not take place during the summer holiday, then it is essential that an additional condition would be added to organize with the Ministry of Education and the school's administration, to transport the students temporarily and find an alternative which can serve the students' safety.

Additional notes:

- Protecting any part of the site from collapsing during construction
- Protecting the students during renovation
- Placing signs during the construction in order to inform residents and also specifying the borders of the site.

Findings of the Breakout Group: Socio-economic Issues

Interaction between students / classes:

A school director stated that separating students according to their age groups would make it much easier for teachers and psychological guides to handle the students' concerns and issues.

All participants agreed on having students of the early stage (1st – 3rd Grade) in the same classroom and mixed, because this age is very docile and rarely cause any problems. They also suggested that those three small-aged groups would have their own toys, courts, gymnasiums and sports equipments so that it would be applicable to their age, in addition to avoiding conflicts that could result from elder students.

Concerning other age groups two suggestions appeared:

- ❖ One group wanted the following separation plan:
 1. 4th –7th grade
 2. 8th –12th grade

- ❖ The other group objected the first plan, explaining that it would cause many conflicts, due to the wide difference between the teenage group mentality and the younger ones, so they suggested the following division:
 1. 4th – 6th grade
 2. 7th – 9th grade
 3. 10th – 12th grade

However, a representative of the MOE reminded that the MOE's division is known as follows:

- ❖ 1st – 3rd grade
- ❖ 4th – 7th grade
- ❖ 8th – 12th grade

It is worth mentioning that all schools are still suffering from the division that is followed by the MOE, and a solution must be found to please all parties.

For all mentioned group divisions, all participants suggested that they should be separated during recesses, and have different courts and facilities.

Concerning laboratories, there exists a division for all group ages, which is: Primary High and Primary Low. This means that equipments needed for both groups differ from each other since the scientific material differs. Obviously higher grades take more advanced subjects than the lower grades.

Student psyche inside the classroom (color of walls, sunlight and temperature):

Color of walls: some participants suggested that an expert in this field should be suggested for choosing colors, bright colors of course are needed, choosing different degrees of the same color could be beneficial. Another participant suggested that drawings could be made for a number of walls in the classrooms of small-aged groups, another participant stated: "colors reflect on student's activity" and how certain colors

might make them sleepy or feel cold... etc. Another group mentioned the colors of the outdoor bricks, so that a student would recognize his/her school from a far distance and how this would make them excited about attending school.

Lighting: during winter there is no problem in utilizing the sunlight for lighting, but in summer time, sun's light would become really annoying, therefore, curtains or shutters must be used to block the sunlight from entering and to avoid all the heat it would bring. Obviously lighting system is needed in summer, a smart way should be figured out to achieve minimum use of energy.

Temperature: For summer and winter, all participants suggested a central heating/cooling system to be included. However, operating cost cannot be handled by the MOE, therefore, a participant suggested either to increase the fees on students, which was objected by the participants, or may be parents, who are financially capable, would provide financial support for this purpose. On conclusion, operating costs would have to be covered by parents of students, who are willing to help in the educational process.

Dust: A principle emphasized to avoid designing high windows, for they cause the entrance of insects and reptiles, especially in summer.

Monitoring of student behavior by supervisors:

It was suggested that a monitor's room would be opposite to classrooms and easily accessible to them. Others suggested a camera system, and others suggested that a monitor would be hired for every floor or wing. A principle stated that there should be two kinds of administrations: Major and Minor, this way responsibility would be split between them. All participants agreed that there should be someone who would take care of the rest rooms to monitor them.

Employment and economic development:

It was agreed that constructing the school will enhance the economic development in the regions chosen, by choosing staff from the local community to work at the schools. A whole board would be needed such as: Secretaries, Teachers, Principals, Psychological guides, Admin employees, even employees hired for monitoring purposes.

Land use:

All participants agreed that a negative impact would arise, from the noise pollution that the mentioned regions would face. Therefore, mitigation measures should include a way to minimize the generated noise by each school.

Archaeological resources:

An employee at the office of the Department of Antiquities, which exists in Aqaba mentioned that the Department of Antiquities must be informed about the project, and that it should be doing a field survey in the suggested sites of construction before proceeding with excavation.

Traffic:

For traffic congestion issues, a parent who also works at one of the 12 schools suggested that parking lots for buses must be separated from parking lots of personal vehicles. That is concerning dropping off and picking up hours. Others suggested making a reasonable distance between entrances and exiting gates so that to avoid congestion, also manage the street of the gates so that people entering it will not return from the same street and cause traffic jam while turning with their vehicles.

Moreover, others warned that since the 8th Region School is going to be on a main street, then it is important to make the entrances and exiting gates on the secondary streets. Also concerning Karamah school and since it is going to be founded on the desert highway connecting Aqaba and Amman, then a necessity exists for bridges and underpasses for the safety of students, zebra lines (zones for pedestrians) and of course avoiding the main street when choosing the entrance and exit gates.

To reduce the problem of traffic jam, car-pooling was suggested and some parents welcomed the idea, others suggested having a van shared between students living in the same neighborhood, but some were complaining that some drivers start exploiting them, so why not having special vans organized by the MOE, and they are ready to pay for this service, but for a reasonable price.

Travel time to and from school:

Constructing the schools in the mentioned regions will not only make it easier for teachers since the number of students is going to be reduced, but it will also make it easier for students to reach school at an earlier hour in the morning, avoiding delays to the morning queue. The most important benefit is reducing parents' time, effort and money since they will no longer need to provide their children a lift to school, in addition to saving the money they used to give their children for taking a bus to school.

Other uses for the school:

It was suggested that some of the school's facilities would be used after school hours. Such as the library, computer laboratory and the courts. In case this idea became applicable, then an ID card must be made for those who are interested in using the facilities, for the purpose of identifying them, may be a small amount would be paid for this service so as to cover the maintenance fees of the school.

Of course someone has to be employed for monitoring purposes. Some participants also suggested that cooperation might be done between the MOE and the Ministry of Culture for better management of this idea.

Findings of the Breakout Group: Public Health & Safety Issues

1. Communicable disease prevention:

Leishmania is quite prevalent in the area and therefore protection of the students from the sand fly that spreads this disease is important. This could be done through putting up screens on the windows.

In order to prevent spreading of a communicable disease, there should be a special room for medical examination where a student suspected of infection may wait until the doctor arrives without exposing other students.

Cleanliness of the sanitary facilities will also minimize the spread of diseases, as will cleanliness of the building in general.

Most common communicable diseases are measles, hepatitis A, flu, chicken pox.

2. Potable water supply and distribution:

The group did not believe that the school will present a stress on water supply in area. The best way to distribute water is by providing water coolers. One of the participants stressed that the coolers should not be located in the hallways because they will obstruct the passage and this is very dangerous. A suggestion was made to locate the cooler near the sanitary facilities. In addition, water reservoirs should be appropriately designed and located.

3. Sanitary facilities:

Sanitary facilities should be located away from the classrooms. Arabic toilets are preferred as they are more hygienic and easier to maintain. The facilities should be located in the southern side to reduce the impact of odor and be provided with ventilators.

4. Indoor and outdoor safety issues:

- There should be several entrances/exits for the school.
- Material coating for the walls and desks should be harmless.
- Ensure that there are no sharp corners that students may be exposed to.
- There should be safety precautions for the gas bottles stored and used in the school.
- The location, height and types of electricity sockets should take into account safety of the students and employees at the school.
- Stairs should have a railing. It is preferable to have two sets of stairs at each end of the hallway.
- Protection on windows needs to be installed.
- Reemphasis on the issue of avoiding coolers along the hallway.
- Drainage system for each story to ensure dry floors, as well as tilting of the floors to ensure proper drainage.
- Apply the Jordanian codes for protection from fires as well as the National Fire Protection Association (NFPA) standards.
- Ensure involvement of the Civil Defence during all phases of the design.
- Install fire escapes as well as fire alarm and fire fighting systems.
- Kindergartens and first grade should be located on the ground floor.

5. Injury from car accidents:

- No exists on the main road.

- A parking lot for cars and buses.
- Signs should be placed outside the school.
- A pedestrian bridge would be very beneficial.

6. Protection from intruders:

Many teachers admitted that this is sometimes a problem, especially in girls' schools. It was recommended that the fence around the school be raised. A gate and a guard house that can oversee all entry points should also be provided.

7. Safety in workshops for males and females:

This was considered to be important specifically regarding the issue of using gas.

8. Provisions for physically challenged students:

It was agreed that this was a major issue of concern and that all facilities should be provided to ensure that these students do not face any problems while at the school. One teacher proposed installing an elevator that can be supervised and only used by the physically disabled students but this was rejected by all other participants as impractical.

9. Earthquake protection measures:

The following precautions were recommended:

- An adequate number of exits.
- Courtyards for standby in all emergency cases.
- An alarm system.
- Enough distance outside the building depending on the height of the school in case of collapse.

Additional notes:

- Chemicals in laboratories should be stored and disposed of in a safe manner. There should be Material Safety Data Sheets on all chemicals found in the laboratories accessible to all students.
- Air conditioning was discussed thoroughly and it was agreed that the operational cost is an obstacle. Fans, insulation, and shades were proposed as alternatives. The layout of the building can also be a factor, i.e. regarding wind direction and the position of the sun.
- There should be a place for cold storage in the canteen to prevent food from spoiling.
- Regarding the use of grey water: Using it directly for irrigation will cause contamination. Using it in toilets will likely lead to exposure to students. For example, how will the water in the flush be separated from that used for washing? Zero contact with the grey water is a must in order to utilize it.
- The issue of space for the student was very thoroughly discussed and it was concluded that in public schools, not enough space is given in a classroom. The Civil Defence stated that according to their standards, the minimum area is 1.9 square meters per student. In the workshop, this area should be 4.9 square meters per person while in the nursery it should be 3.3.
- The issue of separating each set of classes, especially the 1st to the 3rd was heavily debated. It was agreed that this is a major issue that needs to be addressed.
- The blackboard should be the type that does not produce dust from chalk (wiping board).
- Green areas and playgrounds are important.
- There should be nurseries for the children of the teachers.
- Flood mitigation measures should be taken into consideration.

Summary of Questionnaire Responses for the 8th Region School

Construction Issues

Issue	0	1	2	3	4	5
Occupational Health and Safety	20.69 %	0%	6.90%	31.03 %	37.93%	3.45%
Workers Sanitation	0%	0%	0%	10.34%	55.17%	34.48%
Traffic	0%	0%	13.79%	13.79%	44.83%	27.59%
Noise	0%	3.45%	17.24%	13.79%	42.38%	24.14%
Dust Pollution	0%	0%	13.79%	3.45%	51.72%	31.03%
Water Demand	10.34%	3.45%	37.93%	17.24%	10.34%	20.69%
Soil and water pollution	13.79%	10.34%	31.03%	24.14%	17.24%	3.45%
Water stagnation	0%	0%	24.14%	20.69%	24.14%	27.59%
Waste generation	0%	0%	6.90%	3.45%	62.07%	27.59%
Employment opportunities	0%	0%	0%	13.79%	58.62%	27.59%

Socio-economic Issues

Issue	0	1	2	3	4	5
Interaction between students / classes	0%	0%	0%	0%	75.86%	24.14%
Student psyche inside the classroom	0%	0%	0%	6.90%	31.03%	62.07%
Monitoring of student behavior by supervisors	0%	3.45%	10.34%	6.90%	34.48%	44.83%
Employment and Economic development	3.45%	0%	0%	10.34%	41.38%	44.83%
Land Use	3.45%	3.45%	13.79%	10.34%	37.93%	27.59%
Archaeological Resources	6.90%	13.79%	27.59%	31.03%	3.45%	10.34%
Traffic	3.45%	0%	3.45%	6.90%	62.07%	24.14%
Travel time to and from school	0%	0%	0%	10.34%	48.28%	37.93%

Public Health and Safety Issues

Issue	0	1	2	3	4	5
Communicable disease prevention	3.45%	0%	0%	6.90%	51.72%	37.93%
Potable water supply and distribution	6.90%	6.90%	24.14%	24.14%	24.14%	17.24%
Sanitary facilities	0%	3.45%	6.90%	6.90%	27.59%	55.17%
Indoor & outdoor safety issues	0%	3.45%	3.45%	10.34%	55.17%	27.59%
Injury from car accidents	0%	0%	3.45%	17.24%	55.17	24.14%
Protection from intruders	3.45%	0%	6.90%	17.24%	44.83%	27.59%
Safety in workshops for males and females	3.45%	0%	13.79%	6.90%	58.62%	13.79%
Provisions for physically challenged students	0%	0%	0%	0%	31.03%	68.97%
Earthquake protection measures	0%	0%	3.45%	0%	27.59%	68.97%

Summary of Questionnaire Responses for the 10th Region School

Construction Issues

Issue	0	1	2	3	4	5
Occupational Health and Safety	13.79 %	0%	6.90%	31.03 %	41.38%	6.90%
Workers Sanitation	0%	0%	0%	13.79%	51.72%	34.48%
Traffic	0%	0%	13.79%	13.79%	34.48%	37.93%
Noise	0%	3.45%	17.24%	10.34%	44.83%	24.14%
Dust Pollution	0%	0%	13.79%	3.45%	55.17%	27.59%
Water Demand	10.34%	3.45%	37.93%	13.79%	10.34%	24.14%
Soil and water pollution	13.79%	10.34%	31.03%	20.69%	20.69%	3.45%
Water stagnation	0%	3.45%	24.14%	20.69%	24.14%	27.59%
Waste generation	0%	0%	6.90%	3.45%	55.17%	34.48%
Employment opportunities	0%	0%	0%	13.79%	51.72%	34.48%

Socio-economic Issues

Issue	0	1	2	3	4	5
Interaction between students / classes	0%	0%	0%	0%	75.86%	24.14%
Student psyche inside the classroom	0%	0%	0%	6.90%	31.03%	62.07%
Monitoring of student behavior by supervisors	0%	3.45%	10.34%	6.90%	27.59%	51.72%
Employment and Economic development	3.45%	0%	0%	10.34%	37.93%	48.28%
Land Use	3.45%	3.45%	13.79%	10.34%	34.48%	31.03%
Archaeological Resources	6.90%	13.79%	27.59%	31.03%	3.45%	10.34%
Traffic	3.45%	0%	3.45%	10.34%	58.62%	24.14%
Travel time to and from school	0%	0%	0%	10.34%	41.37%	44.83%

Public Health and Safety Issues

Issue	0	1	2	3	4	5
Communicable disease prevention	3.45%	0%	0%	3.45%	48.28%	44.83%
Potable water supply and distribution	6.90%	6.90%	24.14%	24.14%	24.14%	13.79%
Sanitary facilities	0%	3.45%	6.90%	6.90%	24.14%	58.62%
Indoor & outdoor safety issues	0%	3.45%	3.45%	10.34%	51.72%	31.03%
Injury from car accidents	0%	0%	3.45%	17.24%	58.62%	20.69%
Protection from intruders	3.45%	0%	6.90%	17.24%	48.28%	24.14%
Safety in workshops for males and females	0%	0%	13.79%	6.90%	55.17%	17.24%
Provisions for physically challenged students	0%	0%	0%	0%	31.03%	68.97%
Earthquake protection measures	0%	0%	3.45%	0%	24.14%	72.41%