

## 6. NOISE

### 6.1 Introduction

As described in Section 2.10, noise impact during construction and operation of the TLC DGA is not considered a key issue in this study. Hence, detailed noise assessment is not required. The findings of the noise impact assessment undertaken in the IEIA of the construction and operational phase of the DGA are therefore summarized below.

It should be noted that blasting of rock outcrops within the mooring anchorages will not be undertaken, thus significantly reducing the noise levels generated during the construction phase.

### 6.2 Baseline Conditions

#### *Existing Conditions*

In the north of Ma Wan, major development associated with the North Lantau Development (NLD) is currently in progress. These construction works have caused the ambient noise levels to be significantly increased. No committed future developments are proposed in southern Ma Wan, to the south of the Lantau Link. Only village type residential buildings and a cemetery are currently located in this southern area. The area is still rural in nature although the traffic noise from the Lantau Link has increased ambient noise levels.

#### *Future Conditions*

In the future, the ambient noise levels would increase due to the comprehensive residential development associated with the NLD in the northeastern part of Ma Wan, the development of the adjacent 'Village Type Development' zone and the proposed theme park at the western CDA, to the north of Lantau Link. As a result of these developments, the volume of road and marine traffic is expected to increase in the future, and thus it is anticipated that traffic noise levels will increase.

### 6.3 Findings of the IEIA Study

#### 6.3.1 Noise Sensitive Receivers

Three Noise Sensitive Receivers (NSRs) have been identified in the IEIA (see **Figure 6.1**). The locations of these NSRs and their approximate distance from the nearest notional noise source are summarised in Table 6.1.

**Table 6.3 Dredging Operations and Plant Inventory for the site**

| Plant                | Number | TM Reference Number | Sound Power Level dB(A) |
|----------------------|--------|---------------------|-------------------------|
| Dipper Dredger       | 1      | CNP 221             | 110                     |
| Tug boat + excavator | 1      | CNP 081             | 112                     |
|                      |        |                     | <b>Total : 114</b>      |

**Table 6.4 Breakwater Construction and Plant Inventory for the site**

| Operation                  | Plant                         | Number | TM Reference Number | Sound Power Level dB(A) |
|----------------------------|-------------------------------|--------|---------------------|-------------------------|
| Breakwater Core and Armour | Derrick Barge                 | 7      | CNP 061             | 104+9                   |
| Concrete Armour            | Barge and barge mounted crane | 1      | CNP 061<br>CNP 048  | 104<br>112              |
|                            |                               |        |                     | <b>Total : 116</b>      |

Based on the findings of the water quality impact assessment undertaken in this DEIA Study, the recommended method of working for the dredging of the breakwater foundations involves the use of grab or trailing suction hopper dredgers (with no overflow nor ALMOB). The use of a trailing suction hopper dredger, or other suitable vessel which can carry out the requirement of sandfill discharge through a pipeline, is recommended for the sandfilling activities (Section 3.8.1). The sound power levels of a grab dredger and trailing suction hopper dredger<sup>1</sup> are 112 dB(A) and 111 dB(A) respectively, and thus no significant difference in noise levels is anticipated with the use of these recommended plant.

As recommended under the water quality mitigation measures described in Section 3.8.1, dredging works and sandfill placement for the breakwater foundations shall not be carried out concurrently. With the adoption of the additional water quality mitigation measure to restrict the number of grab dredgers to not more than two working at one time, the total sound power level is calculated to be 115 dB(A). Therefore no significant difference in the total sound power level from that given above in Table 6.3 for the dredging operations is anticipated with 2 grab dredgers in operation at the breakwaters at the same time.

#### 6.3.4 Prediction and Evaluation of Impact

From the results of the noise impact assessment undertaken in the IEIA study, no exceedances of the ANL have been predicted during day-time (0700-1900 hrs) and evening period (1900-2300 hrs) construction activities, and hence no mitigation measures were recommended.

<sup>1</sup> Tsuen Wan Dangerous Goods Anchorage: Alternative Site Search Study - Stage 2 Study. Volume 3: Initial Environmental Impact Assessment. Final Report January 1996, ERM Hong Kong.

**Table 6.1 Noise Sensitive Receivers and Distances to Notional Noise Source (m)**

| NSR   | Description                                   | Mud Dredging | Breakwater |
|-------|-----------------------------------------------|--------------|------------|
| NSR 1 | Village type buildings South-east of Tai Lung | 500          | 400        |
| NSR 2 | Lau Fa Tsuen                                  | 700          | 600        |
| NSR 3 | Ma Wan Town                                   | 950          | 900        |

### 6.3.2 Noise Evaluation Criteria

The construction noise is governed by the Noise Control Ordinance (NCO) and the subsidiary Technical Memoranda; the Technical Memorandum for the Assessment of Noise From Construction Work Other than Percussive Piling and the Technical Memorandum on Noise from Percussive Piling. The TMs establish the permitted noise levels at NSRs for construction work depending upon working hours and the existing noise climate.

The NCO criteria for the control of noise from powered mechanical equipment (PME) are related to the type of area containing the NSR rather than the background noise level. According to the NCO, the surrounding NSRs in Ma Wan are regarded to have an Area Sensitivity Rating (ASR) of "A" (village type / rural areas). The corresponding noise criteria of Acceptable Noise Level (ANL) for construction work during restricted and unrestricted hours are shown in Table 6.2 below. (Restricted hours, as stipulated under the NCO, are evenings (1900-2300), night-time (2300-0700) and all day (0700-2300) on Sundays and Public Holidays. A Construction Noise Permit (CNP) is required for works using PME during restricted hours and particularly at night).

**Table 6.2 Recommended Noise Criteria for NSRs**

| Time Period                                                              | Noise Criteria for ASR "A" |
|--------------------------------------------------------------------------|----------------------------|
| Day time (0700-1900, Monday through Saturday)                            | $L_{Aeq\ 30min}$ 75 dB     |
| Evenings (1900-2300) and Public Holidays (including Sundays) (0700-2300) | $L_{Aeq\ 5min}$ 60 dB      |
| Night-time (2300-0700)                                                   | $L_{Aeq\ 5min}$ 45 dB      |

Under the NCO, there is no control of construction activities during normal working hours. However, a limit of  $L_{Aeq\ 30min}$  75 dB is proposed in the "Practice Note For Professional Persons, PN 2/93" issued by the Professional Persons Environmental Consultative Committee (ProPECC) in June 1993. This limit is generally accepted in Hong Kong and imposed on major construction projects.

### 6.3.3 Proposed Plant Inventory

A list of plant inventory for dredging operations and for the construction of the breakwaters, as identified in the IEIA, is shown in Tables 6.3 and 6.4 below.

For the operational phase, the IEIA predicted that there would be no noise impact at the identified NSRs from unmitigated operational activities and thus mitigation requirements were not necessary.

#### **6.4 Conclusions**

Noise impact during construction and operation of the TLCDGA is not a key issue in this study. Detailed noise assessment is therefore not required.

No unacceptable noise impacts have been predicted during construction and operational stages. Hence, no noise mitigation measures were recommended for the construction and operational phase.