MSIA Reading Series 11

Edited By
Kuppusamy S. and Mohd Shahwahid H.O.
(2022)

DETERMINATION OF ZONE OF IMPACT IN THE PREPARATION OF A QUALITY SIA REPORT

1. Introduction

This session was an initiative of the speaker, Pn Herlina Ab Aziz, the current President of MSIA, to share her experience in the determination of the Zone of Influence (ZOI) and the factors that needs to be considered in the determination.

Although interests in the preparation of social impact assessment (SIA) reports have increased, questions have been raised as to whether the SIA reports have been comprehensive and of desirable quality. It is acknowledged that SIA report preparation has evolved tremendously in the recent past with its modest beginning as part of the EIA Report. With EIA having had over 30 years of experience in its evolvement into what it is now, yet the history of a full-blown standalone SIA is only under a decade old. The Federal Town and Country Planning Department (JPBD, now PLANMalaysia) introduced the first Manual for the Preparation of SIA in 2017 following an amendment in the Town and Country Planning Act 1976 that empowers JPBD as the approving authority of the SIA Report. It has been acknowledged that early SIA reports have improved based on the observation of the academic and MSIA's panel representatives as consultants were now guided by the second version of the Manual which was introduced in 2018. In 2022, PLANMalaysia (PM) introduced a registry of Professional Members under its cap. To date, PM has introduced two sessions of training sessions as a prerequisite to be awarded such listing under the department. The third Manual is scheduled to be launched by PLANMalaysia early next year.

2. Determination of ZOI as Part of Scoping Exercise

Every SIA project must be fluid to determine the Zone of Influence (ZOI) based on a number of criteria. There is no necessity that two SIA reports with the same project background but at different locations should have a similar ZOI selection method. There is no standard answer as to what is the right scale for a ZOI. Each project deserves an independent set of ZOI based on its own merits. It is guided by the search of the potential issues that may be expected to emerge from the proposed project, if implemented. There is certainly a need to examine the what, where, when and why questions in relation to the proposed project site.

TPr Herlina is the President of the Malaysian Association of Social Impact Assessment (MSIA), the leading association of SIA professionals in Malaysia. Under the umbrella of PEERS Consult (M) Sdn. Bhd., she participated actively in the urban planning consulting works and contributed greatly to the development of SIA as planning tool in the country.

Public involvement, decision making, and general reviews must be done to focus on the proposed project site. In the scoping process, there are a few aspects to consider: who are those likely to be affected, and what are the existing issues faced by the stakeholders at site, sensitivities and also to estimate how we may want to engage them. A person with research background has a better edge in doing this.

ZOI is simply spatial-based. As ZOI for SIA must be very focused, there is no necessity to cover a very wide spatial area to the extent the feedback would become very diluted. By so doing, there will be redundancy in data collected while the time taken to complete the whole study would be too long that displeases the project proponent. A reasonable and justifiable ZOI would help address these adversaries.

The social influence in human life can be assessed via the interaction between parameters in determining the issues that may influence the social groups. Having experience and some background knowledge of the issues would help in establishing a strong scoping exercise. By examining the social receptors with the project site, its peripheries and beyond should also be assessed in the scoping exercise. The consultant may use a problem tree analysis to predict the type of issues that may confront the social receptors. Problem tree analysis will be able to make assumptions on the root causes, their immediate outcomes and subsequent problems as a series of chain reactions between cause-and-effect cycles. Based on these, it is important to identify who are the likely affected groups, interested groups and the related authorities (identification of stakeholders). For an EIA report, TORAC would follow a scoping report which would reflect almost a complete report. That shows how important scoping is in determining ZOI, but TORAC is not required for SIA reports. In SIA, scoping report is part of the process towards completing the SIA report.

3. How to Prepare ZOI?

Every SIA consultant is fully responsible to his/her SIA study. The consultant is more aware of the proposed project than by other parties including the panel of assessors. It is the consultant's duty to ensure that the project is clearly described to the satisfaction of the readers. For instance, in the case of SIA on airports, it is common to set the ZOI to be along flight paths. The first concept on ZOI is always based on closest receptor. One needs to see who the closest receptors are to the proposed site of the project. In Sarawak, SIA looks at the components within the project, and to how to manage the project, rather more difficult. In the peninsula, it is common to see that the components of the project are already fixed, and only the external affected parties will have to be dealt with. An example is slum areas where the illegal residents are relocated or compensated. The impact on the spatial area has to be

determined, depending on the potential impacts on the area. These are difficult and often not easily quantifiable. One may need to consider how far the ZOI should be from the perimeter of the proposed project. ZOI is subject to debate as different person may assume different size for the ZOI. However, it must be noted that too large ZOIs may be meaningless as respondents/participants from far away may not perceive any impact from the proposed project. For example, 2km away from a proposed industrial development in an urban area may not be seen as impactful to them but the same may be seen as a serious issue by the villagers.

A primer and secondary ZOI must be developed and each must be justified in detail. Manual 2 has details of primer and secondary zones.

4. Purpose of ZOI

ZOI is the area within which changes in social quality associated with the project are predicted and anticipated during the scoping. The expression of these impacts must be objective and, to the extent possible, quantifiable, provided this is feasible, in line with methodologies available. ZOI will provide:

1. Spatial limitations required for issues that include filtering and determining the content of social impact assessment for the proposed project;
2. Limitations to socio-economic analysis
3. Limitations to identify and determine stakeholder involvement.

5. Approaches in ZOI determination

There are usually four different ways the ZOI can be determined. They are:

(i) Fixed corridor approach;
(ii) Catchment area or service area approach;
(iii) Jurisdiction or neighbourhood approach; and
(iv) Issue approach.

It must be noted that any given SIA study may employ more than one of the approaches above. Advantages and disadvantages of different approaches used in determining ZOI can be seen in Table 1.

Table 1: Advantages and Disadvantages of Various Approaches in Determining ZOI

Approach	Advantanges	Disadvantages
Fixed corridor approach (such as a 1-km belt along the boundary of project site)	Simple, easy to comprehend, and measurable	Corridors are usually not related to perceptions of indirect effects; do not provide a framework for consultation
Catchment or service area approach	Takes into account the integrated network and its relationship with project planning	More difficult to determine; no natural boundaries on land; more conceptual
Jurisdiction or neighbourhood approach	Provides for a better consulting network; easy to recognize; relate to people in the jurisdiction they live	Might be a larger area than necessary; difficulties in logistics for participation
Issue approach	ZOI can be set to vary according to the problem being assessed	Air quality, land use change, sound, prediction of congestion and traffic, wildlife corridors More focused on specific issues but less clear as there are various areas of influence.

ZOI should not be confined to a rigid design or structure such as a radius from the perimeter of the proposed project. Some may think a radius of 500m or 800m should be the case. As an example, for a transit-oriented development (TOD) project, there are planning guidelines for a walkable distance for a certain distance and those under a covered canopy walk. Whichever ZOI is chosen, there must be a strong description of the justification used in its selection.

6. Factors to Consider in Determining ZOI

Among the key factors are social issues identified during the scoping process, type of development, scale of development, and existing land uses. Others include edge or limitations such as the proposed highway project divides an existing community into two; proximity to development or the closest receptor; distance of potential impact (such as upstream of river), project component, and history of the site or social concerns.

Problem arises when the SIA consultants could not garner sufficient participation from those in the primary ZOI. Example is where a condominium, especially a gated one, is located immediately next to the proposed development but the stakeholders within were not forthcoming to be engaged in discussions despite numerous attempts by the consultant concerned. In such a case, a SIA consultant would have to make his/her own professional assessment in the place of the stakeholders of those from the said condominium. This was the case with Rapid Transit System Link (RTS Link) at Johor Bahru. The same project also

had another experience whereby the SIA team performed an earlier scanning of the housing estate next door to the proposed RTS Link project, such as Kim Teng Park at Johor Bahru. This measure is highly recommended before any FGD were to be conducted, as SIA consultants must try to be aware of the issues on site at the social receptor as participants often claim that consultants are unaware of their area under discussion. For Kim Teng Park, the consultant examined the whole housing conditions on a macro perspective, who are those residing (local vs foreigners), rented vs owner-occupied, occupied vs vacant units. In addition, it is good to examine the local issues raised in the social media. RTS Link was a good showcase as the consultants attended the FGD well equipped with the information that they were able to match and relate during the session. In fact, some of these were highlighted in the slides that were presented to the participants to build the confidence of the participants on the consultants.

Often, engagements with different social groups in urban or rural setting should be done separately. For example, it is not viable to include the *orang asli* group, the Malay, Chinese, Indian and other residential representatives in the same FGD session. Furthermore, when the social receptor is a minority within the larger setting, it is best that all or most of them are engaged or surveyed. A proposed highway project had to engage with all the social receptors. However, if the only social receptor is located say 5km away in the rural area, the SIA consultant has to ensure that the social receptor at 5km is engaged as they are the closest receptor. Thus, the primary ZOI will be 5km, in that case. The views by some consultants who say that since there are no settlements within 5km radius, thus no samples were taken, are certainly wrong!

Figure 1 shows the primary and secondary ZOI that follows the shape of the proposed development site. Once the 0 – 1 km band and 1.1 – 3 km band is determined, it is important that all land uses, and the social receptors such as the housing estate, villages and the industrial areas as per the diagram are examined. Even when there are settlements outside the peripheries of the secondary ZOI, and that the settlements are located on the left and the right side of the only access roads to the site, it is advisable that adjustments are made to include them to certain extent as they will also be experiencing impacts from the proposed project. The original ZOIs may be revised further to expand the primary ZOI to say 0 – 1.5 km and the secondary to be 1.51 – 3.0 km. This would be a better framework to justify than to fix it as per the originally planned bands.

Figure 1: Block-shaped site project boundary

Figure 2 shows Gamuda Cove's development. On the left is agricultural land involving villages of Orang Asli and other settlements. On the right of the ELITE highway are open areas. The highway traversed and divided the existing settlements. As a result, the originally thought of brown bands in the diagram as primary ZOI and the yellow bands as the secondary ZOI had to be redesigned. Those on the left of the highway were redefined as primary ZOI since they have had to access roads going closer to the settlements along the highway. Likewise, as there were less settlements on the right-hand side of the highway and that they had other access roads for themselves, they were taken as the secondary ZOI.

Figure 3 shows an example of a dam project. Bands are initially drawn following the shape of the water body therein. The second step is to determine the shape with the assumption that the water level would rise, this would serve as the adjusted shape for potential impact. This study was for SIA within an EIA report, whereby engineers were able to assist in the design. Although the bands were clear but the consultants had to include the settlements along the connecting road to the site of the proposed dam, as they will be facing the social issues as well from the proposed project. These are to be seriously considered in the establishment of the ZOI.

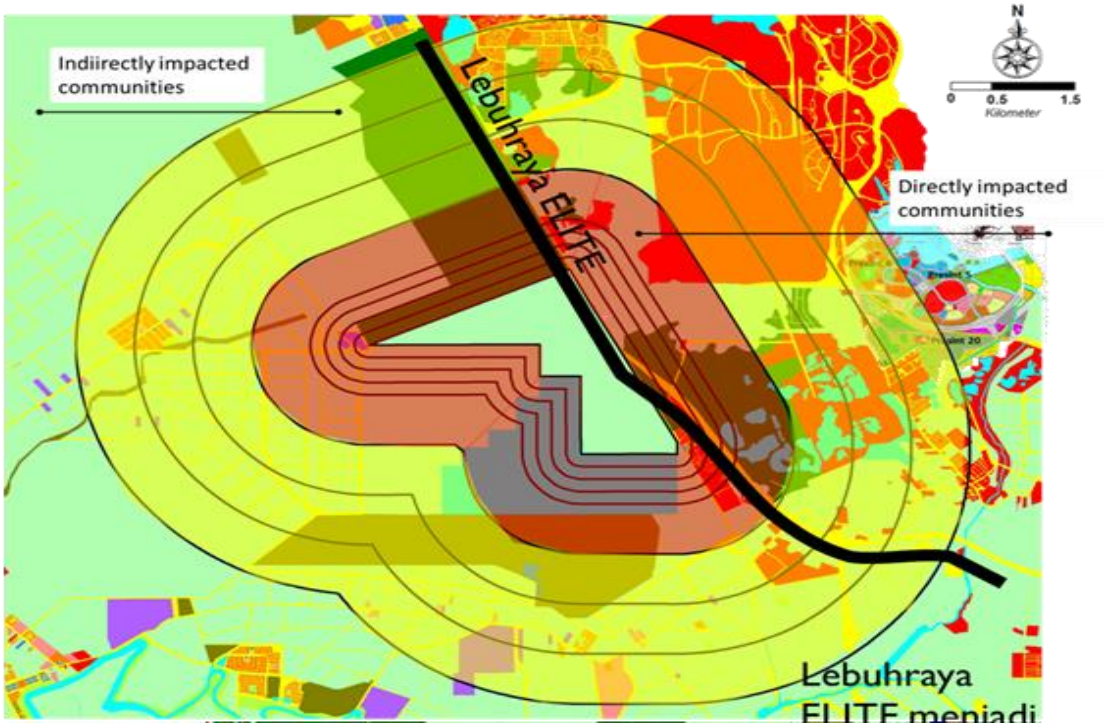

Figure 2: Block-shaped ZOI

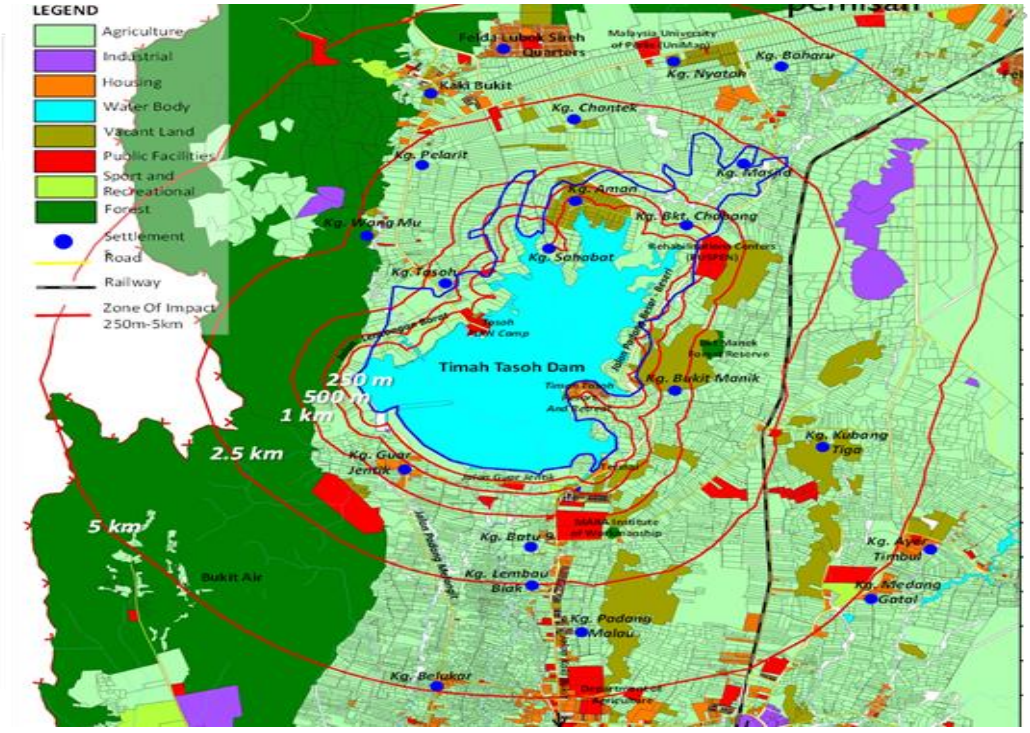

Figure 3: Block-shaped ZOI

Figure 4 shows a segment of the West Coast Expressway (WCE) highway project. The first SIA was rejected including by the parliamentarian of the area. The new consultants appointed re-examined the reasons why the first report for the segment was rejected. It was found that the first report was not able to identify areas where objections from the respondents/participants were registered. The SIA report is deemed meaningless to the politician, if the pockets of objections and individual groups objecting cannot be identified for micro mitigation-management. According to the parliamentarian, all residents including himself were fully in disagreement with the project. The new set of consultants redrew the primary and secondary ZOIs as per Figure 4 and subdivided each into smaller subzones. This enabled them to identify and assessed the impact in detail. The consultants also prepared a list of socially sensitive areas (*kawasan sensitif sosial*), which in this case was at E1a, and E1d as the villages where the objection to the proposed highway were at its highest level, especially due to relocation envisaged.

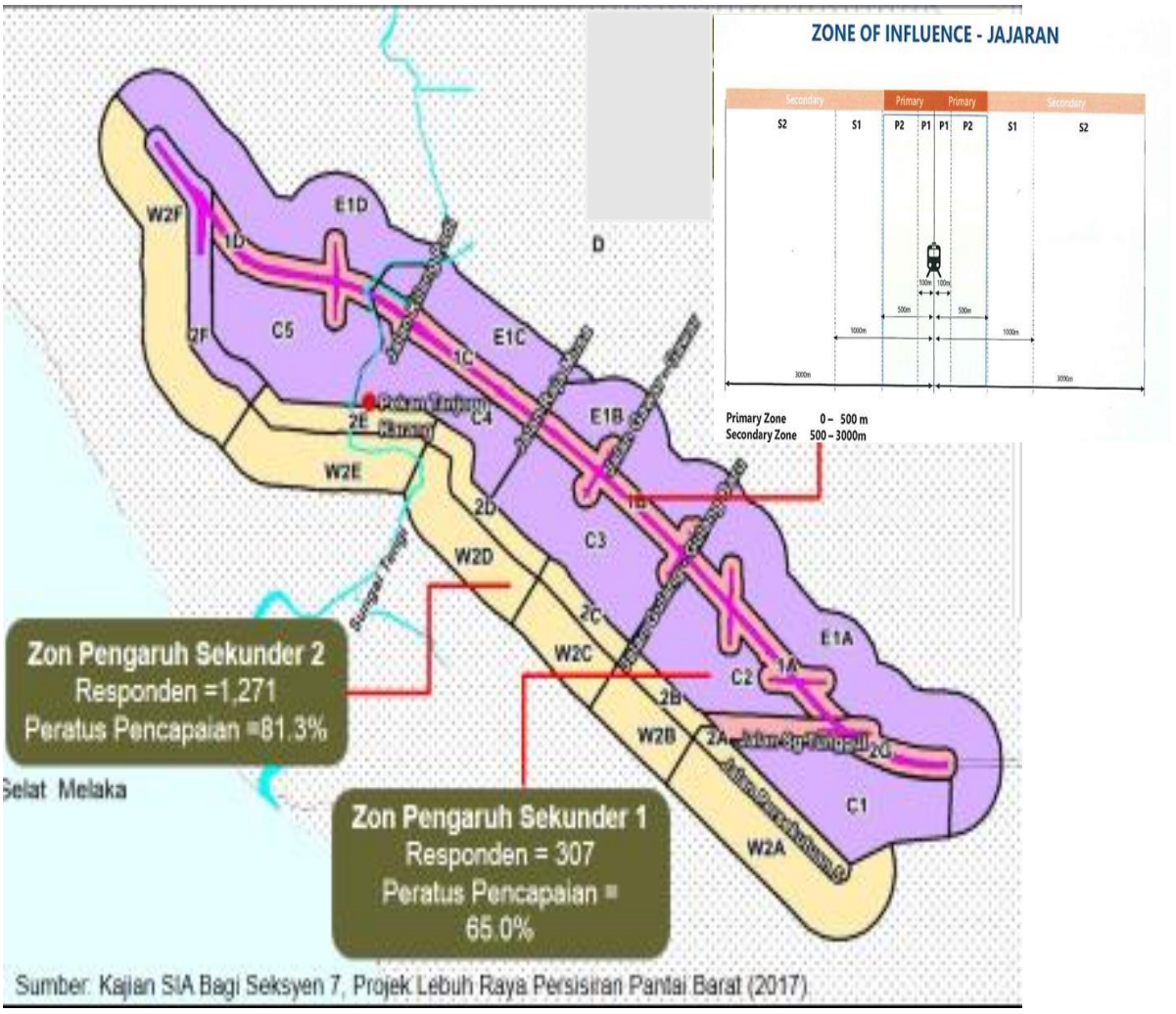

Figure 4: ZOI that corridor-oriented

Figure 5 is a unique example of the RTS Link between Johor Bahru and Woodlands, Singapore. The proposed project would entail three major components, ie. the railway alignment, a station and another a depot. As such the consultant would need to know the components within the station and those along the proposed alignment and how the potential passengers would access or exit the station. Following this, a land valuer and traffic consultants were included in the SIA project team. Each of the zones were then subdivided according to characteristics, such as commercial, residential etc. Examining each ZOI resulted in the shape of the diagram given in Figure 5.

Objections came from segment B2 who said they will not be able to have access to the RTS Link services later. But the consultants were also asked whether they will use the infrastructure once it is completed, for which most answered to the “affirmative”. B2 were indirectly impacted but objected to the proposed project. The site where the depot was to be built involved some residents who appeared like living in a slum area (Wadi Hana settlement), and some are open space, and not maintained. The site was explored and they were engaged via FGD and a questionnaire perception survey to identify as well whether they were original inhabitants of the site, or they were transient inhabitants. This helped the project proponents to plan mitigation measures accordingly, especially in relocating them.

Based on the finalised plan, the team examined the commercial buildings, and the religious establishments within the ZOIs determined. Based on the census done, the team were able to identify commercial, religious and housing units who objected to the proposed project in order to assist in their respective mitigation plans.

Fishing communities often become a serious issue at any site that are earmarked for development. Engagement with residential settlements adjacent to the Causeway found that no fishermen will be affected, that not many were operational there as the areas along the Causeway is a restricted area by the government. But later, towards the end of the SIA research, the team were informed by LKIM and Persatuan Nelayan Kawasan that a number of fishermen were still operating at the sites where the piers for the alignment above the water surface were to be built. Following this, the team engaged the fishing representatives which then provided the team the sketches of their fishing routes. Mitigation measures for them were planned accordingly.

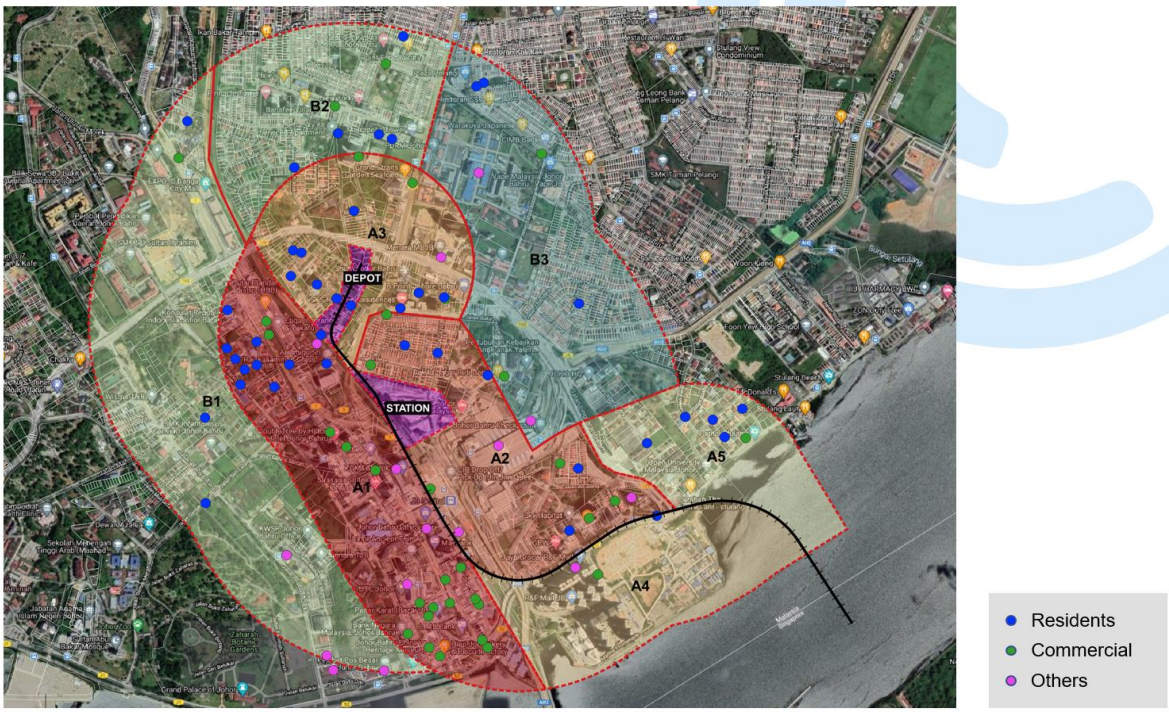

Figure 5: Unique ZOI based on Physical and Social Receptors

Figure 6 shows an illustration of dots that depict the support, and objections according to specific location within the ZOI area. Distribution of impacted community will be easily identified graphically and made it easy for panel members to comprehend better.

Figure 7 depicts an airport area study involving an initial 10km x 10km boundary forming the directly impacted area. But after an assessment of the noise simulation, zone of air traffic security, the team were able to comprehend that only the settlements along and nearby and outside the runway would be affected (see the dark grey boxes shown in the figure). They were then set to be the primary ZOI to be studied and others outside as secondary ZOI.

Figure 6: Distribution of Responses within COI

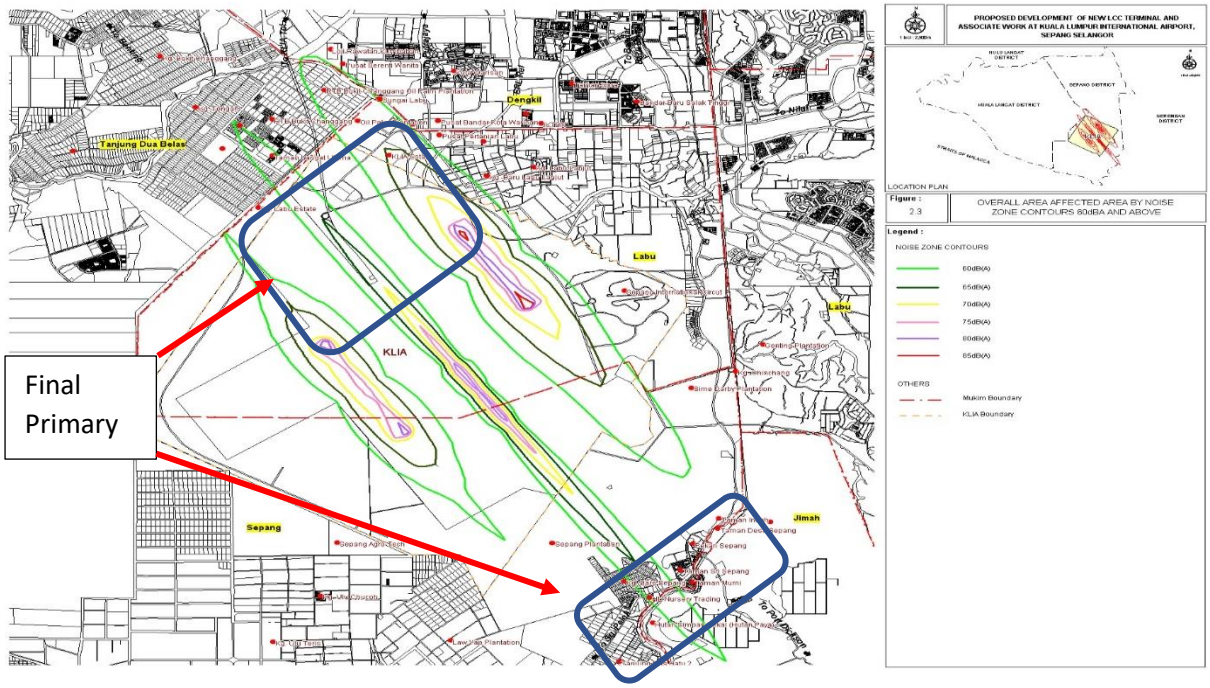

Figure 7: ZOI for Airport SIA Study

7. Conclusion

Based on the scoping, determination of the primary and secondary ZOI as well as the social groups that would be affected, the methodology concerned can be planned well. Site reconciliations are imperative to allow consultants to comprehend well potential impacts from the proposed project. Above all, it is important that all decisions for the establishment of

primary and secondary ZOI, the social groups, as well as the resultant methodology be justified. Consultants must realise that each area is treated as a unique case and that previous experiences should not be blindly imposed on the new site to be studied. Statement of relevancy of the ZOI and the impacted social group is most importantly taken as a serious guide. In sum, ZOI is a very important aspect that must be given prominence in a SIA study.

Acknowledgement

The contributions and deliberations of the panelist and feedbacks from participating audiences during the SIA Hard Talk session are very much appreciated.

Disclaimer

The opinions expressed in this MSIA Reading Series are those of the panelist and participating audiences. They do not purport to reflect the opinions or views of MSIA and the editors.