

**Environmental Impact Assessment (EIA) Report**  
**For**  
**Dawei Bus Terminal and Commercial Complex**  
**Project**  
**Version 00**

**Proposed by**



**Khant Shwe Pyi Co., Ltd**

**Prepared by**





**E Guard Environmental  
Services Co., Ltd**

**July, 2024**



**Report Review Form**

<b>Report Title:</b> Environmental Impact Assessment Report for Dawei Bus Terminal and Commercial Complex	
<b>Report Version:</b> 00 Version	
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<b>Summary: Environmental Impact Assessment Report</b>  This document presents the Environmental Impact Assessment report Dawei Bus Terminal and Commercial Complex Project	<b>Approved by: U Soe Min</b> <b>(Board of Director)</b>  

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## **Disclaimer**

This report has been prepared within the terms of references (TOR) adopted for this report and those of the contract with the client according to the prevailing active Laws, Rules, Regulations, and Procedures within the framework of Myanmar Environmental Impact Assessment Procedure 2015. We do not assume any responsibility or liability in regard with any matters beyond the scope of the TOR and the contract.

Data analysis, impact assessment, devising mitigation measures and report formulation were carried out based on the information/plan/processes provided by the project proponent, available secondary data and information, and onsite observation and measurement of E Guard's environmental study team in line with the relevant national and international guidelines and standards. While we do take effort to ensure that the information contained in this report is reliable and accurate, we disclaim no responsibility for errors and omissions which might occur despite of our reasonable skill and care.

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The personal, organizational, and commercial data and information contained in this report were included solely upon the demand and requirements of concerned authority, and we have no intention of breaching the privacy or disclosing the trade secrets whatsoever.





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**Commitment to follow and compliance with Environmental Conservation Law, Rules, Environmental Impact Assessment Procedure, National Environmental Quality (Emission) Guidelines, Relevant Environmental Standards and Mitigation Measures stated in the Environmental Management Plan (EMP) of EIA Report**

With regard to the above matter, we, E Guard Environmental Services Co., Ltd has prepared the Environmental Impact Assessment (EIA) Report for Dawei bus terminal and commercial complex project. We are confident that the report has been prepared in compliance with Environmental Conservation Law (2012), Environmental Conservation Rules (2014), Environmental Impact Assessment Procedure (2015), National Environmental Quality (Emission) Guidelines (2015) and relevant environmental standards through successful implementation of mitigation measures and environmental monitoring plans stated in the Environmental Management Plan (EMP) of EIA report.

Soe Min  
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### **Commitment to follow Environmental Conservation Law, Rules, Standards and Mitigation and Management Measures Stated in the Environmental Impact Assessment (EIA) Report**

With regards to the above matter, we, Khant Shwe Pyi Co., Ltd strongly commits that all our operations will be performed in an environmental friendly manner by following existing laws and regulations, especially Environmental Conservation Law (2012), Environmental Conservation Rules (2014), Environmental Impact Assessment Procedure (2015), National Environmental Quality (Emission) Guidelines (2015) and other relevant environmental standards through successful implementation of mitigation measures stated in the Environmental Management Plans (EMP) of EIA report.

Zaw Bo Khant  
Chairman  
Khant Shwe Pyi co., Ltd.

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**LIST OF ABBREVIATIONS**

ACGIH	American Conference of Governmental Industrial Hygienists
ADB	Asia Development Bank
ALGAS	Asia Least-cost Greenhouse Gas Abatement Strategy
BOD	Biological Oxygen Demand
CaCO <sub>3</sub>	Calcium Carbonate
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
COD	Chemical Oxygen Demand
CSR	Cooperate Social Responsibility
D	Duration
DICA	Directorate of Investment and Company Administration
DSEZ	Dawei Special Economic Zone
ECC	Environmental Compliance Certificate
ECD	Environmental Conservation Department
EHS	Environmental Health and Safety
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EPAS	Environmental Parameter Air Station
EQ	Environmental Quality
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
FGD	Focus Group Discussion
GAD	General Administration Department
GHG	Greenhouse Gas
GIS	Geographic Information System
GPS	The Global Positioning System
GRM	Grievance Redress Mechanism
HI	High Interest
HP	High Power
HP	Horse Power
IEE	Initial Environmental Examination
IFC	International Finance Corporation
INGO	International Non-Government Organization
IUCN	International Union for Conservation of Nature
JPOI	Johannesburg Plan of Implementation
KBA	Key Biodiversity Area
KII	Key Informal Interview
KSP	Khant Shwe Pyi Co., Ltd
KVA	Kilo-volt-amperes
LC	Least Concern
LI	Low Interest
LP	Low Power

M	Magnitude
MIC	Myanmar Investment Commission
MOEE	Ministry of Electrical and Energy Ministry of Natural Resources and Environmental
MONREC	Conservation
NAAQS	National Ambient Air Quality Standards
NE	Not Evaluated
NEQG	National Environmental Quality (Emission) Quality
NGO	Non-Government Organization
NO <sub>2</sub>	Nitrogen Dioxide
NSDS	National Sustainable Development Strategy
O <sub>3</sub>	Ozone
P	Probability
PAPs	Project Affected Persons
PCM	Public Consultation Meeting
PD	Public Disclosure
pH	Potential of Hydrogen
PM	Particulate Matter
PPE	Personal Protective Equipment
PS	Performance Standards
RCC	Reinforced Cement Concrete
SEZ	Special Economic Zone
SO <sub>2</sub>	Sulfur Dioxide
SOP	Standard Operation Procedure
SP	Significant Point
TDS	Total Dissolved Solids
UNCED	United Nations Conference on Environment and Development
UN- DESA	United Nations Department of Economic and Social Affairs
UNFCCC	United Nations Framework Convention on Climate Change
VECs	Valued Environmental and Social Components
VOCs	Volatile Organic Compounds
WHO	World Health Organization
WSSD	World Summit on Sustainable Development



### အကျဉ်းချုပ်အစီရင်ခံစာ

ဤပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း အစီရင်ခံစာသည် ခန့်ရွှေပြည် ကုမ္ပဏီလီမိတက်မှ အကောင်အထည်ဖော်ဆောင်ရွက်မည့် အဝေးပြေးယာဉ်ရပ်နားစခန်းနှင့် ဆက်စပ်လုပ်ငန်း စီမံကိန်းအတွက် ရေးသားပြုစုထားခြင်း ဖြစ်ပါသည်။ အစီရင်ခံစာသည် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာနမှ ထုတ်ပြန်ထားသည့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများ (၂၀၁၅) နှင့်အညီ ပြုစုရေးသားထားခြင်း ဖြစ်ပါသည်။

လေ့လာဆန်းစစ်ခြင်း၏ အဓိက ရည်ရွယ်ချက်များမှာ စီမံကိန်း၏ လုပ်ဆောင်မှုများကြောင့် စီမံကိန်းဧရိယာရှိ အနီးပတ်ဝန်းကျင်နှင့် သဘာဝပတ်ဝန်းကျင်အပေါ် ထိခိုက်လာနိုင်သော အဓိက သက်ရောက် ထိခိုက်မှုများကို သတ်မှတ်ရန်၊ ထိုထိခိုက်မှုများကို လျှော့ချနိုင်ရန်အတွက် လျော့နည်းစေမည့် နည်းလမ်းများကို ဖော်ပြရန်၊ စီမံကိန်းအတွက် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ကို ပြင်ဆင်ရန်နှင့် အကောင်အထည်ဖော်ရန်တို့ ဖြစ်ပါသည်။

ဤအစီရင်ခံစာတွင် မြန်မာနိုင်ငံ၌ လက်ရှိကျင့်သုံးလျက်ရှိသော သက်ဆိုင်ရာ မူဝါဒများနှင့် အမျိုးသားဥပဒေများကို ဖော်ပြထားပြီး အဆိုပြုထားသည့် ဖွံ့ဖြိုးတိုးတက်မှုနှင့်ဆက်စပ်သော သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာနှင့် လူမှုရေးဆိုင်ရာ ရှုထောင့်များကိုလည်း ပြန်လည်သုံးသပ်ထားပါသည်။ ဖွံ့ဖြိုးဆဲနိုင်ငံများတွင် သဘာဝပတ်ဝန်းကျင်၊ လူမှုရေးဆိုင်ရာကဏ္ဍများနှင့် သက်ဆိုင်သော ဥပဒေများနှင့် စံနှုန်းများသည် စီမံကိန်းလုပ်ဆောင်ရန်အတွက် စည်းမျဉ်းဘောင်များ သတ်မှတ်ရာတွင် မလုံလောက်ကြောင်း မကြာခဏ လေ့လာတွေ့ရှိရသည်။ ထို့ကြောင့် ဤနိုင်ငံများတွင် လုပ်ဆောင်နေသော အဖွဲ့အစည်းများသည် လူသိများသော ငွေကြေးဆိုင်ရာအဖွဲ့အစည်းများဖြစ်သည့် ADB, IFC နှင့် World Bank ၏ လမ်းညွှန်ချက်များနှင့် စံချိန်စံညွှန်းများကို ၎င်းတို့၏လုပ်ငန်းများတွင် ကောင်းမွန်သော အလေ့အကျင့်များအဖြစ် လိုက်နာကျင့်သုံးရမည် ဖြစ်သည်။ သို့ဖြစ်ပါ၍ သင့်တော်သည့် နိုင်ငံတကာဆိုင်ရာ လမ်းညွှန်ချက်များကိုလည်း ဖော်ပြထားပါသည်။

စီမံကိန်းဧရိယာသည် မြောက်လတ္တီကျု ၁၄ ဒီဂရီ ၆ မိနစ် ၅၇.၉၈ စက္ကန့် နှင့် အရှေ့လောင်ဂျီကျု ၉၈ ဒီဂရီ ၁၂ မိနစ် ၄၃.၉၉ စက္ကန့် ကြားတွင် တည်ရှိပြီး အကွက်အမှတ် (၁၀၄)၊ သပြေချောင်းကျေးရွာ၊ ထားဝယ်မြို့၊ ထားဝယ်ခရိုင်၊ တနင်္သာရီတိုင်းဒေသကြီးရှိ မြေဧရိယာ (၂၀) ဧကပေါ်တွင် တည်ရှိသည်။ အဝေးပြေးယာဉ်ရပ်နားစခန်းနှင့် ဆက်စပ်လုပ်ဆောင်မှု လုပ်ငန်း စီမံကိန်းသည် ထားဝယ်မြို့တော်စည်ပင်ဖွံ့ဖြိုးတိုးတက်ရေး၊ သန့်ရှင်းသာယာလှပရေး၊ ခရီးသွားလာရေးတို့ကို အဓိကအလေးထားစီစဉ်ဆောင်ရွက်လိုခြင်းဖြစ်သည်။ ထို့ကြောင့် ခရီးသွားပြည်သူများ စိတ်အေးချမ်းသာစွာ ခရီးသွားလာ

နိုင်ရေးနှင့် ထားဝယ်မြို့အတွင်း ပို့ဆောင်ဆောင်သွယ်ရေး လမ်းကြောင်းများ ပိုမိုကောင်းမွန်လာစေရန် ရည်ရွယ်ကာ အကောင်အထည်ဖော်ဆောင်ရွက်လိုခြင်း ဖြစ်ပါသည်။

စီမံကိန်းနှင့်သက်ဆိုင်သည့် အကျဉ်းချုပ် ဖော်ပြချက်များမှာ အောက်ပါအတိုင်း ဖြစ်ပါသည်။

<b>စီမံကိန်းအကြောင်းအရာဖော်ပြချက်များ</b>	
စီမံကိန်း အမည်	ထားဝယ်အဝေးပြေးယာဉ်ရပ်နားစခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်း
လုပ်ငန်းဖော်ဆောင်သူ	ဦးဇော်ဘိုခန့်
နိုင်ငံသား	မြန်မာ
အဖွဲ့အစည်းအမည်	ခန့်ရွှေပြည်ကုမ္ပဏီလီမိတက်
ကုမ္ပဏီမှတ်ပုံတင်အမှတ်	၁၀၂၅၄၈၄၉၃
လုပ်ငန်းအမျိုးအစား	ထားဝယ်အဝေးပြေးယာဉ်ရပ်နားစခန်း
ရင်းနှီးမြုပ်နှံမှုအမျိုးအစား	မြန်မာနိုင်ငံသား ရင်းနှီးမြုပ်နှံမှု
ရင်းနှီးမြုပ်နှံမည့်အချိန်	(၅၀) နှစ်
ရင်းနှီးမြုပ်နှံမှု ပမာဏ	ကျပ် ၅၄၂၉.၀၅၃ သန်း
စီမံကိန်းတည်နေရာ	အမှတ် (၁၀၄), သပြေချောင်းကျေးရွာအုပ်စု၊ ထားဝယ်မြို့၊ ထားဝယ်ခရိုင်၊ တနင်္သာရီတိုင်း ဒေသကြီး၊ မြန်မာ
ရုံးလိပ်စာ (ရန်ကုန်)	အမှတ် (၅) ၊ မကြီးကြီးလမ်း၊ စမ်းချောင်းမြို့နယ်၊ ရန်ကုန် တိုင်းဒေသကြီး၊ မြန်မာ
ရေသုံးစွဲမှု	တစ်ရက်လျှင် ၅၀၀၀၀ လီတာ
ရေအရင်းအမြစ်	လက်ယက်တွင်းရေတွင်း ၈ ခု၊ ရေတွင်းကြီး ၁ ခု
လျှပ်စစ်စွမ်းအားအရင်းအမြစ်	ထရန်စဖော်မာ ၃ လုံး (မြန်မာ့လျှပ်စစ်စွမ်းအား လုပ်ငန်း) ၊ ဂျန်နရေတာ ၂လုံး
စီမံကိန်း၏ အကျယ်အဝန်း	၂၀ ဧက

အလုပ်သမားဦးရေ	၇၃ ဦး
တည်ဆောက်သည့် အချိန်ကာလ	စတင်တည်ဆောက်ခဲ့သည့် အချိန်ကာလ - ဇန်နဝါရီ/၂၀၂၃ ပြီးစီးမည့် အချိန်ကာလ- ဒီဇင်ဘာ/၂၀၂၃
စီမံကိန်းတည်ဆောက်သည့် အချိန်ကာလ (နှစ်)	၂၀၂၁-၂၀၂၃
ဆက်သွယ်ရန်ပုဂ္ဂိုလ်	ဦးဇော်ဘိုခန့်
ဆက်သွယ်ရန် အချက်အလက်	၀၉- ၅၅၂၇၉၉၉ kobobo001@gmail.com

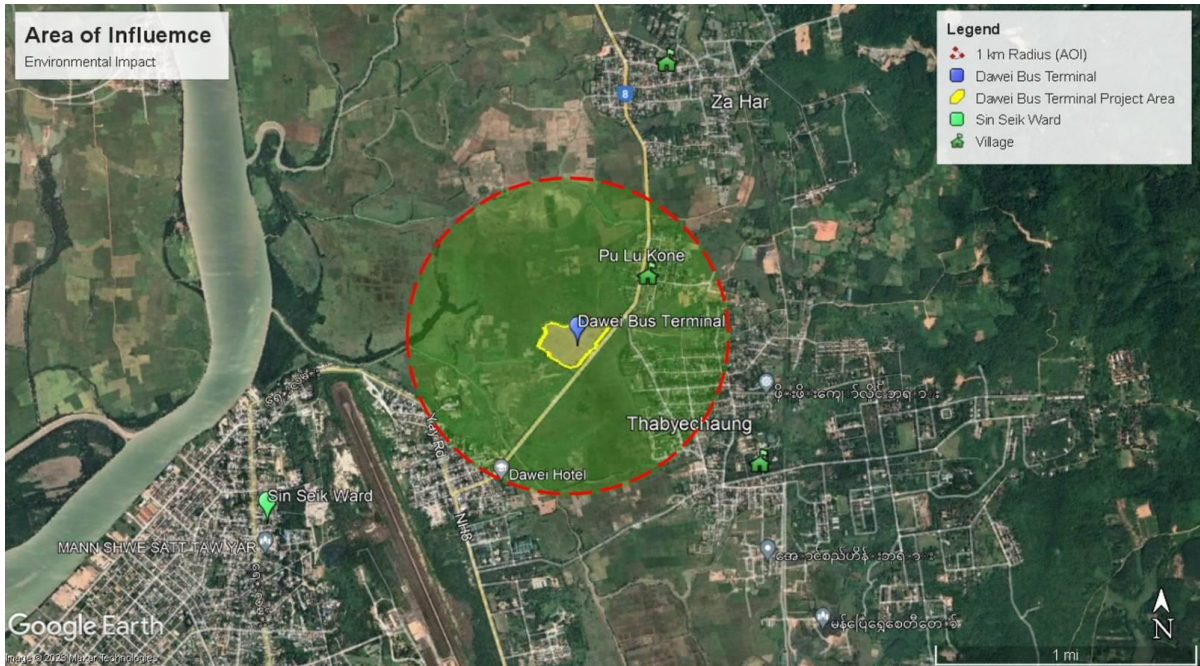
ခန့်ရွှေပြည် ကုမ္ပဏီလီမိတက်သည် အဆိုပြုစီမံကိန်းအတွက် ဒီဇိုင်း ၂မျိုးကို အဆိုပြုခဲ့သော်လည်း ဒုတိယ ဒီဇိုင်းတွင် ဖော်ပြထားသော ဆီသိုလှောင်ကန်များ၏ တည်နေရာသည် မီးဘေးအန္တရာယ်ကို ပိုမိုလျော့ချနိုင်သောကြောင့် ယခုဒီဇိုင်းကို ရွေးချယ်ခဲ့ခြင်း ဖြစ်သည်။ မြေနေရာကျယ်ပြန့်ပြီး စီမံကိန်း တိုးချဲ့လိုပါက တိုးချဲ့နိုင်သောကြောင့် ထားဝယ်မြို့၏ အပြင်ဘက်တွင် စီမံကိန်းတည်နေရာကို ရွေးချယ်ခဲ့ခြင်းဖြစ်ပါသည်။ အဝေးပြေးယာဉ်ရပ်နားစခန်း၏ တည်နေရာကို ရွှေ့ပြောင်းပါက ယာဉ် လမ်းကြောင်း ပိတ်ဆို့မှုများ ဖြစ်ပွားလာနိုင်သည်။ ထို့ကြောင့် ဒေသခံပြည်သူများအတွက် သွားလာရ လွယ်ကူစေရန် ရေး-ထားဝယ် အဝေးပြေးလမ်းမဘေးတွင် စီမံကိန်းတည်နေရာကို ရွေးချယ်ခဲ့ခြင်း ဖြစ်သည်။ ထို့ပြင် သဘာဝမူရင်းဒေသများ ဆုံးရှုံးမှုကို ရှောင်ရှားနိုင်ရန် သဘာဝပေါက်ပင်များမရှိသော မြေနေရာကို ရွေးချယ်ခဲ့ပါသည်။ လူနေဧရိယာများနှင့် ဝေးသောကြောင့် စီမံကိန်းကြောင့် ဖြစ်ပေါ် လာနိုင်သည့် အန္တရာယ်များကိုလည်း လျော့ချနိုင်ပါသည်။ စီမံကိန်းကို အကောင်အထည် မဖော်ပါက ထားဝယ်မြို့အတွင်း ယာဉ်လမ်းကြောင်း ပိတ်ဆို့မှုများကို မရှောင်ရှားနိုင်သည့်အပြင် စီမံကိန်းကြောင့် ရရှိလာနိုင်သော အခွင့်အလမ်းများကို ဒေသခံပြည်သူများ အကျိုးခံစားခွင့် မရနိုင်ပါ။

သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာနှင့် လူမှုစီးပွားရေးဆိုင်ရာ အခြေအနေများအပါအဝင် စီမံကိန်းဧရိယာ၏ အခြေအနေများကိုလည်း ဖော်ပြထားပါသည်။ ဤအခန်းတွင် တင်ပြထားသည့် သတင်း အချက် အလက်များသည် တဆင့်ခံ အချက်အလက်များ (secondary data) နှင့် မူလအခြေခံ အချက် အလက်များ (primary data) မှ ကောက်ယူရရှိထားသော အချက်အလက်များကို အခြေခံ၍ ဖော်ပြထားပါသည်။ စီမံကိန်းဧရိယာမှ ကောက်ယူရရှိသော သဘာဝပတ်ဝန်းကျင် အခြေအနေများ၏ ယေဘုယျဖော်ပြချက်များကိုလည်း ဖော်ပြထားပါသည်။ တဆင့်ခံ အချက်အလက်များ (secondary data) ကို ထုတ်ဝေပြီးသော သတင်းအချက်အလက်များ၊ စီမံကိန်း ဖော်ဆောင်သူထံမှ ရရှိသော

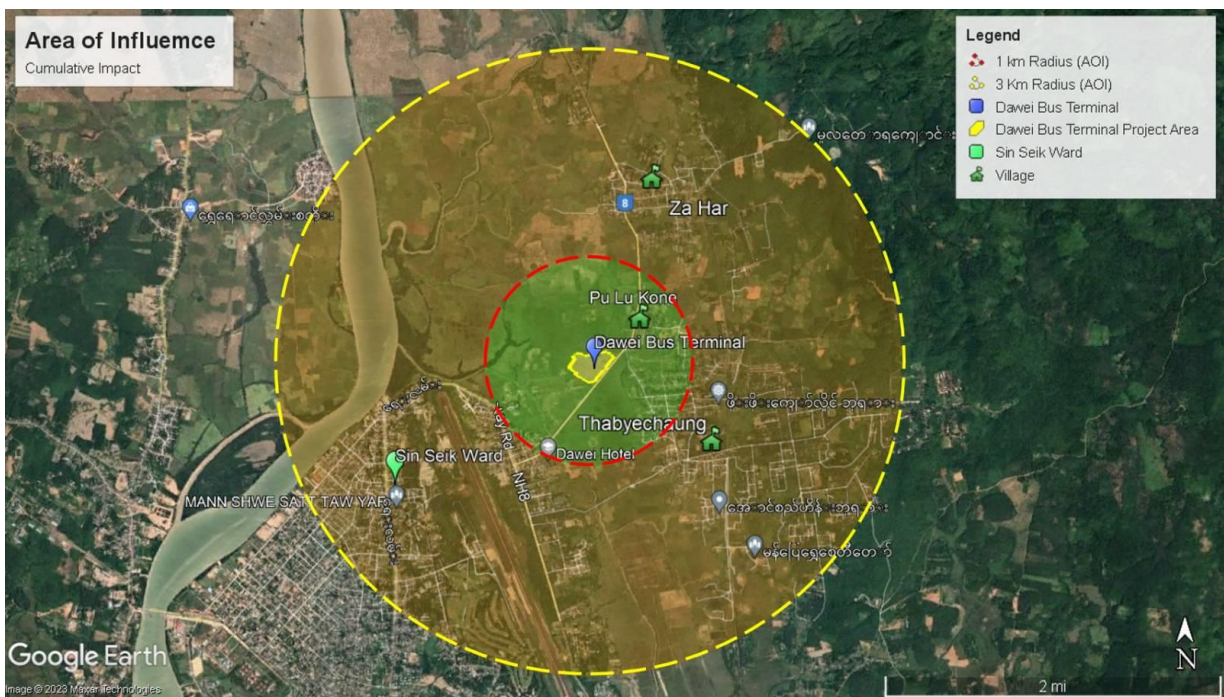
အချက်အလက်များနှင့် ထားဝယ်မြို့နယ် အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာနမှ ပြဌာန်းထားသော မြို့နယ်ဆိုင်ရာ အချက်အလက်များမှ ရယူထားပါသည်။ မူလ လူမှုရေးဆိုင်ရာ အချက်အလက်များနှင့် ပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး တိုင်းတာမှုများ (ဆူညံသံနှင့် တုန်ခါမှု၊ လေနှင့် ရေ အရည် အသွေး) ကို ၂၀၂၃ ခုနှစ် ဧပြီလနှင့် ၂၀၂၃ ခုနှစ် စက်တင်ဘာလတို့တွင် ကောက်ယူခဲ့ပါသည်။ သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ အခြေအနေများ၏ အကျဉ်းချုပ် ခြုံငုံသုံးသပ်မှုများသည် အဆိုပြုထား သော စီမံကိန်းကြောင့် ဖြစ်ပေါ်လာနိုင်သည့် ကောင်းကျိုးသက်ရောက်သော သို့မဟုတ် ဆိုးကျိုး သက်ရောက်သော သို့မဟုတ် ဆက်စပ်သက်ရောက်သော အကျိုးသက်ရောက်မှုများကို ထုတ်ဖော် ရေးသားထားခြင်း ဖြစ်ပါသည်။

သဘာဝပတ်ဝန်းကျင်ရှိ အမျိုးမျိုးသောအရင်းအမြစ်များမှ စွန့်ထုတ်လာနိုင်သော ညစ်ညမ်းမှု ပမာဏ နှင့် အခြေအနေကို သိရှိနိုင်သည့် နည်းလမ်းကို ရွေးချယ်အသုံးပြုထားပါသည်။ ကောက်ယူမည့် သဘာဝ ပတ်ဝန်းကျင်ဆိုင်ရာ အချက်အလက်များသည် စီမံကိန်းများတွင် အသုံးပြုသော လမ်းညွှန် ချက်များနှင့်အညီ ရွေးချယ်သတ်မှတ်ထားပါသည်။ စီမံကိန်းဧရိယာ ပတ်ဝန်းကျင်၏ လေထု အရည် အသွေး၊ ရေထုအရည်အသွေးနှင့် ဆူညံသံအဆင့်ကို တိုင်းတာကောက်ယူမည့် နမူနာနေရာများ ရွေးချယ်သတ်မှတ်ခြင်းနှင့် ခွဲခြားစိတ်ဖြာခြင်း ကဲ့သို့သော လိုအပ်သည့် လုပ်ဆောင်ချက်များ အားလုံး ကို အီးဂတ်မှ သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ ကျွမ်းကျင်ပညာရှင်များမှ ရွေးချယ်သတ်မှတ်ထားပါသည်။ အဆိုပြုထားသည့် စီမံကိန်းဧရိယာနှင့် အနီးပတ်ဝန်းကျင်ရှိ အခြေအနေများ၏ အသေးစိတ် အချက် အလက်များကိုလည်း ပြည့်စုံစွာ ဖော်ပြထားပါသည်။

စီမံကိန်း၏ ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းအတွက် လေ့လာမည့်နယ်ပယ်အား စီမံကိန်း တည်နေရာ ဗဟိုမှ ၁ ကီလိုမီတာ အချင်းဝက်အတွင်း တိုက်ရိုက် ထိခိုက်သက်ရောက်မှုစနစ် အဖြစ် သတ်မှတ်ပြီး စီမံကိန်းမှ ၃ ကီလိုမီတာအချင်းဝက်အတွင်း တဆင့်ခံ ထိခိုက်သက်ရောက်မှုစနစ် အဖြစ် သတ်မှတ်ထားပါသည်။ စီမံကိန်းဧရိယာသည် အနီးပတ်ဝန်းကျင်တွင် လယ်မြေများသာရှိပြီး ထားဝယ် မြို့နယ်ရှိ လူနေဧရိယာများနှင့် ဝေးသောနေရာတွင်တည်ရှိသည့်အပြင် စီမံကိန်း၏ အနီးတစ်ဝိုက်တွင် လည်း အခြားစီမံကိန်းများ မရှိကြောင်း တွေ့ရသည်။



စီမံကိန်းနယ်ပယ် ၁ ကီလိုမီတာအတွင်း လွှမ်းမိုးမှု ဧရိယာ



စီမံကိန်းနယ်ပယ် ၃ ကီလိုမီတာအတွင်း လွှမ်းမိုးမှု ဧရိယာ

လက်ရှိတွင် အဆိုပြုထားသည့် စီမံကိန်းကို အဆင့်၃ဆင့် ခွဲခြားထားပါသည်။ စီမံကိန်း တည်ဆောက် ရေးအဆင့်၊ လုပ်ငန်းလည်ပတ်သည့်အဆင့်နှင့် လုပ်ငန်းဖျက်သိမ်းသည့်အဆင့်တို့ ဖြစ်ပါသည်။ လုပ်ငန်းဖျက်သိမ်းသည့်အဆင့်တွင် ဖြစ်ပေါ်လာနိုင်သော သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ သက်ရောက် မှုများသည် ယာယီသက်ရောက်မှုများ ဖြစ်သည်။

ဆိုးကျိုးသက်ရောက်မှုများ

လုပ်ငန်းလည်ပတ်သည့်ကာလအတွင်း ဖြစ်ပေါ်လာနိုင်သော သက်ရောက်မှုများတွင် လေ၊ ရေ၊ စွန့်ပစ်ပစ္စည်း၊ ဆူညံသံနှင့်တုန်ခါမှု၊ အနံ့၊ ယာဉ်အသွားအလာ၊ ကျန်းမာရေးနှင့်ဘေးအန္တရာယ် ကင်းရှင်းရေး (လုပ်ငန်းခွင်နှင့် ရပ်ရွာလူထု) အပေါ် သက်ရောက်မှုတို့ ပါဝင်သည်။ ဖြစ်ပေါ်လာနိုင်သော သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ သက်ရောက်မှုများသည် စီမံကိန်းလုပ်ဆောင်ချက်များနှင့် သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ အခြေခံ အချက်အလက်များ၏ စိစစ်ခွဲခြမ်းစိတ်ဖြာမှုများကို အခြေခံ၍ သတ်မှတ်ထားပါသည်။

ကောင်းကျိုးသက်ရောက်မှုများ

စီမံကိန်းအကောင်အထည်ဖော်ဆောင်ရွက်ခြင်းကြောင့် စီမံကိန်း အဆိုပြုထားသည့် နေရာ၏ အနီးပတ်ဝန်းကျင်ရှိ လူမှုစီးပွားဆိုင်ရာအခြေအနေများတွင် အချို့သော ကောင်းကျိုးသက်ရောက်မှုများ ဖြစ်ပေါ်လာနိုင်ပါသည်။ ကျွမ်းကျင်မှုဆိုင်ရာ စိစစ်ဆုံးဖြတ်ချက်များအပေါ် အများဆုံး ဖြစ်ပေါ်နိုင်သည့် အတိုင်းအတာအထိ ခွဲခြားသတ်မှတ်ထားသော သက်ရောက်မှုအများစုကို တွက်ချက်ဖော်ပြထားပါသည်။

ကောင်းကျိုးနှင့် ဆိုးကျိုးသက်ရောက်မှုများအပြင် သက်ရောက်မှုများကို အောက်ပါအတိုင်း အမျိုးအစား ခွဲခြားထားပါသည်။

ရုပ်ပိုင်းဆိုင်ရာ သဘာဝပတ်ဝန်းကျင်အပေါ်တွင် သက်ရောက်မှုများ

- လေထုအရည်အသွေးအပေါ် သက်ရောက်မှုများ
- ရေထုအရည်အသွေးအပေါ် သက်ရောက်မှုများ
- စွန့်ပစ်ပစ္စည်းများအပေါ် သက်ရောက်မှုများ
- ဆူညံသံနှင့်တုန်ခါမှုအပေါ် သက်ရောက်မှုများ
- အနံ့အပေါ် သက်ရောက်မှုများ
- သယ်ယူပို့ဆောင်ရေးအပေါ် သက်ရောက်မှုများ

လူမှုရေးဆိုင်ရာ သဘာဝပတ်ဝန်းကျင်အပေါ်တွင် သက်ရောက်မှုများ

- လူမှုစီးပွားရေးအပေါ် သက်ရောက်မှုများ
- လုပ်ငန်းခွင်ကျန်းမာရေးနှင့်ဘေးအန္တရာယ်ကင်းရှင်းရေးအပေါ် သက်ရောက်မှုများ
- ရပ်ရွာလူထုကျန်းမာရေးနှင့်ဘေးအန္တရာယ်ကင်းရှင်းရေးအပေါ် သက်ရောက်မှုများ

အဆင့်တစ်ခုချင်းစီအလိုက် ဖြစ်ပေါ်နိုင်သော ထိခိုက်သက်ရောက်မှုများနှင့် လျော့ချနိုင်မည့် နည်းလမ်းများ၏ အကျဉ်းချုပ်ကို အောက်ပါဇယားတွင် ဖော်ပြထားပါသည်။

ထိခိုက်သက်ရောက်မှုများနှင့် လျော့ချနိုင်မည့် နည်းလမ်းများ အကျဉ်းချုပ်

ထိခိုက်သက်ရောက်မှုများ	လျော့ချနိုင်မည့် နည်းလမ်းများ အကျဉ်းချုပ်
တည်ဆောက်ရေးအဆင့်	
လေထုအရည်အသွေး	ဂျန်နရေတာများ၊ စက်ကိရိယာများနှင့် စက်ပစ္စည်းများကို ထိရောက်စွာ ထိန်းသိမ်းခြင်း၊ ရေဖြန်းကိရိယာများကို တပ်ဆင်ခြင်း၊ ဖုန်ထမှုကို ယာယီ ကာကွယ်ပေးသည့် ကိရိယာများ အသုံးပြုခြင်း၊ ယာဉ်သွားလာမှု အမြန်နှုန်းကို တစ်နာရီလျှင် ကီလိုမီတာ ၂၀ သတ်မှတ်ခြင်းအားဖြင့် လေထုအတွင်း အငွေ့ထုတ်လွှတ်မှုကို ထိန်းချုပ်နိုင်ပါသည်။
ရေအရည်အသွေး	ရေထုညစ်ညမ်းမှုကို လျော့ချရန်အတွက် မိုးရွာသီတွင် ဆောက်လုပ်ရေး လုပ်ငန်းများ ရှောင်ရှားရန်၊ အမှိုက်စွန့်ပစ်သည့် နည်းလမ်းများကို ထိန်းချုပ်ရန်နှင့် ပြုပြင်မွမ်းမံခြင်းနှင့် လမ်းခင်းစဉ်အတွင်း ကွန်ကရစ် အမှုန်များ ပျံ့လွင့်မှုကို လျော့ချရန်အတွက် ဖုန်မှုန့်ဖမ်းသည့် ပိုက်ကွန်များကို တပ်ဆင်ရမည်။
စွန့်ပစ်ပစ္စည်း	<ul style="list-style-type: none"> <li>• ဆောက်လုပ်ရေးလုပ်ငန်းခွင်မှ ထွက်ရှိလာသော စွန့်ပစ်ပစ္စည်းများကို ယာယီနေရာတွင် စုပုံထားပြီးနောက် စွန့်ပစ်ရမည်။</li> <li>• အမှိုက်အမျိုးအစားများကို ခွဲခြားပြီး ဒေသရှိ အမှိုက်ကောက်ယူသိမ်းဆည်းသည့် လုပ်ငန်းများနှင့်ချိတ်ဆက် စွန့်ပစ်ရမည်။</li> <li>• စက်သုံးဆီဆိုင်မှ ထွက်လာသော စွန့်ပစ်ရေများကို သန့်စင်ပြီးမှ စွန့်ပစ်ရမည်။</li> </ul>
ဆူညံသံနှင့် တုန်ခါမှု	<ul style="list-style-type: none"> <li>• ညပိုင်းတွင် အလုပ်လုပ်ကိုင်မှုကို တတ်နိုင်သမျှ ရှောင်ရှားရမည်။</li> <li>• ဆောက်လုပ်ရေးလုပ်ငန်းခွင် မစတင်မီ ဆူညံသံနှင့် တုန်ခါမှုကို ထိခိုက်ခံစားလွယ်နိုင်သော နေရာများကို ခွဲခြားသတ်မှတ်ရမည်။</li> <li>• အင်ဂျင်နှင့် အိတ်ဇောစနစ်များမှ ဆူညံမှုကို လျော့ချရန် စက်ပစ္စည်းကိရိယာများကို ပုံမှန် ပြုပြင်ထိန်းသိမ်းရမည်။</li> </ul>
မြေအရည်အသွေး	<ul style="list-style-type: none"> <li>• ဆောက်လုပ်ရေးလုပ်ငန်းမစတင်မီ မြေပြိုမှုများကို ထိန်းသိမ်းကာကွယ်ရန် မြေဆီလွှာအခြေအနေ စမ်းသပ်မှုများကို လုပ်ဆောင်ရမည်။</li> <li>• ရေမြောင်းစနစ်များနှင့် ရေထိန်းနံရံများအတွက် လုံခြုံစိတ်ချသော ဒီဇိုင်း နည်းလမ်းများကို အသုံးပြုရမည်။</li> <li>• မြေပြိုမှုအန္တရာယ်များမှ အရေးကြီးသော အခြေခံအဆောက်အအုံများကို ကာကွယ်ရမည်။</li> </ul>

	<ul style="list-style-type: none"> <li>• စိမ့်မဝင်နိုင်သော မြေနေရာတွင် ယာယီအမှိုက်စုပုံသည့် နေရာအဖြစ် ထားရမည်။</li> <li>• မတော်တဆ ဆီယိုဖိတ်မှုများ ဖြစ်ပေါ်က ချက်ချင်း သန့်ရှင်းရေး ပြုလုပ် ရမည်။</li> </ul>
ယာဉ်သွားလာမှု	<ul style="list-style-type: none"> <li>• ဆောက်လုပ်ရေးလုပ်ငန်းသုံးယာဉ်များ သယ်ယူပို့ဆောင်သည့် အချိန် ကို ရှောင်ရှားရမည်။</li> <li>• ဆီဆိုင်အတွင်း ဘေးကင်းလုံခြုံသော ယာဉ်သွားလာမှု ဒီဇိုင်းများ ပြုလုပ် ရမည်။</li> <li>• သင့်တော်သော အတားအဆီးများနှင့် အမှတ်အသားများ သတ်မှတ်ထား ခြင်းဖြင့် လူသွားလမ်းစင်္ကြံများနှင့် ယာဉ်သွားလမ်းများကို ရှင်းလင်းစွာ ပြုလုပ်ထားရမည်။</li> <li>• ဘေးကင်းလုံခြုံသော ယာဉ်မောင်းမှု အလေ့အထများကို လိုက်နာ ကျင့်သုံးရမည်။</li> </ul>
လုပ်ငန်းခွင် ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး	လုပ်ငန်းခွင် ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး ပြဿနာများကို ကာကွယ်ရန် ဆောက်လုပ်ရေးလုပ်ငန်းခွင်အတွင်း တစ်ကိုယ်ရည်သုံး အကာအကွယ်ပစ္စည်းများကို ဝတ်ဆင်ရမည်။
လုပ်ငန်းလည်ပတ်ရေး အဆင့်	
လေထု အရည်အသွေး	အမှိုက်များ မီးရှို့ခြင်းကို တားမြစ်ရမည်။ ဖန်လုံအိမ်ဓာတ်ငွေ့များကို စုပ်ယူ ရန်နှင့် ညစ်ညမ်းမှုများ အထူးသဖြင့် လေထုညစ်ညမ်းမှုများကို လျော့ချနိုင် ရန် စိုက်ခင်းများကို တည်ထောင်ရမည်။
ရေထု အရည်အသွေး	ရေထုညစ်ညမ်းမှုများကို ကာကွယ်ရန် အနည်ကျကန်များ၊ ယာယီ သန့်စင်ခန်းများကို တည်ဆောက်ခြင်း၊ ယိုစိမ့်မှုကို ခံနိုင်ရည်ရှိသော ကွန်တိန်နာများ အသုံးပြုခြင်း၊ မိုးရေ စုဆောင်းခြင်းတို့ကို ပြုလုပ်ရမည်။ လောင်စာဆီဆိုင်များအတွက် ရေဆိုးစွန့်ပစ်မှု စံနှုန်းများ ထိန်းသိမ်းရန် ထိရောက်သော ရေဆိုးစီမံခန့်ခွဲမှု နည်းလမ်းများကိုလည်း လုပ်ဆောင်ရ မည်။
စွန့်ပစ်ပစ္စည်း	ထားဝယ်မြို့နယ် စည်ပင်သာယာရေးအဖွဲ့၏ လမ်းညွှန်ချက်များနှင့် လိုအပ် ချက်များအရ သင့်တော်သော စွန့်ပစ်ပစ္စည်းစီမံခန့်ခွဲမှု နည်းလမ်းများကို ဆောင်ရွက်ရမည်။ စည်းကမ်းသတ်မှတ်ချက်များနှင့်အညီ အန္တရာယ်ရှိ



	<p>သော စွန့်ပစ်ပစ္စည်းစီမံခန့်ခွဲမှုများအတွက် သင့်တော်သော ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေးဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများကို အသုံးပြုခြင်း ဖြင့် စီမံကိန်းလုပ်ငန်းများကို ဆောင်ရွက်သင့်သည်။</p>
<p>ဆူညံသံနှင့်တုန်ခါမှု</p>	<p>ဖောက်ခွဲရေး လုပ်ဆောင်မှုများအတွက် ဆူညံသံထိန်းချုပ်သည့် ကိရိယာ များ တပ်ဆင်ခြင်း၊ လောင်ကျွမ်းသည့်အင်ဂျင်များအတွက် အိတ်ဇောပိုက် များ တပ်ဆင်ခြင်း၊ ဂျန်နရေတာများအတွက် ဆူညံသံ အကာအကွယ်များ တည်ဆောက်ခြင်းနှင့် အင်ဂျင်နှင့် အိတ်ဇောပိုက်များမှ ထွက်သော ဆူညံသံများကို လျော့ချရန် စက်ပစ္စည်းများကို ပုံမှန် ထိန်းသိမ်းရမည်။</p>
<p>ယာဉ်သွားလာမှု</p>	<ul style="list-style-type: none"> <li>• ယာဉ်လမ်းကြော ပိတ်ဆို့မှုများကို လျော့ချရန် သင့်တော်သော ယာဉ် လမ်းကြော စီမံခန့်ခွဲမှုကို အကောင်အထည်ဖော်ရမည်။</li> <li>• ယာဉ်လမ်းကြောကြပ်တည်းမှုကို လျော့ချရန် အများပြည်သူသုံး သယ်ယူပို့ဆောင်ရေးယာဉ်များကို အသုံးပြုရမည်။</li> <li>• ယာဉ်ရပ်နားစခန်းသို့ ဦးတည်သော လမ်းအခြေခံ အဆောက်အအုံများ ကို ကောင်းမွန်အောင် ပြုလုပ်ရမည်။</li> </ul>
<p>လုပ်ငန်းခွင် ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး</p>	<ul style="list-style-type: none"> <li>• ကျန်းမာရေးစောင့်ရှောက်မှုများကို ထောက်ပံ့ပေးရမည်။</li> <li>• ရှေးဦးပြုစုနည်းလမ်းများကဲ့သို့သော သင်တန်းများကို အလုပ်သမားများ အတွက် စီစဉ်ပေးရမည်။</li> <li>• အလုပ်လုပ်နေစဉ်အတွင်း သင့်တော်သော တစ်ကိုယ်ရည်သုံး အကာ အကွယ်များကို ထောက်ပံ့ပေးသင့်သည်။</li> <li>• စီမံကိန်းဧရိယာတစ်လျှောက် သတိပေးဆိုင်ဘုတ်များကို တပ်ဆင်ထား သင့်သည်။</li> <li>• မတော်တဆမှုနှင့် အရေးပေါ်ကိစ္စများ ဖြစ်ပေါ်လာပါက ဆေးပစ္စည်း အထောက်အပံ့နှင့် သယ်ယူပို့ဆောင်ရေးယာဉ်များကို ပြင်ဆင်ထားသင့် သည်။</li> </ul>
<p>မီးဘေးအန္တရာယ်</p>	<p>မတော်တဆမှုများကို ကာကွယ်ရန် မီးသတ်ဆေးဘူးများ၊ ရေလှောင်ကန် များ၊ အစမ်းလေ့ကျင့်မှုများနှင့် ရွှေ့ပြောင်းရေး အစီအစဉ်များကို စီစဉ်ထား သင့်သည်။ အလုပ်သမားများကို မီးဘေးအန္တရာယ် ကြိုတင်ကာကွယ်ရေး သင်တန်းများနှင့် ရှင်းလင်းရေးဆိုင်ရာ လုပ်ထုံးလုပ်နည်း သင်တန်းများ ပေးသင့်သည်။ လောင်စာဆီဆိုင်ဧရိယာအတွင်း ဆေးလိပ်သောက်ခြင်းကို တားမြစ်ထားပါသည်။</p>

လုပ်ငန်းပိတ်သိမ်းသည့်အဆင့်	
လေထုအရည်အသွေး	လုပ်ငန်းပိတ်သိမ်းစဉ် ဖြိုချသည့်လုပ်ငန်းများ လုပ်ဆောင်ချိန်အတွင်း အမှုန်ပျံ့လွင့်မှုများကို လျော့ချရန် ရေဖြန်းခြင်း လုပ်ငန်းများ ဆောင်ရွက်ရမည်။
ရေအရည်အသွေး	ရေဆိုးညစ်ညမ်းမှုများကို လျော့ချရန် ဖြိုချသည့် လုပ်ငန်းများကို မိုးရာသီတွင် ရှောင်ရှားသင့်သည်။
စွန့်ပစ်ပစ္စည်း	<ul style="list-style-type: none"> <li>• ဖြိုချဖျက်ဆီးထားသည့် စွန့်ပစ်ပစ္စည်းများကို ယာယီနေရာတွင် စုပုံထားပြီးနောက် စွန့်ပစ်ရမည်။</li> <li>• အမှိုက်အမျိုးအစားများကို ခွဲခြားပြီး ဒေသရှိ အမှိုက်ကောက်ယူသိမ်းဆည်းသည့် လုပ်ငန်းများနှင့်ချိတ်ဆက် စွန့်ပစ်ရမည်။</li> <li>• စက်သုံးဆီဆိုင်မှ ထွက်လာသော စွန့်ပစ်ရေများကို သန့်စင်ပြီးမှ စွန့်ပစ်ရမည်။</li> <li>• ဖြိုချဖျက်ဆီးခြင်းနှင့် မြေနေရာရှင်းလင်းခြင်းမှ ထွက်ရှိလာသော စွန့်ပစ်ပစ္စည်းများနှင့် အကြွင်းအကျန်များကို သက်ဆိုင်ရာ စည်းမျဉ်းစည်းကမ်းများနှင့်အညီ စွန့်ပစ်ရမည်။</li> </ul>
ဆူညံသံနှင့် တုန်ခါမှု	<ul style="list-style-type: none"> <li>• ညပိုင်းတွင် အလုပ်လုပ်ကိုင်မှုကို တတ်နိုင်သမျှ ရှောင်ရှားရမည်။</li> <li>• ဆောက်လုပ်ရေးလုပ်ငန်းခွင် မစတင်မီ ဆူညံသံနှင့် တုန်ခါမှုကို ထိခိုက်ခံစားလွယ်နိုင်သော နေရာများကို ခွဲခြားသတ်မှတ်ရမည်။</li> <li>• အင်ဂျင်နှင့် အိတ်ဇောစနစ်များမှ ဆူညံမှုကို လျော့ချရန် စက်ပစ္စည်းကိရိယာများကို ပုံမှန် ပြုပြင်ထိန်းသိမ်းရမည်။</li> </ul>
မြေအရည်အသွေး	<ul style="list-style-type: none"> <li>• ဖြိုချခြင်းလုပ်ငန်းများမစတင်မီ မြေပြိုကျမှုများမှ ကာကွယ်ရန် မြေဆီလွှာကို စမ်းသပ်စစ်ဆေးရမည်။</li> <li>• ဘေးကင်းလုံခြုံစိတ်ချရသော ဖြိုချခြင်းနည်းလမ်းများကို အသုံးပြုရမည်။</li> <li>• မစီမံနိုင်သော မြေနေရာတွင် ယာယီအမှိုက်စုပုံသည့် နေရာများအဖြစ် ထားရမည်။</li> <li>• ဆီယိုဖိတ်မှုများ မတော်တဆဖြစ်ပွားပါက ချက်ချင်းသန့်ရှင်းရမည်။</li> </ul>

<p>ယာဉ်သွားလာမှု</p>	<ul style="list-style-type: none"> <li>• ဆောက်လုပ်ရေးလုပ်ငန်းသုံးယာဉ်များ သယ်ယူပို့ဆောင်သည့်အချိန်ကို ရှောင်ရှားရမည်။</li> <li>• ဆီဆိုင်အတွင်း ဘေးကင်းလုံခြုံသော ယာဉ်သွားလာမှု ဒီဇိုင်းများ ပြုလုပ်ရမည်။</li> <li>• သင့်တော်သော အတားအဆီးများနှင့် အမှတ်အသားများ သတ်မှတ်ထားခြင်းဖြင့် လူသွားလမ်းစင်္ကြံများနှင့် ယာဉ်သွားလမ်းများကို ရှင်းလင်းစွာ ပြုလုပ်ထားရမည်။</li> <li>• ဘေးကင်းလုံခြုံသော ယာဉ်မောင်းမှု အလေ့အထများကို လိုက်နာကျင့်သုံးရမည်။</li> </ul>
<p>လုပ်ငန်းခွင် ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး</p>	<p>စီမံကိန်းသည် အလုပ်သမားများအတွက် ဘေးကင်းလုံခြုံသော ပတ်ဝန်းကျင်နှင့် လူမှုဖုံလုံရေးကို မြှင့်တင်ရန် ရည်ရွယ်၍ လုပ်ငန်းပိတ်သိမ်းချိန်အတွင်း တစ်ကိုယ်ရည်သုံး အကာအကွယ်ပစ္စည်းများကို ဝတ်ဆင်ခြင်းဖြင့် လုပ်ငန်းခွင် ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး ထိခိုက်မှုများကို လျော့ချရမည်။</p>

စီမံကိန်း၏ အဆင့်အားလုံးအတွက် ပတ်ဝန်းကျင်ဆိုင်ရာ စောင့်ကြပ်ကြည့်ရှုခြင်းနှင့် စီမံခန့်ခွဲမှု အစီအစဉ်များသည် ဆက်စပ်သက်ရောက်မှုများကို ရှောင်ရှားရန်နှင့် လျော့နည်းစေရန် ရေးဆွဲထားခြင်းဖြစ်သည်။ အဆိုပြုထားသော စီမံကိန်း၏ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ကို စီမံကိန်း၏ လုပ်ငန်းတည်ဆောက်သည့်အဆင့်၊ လုပ်ငန်းလည်ပတ်သည့်အဆင့်နှင့် လုပ်ငန်းဖျက်သိမ်းသည့်အဆင့်အတွင်း ဖြစ်ပေါ်နိုင်သော ပတ်ဝန်းကျင်ဆိုင်ရာ ထိခိုက်သက်ရောက်မှုများကို ဆန်းစစ်အကဲဖြတ်၍ ပြင်ဆင်ထားခြင်း ဖြစ်ပါသည်။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်၏ ရည်ရွယ်ချက်မှာ ပတ်ဝန်းကျင်ဆိုင်ရာနှင့် လူမှုစီးပွားရေးဆိုင်ရာ လုပ်ဆောင်မှုများအတွက် လမ်းညွှန်ချက်များအဖြစ် အသုံးပြုရန် ဖြစ်ပါသည်။ စီမံကိန်း၏ ပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုအစီအစဉ်တွင် အဓိက ခေါင်းစဉ်ခွဲ (၅)ခုဖြင့် ဖော်ပြထားပါသည်။

စည်းမျဉ်းစည်းကမ်း၊ သတ်မှတ်ချက်များနှင့်အညီ စောင့်ကြပ်ကြည့်ရှုခြင်းကို လုပ်ဆောင်သွားမည် ဖြစ်ပြီး ဖြစ်ပေါ်လာနိုင်သော ထိခိုက်သက်ရောက်မှုများကို လျော့ပါးသက်သာစေရန် ထိရောက်သော လုပ်ငန်းလည်ပတ်မှုများနှင့် လျော့ချရေးနည်းလမ်းများကို အကဲဖြတ်စိစစ်သွားမည် ဖြစ်သည်။ အဆိုပြုထားသော စီမံကိန်းကို သေချာစွာပြင်ဆင်ထားသော ပတ်ဝန်းကျင်ဆိုင်ရာ စောင့်ကြပ်ကြည့်ရှုခြင်း အစီအစဉ်နှင့်အညီ စောင့်ကြပ်ကြည့်ရှုသွားမည်ဖြစ်သည်။ စောင့်ကြပ်ကြည့်ရှုခြင်းကို

ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး၊ ထုတ်လွှတ်မှု၊ စွန့်ထုတ်မှု အစရှိသည်တို့နှင့် ဆက်စပ်သော အချက်အလက်များကို တိုက်ရိုက်တိုင်းတာခြင်းဖြင့် လုပ်ဆောင်သွားမည် ဖြစ်သည်။

ပထမအကြိမ် အများပြည်သူနှင့် တိုင်ပင်ဆွေးနွေးခြင်းကို သက်ဆိုင်ရာ ဆက်စပ်ပတ်သက်သူများနှင့် အတူ ၂၀၂၃ ခုနှစ်၊ မေလ (၅) ရက်နေ့တွင် ထားဝယ်မြို့နယ်၊ မြို့တော်ခန်းမ၌ ကျင်းပခဲ့သည်။ ဒုတိယ အကြိမ် အများပြည်သူနှင့် တိုင်ပင်ဆွေးနွေးခြင်းကိုလည်း ၂၀၂၃ ခုနှစ်၊ စက်တင်ဘာလ (၅) ရက်နေ့ တွင် ထားဝယ်မြို့နယ်၊ မြို့တော်ခန်းမ၌ ကျင်းပခဲ့သည်။ တိုင်ပင်ဆွေးနွေးမှုများမှ စီမံကိန်းကြောင့် ထိခိုက်ခံစားရနိုင်သူများ၏ သတင်းအချက်အလက်များ၊ ဖြစ်ပေါ်နိုင်သည့် အချက်အလက် ကွာဟမှု များနှင့် ထိုအချက်အလက်များအား ပတ်ဝန်းကျင်ထိခိုက်မှုအစီရင်ခံစာတွင် မည်သို့ ထည့်သွင်း ဆောင်ရွက်သွားနိုင်မည့်အကြောင်းနှင့်ပတ်သက်သော အချက်အလက်များ စုဆောင်းရရှိခဲ့ပါသည်။ အများပြည်သူနှင့် တိုင်ပင်ဆွေးနွေးပွဲတွင် ထားဝယ်မြို့နယ်၊ အထွေထွေအုပ်ချုပ်ရေး ဦးစီးဌာန အပါ အဝင် သက်ဆိုင်ရာ အစိုးရဦးစီးဌာနများ၊ ကျေးရွာအုပ်ချုပ်ရေးမှူးများ၊ ဒေသခံ ရပ်ရွာလူထုနှင့် ရပ်ရွာကိုယ်စားလှယ်များ တက်ရောက်ခဲ့ပါသည်။ အများပြည်သူနှင့် တိုင်ပင်ဆွေးနွေးခြင်းမှ တွေ့ဆုံမှု အစည်းအဝေးမှတ်တမ်းနှင့် ဓာတ်ပုံများကို အခန်းတစ်ခုအဖြစ် ဖော်ပြထားပါသည်။

ဆောင်ရွက်ခဲ့သည့် ဆွေးနွေးမှုလုပ်ငန်းများမှာ ၂၀၂၃ ခုနှစ်၊ မေလ ၅ ရက် တွင် ပထမအကြိမ် လူထု တွေ့ဆုံပွဲအား မြို့တော်ခန်းမ၊ ထားဝယ်မြို့နယ်တွင်ပြုလုပ်ခဲ့သည်။ ဒုတိယအကြိမ် လူထုတွေ့ဆုံပွဲ အား ၂၀၂၃ ခုနှစ်၊ စက်တင်ဘာလ ၅ ရက်တွင် မြို့တော်ခန်းမ၊ ထားဝယ်မြို့နယ်တွင် ပြုလုပ်ခဲ့သည်။ ညှိနှိုင်းဆောင်ရွက်မှုပြုလုပ်ခြင်း ရည်ရွယ်ချက်များမှာ အစိုးရဦးစီးဌာနများ၊ ကျေးရွာအုပ်ချုပ်ရေးမှူး များ၊ ဒေသခံရပ်ရွာလူထု နှင့် ရပ်ရွာကိုယ်စားလှယ်များ၊ စိတ်ဝင်စားသည့် ဆက်စပ်ပတ်သက်သူများ ထံသို့ စီမံကိန်းဆိုင်ရာ အချက်အလက်များ တင်ပြရန်၊ သက်ဆိုင်သူများထံမှ စိုးရိမ်မှု၊ လိုလားမှုများနှင့် အကြံပြုချက်များရယူရန်၊ Key Informant Interview အား ပူးပေါင်းပေးရန် တောင်းဆိုရန်၊ လူမှုရေး ဆိုင်ရာ အခြေခံအချက်အလက်များ ကောက်ယူခြင်းနှင့်တက်ရောက်သူများထံမှ တုံ့ပြန်မှုများ စုဆောင်းခြင်းပြုလုပ်ရန်ဖြစ်သည်။ ဆွေးနွေးမှု ကာလအတွင်း လက်ခံရရှိသော မှတ်ချက်များ အကျဉ်းချုပ် မေးခွန်းများ၊ မှတ်ချက်များနှင့် အသေးစိတ် ဖြေကြားချက်များကိုလည်း ပြည့်စုံစွာ ဖော်ပြ ထားပါသည်။

ထားဝယ်မြို့၊ မြန်မာနိုင်ငံတွင် အကောင်အထည်ဖော် ဆောင်ရွက်မည့် အဝေးပြေးယာဉ်ရပ်နားစခန်း နှင့် ဆက်စပ်လုပ်ငန်းစီမံကိန်းအတွက် ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းသည် ပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဆိုင်ရာ ဥပဒေ၊ လုပ်ထုံးလုပ်နည်းများနှင့်အညီ စီမံကိန်း တည်ဆောက်ရေးအဆင့်၊ လုပ်ငန်းလည်ပတ်ရေးအဆင့်နှင့် လုပ်ငန်းပိတ်သိမ်းသည့်အဆင့်အတွင်း ဖြစ်ပေါ်လာနိုင်သော အဓိက

ပတ်ဝန်းကျင်ဆိုင်ရာ ထိခိုက်သက်ရောက်မှုများကို ခွဲခြားသတ်မှတ်ရန် ဖြစ်သည်။ အချက်အလက်များ ခွဲခြားစိတ်ဖြာခြင်းနှင့် ကောက်ချက်ခြင်းများအရ အဆိုပြုထားသော စီမံကိန်း၏ လေထု အရည်အသွေး၊ ဆူညံသံနှင့် တုန်ခါမှုအဆင့်များသည် WHO လမ်းညွှန်ချက်များနှင့် NEQG ထုတ်လွှတ်မှု စံနှုန်းများ၏ လက်ခံနိုင်သော အတိုင်းအတာအတွင်းတွင် ရှိပါသည်။ အဆိုပြုထားသော စီမံကိန်းဧရိယာသည် စိုက်ပျိုးမြေ ဧရိယာဖြစ်သောကြောင့် မြေဆီလွှာညစ်ညမ်းမှုလည်း မရှိနိုင်ကြောင်း တွေ့ရသည်။ ထို့ပြင် စီမံကိန်းဧရိယာအနီးတစ်ဝိုက်တွင် အရေးကြီးသည့်မျိုးစိတ်များ မရှိသောကြောင့် ဇီဝမျိုးစုံမျိုးကွဲများကို မထိခိုက်နိုင်ပါ။ အဆိုပြုထားသော စီမံကိန်းသည် မြေပေါ်ရေအရည်အသွေးကို ထိခိုက်မှု မရှိစေရန် ဆောက်လုပ်ရေးလုပ်ငန်းနှင့် လုပ်ငန်းလည်ပတ်သည့်အချိန်အတွင်း ရေထုအရည်အသွေးကို စောင့်ကြပ်ကြည့်ရှုသွားမည် ဖြစ်ပါသည်။ လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးကင်းလုံခြုံရေး ပြဿနာများနှင့် ဆက်စပ်သော ဘေးအန္တရာယ်များ ရှိနိုင်သောကြောင့် လျော့ချရေးနည်းလမ်းများတွင် ဘေးကင်းလုံခြုံရေးဆိုင်ရာ အသိပညာပေးသင်တန်းများ၊ ရှေးဦးပြုစုခြင်းနည်းလမ်းများနှင့် တစ်ကိုယ်ရည်သုံးအကာအကွယ် ပစ္စည်းများကို ထည့်သွင်းဖော်ပြထားပါသည်။ အခြားတစ်ဖက်တွင်လည်း အနီးအနားရှိ ဒေသခံပြည်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်းများကိုလည်း ဖန်တီးပေးနိုင်ပါသည်။ အချုပ်အားဖြင့်ဆိုရသော် ပတ်ဝန်းကျင် စောင့်ကြပ်ကြည့်ရှုခြင်း အစီအစဉ်သည် လုပ်ငန်းလည်ပတ်သည့်အဆင့်အတွင်း ဖြစ်ပေါ်လာနိုင်သော ကြွင်းကျန်သက်ရောက်မှုများကို ဖြေရှင်းရန် အတွက်လည်း ပြင်ဆင်ထားပါသည်။ အဆိုပြုထားသော လျော့ချရေးနည်းလမ်းများသည် စီမံကိန်းဧရိယာအတွက် ကောင်းမွန်သော ပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှုများကို ဦးတည်ရေးသားထားခြင်း ဖြစ်ပါသည်။



## 1. EXECUTIVE SUMMARY

This Environmental Impact Assessment (EIA) study report is for bus terminal and a commercial complex development project proposed by Khant Shwe Pyi Co., Ltd. The report is prepared compliance with the environmental conservation law and procedures (2015) under the Environmental Conservation Department (ECD).

The specific objectives of this study are to identify the major impacts that may arise from the activities of the proposed project on natural environment and surrounding environment of the project area, describe the mitigation measures to minimize these impacts, prepare and implement Environmental Management Plan for the project.

In this report the relevant policies and national laws and legislations are expressed which are currently practiced in Myanmar and environmental and social aspects which are related to the proposed development are reviewed. In developing countries, it is frequently observed that laws and standards pertinent to environment and social aspects are not sufficient enough to refer in setting up the project oriented regulatory frameworks. Consequently, many organizations operating in these countries have to adopt guidelines and standards of well-known financial institutions such as ADB, IFC and World Bank as best practices in their industries. Therefore, the relevant international guidelines are also described.

The project area is located at field number (104) Tha Byay Chaung village, Dawei City, Dawei District, Tanintharyi Region, at Lat: 14° 6'57.98"N and Long: 98°12'43.99"E on a land area of (20) acres by implementation plan of Khant Shwe Pyi Co., Ltd. This project is planning to implement the highway bus station, parking area and related services project which is mainly focus on important for local municipality, transportation and cleanliness of Dawei City. Therefore, implementation aims to make travel peacefully and build improve transportation system of Dawei City.

The following are the brief of the project description.

Project Name	Dawei Bus Terminal and Commercial Complex Project
Proponent's Contact Name	U Zaw Bo Khant
Citizenship	Myanmar
Name of Principle Organization	Khant Shwe Pyi Co., Ltd.
Company Registration Numbers	102548493
Type of Business	Bus Terminal
Investment	Local investment
Investment Period	50 years
Amount of Investment	5,429.053 million (Kyat)

Office Address (Dawei Project Site)	Field number (104) Tha Byay Chaung village, Dawei City, Dawei District, Thanintharyi Region, Myanmar.
Office Address (Yangon)	No.5, Ma Kye Kye St., San Chaung Tsp., Yangon Region, Myanmar
Water consumption	50,000 Liters per day
Source of water	8 hand scoop water holes, one big well
Source of Electrical Power	Three transformers (MOEE), Two generators
Land used	20 acres
No. of workers	73 employees
Construction Schedule	Start from Jan/2023 Finished at Dec/2023
Period of Project Site (Year)	2021-2023
Contact Person	U Zaw Bo Khant
Contact info	09-5527999 kobobo001@gmail.com

The proposed project is located beside Ye-Dawei highway in the vicinity of Dawei City, the project site and its surroundings are gradually changing from rural/ agricultural land to suburban areas. According to the discussion with site management personnel, it is learned that the vegetation of the project site has long been removed, and the natural habitat has been turned into areas dominated by barren land. It was confirmed by the observations of site visit. No evidence of the presence of recent natural vegetation cover was seen in the project site and surrounding areas. Where water supply is available, sporadic small-sized farms cultivated for family subsistence were observed on the land adjacent to the site. The areas obviously can no longer provide habitats for any natural flora and fauna species.

Although Khat Shwe Pyi Co., Ltd proposed two designs for the proposed project the second layout reduces fire hazards due to the location of oil storage tanks, so the design has been chosen for project. The bus terminal site was chosen outside Dawei City due to its wide land area and potential for extension. The potential traffic congestion may occur if the bus terminal's location were moved. The project site is conveniently located near the Ye-Dawei highway, ensuring easy access and communication for locals. KSP could choose barren land with negligible presence of natural regeneration in order to avoid habitat loss. Moreover, it can reduce risk due to the project is not too near to the local community. If the project is not implemented, traffic congestions in Dawei City cannot be avoided and local people cannot be benefitted from opportunity offered by the proposed project.

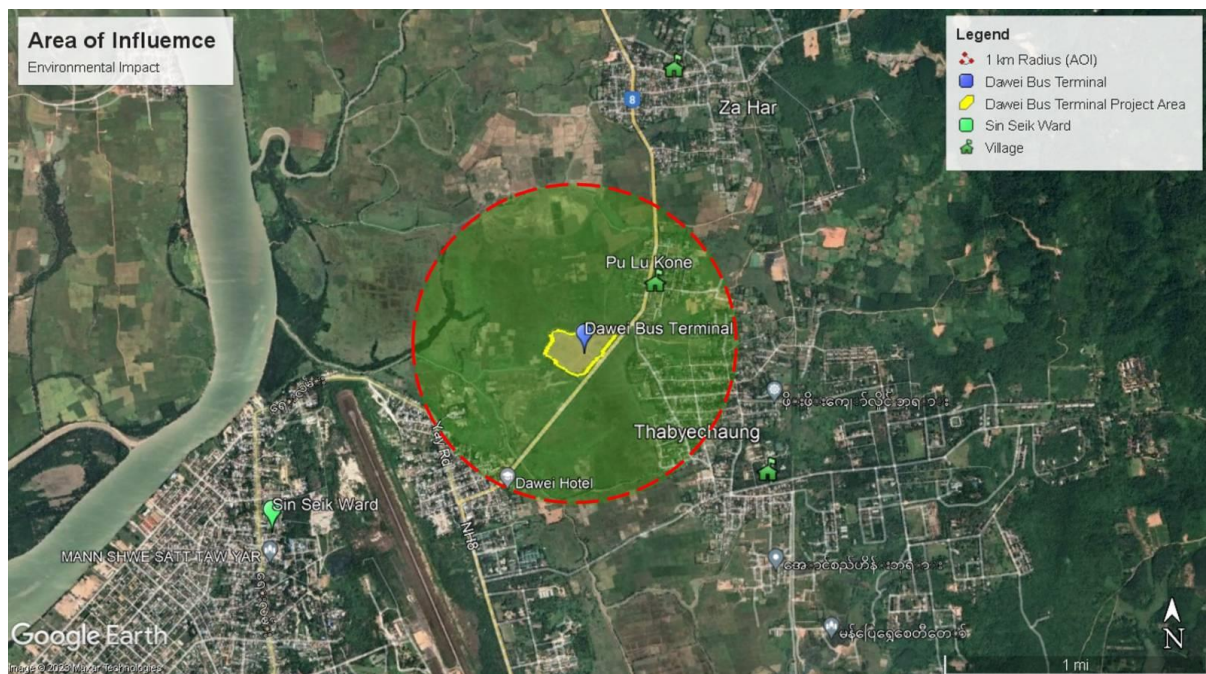


The baseline conditions of the project area including environmental and social status are described. The information provided in this section is based on data collected from primary and secondary sources. It also provides general description of the status of the receiving environment in the project area. Secondary sources include a desktop review of published information, supplemented with information provided by project proponent and township profiles from official township data of Dawei township. Primary social data and environmental onsite measurements (noise and vibration, air, and water quality) were collected in April, 2023 and September, 2023. The brief overview of environmental features may be positive or negative or cumulative effects by the proposed project.

The methodology had been designed to know the nature and degree of pollution from various sources in the environment. Baseline environmental parameters were defined according to the guideline which applies to projects. All necessary activities such as site selections for sampling and analysis of ambient air quality, water quality and noise level of the project site were identified by environmental specialists of E Guard.

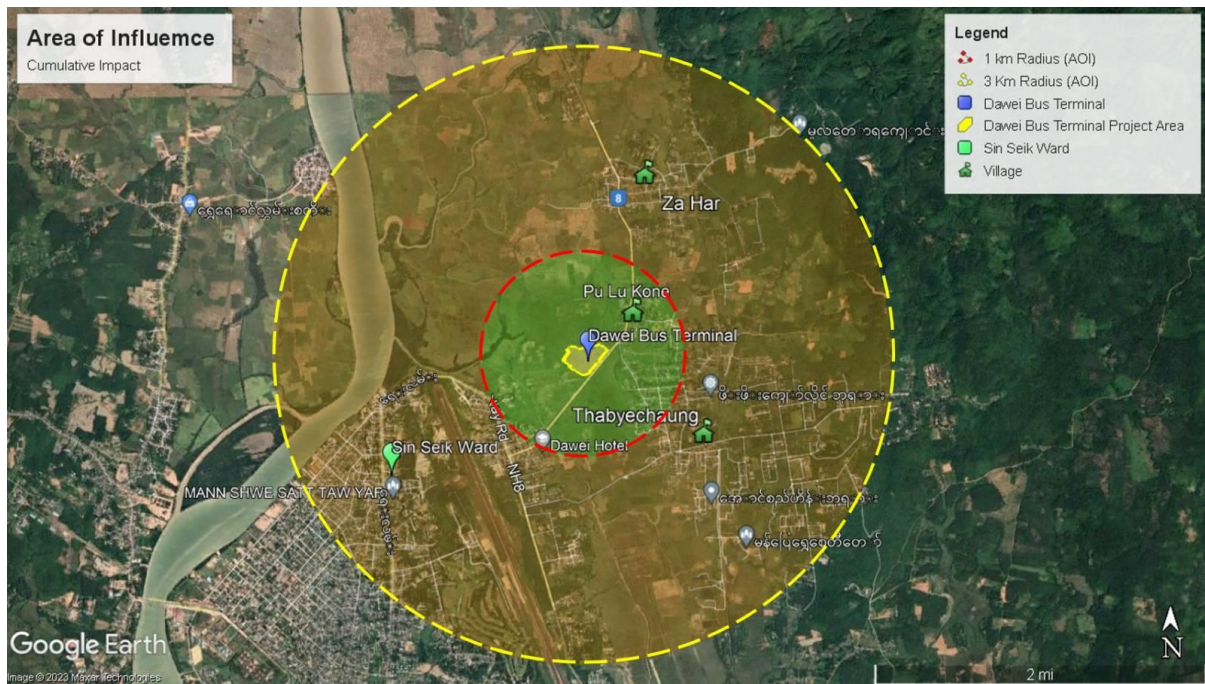
The detailed information about the baseline conditions of proposed project area and surrounding area are described.

The study area for EIA study of this project is defined to be the area within 1 kilometer radius from the center of the site as primary impact zone and 3-kilometer radius as secondary impact zone. The project is located at outer area of Dawei township, which is away from residential area surrounded by farm land and there is no nearest vicinity of the project.



**Figure 1.1 1km area of influence for scope of project**

Source: E Guard Study Team (2023)



**Figure 1.2 3 km area of influence for cumulative impacts of project**

Source: E Guard Study Team (2023)

In the current situation, the proposed project has separated into three stages. Construction stage, Operation stage, and Decommissioning of the proposed project. Potential environmental impacts during decommissioning are likely to be temporary.

*Negative impacts*

Potential impacts during operation include those related to air, water, waste, noise and vibration, odor, traffic, health and safety (occupational and community). The possible environmental impacts are identified based on the analysis of environmental baseline information and project activities.

*Positive impacts*

There may be some positive impacts in the socio-economic of surrounding environment of the proposed site due to the implementation of the project. Most of the identified impacts have been quantified to the extent possible on the professional judgment.

Apart from the positive and negative impacts, impacts are categorized as following,

*Impacts on Physical Environment*

- Impacts on Air quality
- Impacts on Water Quality
- Impacts of Waste
- Impacts of Noise and vibration
- Impacts of Odor
- Impacts on Transport

*Impacts on Social Environment*

- Impacts on Socio-economic
- Impacts on Occupational health and safety
- Impacts on Community health and safety

The impact and summary of mitigation measures at each phase are provided in the following table.

**Table 1.1 Impact and Summary of Mitigation Measures**

Impact	Summary of Mitigation Measures
<b>Construction Phase</b>	
Air Quality	Control air emissions by efficiently maintaining generators, vehicles, and machinery, implementing water sprinkling, temporary dust covers, and limiting vehicle speeds to 20km/h.
Water Quality	To reduce water contamination, avoid construction earthwork during rainy seasons, prevent disposal activities, and install dust nets to mitigate concrete particle dispersion during polishing and paving.
Waste	<ul style="list-style-type: none"> <li>• Construction waste should dump on temporary site then dispose.</li> <li>• Separate Waste and dispose to local waste collection services.</li> <li>• Waste water dispose from fuel shop should treated and dispose.</li> </ul>
Noise and Vibration	<ul style="list-style-type: none"> <li>• Avoid nighttime work as much as possible</li> <li>• Identify on noise and vibration vulnerable areas before construction</li> <li>• Regularly maintain vehicles to minimize noise from engines and exhaust systems.</li> </ul>
Soil Quality	<ul style="list-style-type: none"> <li>• Before construction, conduct soil investigations to prevent landslides.</li> <li>• Use safe design methods for drainage systems and retaining walls.</li> <li>• Protect critical infrastructures from landslide hazards.</li> <li>• Place temporary dumping areas in impermeable ground.</li> <li>• If accidentally spill oil, clean it up immediately.</li> </ul>
Traffic	<ul style="list-style-type: none"> <li>• Avoid rush hour for construction vehicles logistic.</li> <li>• Make design for safety traffic within the fuel station.</li> <li>• Clearly mark pedestrian walkways and vehicle lanes with appropriate barrier and signage.</li> <li>• Promote the safety driving habits.</li> </ul>
Occupational Health and Safety	PPE wears during construction to prevent occupational health and safety issues.
<b>Operation Phase</b>	
Air Quality	Open burning of waste materials is prohibited. Plantations will be implemented to absorb greenhouse gases (GHG) and help fight pollution, particularly air pollution.

Water Quality	To prevent water contamination, set sedimentation ponds, provide temporary toilets, use leak-proof containers, maintain rainwater collection, and implement effective water drainage networks. Effective management of the effluent treatment plant is crucial to maintain acceptable wastewater disposal standards, especially for fuel stations.
Waste	Proper waste management will be taken into account according to the requirements and directions of the Dawei township development committee. Project activities should be conducted with the use of appropriate health and safety procedures for hazardous waste management in accordance with the regulatory requirement.
Noise and Vibration	Implement noise control devices for impact blasting activities, exhaust muffling for combustion engines, build noise enclosures for generators, and regularly maintain vehicles to minimize engine and exhaust noise.
Traffic	<ul style="list-style-type: none"> <li>• Develop and implement a comprehensive traffic management plan to minimize congestion.</li> <li>• Improve integration with other forms of public transportation to reduce traffic load.</li> <li>• Enhance road infrastructure leading to and from the terminal.</li> </ul>
Occupational Health and Safety	<ul style="list-style-type: none"> <li>• Provide health care facilities.</li> <li>• Trainings are provided for worker such as first aid, etc.</li> <li>• Appropriate PPE should provide during working.</li> <li>• Warning signs are ensured to set up through project site.</li> <li>• Medical support or transport should prepare in case of accidents and emergency.</li> </ul>
Fire Hazard	To prevent accidents, fire extinguishers, water tanks, drills, and evacuation plans are provided. Employees should attend fire prevention courses and be trained on cleaning procedures. Smoking is prohibited in all fuel station areas.
<b>Decommission Phase</b>	
Air Quality	During demolishing, water sprinkling shall be carried out to suppress fugitive dust during earthworks in demolishing work.
Water Quality	In order to reduce water contamination, demolishing earthwork should be avoided in the rainy season.
Waste	<ul style="list-style-type: none"> <li>• Demolishing waste should dump on temporary site then dispose.</li> <li>• Separate Waste and dispose to local waste collection services.</li> <li>• Waste water dispose from fuel shop should treated and dispose.</li> <li>• All the surplus materials and waste products arising from the demolition and site clearance shall be disposed of in accordance with relevant requirements.</li> </ul>
Noise and Vibration	<ul style="list-style-type: none"> <li>• Avoid nighttime work as much as possible</li> <li>• Identify on noise and vibration vulnerable areas</li> </ul>

	<ul style="list-style-type: none"> <li>• Regularly maintain vehicles to minimize noise from engines and exhaust systems.</li> </ul>
Soil Quality	<ul style="list-style-type: none"> <li>• Before decommission, conduct soil investigations to prevent landslides.</li> <li>• Use safe demolishing methods</li> <li>• Place temporary dumping areas in impermeable ground.</li> <li>• If accidentally spill oil, clean it up immediately.</li> </ul>
Traffic	<ul style="list-style-type: none"> <li>• Avoid rush hour for construction vehicles logistic.</li> <li>• Make design for safety traffic within the fuel station.</li> <li>• Clearly mark pedestrian walkways and vehicle lanes with appropriate barrier and signage.</li> <li>• Promote the safety driving habits.</li> </ul>
Occupational Health and Safety	The project aims to enhance safety, work environment, and social welfare for workers, reducing occupational health risks, and requiring PPE wear during decommission periods.

The Environmental Monitoring and Management plan for different phases of the project will also help minimize or avoid the cumulative impacts. The Environmental Management Plan (EMP) of proposed project was prepared by using the finding of potential environmental impacts during construction phase, operation phase, and decommission phase. The objective of Environmental Management Plan is to apply as guideline for environmental and social activities. Five main sections are provided in this Environmental Management Plan of the project.

Monitoring will be conducted to ensure compliance with regulatory requirements as well as to evaluate the effectiveness of operational controls and other measures intended to mitigate the potential impacts. The proposed project will be monitored through a well-defined Environmental Monitoring Program. This will be done by direct measurement of parameters related to environmental quality, emissions, discharges, etc.

The first consultation meeting was held on May 5, 2023 with various relevant stakeholders at the city hall of Dawei township. The second consultation meeting was held on September 5, 2023 at the city hall of Dawei township. The consultation helped the project to gather information on potentially affected people, and on potential data gaps and how these can be closed out in the EIA report. Consultation meeting involved public meetings with a range of stakeholders in Dawei township including Dawei GADs, village administrators, related government departments, local communities and community representative. The meeting minutes and photos from the consultation meeting are provided.

Consultation Activities are done in 5th May, 2023 for First Stakeholder Meeting at City Hall, Dawei Township and Second Public Consultation Meeting is held on 5th September, 2023 at same hall. The main purpose of stakeholder meeting is to present the project information to local government, village administrators, local communities and other interested parties, to gather concerns and suggestions from stakeholders, to ask Key Informant Interview, to conduct household social survey and to collect response from attendances. Summaries of Comments

Received during Stakeholders Engagement are described detail as question and answers sections.

The Environmental Impact Assessment (EIA) for bus terminal and commercial complex in Dawei City, Myanmar, aims to identify major environmental impacts during construction, operation, and decommissioning phases, in compliance with the Environmental Conservation Law and procedures. The proposed project's air quality, noise, and vibration levels are within acceptable standards set by WHO guidelines and NEQG emission standards, according to data interpretation. As the proposed project area is the agricultural land, there has no soil contamination. Moreover, it may not affect biodiversity because there has no important species in the vicinity of the project site. The proposed project will monitor water quality during construction and operation, ensuring no impact on surface water quality. Mitigation measures include safety awareness training, first aid, and personal protective equipment due to there has risks related to occupational health and safety. On the other hand, employment opportunities are created for locals in residential areas. In conclusion, the environmental monitoring plan prepared to address residual impacts during operation phase. The proposed mitigation measures will also ensure good environmental management in the project area.

## 2. INTRODUCTION

This Environmental Impact Assessment (EIA) study report is for a bus terminal and a commercial complex development project proposed by Khant Shwe Pyi Co., Ltd. The report is prepared in compliance with the environmental conservation law and procedures (2015) under the Environmental Conservation Department (ECD).

Environmental Impact Assessment (EIA) aims to ensure effective compliance and governance concerning the environment, whereas simultaneously focusing on key issues such as stakeholders' empowerment, providing access to relevant and concise information to enable informed decision-making.

The specific objectives of this study are to identify the major impacts that may arise from the activities of the proposed project on natural environment and surrounding environment of the project area, describe the mitigation measures to minimize these impacts, prepare and implement Environmental Management Plan for the project.

Khant Shwe Pyi selected an independent third-party environmental services provider, E Guard Environmental Services Co., Ltd., to undertake the Environmental Impact Assessment (EIA) study work for the project. Environmental Conservation Department (ECD) (Naypyidaw) has approved the third-party selection with EIA-1/4/Opinion (TP-N) (2040/2023)

### 2.1. Description of Project Proponent

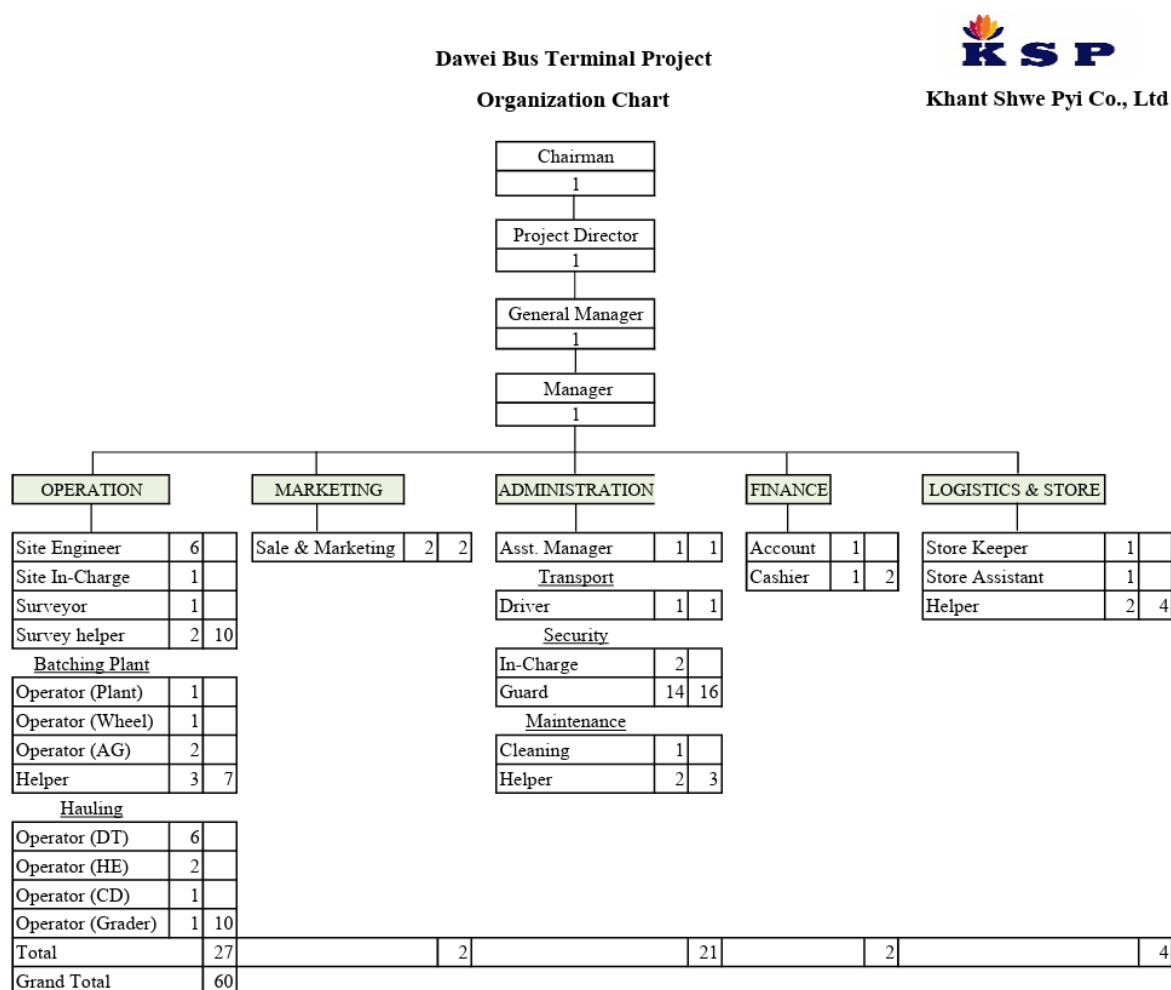
The proposed project is the 100% local investment by Khant Shwe Pyi Co., Ltd., a registered private company limited by shares. The main office of Khant Shwe Pyi Co., Ltd. is located at No. (5), Ma Gyi Gyi Road, San Chaung Township, Yangon and the company was established by 5 Directors with the registration number (102548493). The company is doing the excavation of jade and jewelry and importation of Diesel, machines, vehicles, and accessories from foreign countries.

Khant Shwe Pyi Co., Ltd alone is investing 100% investment in Dawei bus terminal and commercial complex project which is located on the 20 acres at field number (104), Tha Byay Chaung village, Dawei township, Dawei district, Tanintharyi Region. When the construction starts in 2022, (73) permanent local staffs and 200 temporary workers perform the operation activities. By prioritizing local people, this initiative will create employment opportunities, leading to an improvement in the region's human resources.

**Table 2.1 Project Proponent Description**

Project Name	Dawei Bus Terminal and Commercial Complex Project
Proponent's Contact Name	U Zaw Bo Khant
Citizenship	Myanmar
Name of Principle Organization	Khant Shwe Pyi Co., Ltd.
Company Registration Numbers	102548493

Type of Business	Bus Terminal
Project Address (Dawei)	Field number (104) Tha Byay Chaung village, Dawei City, Dawei District, Thanintharyi Region, Myanmar.
Office Address (Yangon)	No.5, Ma Kyee Kyee St., San Chaung Tsp., Yangon Region, Myanmar
Period of Project Site (Year)	2021-2023
Contact Person	U Zaw Bo Khant
Contact info	09-5527999 kobobo001@gmail.com



**Figure 2.1 Organization Chart of Khant Shwe Pyi Co., Ltd**

Source: Khant Shwe Pyi Co., Ltd



## 2.2. List the Environmental and Social Experts

Environmental Impact Assessment (EIA) for the Dawei Bus terminal and commercial complex project is prepared by E Guard Environmental Services Co., Ltd. The environmental study was carried out by the project team members listed below and the summary for each team member's responsibilities during study period.

Established in July 2013, "E Guard" has evolved into a prominent third-party Environmental Impact Assessment (EIA) consultancy firm, making significant strides in the field of environmental services. Registered with the Directorate of Investment and Company Administration (DICA), "E Guard" proudly stands as a recognized and reputable organization committed to fostering sustainable development through responsible environmental practices. As a licensed third-party consultancy organization accredited by the Environmental Conservation Department (ECD), "E Guard" plays a pivotal role in ensuring that projects adhere to stringent environmental standards. The firm's third-party consultant license no. EIA\_CO(A)001 2023 was issued on 29 December 2023 with 57 Areas of Expertise. Thus, it is providing comprehensive EIA services positioned as a trusted advisor, offering invaluable insights into the potential environmental impacts associated with diverse projects across various sectors.

### **E Guard Environmental Services Co., Ltd.**

Company Name	E Guard Environmental Service Co., Ltd.
[DICA]Company Registration No.	110487223 2022-2023 (Ygn)
[ECD] Consultant Registration No.	616/2015
Contact Address	No. (145- A2- 3), Thiri Mingalar Street, Ward No. (4), 8 Mile, Mayangone Township, Yangon 11062, Myanmar.
Telephone Number	+95 9797005160
E-mail	usoemin@eguardservices.com
Contact person	U Soe Min Team Leader 09 797005160

List of E Guard team members who are involved in preparing, revising and updating the report is listed below with their areas of expertise and their areas of expertise and responsibilities during study period.

**Table 2.2 Key Environmental and Social Consultants for the Project**

No.	Name	Position	Registration License No. by ECD	Transitional Consultant Registration Numbers	Role
1.	E Guard Environmental Services	EIA Organization	EIA-CO (A) 001/2023	0028	
2.	U Soe Min	Team Leader (Director)	EIA-C 031/2023	0000067	Hydrology, Conservation of Surface Water and Ground Water Water pollution, prevention control, monitoring, and impact prediction
3.	Daw May Pwint Phoo	Main Consultant (Associate Consultant)	EIA-AC 007/2023	0000369	Overall responsibility for EIA project report preparation General Environmental Management Risk Assessment and Management Traffic Management Impact Identification and Analysis Formulating mitigation measures and Environmental Management Plan
4.	Daw Thein Mwe Khin	Team Member (Senior Consultant)	EIA-C 006/2023	0000104	Field survey analysis and report for social impact Preparation for social data results

					Valuation and analysis from an economic perspective
5.	Daw Thet Mhue Khin	Team Member (Senior Consultant)	EIA- C 054/2024	-	Water resource engineering Infrastructure Waste management
6.	U Aung Si Thu Thein	Team Member (Consultant)	EIA-AC 006/2023	0000281	Natural Resource Management Biodiversity Land use
7.	U Si Thu Aung	Team Member (Consultant)	EIA-AC 094/2024	0000261	Water pollution control Hydrology and impact analysis
8.	U Thaw Tar Htun	Team Member (Consultant)	EIA-C 007/2023	0000267	Prevention and control of air pollution Meteorology, air quality assessment, and prediction Prevention, control, and impact prediction related to water pollution
9.	U Htet Aung	Team Member (Assistant Consultant)	EIA-AC 095/2024	0000379	Geology and Soil
10.	Daw May Tun Win	Team Member (Assistant Consultant)	EIA-AC 003/2023	0000380	Legal Analysis
11.	U Aung Moe Oo	Team Member (Assistant Consultant)	EIA-AC 010/2023	0000336	Noise and Vibration and impact analysis

12.	U Nyein Chan Aung	Team Member (Assistant Consultant)	EIA-AC 004/2023	0000376	General Environmental Management
13.	U Aung Zayar Wint	Team Member (Assistant Consultant)	EIA-AC 008/2023	0000377	Primary data collection and analysis (Air, Water, Noise and vibration)  Environmental quality report preparation
14.	Daw Moe Cho Thinn	Team Member (Environmen tal Specialist)	Supporting Expert	0000378	Facilitation of meeting

*Notes: Although the lists of study team with TCR number have been described in the first version report, most of the consultants who prepare this scoping report have been received registration licenses and E guard environmental services also received organization license on 22<sup>nd</sup> December, 2023. Moreover, E guard environmental services has got permission to perform 132 out of 157 project types. Therefore, the lists of study team with registration license number by ECD are described in the revised version report.*

## **Responsibilities**

### **U Soe Min (Team Leader)**

U Soe Min is a team leader responsible for successful implementation of the environmental related projects overseeing and coordinating the various aspects of the EIA process. He leads the overall planning, organization, and execution of the EIA process, and develops project timelines, milestones, and deliverables. As a team leader he; assembles and manages a multidisciplinary team of experts, including ecologists, engineers, social scientists and other specialists fosters effective communication and collaboration among team members oversees the quality of work produced by the EIA team facilitates stakeholder meetings, addresses concerns and facilitates communication between the project proponent and stakeholders oversees the preparation of the EIA report, ensuring it accurately reflects the findings of the assessment reviews and approves the final report.

His professional consultant registration number is EIA-C 031/2023. He is a civil, water resources and environmental engineer. He holds Bachelor of Civil Engineering Degree from Rangoon Institute of Technology (RIT, Yangon) and Master of Environmental Engineering from Asian Institute of Technology (AIT, Bangkok). As a civil-water resources engineer, he was involved in water resources development projects from investigation and feasibility studies to planning, design and construction. He had experience of local and international practices on construction management, contractual documentations, and establishment of environmental data acquisition systems. He had worked as a local consultant for various technical assistant project of ADB and World Bank supporting capacity-building projects in strengthening

environmental safeguard systems in Myanmar from 2015 to 2020. Taking the role of a principal consultant at E Guard Environmental Services Co., Ltd., he is leading the local consultant team and collaborating with international consultant firms in doing EIA study works in Myanmar.

**Daw May Pwint Phoo (Main Consultant)**

Daw May Pwint Phoo is an Environmental Consultant who plays a critical role in the process of assessing the potential environmental impacts of the proposed project. Her involvement in this project includes: Work with project proponents and stakeholders to define the scope and boundaries of the EIA study Identify key environmental components and potential impacts to be considered Gather comprehensive baseline data on the existing environmental conditions in and around the project area. Assess factors such as air and water quality, biodiversity, soil conditions, and socio-economic aspects. Evaluate potential environmental, social, and economic impacts of the proposed project. Identify both positive and negative effects on the environment and affected communities. Explore and assess alternative project designs or locations that may minimize adverse impacts. Provide recommendations for the most environmentally sustainable options. Ensure adherence to relevant environmental laws, regulations, and standards. Navigate the permitting process and liaise with regulatory authorities as needed. Facilitate public consultations and engage with stakeholders to gather input and address concerns. Foster communication between the project proponent and the affected communities. Compile the findings of the EIA into a comprehensive report. Clearly communicate potential impacts, mitigation measures, and alternatives to decision-makers and stakeholders. Provide expert advice to the project proponent on environmentally responsible practices and measures. Assist in the development of strategies to minimize or offset environmental impacts. Identify and assess potential risks associated with the project and propose risk management strategies. She is expertise of this project for Land use, Hydrology, Waste Management, Risk Assessment and Traffic Management.

**Daw Thein Mwe Khin (Senior Consultant)**

Daw Thein Mwe Khin is a Senior Consultant, who received her Master Degree in Regional and Rural Development Planning from Asian Institute of Technology in 2019 and Bachelor Degree in Forestry from the University of Forestry in 2013. She worked as a social expert in Yangon Outer Ring Road Construction Project, Hanthawaddy New International Airport Development Project and Wataya Bridge Construction project. She had experience in working as a survey team leader for YCRL Updating Project and Dry Zone Water Supply Project in 2014, 2015 and 2016 respectively. She had her experiences in working as a core team member of the social team who did the preparation of RAP for Construction of Kyarkalay Bypass and 2 Bridges and RAP for Construction of Thaton Bypass and 2 Bridges in 2014. In addition, she has a project leader role in the preparation of four IEE reports for various types of projects, tender preparation, many social surveys, FGDS for various EIA/IEE/EMP projects during around five years of working life in the EIA field. She also studied the socioeconomic impact of rural electrification on the well-being of rural households in central dry zone, Myanmar as her master thesis in 2018. She will be involved as a social team leader and social expert in this project.

**Daw Thet Mhue Khin (Senior Consultant)**

Daw Thet Mhue Khin is a senior consultant, who holds Master of Civil Engineering which specialized in Environmental Engineering from Yangon Technological University, Yangon in 2014. She is familiar with not only conducting reconnaissance surveys but also environmental impact assessment. And also, she has total 7-year experiences including master research “Water Supply Network Analysis for Minbu District”, over five year’s experiences in water pollution control waste management, risk assessment, environmental management plans and systems, occupational health safety and environment, civil engineering and data interpretation. She is also a Registered Engineer (Water Supply and Sanitation) at Myanmar Engineering Council and a Member of Myanmar Environmental Assessment Association. Also, she had worked as Civil Engineer at CS Construction and Geotechnical Pte. Ltd. for over three years in Singapore. She is responsible for water resource engineering, infrastructure, and waste management in this report.

**U Aung Si Thu Thein (Consultant)**

U Aung Si Thu Thein is a consultant, who received his Bachelor Degree in Forestry from the University of Forestry in September, 2015. He also received Post Graduate Diploma in Geographic Information Systems from the Dagon University in February, 2018. Moreover, he pursued his Master of Science Degree in Natural Resources Management from the Asian Institute of Technology, Thailand in May, 2020. He has more than five years-experience in preparation of Environmental Management Plan and Initial Environmental Examination Reports for various development projects as a Lead Consultant and in participation many Environmental Impact Assessment and Resettlement Action Plan projects for development projects in Myanmar. On the other hand, he has two years-experience in research conducting with regards to impacts assessment of natural resources management systems on livelihood of local people. Moreover, he has many experiences in communication with clients, government authorities and local people, stakeholder engagements and public consultation meetings conduction and socio-economic survey. His expertise for this project includes natural resources management, biodiversity and land use.

**U Si Thu Aung (Consultant)**

U Si Thu Aung is a Consultant at E Guard Environmental Services Co. Ltd. He gained his Civil Engineering Degree from Thanlyin Technological University in 2014. He also pursued his Master Degree in Environmental Engineering at Yangon Technological University in 2018 while he started his career with E-Guard. He is also a Registered Engineer (Water Supply and Sanitation) at Myanmar Engineering Council. Through his time at E-Guard, he has been involved in the preparation of ESIA, related reports and in negotiation with relevant stakeholders such as Report Writing, Stakeholders Engagement, Secondary Data Collection, Site Investigation, Impact Assessment, Mitigation Measures and Environmental Management Plan, etc. He has worked in Myanmar EIA Field and in a range of different local and international projects about five years. His quest for seeking out new sources and making friends for data collection led to him assist his primary works and provide information to the organization and colleagues. Currently he is working in the organization as a motivated and

collaborative team player. He is responsible for water pollution control, hydrology and impact analysis for this report.

#### **U Thaw Tar Htun (Consultant)**

U Thaw Tar Htun is employed as a consultant at E Guard Environmental Services Co., Ltd., where he has been involved in the Environmental Impact Assessment (EIA) project reporting since 2018. He holds a bachelor's degree in Civil Engineering from Taunggyi Technological University, obtained in 2011, and a master's degree in Engineering (International Graduate Program in Environmental and Water Resources Engineering) from Mahidol University in Thailand, completed in 2016. Over the course of nine years, he has amassed considerable experience in various environmental fields, including his research conducted during his master's degree program titled "Mathematical Modelling of the Wastewater Collection System in Cha-Am Municipality using PCSWMM." This research was presented at the 3rd International Conference on Civil, Biological, and Environmental Engineering held in Phuket, Thailand.

During his career, he has been actively involved in numerous projects pertaining to Environmental Impact Assessment studies, Impact Identification and Analysis, formulation of mitigation measures, and the development of Environmental Management Plans. From August 2012 to October 2017, he served as a Sub Assistant Engineer in the Engineering Department (Water and Sanitation) at the Naypyitaw Development Committee, Naypyitaw.

Within the team conducting this environmental study, U Thaw Tar Htun's primary contributions include the Identification of Impacts and Analysis, formulation of Mitigation Measures, and the development of an Environmental Management Plan with specific focus on the following areas:

- Prevention and control of air pollution
- Meteorology, air quality assessment, and prediction
- Prevention, control, and impact prediction related to water pollution

#### **U Htet Aung (Assistant Consultant)**

U Htet Aung is an Assistant Consultant, received Master Degree with Petroleum Geology from Yangon University in 2015. He has three years experiences in data collections and report writing. He is currently preparing environmental reports, conducting public consultation and information gathering processes. He was participated in the preparation of Environmental Impacts Assessment (EIA) Report of Yangon Outer Ring Road (YORR) Construction Project and Nyaungdon Bank Protection and Rehabilitation Project. He was working on Data Analysis and Impact Assessment, Stakeholder engagement and Public Consultation Meeting and Technical Report Writing of 40MW Ground Mounted Solar Power Plant and 30MW Belin Solar Power Plant EMP reports. His expertise for this project includes geology and soil.

#### **Daw May Thu Win (Assistant Consultant)**

Daw May Thu Win is working as an Assistant Consultant in E-Guard Environmental Services Co., Ltd. She obtained her Bachelor degree in Law from East Yangon University (Tarwa) in 2018. She is currently assisting in preparing Laws, Rules, Regulations, Policies, Directions and

Notifications used for environmental reports, public consultations and information-gathering processes. As a legal expert, she has the responsibility of Legal study and analysis of this project. She will mainly contribute to the Policy, Legal and Institutional Framework Chapter of this EIA study.

**U Aung Moe Oo (Assistant Consultant)**

U Aung Moe Oo is an Assistant Consultant, who received Bachelor Degree in Chemical Engineering from Thanlyin Technological University in November 2016. He has almost six years-experiences in preparation of Environmental Management Plan and Initial Environmental Examination reports for various development projects and in participation many Environmental Impact Assessment and Resettlement Action Plan projects including Japan's ODA loan projects.

As the team member of this study, he assisted data collection for Environmental Quality (air, noise and vibration) data computing, and analyzing.

**U Nyein Chan Aung (Assistant Consultant)**

U Nyein Chan Aung is an Assistant Consultant, who received Bachelor Degree in Forestry from the University of Forestry and Environmental Sciences in November, 2016. He has almost five years-experiences in preparation of Environmental Management Plan and Initial Environmental Examination reports for various development projects and participation in Environmental Impact Assessment and Resettlement Action Plan projects in the field of reporting, conduction stakeholder engagement, biodiversity survey, social survey, RAP survey and site visiting. He has completed various trainings regard with environmental impact assessment and management, and GIS. He has main responsibilities that are stakeholder engagement and public consultation meeting.

**U Aung Zayar Wint (Assistant Consultant)**

U Aung Zayar Wint is an Assistant Consultant, who received Bachelor Degree of Forestry from University of Forestry and Environmental Science (UFES) in November, 2017. He also received Post Graduate Diploma in Environmental Impact Assessment and Environmental Management System from Yangon Technological University (YTU) in December, 2019. He has almost four years-experiences in monitoring the environmental quality, writing the environmental quality reports and project monitoring reports including Japan's ODA Loan Project. He also takes part in ISO document controlling of Environmental Quality Team. He has responsibility for environmental quality measurement, data analysis, and EQ report writing.

**Daw Moe Cho Thinn (Environmental specialist)**

Daw Moe Cho Thinn is an environmental specialist, who received Bachelor of Public of Administration from Yangon University of Economics. She also got Diploma in Accounting (UK) in 2019. She had experience in working as a volunteer recycling and upcycling trainer at HER (Heroines to Enable Recycling) project. She worked as a volunteer at media team of U-Report Myanmar Organization from 2019 to 2022. She did a research paper about Yangon Public Bus Transportation for her Bachelor Degree. She is currently working in social data analysis, data reporting, valuation and analysis from an economic perspective at E Guard



Environmental Services. Her contribution in this project is social data analysis, valuation and analysis from an economic perspective.

**U Khin Zaw Min (Surveyor)**

He is responsible for the onsite sampling and measurement, instrument calibration and maintenance, sample preservation and logistic arrangement, engagement with laboratory for analysis and acquiring analytical results for the laboratory.



**E Guard Environmental Services Co., Ltd.**

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**E-mail: [info@eguardservices.com](mailto:info@eguardservices.com)**

### 3. POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

#### 3.1. Overview of the Policy, Legal and Institutional Framework

This section reviews the relevant policies, national laws, regulations, legislations and institutional framework of Myanmar, National Environmental Quality (Emission) Guidelines, International standards, guidelines, and agreements relevant in the context of environmental and socio-economic aspect of the project. The project proponent understood and should compile in accordance with the followings:

##### *Overview of Myanmar Regulatory Framework*

Key ministries, agencies, and state-owned enterprises that have jurisdiction or are typically involved in environmental and social impact assessment related to the Project include the followings:

- (1) Ministry of Natural Resources and Environmental Conservation (MONREC)
- (2) The Environmental Conservation Department (ECD)
- (3) Ministry of Transport and Communications
- (4) Ministry of Electric Power
- (5) Ministry of Energy
- (6) Ministry of Industry
- (7) Ministry of Labor
- (8) Ministry of Health and Sports
- (9) Ministry of Construction

##### *Regulatory Framework for Environmental Assessment in Myanmar*

- (1) Constitution of the Republic of the Union of Myanmar (2008)
- (2) Myanmar Agenda 21 (1997)
- (3) National Sustainable Development Strategy (2009)
- (4) The Environmental Impact Assessment Procedure (2015)

#### 3.2. Policy and Legal Framework, including Existing Applicable Laws and Rules,

The project proponent understood and compile in accordance with the followings:

No.	Laws and Regulations	Relevant Articles	Commitments
1.	<b>National Environmental Policy of Myanmar (2019)</b>	Mission  Vision	<ul style="list-style-type: none"> <li>• To achieve a clean environment, with healthy and functioning ecosystems, that ensures inclusive development and wellbeing for all people in Myanmar</li> <li>• To establish national environmental policy principles for guiding environmental protection and</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			sustainable development and for mainstreaming environmental considerations into all policies, laws, regulations, plans, strategies, programs and projects in Myanmar
2.	<b>Constitution of the Republic of the Union of Myanmar (2008)</b>	Section 45  Section 390	The Union has proclaimed that it will protect and conserve the natural environment  Every citizen has the duty to assist the Union in carrying out the following matters:  a) Preservation and safeguarding of cultural heritages  b) Environmental Conservation  c) Striving for development of Human Resources  d) Protection and preservation of public property
3.	<b>The Environmental Conservation Law (2012)</b>	Objectives          Sub-section (o) of Section 7, Section 14, 15, 24, 25, 29	To construct a healthy and clean environment and to conserve natural and cultural heritage for the benefit of present and future generations; to maintain the sustainable development through effective management of natural resources and to enable to promote international, regional and bilateral cooperation in the matters of environmental conservation.  Project Proponent commits to-  • Pay the compensation for damages if the project will cause injuries to environment

No.	Laws and Regulations	Relevant Articles	Commitments
			<ul style="list-style-type: none"> <li>• Purify, emit, dispose and keep the polluted materials in line with the stipulated standards</li> <li>• Install or use the apparatus which can control or help to reduce, manage, control or monitor the impacts on the environment</li> <li>• Allow relevant governmental organization or department to inspect whether performing is conformity with the terms and condition included in prior permission, stipulated by the ministry, or not</li> <li>• Comply with the terms and conditions included in prior permission</li> <li>• Abide by the stipulations included in the rules, regulation, by-law, order, notification and procedure</li> </ul>
4.	<b>The Environmental Conservation Rules (2014)</b>	Rule 69 (a, b)	<p>Project Proponent commits to-</p> <ul style="list-style-type: none"> <li>• Avoid emit, discharge or dispose the materials which can pollute to environment, or hazardous waste or hazardous material prescribed by notification in the place where directly or indirectly injure to public</li> <li>• Avoid performing to damage to ecosystem and the environment generated by said ecosystem</li> </ul>
5.	<b>The Environmental</b>	Paragraph 102 (a, b),103,104,105,106,	Project Proponent commits to-

No.	Laws and Regulations	Relevant Articles	Commitments
	<b>Impact Assessment Procedure (2015)</b>	107, 108, 109, 110, 113, 115, 117	<ul style="list-style-type: none"> <li>• Be liable for all adverse impacts caused by doing or omitting of project owner or contractor, sub-contractor, officer, employee, representative or consultant who is appointed or hired to perform on behalf of project owner</li> <li>• Support, after consultation with effected persons by project, relevant government organization, government department and other related persons, to resettlement and rehabilitation for livelihood until the effected persons by the project receiving the stable socio-economy which is not lower than the status in pre-project</li> <li>• Implement all commitments of project and conditions included in EMP. Moreover, the project proponent has to be liable for contractor and sub-contractor who perform on behalf of him/her have to fully abide by the relevant laws, rules, this procedure, EMP and all conditions</li> <li>• Be liable and fully &amp; effectively implement all requirements included in ECC, relevant laws and rules, this procedure and standards</li> <li>• Inform the completed information, after specifying the adverse impacts caused</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			<p>by the project, from time to time</p> <ul style="list-style-type: none"> <li>• Monitor all adverse impacts in the pre-construction phase, construction phase, operation phase, suspension phase, closure phase and post-closure phase, moreover has to implement the EMP with abiding the all conditions included in ECC, relevant laws &amp; rules and this procedure</li> <li>• Submit, as soon as possible, the failures of his or her responsibility, other implementation, ECC or EMP. If dangerous impact caused by this failure or failure should be known by the Ministry the project proponent has to submit within 24 hours and other than this situation has to submit within 7 days from knowing it</li> <li>• Submit the monitoring report dually or prescribed time by Ministry in line with the schedule of EMP</li> <li>• Prepare the monitoring report</li> <li>• Show this monitoring report in public place such as library, hall and website and office of project for the purpose to know this report by public within 10 days from the date which the report is submitted to the Ministry. Moreover, has to</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			<p>give the copy of this report, by email or other way which way agreed with the asked person, to any asked person or organization</p> <ul style="list-style-type: none"> <li>• Allow inspector to enter and inspect in working time and if it is needed by Ministry has to allow inspector to enter and inspect in the office and work-place of project and other work-place related to this project in any time</li> <li>• Allow inspector to immediately enter and inspect in any time if it is emergency or failure to implement the requirements related to social or environment or caused to it</li> <li>• Allow inspector to inspect the contractor and sub-contractor who implement on behalf of project</li> </ul>
6.	<b>National Environmental Quality (Emission) Guidelines (2015)</b>	Objectives	The project proponent has to emit, discharge or dispose in line with the standards stipulated in said guideline.
7.	<b>National Sustainable Development Strategy (2009)</b>		The concept of sustainable development was developed by the Brundtland Commission Report (1987) which defined sustainable development as “development which meets the needs of the present without compromising the ability of future generation to meet their own needs’.

No.	Laws and Regulations	Relevant Articles	Commitments
			<p>At the United Nations Conference on Environment and Development (UNCED) held in Rio De Janeiro, Brazil in 1992, governments were urged to pursue the National Sustainable Development Strategy (NSDS). Johannesburg Plan of Implementation (JPOI) adopted in 2002 at the World Summit on Sustainable Development (WSSD) also called upon countries to take immediate steps to make progress in the formulation and elaboration of the NSDS and begin their implementation by 2005. The United Nations Department of Economic and Social Affairs (UN-DESA) lucidly defines National Sustainable Development Strategy as “a coordinated, participatory and interactive process of thoughts and actions to achieve economic, environmental and social objectives in a balanced and integrated manner at the national and local levels.</p>
8.	<b>National Land Use Policy (2016)</b>	<b>Objectives</b>	<ul style="list-style-type: none"> <li>• To promote sustainable land use management and protection of cultural heritage areas, environment, and natural resources in the interest of all people in the country;</li> <li>• To strengthen land tenure security for the livelihood’s improvement and food security of all people in both urban and rural areas of the country;</li> <li>• To recognize and protect customary land tenure</li> </ul>



No.	Laws and Regulations	Relevant Articles	Commitments
			<p>rights and procedures of the ethnic nationalities;</p> <ul style="list-style-type: none"> <li>• To develop transparent, fair, affordable and independent dispute resolution mechanisms in accordance with the rule of law;</li> <li>• To promote people centered development in land resources and accountable land use administration in order to support the equitable economic development of the country;</li> <li>• To develop a National Land Law in order to implement the above objectives of the National Land Use Policy.</li> </ul>
9.	<b>The Myanmar Investment Law (2016)</b>	<p>Objectives</p> <p>Sub-section (d) of Section 50, Sub-section (b, c, d) of Section 51, Sub-section (g, i, j, k, l, m, o, p, q) of Section 65, Section 73</p>	<p>To ensure the appointing of employees, fulfilling the rights of employees, avoiding any injury to environment, social and cultural heritage, insure the prescribed insurance in line with the above law.</p> <p>Project Proponent commits to-</p> <ul style="list-style-type: none"> <li>• Register the land lease contract at Registration of Deeds Office in accordance with the Registration of Deeds Law</li> <li>• Appoint the nationalities in the various levels of administrative, technical and expert work by the arrangement to develop their expertise</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			<ul style="list-style-type: none"> <li>• Appoint the nationalities only in normal work without expertise</li> <li>• Appoint either foreigner or nationality with the appointment agreement in accord with the law</li> <li>• Comply with the international best practices, existing laws, rules and procedures to not damage, pollute, and injure to environment, cultural heritage and social</li> <li>• Close the project after paying the compensation to the employees in accord with the existing laws if violates the appointment agreement or terminate, transfer or suspend the investment or reduce the number of employees</li> <li>• Pay the wages or salary to the employees in accord with the laws, rules, order and procedures in the suspension period</li> <li>• Pay the compensation or injured fees to the respected employees or their inheritors if injury in or loss of part of body or death caused by work</li> <li>• Stipulate the foreign employees to respect the culture and custom and abide by the existing laws, rules, orders, and directives</li> <li>• Abide by labor laws</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			<ul style="list-style-type: none"> <li>• Pay the compensation, to the injured person for damages if damage to environment or socio-economy is occurred by misuse of project</li> <li>• Inspect in anywhere of project if Myanmar Investment Commission inform to inspect the project</li> <li>• Obtain the permission of MIC before EIA process and report back this process to Myanmar Investment Commission</li> <li>• Insure the prescribed insurance by rules</li> </ul>
10.	<b>The Law Amending the Myanmar Investment Law (2019)</b>		Only the terms of the ministry have been changed
11.	<b>The Myanmar Investment Rules (2016)</b>	Rule 202, Rule 206 Sub-Section (a) of Section 51, Rule 212	<p>Project Proponent commits to-</p> <ul style="list-style-type: none"> <li>• Comply with the conditions of the permit issued by MIC and applicable laws when making the investment</li> <li>• Assist while negotiating with the authority for settling the grievance of the local community which has been affected due to investment</li> <li>• Submit the passport, expertise evidence or document of degree and profile to the MIC office for approval if decide to appoint a foreigner as a senior management, technician expert or consultant</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			<ul style="list-style-type: none"> <li>• Ensure the relevant insurance out of the following types of the insurance at any insurance business entitled to carry out insurance business within the Union based on the nature of the business:               <ul style="list-style-type: none"> <li>(a) Property and Business Interruption Insurance;</li> <li>(b) Engineering Insurance;</li> <li>(c) Professional Liability Insurance;</li> <li>(d) Bodily Injury Insurance;</li> <li>(e) Marine Insurance; or</li> <li>(f) Workmen Compensation Insurance;</li> <li>(g) Life Insurance;</li> <li>(h) Fire Insurance.</li> </ul> </li> </ul>
12.	<b>The Law Amending the Myanmar Investment Rules (2018)</b>	Section 15 (Instead of section 212 of The Myanmar Investment Rules (2016))	<p>The rule 212 of Myanmar Investment Rules shall be replaced as follows;</p> <p>When the project proponent obtained the permit or tax exemption or relief has to ensure the relevant insurance out of the following types of the insurance at any insurance business entitled to carry out insurance business within the Union based on the nature of the business;</p> <ul style="list-style-type: none"> <li>(a) Property and Business Interruption Insurance;</li> <li>(b) Engineering Insurance;</li> <li>(c) Professional Liability Insurance;</li> <li>(d) Bodily Injury Insurance;</li> <li>(e) Marine Insurance; or</li> <li>(f) Workmen Compensation Insurance;</li> <li>(g) Life Insurance;</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			(h) Fire Insurance
13.	<b>The Myanmar Insurance Law (1993)</b>	Objectives  Section 15, 16	The project can cause the damages to the environment and injuries to public so to ensure the needed insurances are insured at Myanmar Insurance.  Project Proponent commits to- <ul style="list-style-type: none"> <li>• Use the owned vehicles the project owner has to insure the insurance for injured person</li> <li>• Ensure the insurance to compensate for general damages because the project may cause the damages to the environment and injury to public</li> </ul>
14.	<b>Prevention of Hazard from Chemical and Related Substances Law (2013)</b>	Objectives  Sub-section (a, b) of Section 15, Sub-Section (a, b, c, d, e, f, g, h, i) Section 16, 17, 22, Sub-section (a, c) of Section 27	To ensure to use the hazardous chemical and related substances safely and safety for the employees. Moreover, safety in carrying the hazardous chemical and related substances and storage place of it. If it is needed to train how to use the safety dresses which provided to the employees with free of charges. Insure to compensate for injury to person or damage to environment. The project has to be inspected for safety use of hazardous chemical and related substances before starting the project.  Project owner has to- <ul style="list-style-type: none"> <li>• Be inspected for the safety and resistance of the machinery and equipment by the respective Supervisory Board and Board of</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			<p>Inspection before starting the business</p> <ul style="list-style-type: none"> <li>• Assign the employees, who will serve with the hazardous chemical and substances, to attend the trainings on prevention of hazardous chemical and substances in local or abroad</li> <li>• Abide by the conditions included in the license</li> <li>• Abide by and assign to the employees who serve in this work to abide by the instructions for safety in using the hazardous chemical and related substances</li> <li>• Arrange the enough safety equipment in the work-place and provide the safety dresses to the employees who serve in this work with free of charge</li> <li>• Train, in work-place my arrangement, the know-how to use the occupational safety equipment, personal protection equipment and safety dresses systemically in the work-place</li> <li>• Allow the receptive Supervisory Board and Board of Inspection to inspect whether the hazard may be injured to health of human or animal or damaged to environment</li> <li>• Assign the healthy employees who have</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			<p>obtained the recommendation that is fit for this work after taken medical check- up and keep systematically the medical records of employees</p> <ul style="list-style-type: none"> <li>• Inform the copy of storage permission for hazardous chemical and related substances to the relevant township administrative office</li> <li>• Obtain the approval with instructions of relevant fire force before starting the work if the project will use the fire hazard substances or explosive substances</li> <li>• Transport only the limited amount of the chemical and related substance in accord with the prescribed stipulations in local transportation</li> <li>• Insure, in accord with the stipulations, to pay the compensation if the project cause injury to person or animals or damage to environment</li> <li>• Abide by the conditions included in the registration certificate. Moreover, will abide by the orders and directives issued by the Central Supervisory Board from time to time</li> <li>• Classify the level of hazard to protect it in advance according to the properties of</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			chemical and related substances <ul style="list-style-type: none"> <li>• Provide the safety equipment, personal protection equipment to protect and reduce the accident and assign to attend the training to use the equipment systematically</li> </ul>
15.	<b>The Public Health Law (1972)</b>	Objectives  Section 3, 5	To ensure the public health include not only employees but also resident people and cooperation with the authorized person or organization of health department.  The Project Proponent commits to- <ul style="list-style-type: none"> <li>• Abide by any instruction or stipulation for public health</li> <li>• Allow any inspection, anytime, anywhere, if necessary</li> </ul>
16.	<b>The Prevention and Control of Communicable Diseases Law (1995)</b>	Objectives  Sub-section (a) of Section 3 Clause (9), 4, 9, 11	To ensure the healthy work environment and prevention the communicable diseases by the cooperation with the relevant health department.  The Project Proponent commits to- <ul style="list-style-type: none"> <li>• Build the housing in line with the health standards, distribute the healthful drinking water &amp; using water and arrange to systematically discharge the garbage &amp; sewage</li> <li>• Abide by any instruction or stipulation by Department of health and Ministry of Health</li> <li>• Inform promptly to the nearest health department or</li> </ul>



No.	Laws and Regulations	Relevant Articles	Commitments
			<p>hospital if the following are occurred</p> <ul style="list-style-type: none"> <li>(a) Mass death of animals included in birds or chicken;</li> <li>(b) Mass death of mouse;</li> <li>(c) Suspense of occurring of communicable disease or occurring of communicable disease;</li> <li>(d) Occurring of communicable disease which must be informed</li> </ul> <ul style="list-style-type: none"> <li>• Allow any inspection, anytime, anywhere if it is need to inspect by health officer</li> </ul>
17.	<b>The Law Amending the Prevention and Control of Communicable Disease Law (2011)</b>	Section 7 (Instead of section 9 of The Prevention and Control of Communicable Disease Law (1995))	<p>Section 9 of the Prevention and Control of Communicable Diseases Law shall be substituted as follows;</p> <p>“When the head of the household, any member of the household or any entrepreneur knows the occurrence of any of the following matters, he shall report immediately to the nearest health department or hospital;</p> <p>Enmasse death of animals including</p>
18.	<b>The Control of Smoking and Consumption of Tobacco Product Law (2006)</b>	<p>Objectives</p> <p>Sub-section (a, b, c, d) of Section 9</p>	<p>To ensure the creation of smoking area and non-smoking area in the power plant area for health and control of smoking.</p> <p>The project proponent commits to-</p> <ul style="list-style-type: none"> <li>• Keep the caption and mark referring that is non-smoking area in the project area</li> <li>• Arrange the specific place for smoking in the project</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			<p>area and keep the caption and mark in accordance with the stipulations</p> <ul style="list-style-type: none"> <li>• Supervise and carry out the measures so that no one shall smoke at the non-smoking area</li> <li>• Allow the inspection of supervisory body in the power plant area</li> </ul>
19.	<b>The Occupational Health and Safety Law (2019)</b>	<p>Objectives</p> <p>Sub-section (e, l) of Section 26, Sub-section (a, d, e) of Section 30</p>	<p>To effectively implement measures related to safety and health in every industry and to set occupational safety and health standards.</p> <p>The project proponent has to-</p> <ul style="list-style-type: none"> <li>• Provide adequate and relevant personal protective equipment to workers free of charge and make them wear it during work so as not to expose workers to any serious occupational diseases or hazards</li> <li>• Arrange and display occupational safety and health instructions, warning signs, notices, posters, and signboards</li> <li>• The worker shall wear or use at all times any protective clothes, equipment and tools provided by the employer for the purpose of safety and health</li> <li>• The worker shall proper and systematic use any equipment and tools, machines, any parts of the machines, vehicles,</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			<p>electricity and other substances being used at the workplace</p> <ul style="list-style-type: none"> <li>The worker shall take reasonable care for the safety and health of himself/ herself and of other persons who may be affected by his/ her acts or omissions at work</li> </ul>
20.	<p><b>The Vehicle Safety and Motor Vehicle Management Law (2020)</b></p>	<p>Objectives</p> <p>Sub-section (a) of Section 9, Sub-section (c) of Section 12, Sub-section (r) of Section 14, Sub-section (a) of section 18, Sub-section (g) of section 81</p>	<p>When the construction period and if necessary, in operation and production period for the all vehicles.</p> <p>The project proponent has to-</p> <ul style="list-style-type: none"> <li>Comply with the restrictions and restrictions on the use of domestic vehicles by the Ministry of Transport and Communications with the approval of the Union Government</li> <li>Comply with safety, environmental regulation, standards and regulations regarding the initial registration of vehicles issued by the Ministry</li> <li>Drive at the speed limit set by the Road Transport Directorate to ensure the safe movement of vehicles on public roads</li> <li>Maintain the vehicles in accordance with the standards set by the Department so that it can be driven safely</li> <li>Not to carry or transport hazardous materials in public</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			places in accordance with the regulations
21.	<b>The Vehicle Safety and Motor Vehicle Management Rules (2022)</b>	Chapter 9 and 10	The project proponent has to comply with the Commercial Vehicle Regulations in Chapter (9) and the Motor Vehicle Traffic Regulations in Chapter (10).
22.	<b>The Electricity Law (2014)</b>	Objectives  Sub-section (b) of Section 10, Section 18, Sub-section (a) of Section 21, 22, Sub-section (a, b) of section 26, Section 27, 40, 68	To ensure the compliance with the conditions of permission for productions of electricity, abiding by any stipulation, implementing with the best practices and paying compensation in line with above law. It stipulated the following obligations of the project proponent.  The project proponent commits to- <ul style="list-style-type: none"> <li>• Implement the project with the best practices to reduce the damages on the environment, health and socio-economy, also will pay compensation for the damages and will pay the fund for environmental conservation</li> <li>• Take the certificate of electric safety, issued by the chief-inspector, before the commencement of power generation</li> <li>• Be liable for damages to any person or enterprise by failure to abide by the quality standards or rules, regulation, by-law, order and directive issued</li> <li>• Be liable for damages to any person or enterprise by negligence of project owner</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			<ul style="list-style-type: none"> <li>• Comply with the permission for electric searching and generation</li> <li>• Inform promptly to chief-inspector and head officer of related office while occurring of accident in electricity generation</li> <li>• Comply with the standards, rules and procedure. Moreover, will allow the inspection by respected governmental department and organization if it is necessary</li> <li>• Pay the compensation to anyone who is injured or caused to death in electric shock or fire caused by the negligence or omitting of the project owner or representative of project owner</li> </ul>
23.	<b>Natural Disaster Management Law (2013)</b>	<p>Objectives</p> <p>Sub-section (a, i, iii) of Section 13, Sub-section (b, d) of section 14, Section 25, 26, 29, Sub-</p>	<p>To implement natural disaster management programs and to coordinate with national and international organizations in carrying out natural disaster management activities; to conserve and restore the environment affected by natural disaster and to provide health, education, social and livelihood programs in order to bring about better living conditions for victims;</p> <p>The project proponent has to-</p> <ul style="list-style-type: none"> <li>• Perform preparatory and preventive measures for natural disaster risks</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
		<p>section (a) of section 30</p> <p>Punishments</p>	<p>reduction before the natural disaster strikes</p> <ul style="list-style-type: none"> <li>• Undertake rehabilitation and reconstruction activities for improving better living standard after the natural disaster strikes and conservation of the environment that has been affected by natural disaster</li> <li>• Carry out better improvement on early warning system of natural disaster</li> <li>• Carry out together with the measures of natural disaster risk reduction in development plans of the State</li> <li>• Whoever if the natural disaster causes or is likely to be caused by any negligent act without examination or by willful action which is known that a disaster is likely to strike, shall be punished with imprisonment for a term not exceeding three years and may also be liable to fine</li> <li>• Whoever interferes, prevents, prohibits, assaults or coerces the department, organization or person assigned by this law to perform any natural disaster management shall, on conviction, be punished with imprisonment for a term not exceeding two years or with fine or with both</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			<ul style="list-style-type: none"> <li>• Whoever violates any prohibition contained in rules, notifications and orders issued under this law shall, on conviction, be punished with imprisonment for a term not exceeding one year or with fine or with both</li> <li>• Whoever willful failure to comply with any of the directives of the department, organization or person assigned by this law to perform any natural disaster management shall, on conviction, be punished with imprisonment for a term not exceeding one year or with fine or with both</li> </ul>
24.	<b>The Myanmar Fire Brigade Law (2015)</b>	<p>Objectives</p> <p>Sub-section (a, b) of section 25</p>	<p>To ensure to prevent the fire, to provide the precautionary material and apparatuses, if the fire caused in the project area to be defeated because the project is business in which electricity and any inflammable materials such as petroleum are used. So, the project owner has to institute the specific fire service in line with the above law.</p> <p>The project proponent has to-</p> <ul style="list-style-type: none"> <li>• Institute the specific fire services</li> <li>• Provide materials and apparatuses for fire precaution and prevention</li> </ul>
25.	<b>The Export and Import Law (2012)</b>	<p>Purpose</p> <p>Section 7</p>	<p>Ensure the legal import and export</p> <p>The project proponent has to-</p>

No.	Laws and Regulations	Relevant Articles	Commitments
			<ul style="list-style-type: none"> <li>Abide by the conditions contained in the permission for import if boilers or other machineries are imported</li> </ul>
26.	<b>The Labor Organization Law (2011)</b>	Objectives  Section 17, 18, 19, 20, 21, 22	<p>To ensure protection the rights of the employees, having the good relationships between the employees and employer and enabling to form and carry out the labor organizations systematically and independently.</p> <p>The project proponent has to-</p> <ul style="list-style-type: none"> <li>Allow the labor organization to negotiate and settle with the employer if the workers are unable to obtain and enjoy the rights of the workers contained in the labor laws and to submit demands to the employer and claim in accord with the relevant law if the agreement cannot be reached</li> <li>Allow the demand for the re-appointment of worker who is dismissed by the employer without the conformity with the labor laws</li> <li>Send the representatives to the Conciliation Body in settling a dispute between the employer and the worker</li> <li>Allow the labor organization to participate and discuss in discussing with the government, the employer and the complaining employees in respect of employee's rights or interest contained in the labor laws</li> </ul>



No.	Laws and Regulations	Relevant Articles	Commitments
			<ul style="list-style-type: none"> <li>• Allow the labor organization to participate in solving the collective bargains of the employees in accord with the labor laws</li> <li>• Allow the labor organization to carry out the holding the meetings, going on strike and other collective activities in line with the procedure, regulation, by-law and directive of relevant Chief Labor Organization</li> </ul>
27.	<b>The Settlement of Labor Dispute Law (2012)</b>	Objectives  Section 38, 39, 40, 51	<p>To ensure negotiation and discussion between employees and project proponent, abiding the decision of Tribunal.</p> <p>The project proponent commits to-</p> <ul style="list-style-type: none"> <li>• Not absent to negotiation within the stipulated time for complaint</li> <li>• Not change the existing stipulations for employees within conducting period before tribunal</li> <li>• Not change the existing stipulations for employees within conducting period before tribunal</li> <li>• Pay the compensation decided by Tribunal if violates any act or any omission to damage the interest of labor by reducing of product without efficient cause</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
28.	<b>The Employment and Skill Development Law (2013)</b>	Objectives  Section 5, 14, Sub-section (a, b) of section 30	To ensure the job security and to develop the employee's skill with the fund of project owner.  The project proponent has to- <ul style="list-style-type: none"> <li>• Appoint employees with the contract</li> <li>• Carry out the training programs with the policy of Skill Development Body to develop the employment skill of employees who is appointed or will be appointed</li> <li>• Monthly pay to the fund, which is fund for development of skill of employees, not less below 0.5 percentage of the total payment to the level of worker supervisor and the workers below such level</li> <li>• Promise not to deduct from the payment of employees for above mentioned fund</li> </ul>
29.	<b>The Minimum Wage Law (2013)</b>	Objectives  Sub-section (a, b, c, d, e, f, g) of section 13	To ensure the project owner pay the wages not less than prescribed wages and notify obviously these wages in work place, moreover to be inspected.  The project proponent has to- <ul style="list-style-type: none"> <li>• Notify the prescribed wages obviously in work place</li> <li>• Correctly record the lists, schedules, documents and wages and report these to the relevant department and give if these are asked while</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			<p>inspecting, in accord with the stipulations</p> <ul style="list-style-type: none"> <li>• Allow to be inspected by the inspector</li> <li>• Allow holiday for medical treatment if the employee's health is not fit to work</li> <li>• Allow holidays without deducting from the wages if one of parents or one of family dies</li> </ul>
30.	<b>The Payment of Wages Law (2016)</b>	<p>Objectives</p> <p>Section 3,4,5,7 to 13, 14</p>	<p>To ensure the way of payment and avoiding delay payment to the employees.</p> <p>The project proponent has to-</p> <ul style="list-style-type: none"> <li>• Pay the wages</li> <li>• Submit with the agreements of employees &amp; reasonable ground to department if it is difficult to pay because of force majeure included in natural disaster</li> <li>• Abide by the provisions of section 7 to 13 in chapter (3) in respect of deduction from wages</li> <li>• Pay the overtime fees, prescribed by law, to the employees who work over working hours</li> </ul>
31.	<b>Workmen's Compensation Act (1923)</b>	<p>Objectives</p> <p>Section 13</p>	<p>To ensure the compensations to injured employee while implementing in line with the above law and to pay the prescribed compensations in various kinds of injury.</p> <p>The project proponent has to-</p>

No.	Laws and Regulations	Relevant Articles	Commitments
			<ul style="list-style-type: none"> <li>• Pay the compensation in line with the provisions of said law base on kind of injury and case by case</li> </ul>
32.	<b>The Leaves and Holiday Act (1951)</b>	Objectives	<p>The employees can take the leaves and get the holidays legally and to ensure the right to get the holidays and leaves.</p> <p>The project proponent has to-</p> <ul style="list-style-type: none"> <li>• Allow the leaves and holidays</li> </ul>
33.	<b>The Social Security Law (2012)</b>	<p>Objectives</p> <p>Section 11(a), 15 (a), 18 (b), 48 (b), 75</p>	<p>The project proponent has to create the social security for the employees because the project is the business under the Myanmar Citizen Investment Law. To ensure the social security for employees of the project, the project owner has to register to the social security offices and to pay the prescribed fund.</p> <p>The project proponent has to-</p> <ul style="list-style-type: none"> <li>• Register to the respected social security office</li> <li>• Pay the social security fund for at least four types of social security</li> <li>• Pay the fund which has to be paid myself and together with the fund which has to be paid from their salary by the employees. Moreover, the project owner will pay the cost for paying the above-mentioned fund only myself</li> <li>• Pay the fund for accidentance</li> <li>• Make correctly and submit the list and record provided</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			in section 75 to respected social security office
34.	<b>The Conservation of Water Resources and Rivers Law (2006)</b>	Objectives  Sub-section (a) of section 8, Sub-section (a) of section 11, Section 19, Sub-section (a, b) of section 21, Section 22, Sub-section (b) of section 24	The project proponent will avoid the disposal of stipulated materials into river-creek.  The project proponent commits to- <ul style="list-style-type: none"> <li>• Avoid any act to damage to the river, any creek and water resource</li> <li>• Avoid disposing the fuel, chemicals, toxic substances, other substances and explosive substances from the bank to the river</li> <li>• Avoid disposing any material, which may damage or change the water way, from the bank to the river</li> <li>• Avoid digging the well or lake and digging the soil without permission of the Directorate</li> <li>• Avoid putting the heavy materials in the bank without permission of the Directorate</li> <li>• Avoid the violation of conditions stipulated by the Directorate for prevention of water pollution</li> </ul>
35.	<b>The Law Amending the Conservation of Water Resources and Rivers Law (2017)</b>	Section 8	Section 15 of the Conservation of Water Resources and Rivers Law shall be substituted as follows;  In the river-creek boundary, bank boundary and waterfront boundary, no person, without the permission of the Directorate, shall; <ul style="list-style-type: none"> <li>(a) Carry out the construction of waterway training structure,</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			<p>switchback, dockyard, wet dockyard, water-tight dockyard, building of jetty and pier, the construction of landing lane and landing stage, vessel landing by drainage, drainage and the construction of temporary bridge of river and creek.</p> <p>(b) Dig husbandry pond to carry out fish, prawn, crab, soft-shell crab and other husbandry works.</p>
36.	<b>Underground Water Act (1930)</b>		<p>According to Act the President of the Union may, by notification, direct and shall apply only to the tubes, exceeding a depth to be prescribed the President of the Union and may prescribe different depths for different local areas.</p> <p>Accordingly, “underground water” means water obtained from below the surface of the ground by the sinking of tubes. It is also stated that no person shall sink a tube for the purpose of obtaining underground water except under and in accordance with the terms of a license granted by the water officer, an officer by notification prescribed on his behalf.</p>
37.	<b>The Forest Law (2018)</b>	Objectives	to ensure in carrying out the project with the permission of Ministry of Natural Resources and Environmental Conservation if the project land is forest land or forest covered land. This law focuses as follow;

No.	Laws and Regulations	Relevant Articles	Commitments
		Sub-section (a) of section 12	The project proponent has to obtain the permission of Ministry of Natural Resources and Environmental Conservation before starting the work if the project land is forest land or forest covered under sub- section (a) of section 12.
38.	<b>The Conservation of Biodiversity and Protected Areas Law (2018)</b>	Objectives  Sub-section (a) of section 12	To ensure abiding by the prohibitions and stipulations to protect biodiversity and protected area  The project proponent commits to- <ul style="list-style-type: none"> <li>• The project proponent has to avoid entering the prohibited area located in protected area without permission</li> <li>• The project proponent has to avoid digging on the land or carrying out any activity in protected area</li> <li>• The project proponent has to avoid extracting, collecting or destroying in any manner, any kind of wild or cultivated plant in protected area</li> <li>• The project proponent has to avoid polluting soil, water and air, damaging a water-course or poisoning water, electrification, using chemical or explosive materials in protected area</li> <li>• The project proponent has to avoid possessing or disposing of toxic objectives or mineral wastes in protected area</li> </ul>
39.	<b>The Ethnic Rights</b>	Objectives	To ensure to disclose to residents' ethnic nationalities about the project

No.	Laws and Regulations	Relevant Articles	Commitments
	<b>Protection Law (2015)</b>	Section 5	<p>fully, moreover to ensure to cooperate with them. This law focuses the following matters;</p> <ul style="list-style-type: none"> <li>• The project proponent has to disclose all about the project fully to the residents who are national races.</li> <li>• The project proponent has to cooperate with the residents who are national races.</li> </ul>
40.	<b>The Ethnic Rights Protection Rules (2019)</b>	<p>Sub-section (a) of section 21</p> <p>Sub-section (b) of section 21</p>	<ul style="list-style-type: none"> <li>• The project proponent has to compliance with rule 20 shall be reported to the Ministry in full and submitted to the ministry before the project commences</li> <li>• After the implementation of the project, the plan must be submitted to the ministry</li> </ul>
41.	<b>The Protection and Preservation of Cultural Heritage Regions Law (2019)</b>	<p>Objectives</p> <p>Section 13, 22</p>	<p>To ensure the protection of cultural heritages and the cultural heritage area from the damage by the natural disaster or man-made.</p> <p>The project proponent commits to-</p> <ul style="list-style-type: none"> <li>• Apply to get the prior permission of Directorate of Ancient-Research to build the road, bridge or dam in the cultural heritage area</li> <li>• Promise not to build the building which is not in line with the stipulations prescribed by the Ministry of Culture in the cultural heritage area</li> </ul>
42.	<b>The Protection and Preservation of</b>	Objectives	To ensure the protection of ancient monument and information about it



No.	Laws and Regulations	Relevant Articles	Commitments
	<b>Antique Objectives Law (2015)</b>	Section 12	if it was in the project area. This law focuses as follow; The project proponent has to- <ul style="list-style-type: none"> <li>• Inform to the village-tract or ward administrator if any antique objective is found in project area</li> </ul>
43.	<b>The Protection and Preservation of Ancient Monuments Law (2015)</b>	Objectives  Section 12,15, Sub-section (f) of section 20	To ensure the protection of ancient monument and information about it if it was in the project area. This law focuses as follows; The project proponent has to- <ul style="list-style-type: none"> <li>• Report to the village-tract or ward administrators if the project proponent will find any ancient monument under the ground or on the ground or under the water</li> <li>• Obtain the prior permission of Department of Ancient Research Museum if the project area is in the prescribed area of ancient monument</li> <li>• Obtain the prior permission, by written, of Department of Ancient Research and National Museum if the project proponent disposes the chemical and solid waste in the Ancient Monument area</li> </ul>
44.	<b>The Farmland Law (2012)</b>	Purpose	To ensure the right to use the farm land and sufficient compensation for acquisition of the farm land. This law focuses the following matters; The project proponent commits to-

No.	Laws and Regulations	Relevant Articles	Commitments
		Section 26, Sub-section (a, b) of section 30	<ul style="list-style-type: none"> <li>• Abide by the decision of relevant Ministry with the coordination with the Central Administrative Body of the Farmland for paying the compensation if it is needed acquisition farm land</li> <li>• Obtain the permission of the Central Administrative Body of Farmland for the land use change from paddy field land to other land use</li> <li>• Obtain the permission of the Yangon Region Government with the recommendation of Yangon Region Administrative Body of Farmland for the land use change from farm land other than paddy field land to other land use</li> </ul>
45.	<b>The Law Amending the Farmland Law (2020)</b>	Section 26	<p>The project proponent commits to-</p> <ul style="list-style-type: none"> <li>• Abide by the decision of relevant Ministry with the coordination with the Central Administrative Body of the Farmland for paying the compensation if it is needed acquisition farm land</li> </ul>
46.	<b>The Farmland Rules (2012)</b>	Section 64, 78	<p>The project proponent commits to-</p> <ul style="list-style-type: none"> <li>• According to the land law, it is for the benefit of the state or if the agricultural land is expropriated for public benefit, the central agricultural land management team shall coordinate as necessary to ensure that the relevant</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			<p>person receives damages and compensation for the matters carried out by the original agricultural land holder, including the improvement of the agricultural land with buildings</p> <ul style="list-style-type: none"> <li>• For the sake of long-term national interests of the state, the Union Ministry or Nay Pyi Taw Council or the regional or state government that wants to use the agricultural land in another way for the project implementation</li> <li>(a) It shall be submitted to the Union Government with the opinion of the Central Agricultural Land Management Board</li> <li>(b) When the approval of the Union Government is obtained, the project can be implemented</li> </ul>
47.	<b>The Management of Vacant, Fallow and Virgin Land Law (2018)</b>	<p>Objectives</p> <p>Sub-section (d) of section 10</p> <p>Sub-section (a) of section 19</p> <p>Sub-section (d) of section 19</p>	<p>To ensure the project land is clearly get as the project land.</p> <p>The project proponent will ensure to get permitted areas for the project land by the Central Administrative Body on Vacant, Virgin and Fallow Land.</p> <p>The project proponent will promise to return the land if any antique object is found in the project area.</p> <p>The project proponent will promise to return the land if any resource is found in the project.</p>

No.	Laws and Regulations	Relevant Articles	Commitments
48.	<b>The Law Amending the Management of Vacant, Fallow and Virgin Land Law (2018)</b>	Section 14	<p>The introduction, sub-sections (a) and (c) of section 10 of the Management of Vacant, Fallow and Virgin Land Law shall be substituted as follows;</p> <p>The Central Committee shall permit the use of the vacant, fallow and virgin land for the following business only after inspecting whether there are people cultivating the land currently in accordance with laws.</p> <p>In permitting so;</p> <p>(a) It may permit more than 300 acres and not exceeding 3000 acres at a time for perennial trees, horticultural crops, industrial seasonal crops in the agricultural business. If 75 percent of the permitted acres have been fully cultivated, it may permit further cultivation not exceeding 3,000 acres at a time up to the total of 30,000 acres for a number of times. If it is the business which should be permitted for the interest of the state, it may permit more than 3,000 acres up to the total of 30,000 acres at a time which can be cultivated actually, with the approval of the Union Government;</p> <p>(b) It may permit in coordination with the Ministry of Natural Resources and Environmental Conservation of the Union Government for</p>

No.	Laws and Regulations	Relevant Articles	Commitments
			the mineral production business.
49.	<b>The Management of Vacant, Fallow and Virgin Land Rules (2021)</b>	Section 52	<p>Empty land the right to fallow and fallow land; User may;</p> <p>(a) Agriculture; If it is for breeding and other legal activities approved by the government, the free land allowed 15% in the first year of four years from the date of approval of fallow and fallow land 30% in the second year; 30% in the third year and 25% in the fourth year until the work is completed. If it is for mineral production, the permitted vacant land; waste land and waste land shall be identified and worked on until the completion of the work within the period agreed upon with the Ministry of Natural Resources and Environmental Protection.</p> <p>(b) Authority; Free land acquired for use other than the permitted type in waste land and waste land, other resources may not be mined and extracted from the ground.</p> <p>(c) Vacant land entitled to rights; Deforestation of fallow and fallow areas according to the acres to be planted annually. Deforestation is carried out on an annual basis, without</p>

No.	Laws and Regulations	Relevant Articles	Commitments
			<p>actual cultivation. Do not clear the forest at all.</p> <p>(d) His authority; Free land that has the right to use land tax must be paid in full for fallow and fallow land.</p> <p>(e) Vacant land; The right to fallow and fallow land; The terms and conditions set by the Central Committee shall be followed in relation to access rights.</p>
50.	<b>The Petroleum and Petroleum Product Law (2017)</b>	<p>Purpose</p> <p>Sub-section (a, e) of section 9, Sub-section (a, b, d) of section 10, Section 11</p>	<p>This law is holding license for import and storage of petroleum and petroleum products, and the holder's compliance with the license terms. This law is applicable to the project because of the transportation and storage of fuel in all project phases.</p> <p>The obligations of the project proponent are:</p> <ul style="list-style-type: none"> <li>• Transport the fuel by the vehicle or vessel which is licensed by the Ministry of Transportation and Communication</li> <li>• Abide by the procedures and conditions specified by the Ministry of Transportation and Communication</li> <li>• Transport after obtaining the transportation license issued by the Ministry of Natural Resource and Environmental Conservation</li> <li>• Allow inspection by the Ministry of Natural Resource and Environmental Conservation</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			<ul style="list-style-type: none"> <li>• Store the fuel in the tank which is licensed by the Ministry of Natural Resource and Environmental Conservation</li> <li>• Show the sign of danger on the tank or container of fuel</li> </ul>
51.	<b>The Petroleum Rules (1937)</b>	Purpose	<p>To ensure the project owner's compliance with the stipulations for transportation of oil</p> <p>The project proponent commits to-</p> <p>Abide by the provisions of chapter (3) for transportation as well as the provisions of chapter (4) for storage</p>
52.	<b>The Private Industrial Enterprise Law (1990)</b>	<p>Sub – section (d) of section 11</p> <p>Sub -section (d) of section 11</p> <p>Sub – section (d) of section 13</p> <p>Sub – section (h) of section 13</p>	<p>The duties and powers of the Supervisory Body are as follows-</p> <ol style="list-style-type: none"> <li>a) Supervising to ensure the compliance by the entrepreneurs in the conducting of the industrial enterprises in accordance with the basic principles;</li> <li>b) Giving opinion for the determination of industrial areas and for the granting of lease of land for the private industrial enterprises under sub-section (d) of section 11 of said law.</li> </ol> <ul style="list-style-type: none"> <li>• The project proponent has to maintain systematically and fully as prescribed by the Directorate, the statement of accounts relating to the registered private industrial enterprise and has to submit the same to the relevant Government department, organization or Supervisory</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
		Sub – section (b) and (c) of section 27	<p>Body when required to do so under sub-section (f) of section 11 of said law.</p> <ul style="list-style-type: none"> <li>• The project proponent has to abide by the existing laws under sub-section (d) of section 13 of said law.</li> <li>• The project proponent has not to violate any provision of section 13 under sub-section (h) of section 13 of said law.</li> <li>• The project proponent has not failed to comply with any order or decision passed by the Minister and the Director General under sub-section (b) and (c) of section 27 of said law.</li> </ul>
53.	<b>The Myanmar Companies Law (2017)</b>		<p>Essential Requirements of Companies are as follows,</p> <p>A company registered under the Myanmar Companies Law shall have the following facts: under section-4, sub-section (a) of said law.</p> <ul style="list-style-type: none"> <li>a) a name;</li> <li>b) a constitution</li> <li>c) at least one share in issue (provided that a company limited by guarantee need not have a share capital)</li> <li>d) at least one member</li> <li>e) subject to sub-section (vi), at least one director who shall be ordinarily resident in the Union;</li> <li>f) if the company is a public company, at least three</li> </ul>



No.	Laws and Regulations	Relevant Articles	Commitments
			<p>directions, one of whom shall be a Myanmar citizen who is ordinarily resident in the Union; and</p> <p>g) a registered office address in the Union, under section-4, sub-section (a), sub-section i, ii, iii, iv, v, vi and vii of said law.</p> <p>Capacity and powers of companies are as follows,</p> <ul style="list-style-type: none"> <li>• A company: under section-5, sub-section (a) of said law. <ul style="list-style-type: none"> <li>(i) will be a legal entity in its own right separate from its members having full rights, powers, and privileges and continuing in existence until it is removed from the register: under section-5, sub-section (a), sub-section (i) of said law.</li> <li>(ii) subject to this law and any other law, has both with other and outside the Union full legal capacity to carry on any business or activity, do any act, or enter into any transaction, including the power to: under section-5, sub-section (a), sub-section (ii) of said law.</li> </ul> </li> <li>a) issue shares, debentures or securities which convert into shares in the company; under sub-section (ii), sub-section (aa) of said law.</li> <li>b) grant options to subscribe for shares or debentures in the company: under sub-section</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			<p>(ii), sub-section (bb) of said law.</p> <p>c) grant a security interest over any of its property: under sub-section (ii), sub-section (cc) of said law.</p> <p>d) distribute any of the company's property among the members, in kind or otherwise, under sub-section (ii), sub-section (dd) of said law.</p> <p>The constitution of a company may contain a provision relating to the capacity, rights, powers, or privileges of the company only if the capacity of the company or those rights, powers and privileges are restricted, under section-5, sub-section (b) of said law.</p> <p>A company may act as a holding company of another company and incorporate and hold shares in any number of subsidiaries, under section-5, sub-section (c) of said law.</p>
54.	<b>The Multimodal Transport Law (2014)</b>	Objectives	<p>The objectives of this Law are as follows:</p> <p>(a) to implement the provisions contained in international convention and promises contained in regional agreement related to the multimodal transport;</p> <p>(b) to support the development of commercial business systematically through the cooperation and coordination of multimodal transport</p>

No.	Laws and Regulations	Relevant Articles	Commitments
		<p>Sub – section (a) of section 10</p> <p>Section 11</p>	<p>operators in land and at abroad;</p> <p>(c) to cause more development of, effective and fast multimodal transport services to fulfill the requirements of international trade;</p> <p>(d) to perform operation by the multimodal transport operators in accord with the terms and conditions by registering under this Law;</p> <p>(e) to enable to enjoy fair interests between users and operators in multimodal transport services and to settle the problems peacefully arising thereof;</p> <p>(f) to reduce and free from difficulties and problems in every step-in transporting good through intermediary countries by formal method and to facilitate the transport of goods more quickly.</p> <ul style="list-style-type: none"> <li>• The project proponent has to wish to continue to work the multimodal transport business has to, if the term of the registration expires, apply to the Central Body to renew the registration certificate in accord with the stipulations.</li> <li>• The project proponent has to, when he receives goods to transport it by taking responsibility under the</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
		<p>Section 16</p> <p>Section 17</p>	<p>contrast, mention as the choice of the consignor that multimodal transport document is either transportable or non-transportable and then issue the multimodal transport document to the consignor.</p> <ul style="list-style-type: none"> <li>• The project proponent has to liable for the goods until the goods are transferred and delivered under the agreement commencing from the time of receiving the goods to deliver it by taking responsibility by him.</li> <li>• The project proponent has to liable as his own acts and failure for the acts and failure of his servants or agent. During serving his duties or for the acts and failure of the said person in carrying out under contrast concluded again with any other person.</li> </ul>
55.	<b>The Multimodal Transport Rules (2014)</b>	Section 8	<p>The project proponent has to meet the following requirements:</p> <ul style="list-style-type: none"> <li>(a) Must be a member of the Myanmar International Freight Forwarding Service Operators Association or an association approved by the Central Committee.</li> <li>(b) The company must be a company not related to limited liability or a related company.</li> <li>(c) The company's paid-up capital is at least 80,000</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			<p>special currency drawing right units; Either the Myanmar kyat equivalent to the exchange rate set by the Central Bank of Myanmar for that special currency drawing right unit; There must be securities or property of at least a value equal to that minimum number of units owned by the company.</p> <p>(d) According to the auditor's report, the income (turn over) in the last 1 year or the average income in the last 3 years is at least 80,000 special currency drawing rights units. Either the Myanmar kyat equivalent to the exchange rate set by the Central Bank of Myanmar for that special currency withdrawal right unit; There must be securities or property of at least a value equal to that minimum number of units owned by the company.</p> <p>(e) There must be sufficient insurance for the liability of the multimodal transport operator.</p> <p>(f) Must have a main place of business in the country, and must have a branch office or representative office of his company abroad for the operation of multi-modal transport business.</p>



No.	Laws and Regulations	Relevant Articles	Commitments
		Section 19	<p>The project proponent to perform road transport operations:</p> <ul style="list-style-type: none"> <li>(a) has to be able to compensate adequately for the damage, loss or delay of goods for road transport operations;</li> <li>(b) has to be subject to the prescribed requirements under the rules issued by this Law for road transport operations;</li> <li>(c) has not to be a person who is in blacklist for breaking laws, rules, regulations and by-laws related to road transport operations;</li> <li>(d) has not to be a person serving prison term;</li> <li>(e) has not to be a person who is an undischarged insolvent as being declared by the relevant court.</li> </ul> <p>The project proponent</p> <ul style="list-style-type: none"> <li>(a) has to abide by the prescribed terms and conditions of the operation license;</li> <li>(b) has to keep the compulsory third party liability insurance for passengers to be transported, and road insurance of the goods in accordance with the existing law;</li> <li>(c) has the right to transfer the operation license or the motor vehicle used under the operation license in</li> </ul>





No.	Laws and Regulations	Relevant Articles	Commitments
		<p>Section 40</p> <p>Section 41</p>	<p>The project proponent shall, during the performance of his functions and duties, have responsibility for the act and omission of his servant or agent, or for the act and omission of subcontractor in performing under the subcontract with any other person as if it is acted and omitted by himself.</p> <p>The project proponent has to:</p> <ul style="list-style-type: none"> <li>(a) record the remark in the consignment note after checking the quantity, weight and the apparent condition of the goods when receiving the goods. If the remark is not recorded, it shall be presumed as the cargo is in good condition;</li> <li>(b) ensure to contain the detail particulars specified by the rules issued under this Law in the consignment note;</li> <li>(c) duplicate the consignment note in three copies after signing the consignment note. The original consignment note shall be handed to the consignor and the first copy of consignment note shall be accompanied by the transport motor vehicle together with the goods, and the second copy of consignment note shall be handed to the transport operator;</li> <li>(d) recognize the right to the management of the goods,</li> </ul>

No.	Laws and Regulations	Relevant Articles	Commitments
			<p>stop on the route or return to the other consignee under the right of the consignor unless otherwise agreed in the consignment note;</p> <p>(e) coordinate with the consignor in respect of the right of return to the place of departure of the goods or the right of redirect them to another designation if there is a specific agreement in the consignment note.</p> <p>The project proponent:</p> <p>(a) has to be liable for damage or loss if he cannot prove the evidence that he or his servant or agent has no liability for the loss of and damage to or loss of and damage to the goods for the delay in delivery of the goods that occurred from the time that the transport operator or himself or his servant or agent takes the goods in charge under the contract of goods transportation;</p> <p>(b) has not to be liable for the loss of and damage to the goods for delaying in delivery of the goods if the goods are received without declaration by the consignor in respect of the period to be delivered the goods.</p>
57.	<b>The Road Transport</b>	Section 25	Road Transport industry is classified as follows;

No.	Laws and Regulations	Relevant Articles	Commitments
	<b>Protection Rules (2018)</b>		(a) Domestic road transportation business; (b) Transportation for the public (c) Goods transportation business (d) Tour passenger transportation business; (e) Chartered passenger transportation business; (f) Contract transportation business; (g) Transportation business for personal business; (h) Cross-border road transport business.
58.	<b>The National Food Law (1997)</b>		It is not included as it is considered not relevant to the project.

The ultimate EIA report will be prepared based on the Myanmar Environmental Impact Assessment Procedure (2015) and International best practice and guidelines. Specifically, the environmental impact assessment for this “Dawei Bus Terminal and Commercial Complex” shall be conducted following not only the National Environmental Guidelines but also International Guidelines and Practices such as WHO standards, IFC performance indicators. The international guidelines are as follows;

- a) Environmental Health and Safety Guidelines for Hazardous Materials Management, 2007
- b) Environmental Health and Safety Guidelines for General Environmental, Health and Safety Guidelines, 2007
- c) Environmental Health and Safety Guidelines for Occupational, Health and Safety, 2007
- d) Environmental Health and Safety Guidelines for Ports, Harbors and Terminals
- e) Environmental Health and Safety Guidelines for Natural Gas Processing

In addition, IFC performance standard (PS) represent the policy and performance-based framework and requirements for the ESIA and sustainable social and environmental management for the project. Whereas the World Bank Group’s EHS Guidelines provide guidance on general and industry best practice as well as recommended numerical limits for air emissions to the atmosphere, noise, liquid and solid wastes, hazardous waste, occupational

health and safety, and other aspects of industrial facilities and other types of development project. The IFC performance standard (PS) includes:

- PS 1 Assessment and Management of Environmental and Social Risks and Impacts
- PS 2 Labor and Working Conditions
- PS 3 Resource Efficiency and Pollution Prevention
- PS 4 Community Health, Safety and Security
- PS 5 Land Acquisition and Involuntary Resettlement
- PS 6 Biodiversity Conservation and Sustainable Management of Natural Resources
- PS 7 Indigenous Peoples
- PS 8 Cultural Heritage

### 3.3. National Environmental Quality (Emission) Guidelines for Bus Terminal

#### Air Quality

The air quality measurement will be followed the National Environmental Quality (Emission) Guidelines (2015) and the result of air quality parameters compared and analyzed with NEQ (Emission) Guidelines (2015). The following air quality parameters and guideline value will be measured. The other parameters like wind speed, wind direction, relative humidity and temperature are described.

**Table 3.1 National Environmental Quality (Emission) Guidelines Values for Air Quality**

Parameter	Observed Value		Guideline Value	Guideline	Unit	Averaging Period
	Point 1	Point 2				
SO <sub>2</sub>	0.27	0.19	20	NEQG	μg/m <sup>3</sup>	24 hours
NO <sub>2</sub>	2.70	2.43	200	NEQG	μg/m <sup>3</sup>	1 hour
CO	0.02	0.01	9	NAAQS	Ppm	8 hours
CO <sub>2</sub>	423.51	425.93	5000	ACGIH	ppm	8 hours
PM <sub>10</sub>	25.70	21.65	50	NEQG	μg/m <sup>3</sup>	24 hours
PM <sub>2.5</sub>	12.86	12.34	25	NEQG	μg/m <sup>3</sup>	24 hours
Ozone	22.44	22.35	100	NEQG	μg/m <sup>3</sup>	8 hours

#### Odor

According to National Environmental Quality (Emission) Guidelines (2015), odor level shall not exceed 5 to 10 odorant units at the edge of populated areas in the vicinity of a project.

#### Water Quality

The following parameters of water quality guidelines are considered relatively for ground water (well water) comparing the Thailand Ground water quality standard, ground water quality comparing national drinking water quality standards and surface water quality comparing with

the WHO water quality standards (2018). Water quality for outlet water is compared by National Environmental Quality (Emission) guidelines (2015).

**Table 3.2 Thailand Water Quality Standard Guidelines for Ground water (well water)**

Item	Unit	Thailand Ground Water Quality Standard
Iron	mg/L	-
Total Hardness	mg/L	-
Total Suspended Solids	mg/L	-
Total Coliform Bacteria	MPN/ml	-
pH	-	-
Turbidity	FNU	-
Total Dissolved Solids	mg/L	-
Ammonia	mg/L	-
Nitrate	mg/L	-
Biological Oxygen Demand	mg/L	-
Chemical Oxygen Demand	mg/L	-
Total Nitrogen	mg/L	-
Total Phosphorus	µg/L	-
Arsenic	µg/L	10
Copper	µg/L	1000
Zinc	µg/L	5000
Chromium	µg/L	-
Mercury	µg/L	1
Chlorine (Residual)	mg/L	-

**Table 3.3 National Drinking water quality standards for Ground water**

Item	Unit	National Drinking Water Quality Standards
pH	mg/L	6.5 – 8.5
Turbidity	-	5 (NTU)
Total Dissolved Solids	mg/L	1000
Total Suspended Solids	mg/L	-
Ammonia	100 ml	-
Nitrate	mg/L	50
BOD	mg/L	-
COD	mg/L	-
Total Nitrogen	mg/L	-
Total Phosphorus	µg/L	-
Arsenic	mg/L	0.05
Copper	mg/L	2
Zinc	mg/L	3
Chromium	mg/L	0.05
Mercury	mg/L	0.001
Total Coliform	MPN/ 100 ml	3
Iron	mg/L	0.3
Chlorine (residual)	mg/L	-
Total Hardness	mg/L as CaCO <sub>3</sub>	500

**Table 3.4 WHO water quality standards (2018) for Surface Water**

Item	Unit	WHO Water Quality Standards (2018)
pH	-	6.5 - 8.5

Fluoride	mg/L	1.5
Nitrate	mg/L	50
Sulphate	mg/L	250
Ammonia	mg/L	NA
Total Suspended Solids	mg/L	NA
BOD	mg/L	NA
COD	mg/L	NA
Total Nitrogen	mg/L	NA
Total Phosphorus	µg/L	NA
Lead	mg/L	0.01
Cadmium	mg/L	0.003
Arsenic	mg/L	0.01
Copper	mg/L	2
Zinc	mg/L	5
Nickel	mg/L	0.07
Mercury	µg/L	-
Chromium (Hexavalent)	mg/L	NA
Chromium (Total)	mg/L	0.05
Free Chlorine	mg/L	5
Oil and Grease	mg/L	NA
Phenols	mg/L	0.002
Silver	mg/L	0.05
Sulfide	µg/L	NA
Selenium	mg/L	0.01
Total Cyanide	mg/L	-
Total Coliform	MPN/ml	ND
Iron	mg/l	0.3

Cyanide	mg/l	0.07
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**Table 3.5 National Environmental Quality (Emission) Guidelines for Outlet Water**

Item	Unit	National Environmental Quality (Emission) Guideline
Biological Oxygen Demand	mg/L	50
Chemical Oxygen Demand	mg/L	250
pH	S.U <sup>a</sup>	6-9
Total coliform bacteria	100 ml	100
Total Nitrogen	mg/L	10
Total Phosphorus	mg/L	2
Total Suspended solids	mg/L	50
Turbidity	FNU	-
Total Dissolved Solids	mg/L	-
Ammonia	mg/L	10
Arsenic	mg/L	0.1
Copper	mg/L	0.5
Zinc	mg/L	2
Chromium (total)	mg/L	0.5
Mercury	mg/L	0.01
Nitrate	mg/L	-
Total Hardness	mg/L	-
Iron	mg/L	3.5
Chlorine (residual)	mg/L	0.2

**Noise and Vibration**

The noise level values will be compared with the National Environmental Quality (Emission) Guidelines (2015) as shown in following table.



**Table 3.6 National Environmental Quality (Emission) Guidelines Values for Noise Level**

Receptor	One Hour LAeq (dBA)	
	Daytime 07:00 - 22:00 (10:00 - 22:00 for Public Holidays)	Nighttime 22:00 - 07:00 (22:00 - 10:00 for Public Holidays)
Residential, Institutional, Educational	55	45
Industrial, Commercial	70	70

### 3.4. International Conventions of relevance to Project

Legislation	Relevance to the Project	Ratification Status (in Myanmar)
<b>Environmental</b>		
Vienna Convention for the Protection of the Ozone Layer 1988 and Montreal Protocol on Substances that Deplete the Ozone Layer 1989	Not relevant to the Project as the Project will not use any ozone depleting substances.	Accession 16 <sup>th</sup> Sep 1998 (Vienna) & Accession 24 <sup>th</sup> Nov 1993 (Montreal)
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal	The Project may generate hazardous wastes.	Entered into force 6 <sup>th</sup> April 2015
United Nations Framework Convention on Climate Change 1992 (UNFCCC) and Kyoto Protocol 1997	The project will form part of Myanmar's total emissions output.	Entered in for 23 <sup>rd</sup> Feb 1995 (UNFCCC) and 16 <sup>th</sup> Feb 2005 (Kyoto Protocol)
United Nations Agenda 21	Not relevant to Project. Relevant to the government.	Since 1997

### 3.5. Commitments of Proponent

With regards to the above matter, we, Khat Shwe Pyi Co., Ltd strongly commit that-

1. The Environmental Impact Assessment (EIA) report for petrochemical products terminal and depot project that is implemented in Dawei Bus Terminal and Commercial Complex is accurate and completeness.

2. The EIA has been prepared in strict compliance with applicable laws including Environmental Impact Assessment procedure, and
3. The project will at all times comply fully with the commitments, mitigation measures, and plans in the EIA.

### List of commitments

The following commitments are listed to carry out efficient and effective environmental conservation, health, safety and social responsibilities throughout the proposed project life time.

- After approving the Environmental Management Plan by receptive authorities, accurate operations are carried on.
- The support and understanding of project proponent and authorities is essential for the implementation of comprehensive environmental management plan.
- The experienced and knowledgeable environmental officers, environmental, health, and safety manager, and assistants will perform the implementation of environmental management plan.
- Daily, monthly, and yearly plans will be implemented based on the environmental compliance certificate or instructions in the approval letter, and environmental management plan.
- For the annual report and monitoring, the records of the environmental management activities will be kept.
- The recommendation and monitoring report of monitors and inspectors will be followed.
- The grievance redress mechanism plan to address grievance, cooperate social responsibility plan, occupational health and safety plan, and emergency response plan will be implemented.
- The environmental conservation law, rules and regulations, and instructions of the Republic of the Union of Myanmar will be followed.

The following table shows the summary of environmental and social impacts and mitigation measures committed by Khant Shwe Pyi Co., Ltd to manage and mitigate the potential impacts associated with the development of the project.

**Table 3.7 Key project commitments**

No.	Commitment Source	Description of commitment	Chapter
1.	Policy, Legal and Institutional Framework	Khant Shwe Pyi Co., Ltd strongly commits to follow the related laws, rules, regulations, standards, international and domestic guidelines which was described in the EIA report.	Chapter (3)
2.	Project Description	Khant Shwe Pyi Co., Ltd will inform to respective authorities if the description	Chapter (4)

No.	Commitment Source	Description of commitment	Chapter
		<p>criteria of the project, factory layout and storage capacity, operation process.</p> <p>Moreover, proponent commit to follow solid waste management, wastewater treatment system, and firefighting system described in the EIA report.</p>	
3.	Description of the Surrounding Environmental and Social Condition	Khant Shwe Pyi Co., Ltd committed to consider the baseline condition of environmental and socio-economic of the surrounding area during the operation and decommission phase.	Chapter (5)
4.	Impacts Assessment and Mitigation Measures	Khant Shwe Pyi Co., Ltd committed to describe the positive, negative, and cumulative impacts of operation and decommission phase of the project and follows the recommended mitigation measures.	Chapter (6)
5.	Environmental Management and Monitoring Plans	<p>Khant Shwe Pyi Co., Ltd committed to follow the environmental management plans and sub plans of operation and decommission phase.</p> <p>The project proponent committed to carry out the quality monitoring measurements timely and compare the resulted quality data with the baseline quality data for operation and decommission phase.</p>	<p>Environmental Management Plan Report</p> <p>Chapter (8)</p>
6.	Fire Safety Plan	Khant Shwe Pyi Co., Ltd committed to follow the fire safety plan and monitoring plan that is described in section 8.2.5.	Chapter (8)
7.	Emergency Response Plan	Khant Shwe Pyi Co., Ltd committed to follow the emergency response plans by organizing emergency response team, processing procedures, and following designated protocol that is expressed in section 8.2.7.	Chapter (8)
8.	Corporate Social Responsibility- CSR	Khant Shwe Pyi Co., Ltd committed to follow the Corporate Social Responsibility-CSR plan which is mentioned in section 8.3	Chapter (8)

No.	Commitment Source	Description of commitment	Chapter
		to support for livelihood and health care of local people and staff.	
9.	Grievance Redress Mechanism	Khant Shwe Pyi Co., Ltd committed to follow the measures of the Grievance Mechanism which is mentioned in section 8.4 to resolve and address the grievances and complaints raised from local people and employee.	Chapter (8)
10.	Public Consultation and Disclosure	<p>Khant Shwe Pyi Co., Ltd. committed that the time, date, list of attendants, the place and subject of discussion were correct.</p> <p>Khant Shwe Pyi Co., Ltd. commits to disclose the project related information to stakeholders by conducting public consultation meetings or publishing the EIA report.</p>	Chapter (9)

## **4. PROJECT DESCRIPTION AND ALTERNATIVE SELECTION**

The Dawei Bus Terminal and Commercial Complex Project is a key regional development initiative. The purpose of this project is construction of a high way road network aims to enhance the economic, social, and environmental conditions of the area. This process includes identifying the main challenges and opportunities in the region and then developing and implementing strategies and policies.

The project site is located near the Dawei Airport and Railway Station, as well as the national highway no 8 (Ye-Dawei/Dawei-Ye). It is also conveniently situated with access roads to deep seaport and river transportation. The project is expected to have a significant positive impact on regional development in the future. It has potentials to create jobs and generate economic growth. Moreover, having a healthy transportation infrastructure has a positive impact on local businesses and property values.

Construction of the project components has been underway since 2021. The progress of construction of the facilities is about 60% at the time of report preparation.

### **4.1 Project Background**

Khant Shwe Pyi Co., Ltd. aims to implement an advanced bus terminal and commercial related services on the land area of (20 acres) at field number (104) Tha Byay Chaung village tract, Dawei City, Dawei District, Tanintharyi Region. It developed the project to focus on better transportation of Dawei.

As the project area is located near Dawei City, this project is planned to implement the highway bus station, parking area and related services project which is mainly focus on important for local municipality, transportation and cleanliness of Dawei City. Therefore, the aim of implementation is to make travel peacefully and improve the transportation system of Dawei City.

The period of investment is initial 50 years because the bus terminal and commercial complex project that is performed by company get advantages such as productivity for the region, creation of employment opportunities, not only getting more income tax of country but also profit of company by selling local fruits and vegetables freshly, reducing traffic congestion in the city, giving advanced services to the guests who are arrived at Dawei, and domestic and foreign travelers can travel peacefully in the region.

Performing the selling and lending project by constructing a bus terminal and wholesale market can get benefits such as not only total (100) graduated people and basic workers in Dawei township can get employment opportunities but also selling more traditional foods, handicrafts, and local products. Furthermore, foreign income will be increased because of visiting guests from neighboring countries and transportation and tourism industries in Dawei township can get more income.

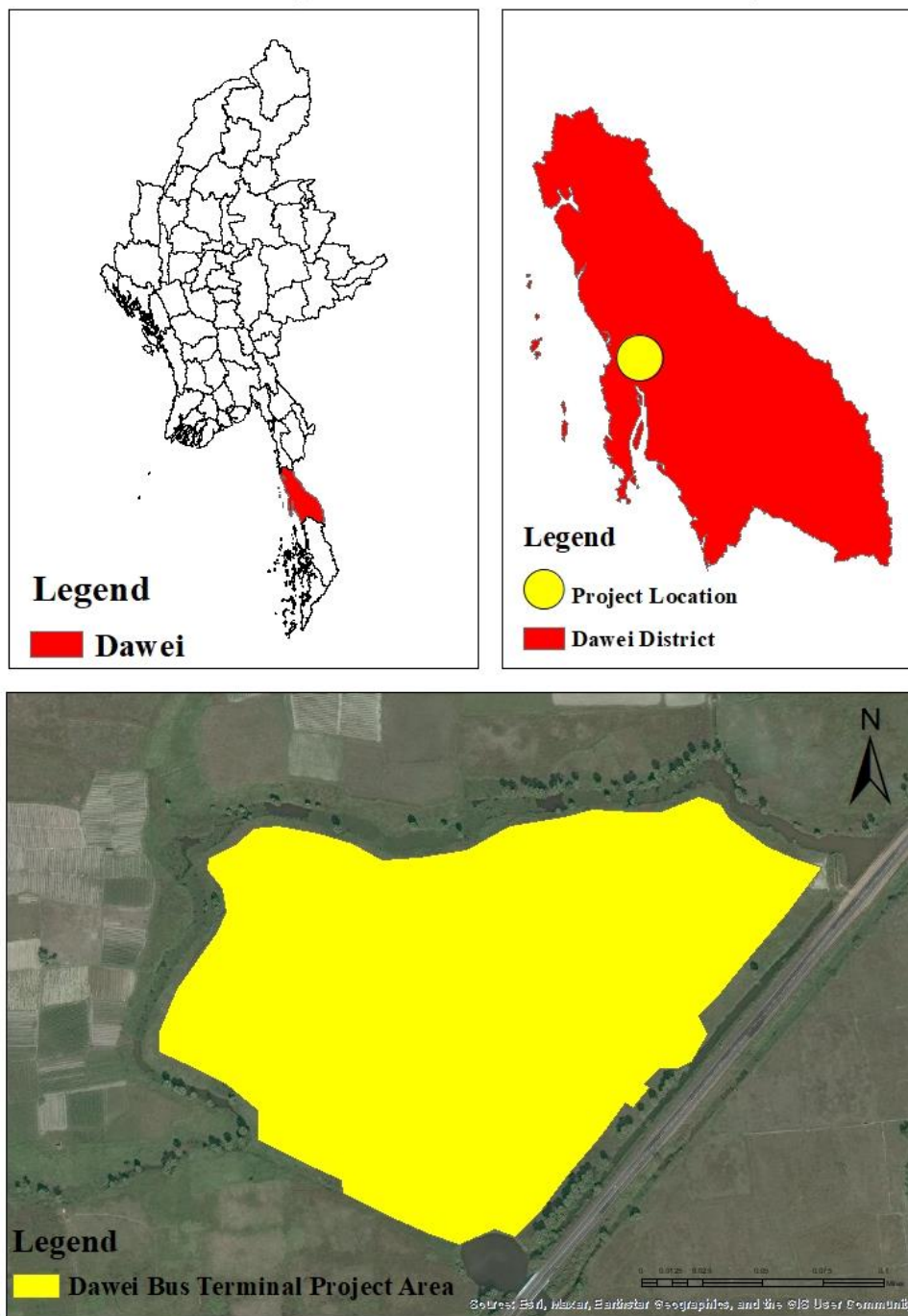
### **4.2 Project Location, Overview Map and Site Layout Maps**

The proposed study area is located in Tanintharyi Region, Dawei District. Dawei is the capital of the Tanintharyi Division in southern Myanmar. Located at the head of the Dawei river estuary and bordering the Andaman Sea, Dawei features an extreme tropical monsoon climate. Flooding is a major issue, along with risks associated with a coastal climate including coastal

erosion, sea level rise and saline intrusion. It is estimated 85 percent of local livelihoods rely on plantation. (Loewen,2012). Land in Dawei has extensive environmental degradation in the region (flooding, reduced water quality). Dawei is a strategic transport and economic hub as part of the East-West Economic Corridor. Among the planned developments are the Dawei Special Economic Zone (DSEZ), a road and rail link to Kanchanaburi province in Thailand, and the Dawei deep-sea port linking the Indian Ocean to the Mekong Region. Regionalization is shaping urbanization processes in Dawei, and the city is expecting rapid population growth with 100,000 new jobs expected to be created by 2025 through the Dawei project. SEZ development and urbanization processes will place significant stress on existing resources, making the city and region more prone to climate hazards.

The project area is located in Dawei township, Tanintharyi Division and at the GPS location of Lat: 14° 6'57.98"N and Long: 98°12'43.99"E, as shown in the project location map.

**Location Map of Dawei Bus Terminal Project Area**



**Figure 4.1 Location Map of Dawei Bus Terminal Project Site**

Source: E Guard Study Team (2023)

The project location is the agricultural land of property (16) within the Kyaung Yar Hmaw Kwin that is located in plot No. (104), Tha Byay Chaung village tract, Dawei township, Tanintharyi region. It will be performed in accordance with legal procedures if the permission is received upon the application for the using of the agricultural land in another way. Khant Shwe Pyi Co., Ltd has received the permit form (15) dated 26-4-2021 from the Divisional Land

Administration and Statistics Department to use the land in another way and still applying to get an industrial degree.

Overall area is 53.74 acres for both phase 1 and phase 2. Total Area of Bus Terminal project for phase 1 land area is 20 acres. The proposed project is plan to implement as follow,

Bus Terminal = 7.88 acres

Commercial Area= 7 acres

Proposed fuel station area=1.5 acres

Cargo gate area=2.25 acres

Main road area= 2.04 acres

Future Development= 30 acres



**Figure 4.2 Overview Map of Dawei Bus Terminal phase 1 and 2**

Source: Khant Shwe Pyi Co., Ltd



Dawei Bus Terminal and Commercial complex



Figure 4.3 Overview and illustration Map of Dawei Bus Terminal phase 1

Source: Khant Shwe Pyi Co., Ltd

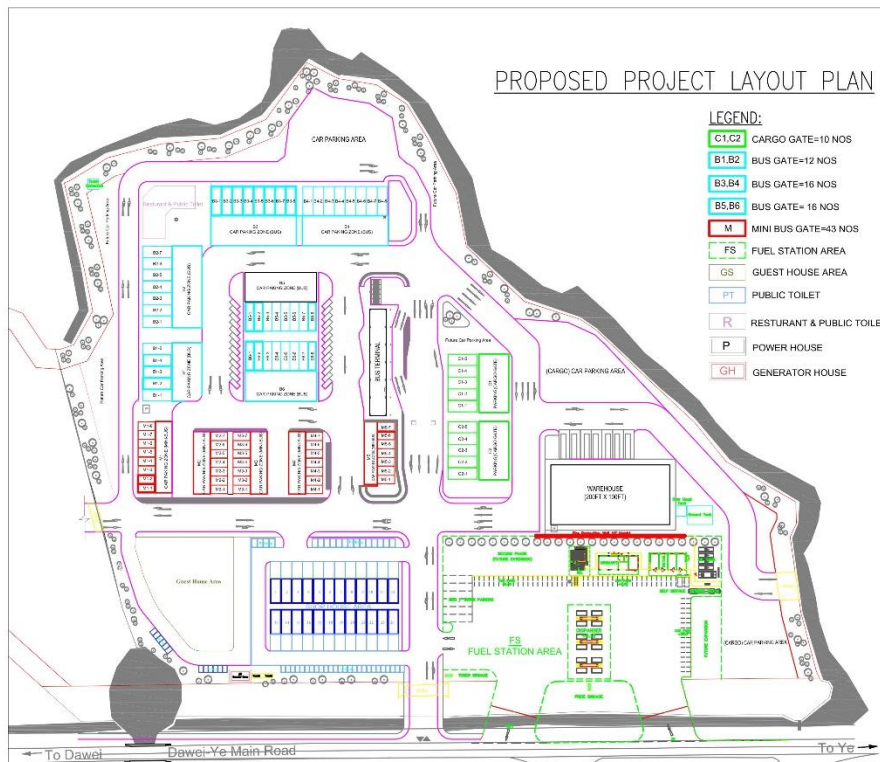


Figure 4.4 Project Layout Plan

Source: Khant Shwe Pyi Co., Ltd



**Figure 4.5** Ariel pictures of Project Site

*Source: Khant Shwe Pyi Co., Ltd*

### **4.3 Services in Bus Terminal Project**

In the proposed bus terminal and commercial related services project, the objective is to establish a comprehensive set of facilities, including:

- a) 44 Bus Gates
- b) 43 Mini Bus Gates
- c) 10 Cargo Gates
- d) 1 Warehouse
- e) 24 Food Stalls
- f) Petrol Shop
- g) Guest House Area
- h) Restaurants
- i) Convenience Store

Furthermore, there are future plans to incorporate a wash bay for vehicles.

Bus and mini bus terminal are built as Two-Storeyed Steel Structure Building plan to run around 80 buses for services. The proposed bus terminal will help to improve local traveling mode, develop tourist attraction and to reduce traffic conjunction in Dawei City as the old highway bus terminal is located within the Dawei City.



**Figure 4.6 Illustration figure of Bus and mini bus Terminal Two-Storyed Steel Structure Building**

*Source: Khant Shwe Pyi Co., Ltd*

The proposed project will also build fuel station in order to have convenient for all buses. Where all the buses and customers' cars can easy to access to fuel. Small convenient store will be add for needs. The following figures are illustration images of fuel station.





**Figure 4.7 Illustration images of fuel station**

Source: Khant Shwe Pyi Co., Ltd

There will also have small convenient store near fuel station, it offers travelers a place to buy snacks, drinks, and other items they may have forgotten to pack and also as refreshment place for a long road trip. The following figures are illustration images of convenient store.



**Figure 4.8 Illustration images of convenient store**

Source: Khant Shwe Pyi Co., Ltd

#### **4.4 Project Development and Implementation Time Schedules**

The proposed project is scheduled start from 2022, January with 73 full time workers. According to schedule, starting with land clearing and topsoil is used to prepare the site before foundations and pilling are laid. After the wet season, terminal building construction, pavement and platform construction, installing drainage trench are develop within project schedule. The overall construction period has expected to finish on 2024. The detail schedule for construction plans is as follow.

**Table 4.1 Construction Period**

Sr. No	Type of Construction	Construction Schedule	
		Started Date	Proposed Finish Date
1.	Mini Bus Gates (M1, M2, M3, M4, M5)	Jan/2023	March/2024
2.	Bus Gates (B1, B2, B3, B4, B5, B6)	Jan/2023	March/2024
3.	Cargo Gates	Jan/2023	March/2024
4.	Bus Terminal	Jan/2023	March/2024
5.	Ware House	Jan/2023	March/2024
6.	Concrete Road (2 Lanes and 4 Lanes)	Jan/2023	March/2024
7.	Infrastructure Works	Jan/2023	March/2024
8.	M&E Work	Jan/2023	March/2024
9.	Food stall and restaurants area	In progress	-
10.	Petrol Shop	In progress	-
11.	Guest House	In progress	-

#### 4.5 Logistic and process design of propose bus terminal project

The proposed project is circulated and operated by following logistic:

1. Passenger Logistics:
  - Bus Terminal Design and Location
  - Segregation: Separate highway bus and mini bus gates
  - Pedestrian Flow
  - Comfort and Convenience: Provide waiting areas, seating, and restrooms.
  - Safety: Implement safety measures like proper lighting and security.
  - Bus Arrival and Departure:
    - Buses arrive at the terminal.
    - Passengers alight from the bus.

- New passengers board.
  - Timely departure ensures efficient operations.
  - Interchange Time
    - Some routes may pass through the terminal without terminating there.
    - Interchange between different bus routes occurs.
    - Revenue collection often happens at these points.
2. Cargo Logistics:
- Loading and Unloading:
    - Efficient Loading/Unloading:
      - Centralized Warehouse Management System
      - Optimal Equipment: Ensure proper equipment (forklifts, cranes) for cargo handling.
3. Other support services:
- Fuel Station
  - Food courts
  - Convenient store
  - Toilet
  - Guest House

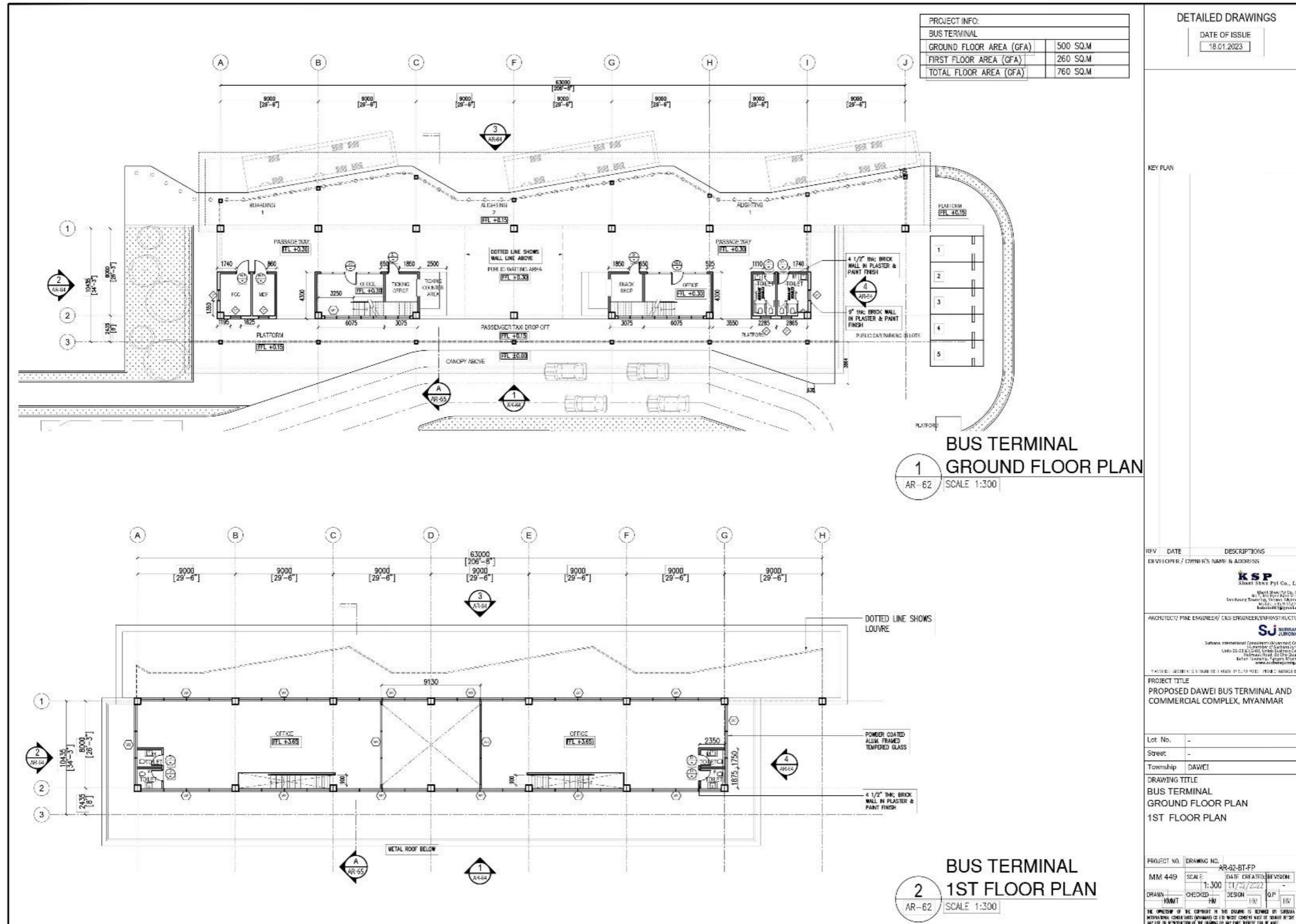


Figure 4.9 Floor Plan of Bus Terminal

Source: Khant Shwe Pyi Co., Ltd

## 4.6 Description of the Project Size

### 4.6.1 Project Infrastructure

The basic infrastructure for the whole project, which is opening bus gates for highway bus by Khant Shwe Pyi Co., Ltd is development project of bus terminal and commercial related services project, the objective is to establish a comprehensive set of facilities, including:

- a) 44 Bus Gates
- b) 43 Mini Bus Gates
- c) 10 Cargo Gates
- d) 1 Warehouse
- e) 24 Food Stalls
- f) Petrol Shop
- g) Guest House Area
- h) Restaurants
- i) Convenience Store (near fuel shop)

#### **Bus Gate**

Construction of a two-story bus gate building with 5, 7, and 8-unit configurations, using R.C.C., commenced in January 2023. Currently, the construction work is 85% completed.



**Figure 4.10 5 Units, 7 Units & 8 Units Two Storied Bus Gate**

*Source: Khant Shwe Pyi Co., Ltd*



### Mini Bus Gate

Construction of one-storied Mini Bus Gate RCC buildings with 7 and 8 units began in January 2023 and it is expected to be completed in March 2024. Currently, 85% of construction work is finished.



**Figure 4.11 8 units & 7 Units One Storied Mini Bus Gate**

*Source: Khant Shwe Pyi Co., Ltd*

### Concrete Road

The construction of the 48-foot four lane concrete road (Four Lane Concrete Road) and the 24-foot two lane concrete road (Two Lane Concrete Road) has been under construction since January 2023 and is expected to be completed by the end of March 2024. 80 % of the concrete road is finished.



**Figure 4.12 Concrete road (2 Lanes and 4 Lanes)**

*Source: Khant Shwe Pyi Co., Ltd*

**Cargo Gate**

Construction of two-storied Cargo Gate RCC buildings with 5 units, each with an area of 98' x4' x50', began in January 2023 and is expected to be completed by March, 2024. Construction of the two-storied Cargo Gate RCC buildings is 95% finished.



**Figure 4.13 Cargo gates**

*Source: Khant Shwe Pyi Co., Ltd*

**Warehouse**

A warehouse serves several critical purposes in the supply chain and logistics. The purpose of warehouses provides a secure and organized space for storing goods, materials, and products. It has been completed and ready to use.

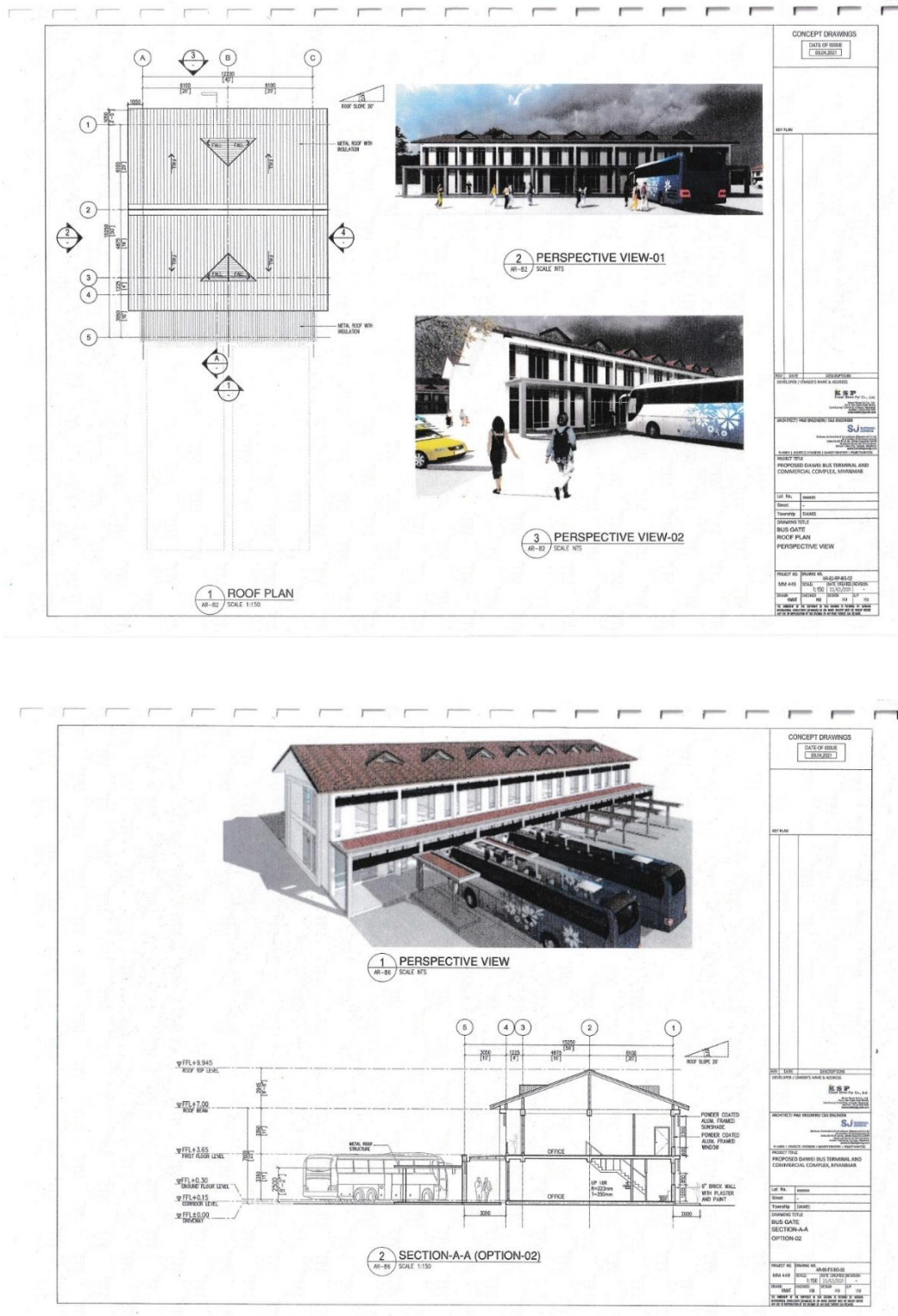


**Figure 4.14 Ware House**

*Source: Khant Shwe Pyi Co., Ltd*

**Bus Terminal**

Construction of bus terminal RCC building began in January 2023 and it is expected to be completed in March 2024. Currently, 65% of construction work is finished.



**Figure 4.15 Bus Terminal**

Source: Khant Shwe Pyi Co., Ltd

### Restaurant

A restaurant, food court, and public toilets are located in the bus terminal for passengers' rest and refreshment needs. Construction of the restaurant is 30% completed. Additionally, construction of shop houses 1 and 2 (measuring 216' x 40' x 21') has begun and is 25% completed.



**Figure 4.16 Resturant**

*Source: Khant Shwe Pyi Co., Ltd*



**Figure 4.17 Shop House 1,2 (216' x 40' x 21')**

*Source: Khant Shwe Pyi Co., Ltd*

## Guest House

There is a place to rest within this project which is built as small hotel or Guest House area.

*Guest House Area:* The Guest House occupies an expansive 1 acre of land. To put this in perspective, an acre is equivalent to approximately 43,560 square feet or 4,046.86 square meters. This generous land area provides ample space for parking, landscaping, and other outdoor amenities.

*Guest House Floor Area:* The Guest House's floor area measures precisely 569.403 square meters. This encompasses all the interior spaces, including guest rooms, reception, dining areas, and administrative offices.

The layout has been thoughtfully designed to optimize functionality and comfort for guests.

*Building Height:* The Guest House stands tall with a height of 14 meters. This measurement includes the roof and any architectural features. The vertical dimension ensures that the Guest House is visible from a distance and adds to its imposing presence.

*Architectural Features:* The Guest House's facade boasts a blend of modern and classic elements. The exterior materials, color palette, and window placements have been carefully chosen to create an inviting ambiance. The roofline features a slight slope, allowing efficient drainage during rainy seasons. Large windows provide natural light to the interior spaces, enhancing the overall guest experience.

*Landscaping and Green Spaces:* Surrounding the Guest House, you'll find meticulously maintained lawns, shrubs, and trees. These green spaces contribute to the Guest House's aesthetic appeal and provide a pleasant environment for guests. Benches and pathways encourage guests to take leisurely strolls and enjoy the outdoors.

*Accessibility and Parking:* The Guest House entrance is wide and welcoming, with a well-marked driveway. Ample parking spaces are available for guests, ensuring convenience and ease of access.

*Safety Measures:* The Guest House complies with all safety regulations, including fire exits, emergency lighting, and smoke detectors. Regular inspections and maintenance are conducted to ensure the safety and well-being of guests and staff.

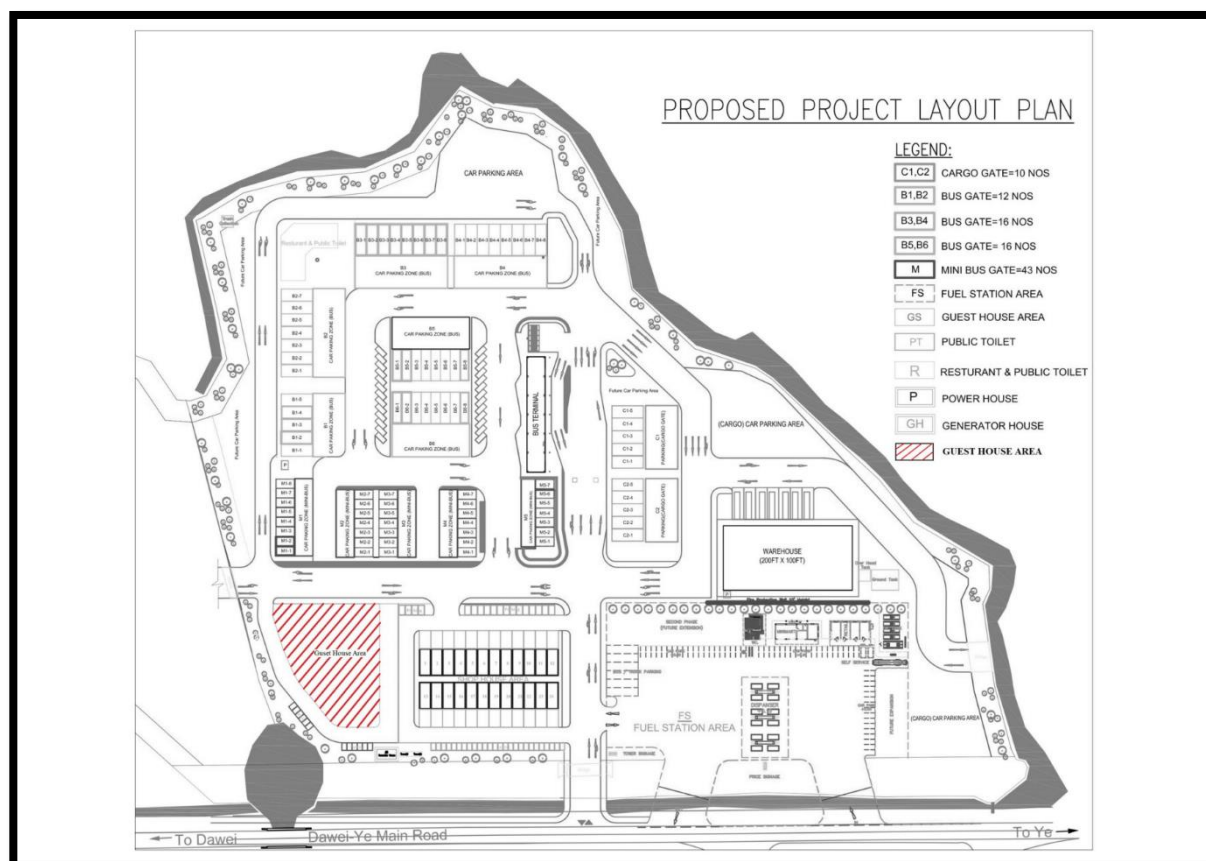
In summary, this meticulously planned Guest House offers a harmonious blend of aesthetics, functionality, and safety, making it an ideal choice for travelers seeking comfort and convenience.

Guest House area is 1 acre / Guest House Floor Area is 569.403 Square Meter, Building Height is 14 Meter (May Be).

**Table 4.2 Numbers of rooms in guesthouse**

Sr.	Room	Numbers
1	Guest House Room	40
2	Kitchen Room	1

3	Dining Room	1
4	Laundry Room	1
5	Store Room	1
6	Reception area	1
7	Lobby area	1



**Figure 4.18 Illustration image of Guest House area in bus terminal**

Source: Khant Shwe Pyi Co., Ltd

**Petrol shop**

There is a place to fill oil within this project which is built in as a fuel oil station.

Fuel Oil Station Area: The fuel oil station occupies an expansive 1.5 acres of land. This generous land area provides ample space for bus and truck parking, oil tank, bowser truck, minimart and office, retail and other facilities. The underground tanks are installed with 6400 gallons tanks. There is four tanks.

The layout has been thoughtfully designed to optimize functionally and convenience for travelers and people who want to fill oil while traveling. Moreover, minimart and retail are prepared, so it will be more convenient for travelers and local people.

**Accessibility and Parking:** The fuel oil station entrance is wide and welcoming, with a well-marked driveway. Ample parking spaces are available for bus, truck and car. So, it can reduce traffic jams within the project site.

**Safety Measures:** The fuel oil station complies with all safety regulations, including establishing a fire safety plan. Regular inspections and maintenance are conducted to ensure the safety and well-being of travelers and staff. Moreover, an alarm bell, portable fire pump and foam (50 Gals), and water tank are installed near the office and oil tank. If an emergency case has occurred, 5 Nos of 35 kg tank fire extinguishers, 2 Nos of 4 kg falling point fire extinguishers are placed near the oil tank to protect the dangerous situation. In the middle of the layout plan, 24 Nos of 4 kg fire extinguishers are also placed.

In summary, this meticulously planned fuel oil station offers a harmonious blend of accessibility and parking, functionality, safety, and reasonable price, making it an ideal fuel oil station for travelers and local people.



**Figure 4.19 Illustration image of Denko fuel shop in bus terminal**

*Source: Khant Shwe Pyi Co., Ltd*

### **Over Head Tank**

A 14' x 14' x 40' overhead water tank is being constructed next to the warehouse. Construction is currently 50% completed. Water Supply and distribution system for reservoir over head tank had been installed in the project area.



**Figure 4.20 Over Head Tank**

*Source: Khant Shwe Pyi Co., Ltd*



**Figure 4.21 Water Supply and distribution system**

*Source: Khant Shwe Pyi Co., Ltd*



**Building M&E Work**

The M&E work for the project is expected to be finished in March 2024. 80% of both building M&E work and infrastructure M&E work have been completed. Fire pump (firefighting system) has been installed by safe zone engineering from 4.2.2024 to 10.2.2024. Wall hacking and piping installation has been performing in B1 and B2 building from 4.2.2024 to 10.2.2024. Wall hacking, base cup, and piping installation for water supply, plumbing and sanitary, and electrical system has been carrying out in B5 and B6 buildings from 4.2.2024 to 10.2.2024.





**Figure 4.22 Infrastructure M&E work**

Source: Khant Shwe Pyi Co., Ltd

#### 4.6.2 Project Site Layout Maps

The basic infrastructure for the whole project, which is opening bus gates for highway bus by building roads and drainage, opening cargo gates, opening fuel stations, and wholesale markets of vegetables and fruits and a hotel is constructed. In phase 1, it plans to establish 44 bus gates, 43 mini bus gates, warehouse, 16 fruit shop for fruit market (parking area include), 24 food stalls and 1 petrol shop. The following figure demonstrates the detail project layout plan.

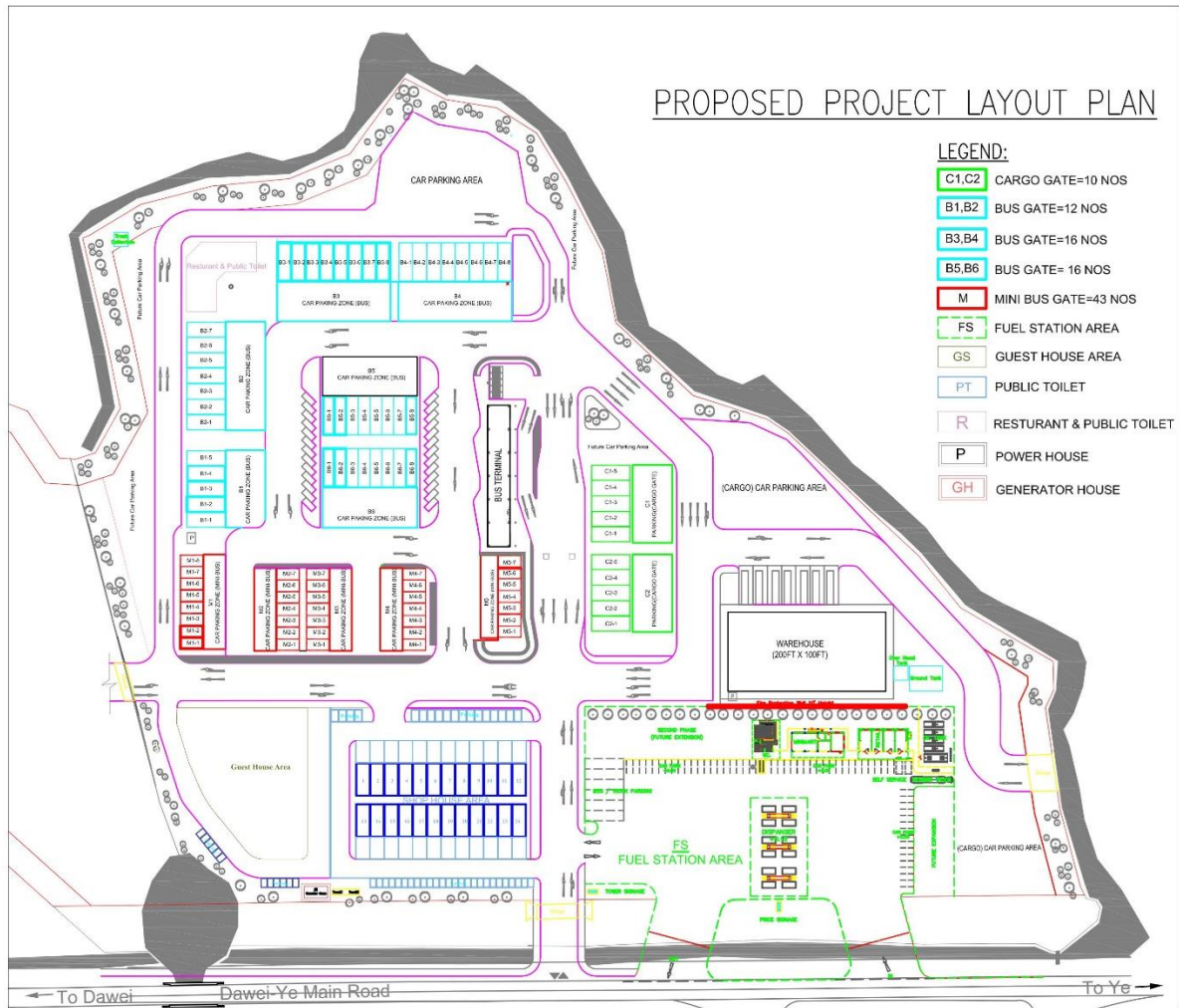
**Table 4.3 Main building size and type**

No.	Building Name	Size of Building	Type of Building
1.	Bus Terminal	(206'-6"x26'-3")	R.C.C

**Table 4.4 Subsidiary building size and type**

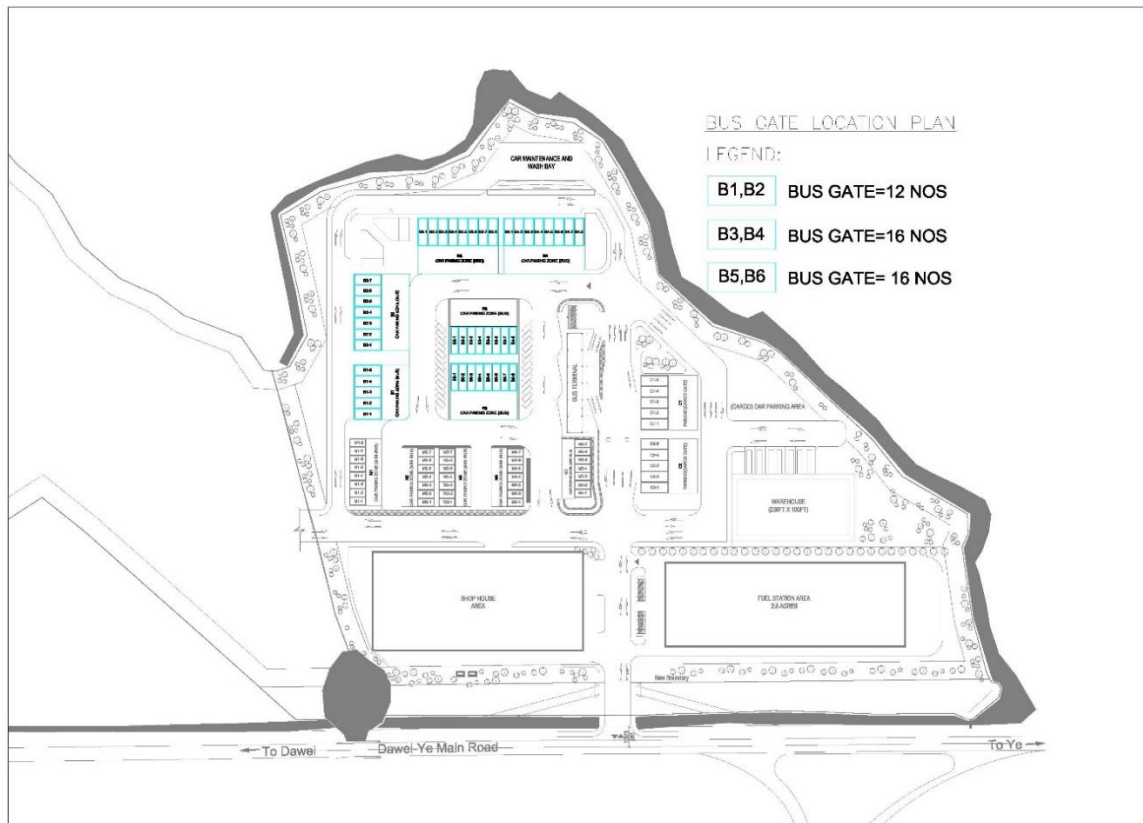
No.	Building Name	Size of Building	Type of Building
1.	Mini Bus Gate (M1)	(120'x30') _8 Units	R.C.C
1.	Mini Bus Gate (M2, M3, M4, M5)	(105'x30') _7 Units	R.C.C
2.	Bus Gate (B1)	(100'x40') _5 Units	R.C.C
3.	Bus Gate (B2)	(120'x40') _7 Units	R.C.C
4.	Bus Gate (B3, B4)	(144'x40') _8 Units	R.C.C

5.	<b>Bus Gate (B5, B6)</b>	<b>(120'x40') _8 Units</b>	<b>R.C.C</b>
7.	<b>Cargo (C1, C2)</b>	<b>(100'x40') _5 Units</b>	<b>R.C.C</b>
8.	<b>Ware House</b>	<b>(100'x200')</b>	<b>Steel Structure</b>



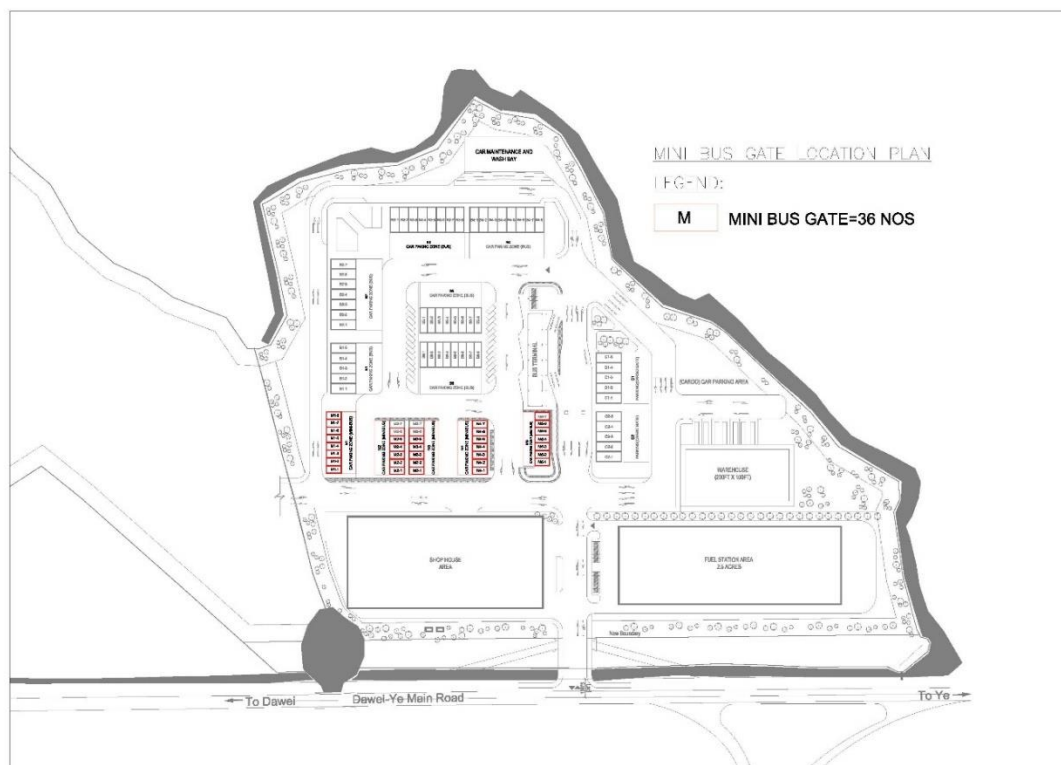
**Figure 4.23 Overview Map of Dawei Bus Terminal phase 1**

Source: Khant Shwe Pyi Co., Ltd



**Figure 4.24 Bus Gate Location Plan**

Source: Khant Shwe Pyi Co., Ltd



**Figure 4.25 Mini bus gate location plan**

Source: Khant Shwe Pyi Co., Ltd

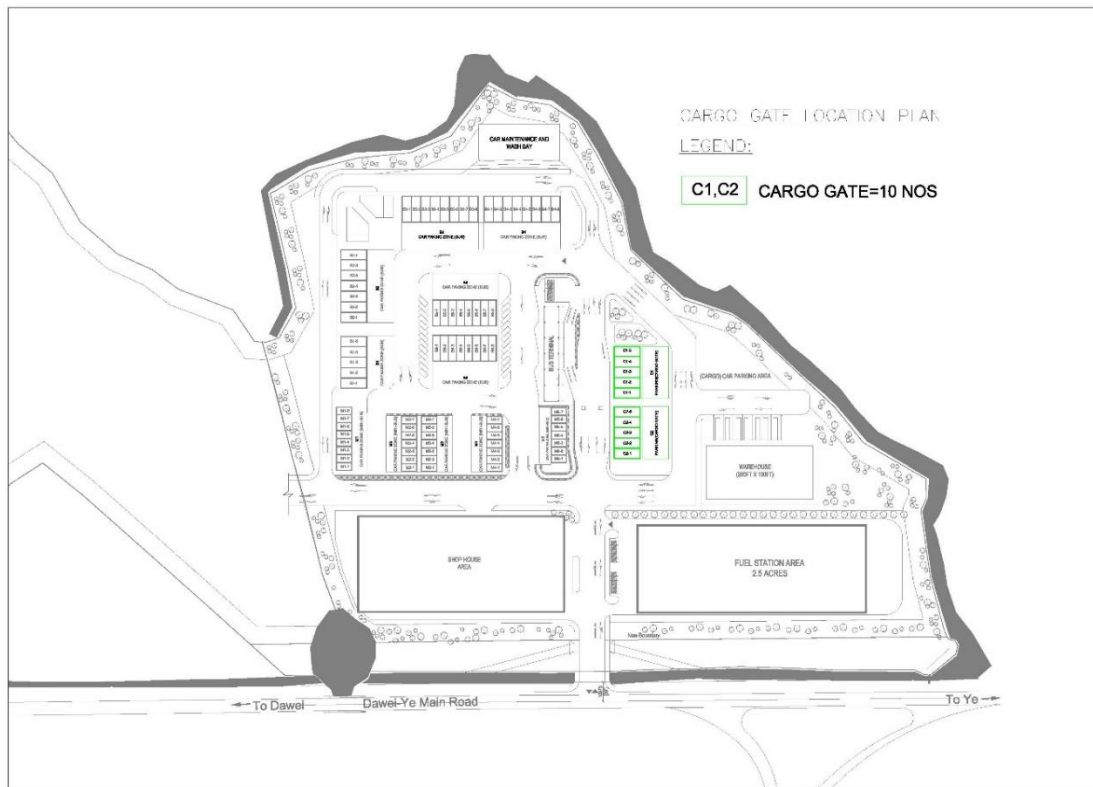


Figure 4.26 Cargo gate location plan

Source: Khant Shwe Pyi Co., Ltd

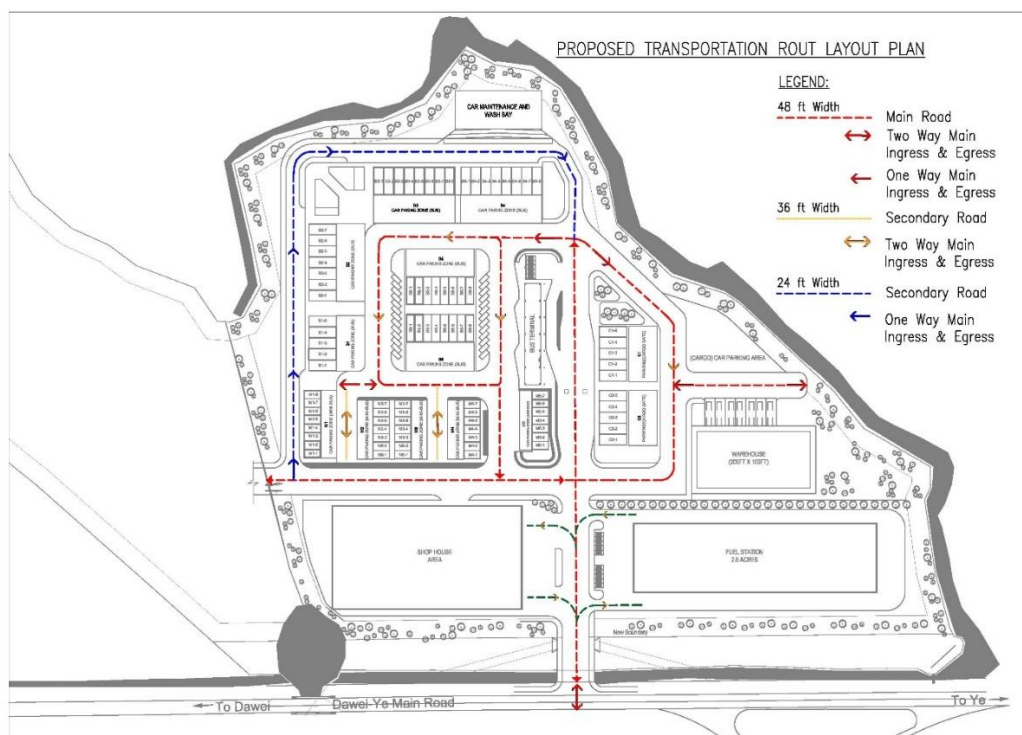
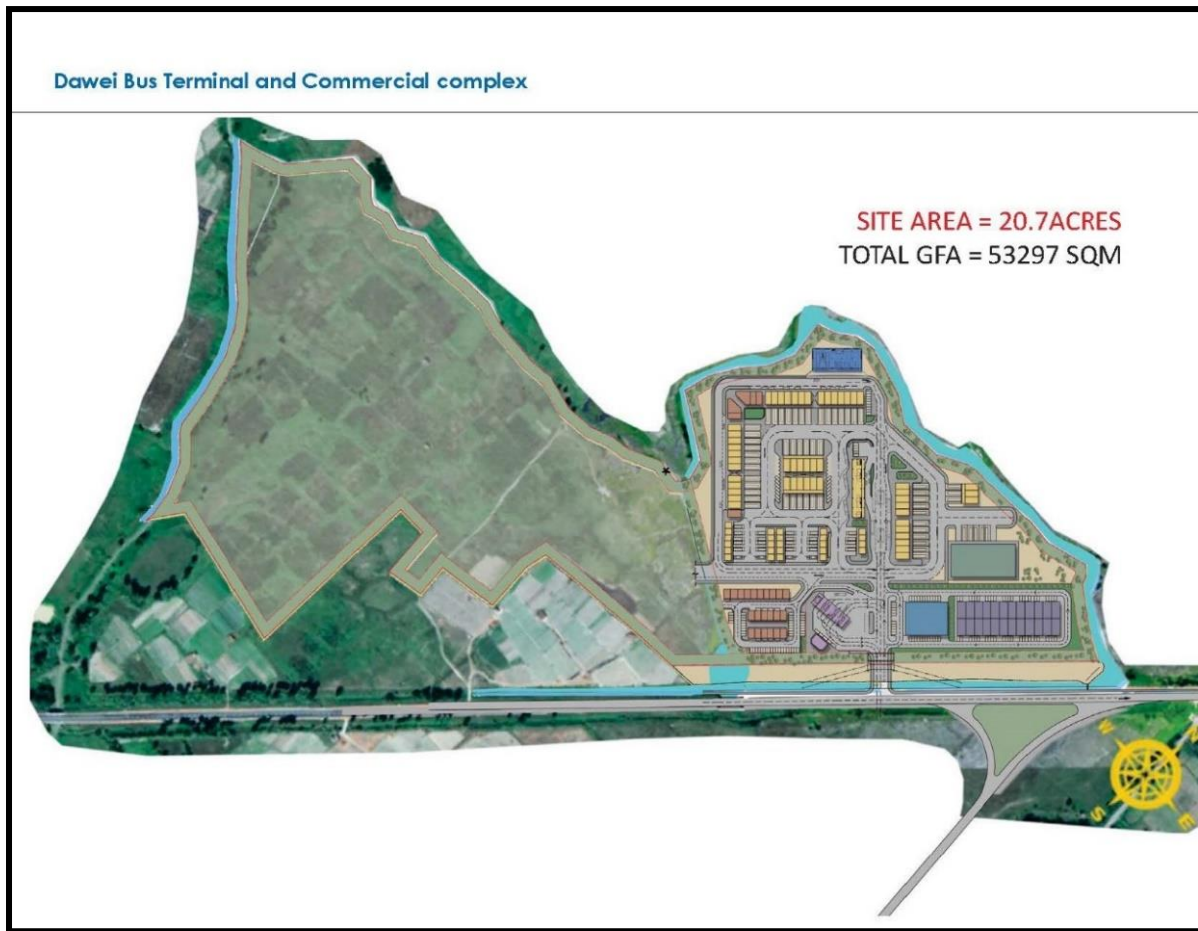


Figure 4.27 Road layout plan

Source: Khant Shwe Pyi Co., Ltd



**Figure 4.28 Overview and illustration Map of Dawei Bus Terminal phase 1**

Source: Khant Shwe Pyi Co., Ltd

**Table 4.5 Machines and equipment list**

Sr. No	Assets Type	Number of Vehicles
1	Volvo FM-400 Dump Truck	7
2	AG Truvk_7 m <sup>3</sup>	2
3	Mitsubishi Motor Grader MG_430	1
4	SUMITOMO_ Excavator	1
5	Doosan Wheel Loader_(ASN:20410)	1
6	Dozer (Dresser)	1

7	TATRA Transporter 815-2 NTH 28.235	1
8	LEYLAND NTC355LL01	1
9	Vibromax Q1103D _ Roller	1
10	TE (Water Boxer)	1
11	CANTER (FUS0_Oil Truck)	1
12	14' DYNA	1
13	Batching Plant ZTC (35m <sup>3</sup> )	1

#### 4.6.3. Landscaping Plan

In order to create a green and beautiful area in the ongoing highway car park project, trees and ornamental plants are being planted at the boundaries of the project site. A variety of trees and flowering plants are being chosen, including (300) *Acacia mangium*, (100) *Delonix regia*, and (100) *Lagerstroemia indica*. These will establish a green and aesthetically pleasing environment for the bus terminal project currently under construction. Additionally, (50) *Borassus flabellifer*, (20) *Tabebuia aurea*, (50) *Terminalia mantaly* are planned to be planted and are expected to flourish during this year's rainy season. Furthermore, the project layout plan incorporates growing grasses and flowering plants in designated green areas to enhance the overall greenery.

**Table 4.6 Lists of Trees and ornamental plants being planted at the project site**

No.	Local Name	Scientific Name	Family	Common Name
1.	Man Gen Shar	<i>Acacia mangium</i>	Fabaceae	Silver Wattle
2.	Sein Pan	<i>Delonix regia</i>	Fabaceae	Royal Poinciana
3.	Pyin Ma	<i>Lagerstroemia speciosa</i>	Lythraceae	Crepe Myrtle
4.	Ngwe Htan	<i>Livistona chinensis</i>	Arecaceae	Chinese Fan Palm
5.	Thabyay buta	<i>Tabebuia aurea</i>	Bignoniaceae	Golden Bell
6.	Taiwan Banda	<i>Terminalia mantaly</i>	Combretaceae	Madagascar Almond



*Acacia mangium*



*Delonix regia*



*Lagerstroemia speciosa*



*Livistona chinensis*



*Tabebuia aurea*

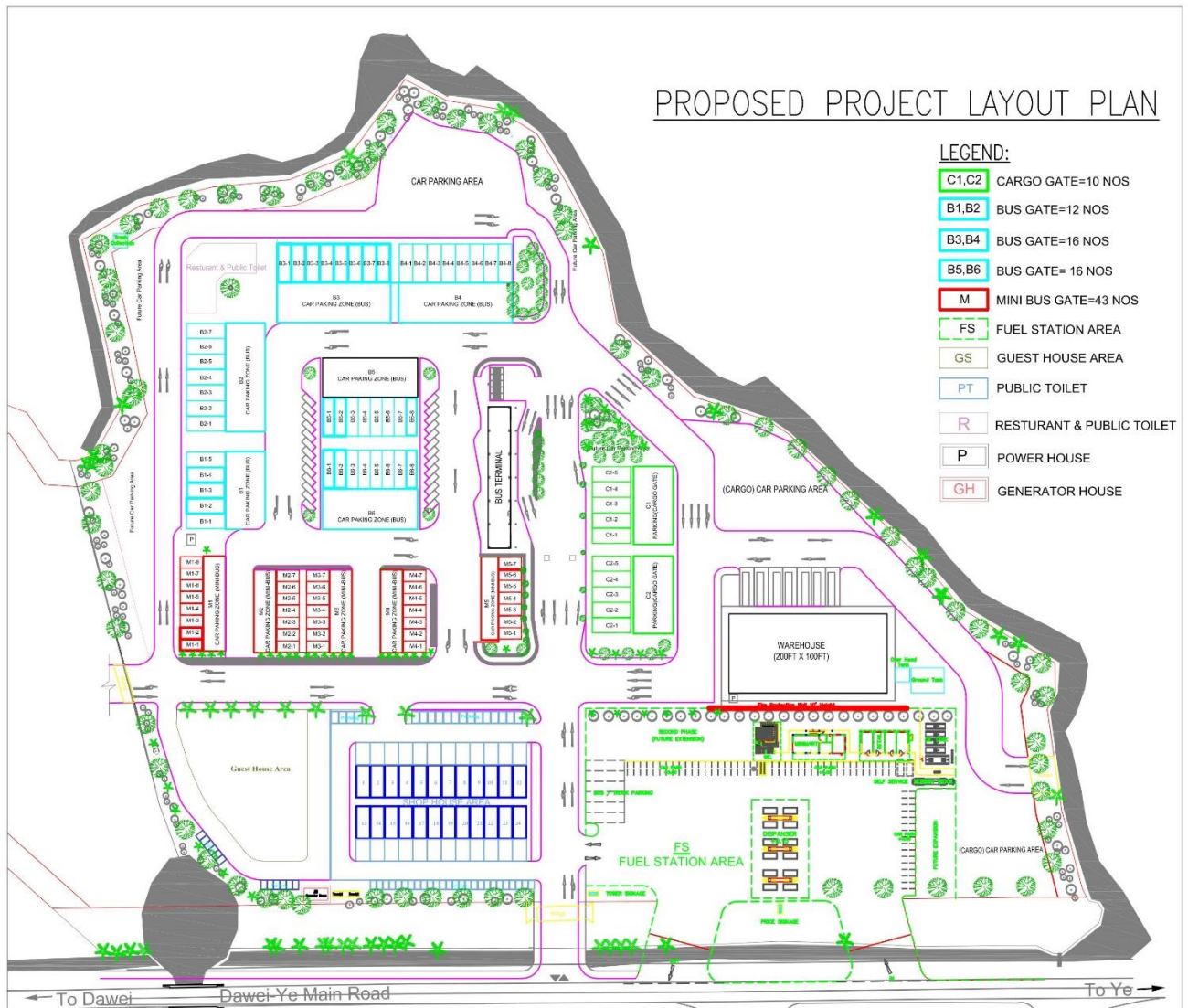


*Terminalia mantaly*

**Figure 4.29 Trees and ornamental plants will be planted at the project site**

Trees and ornamental plants are being planted along the boundaries of the project site. Some were planted during the construction phase, while the rest will be planted during the rainy season. The following layout plan indicates the designated locations for the trees.



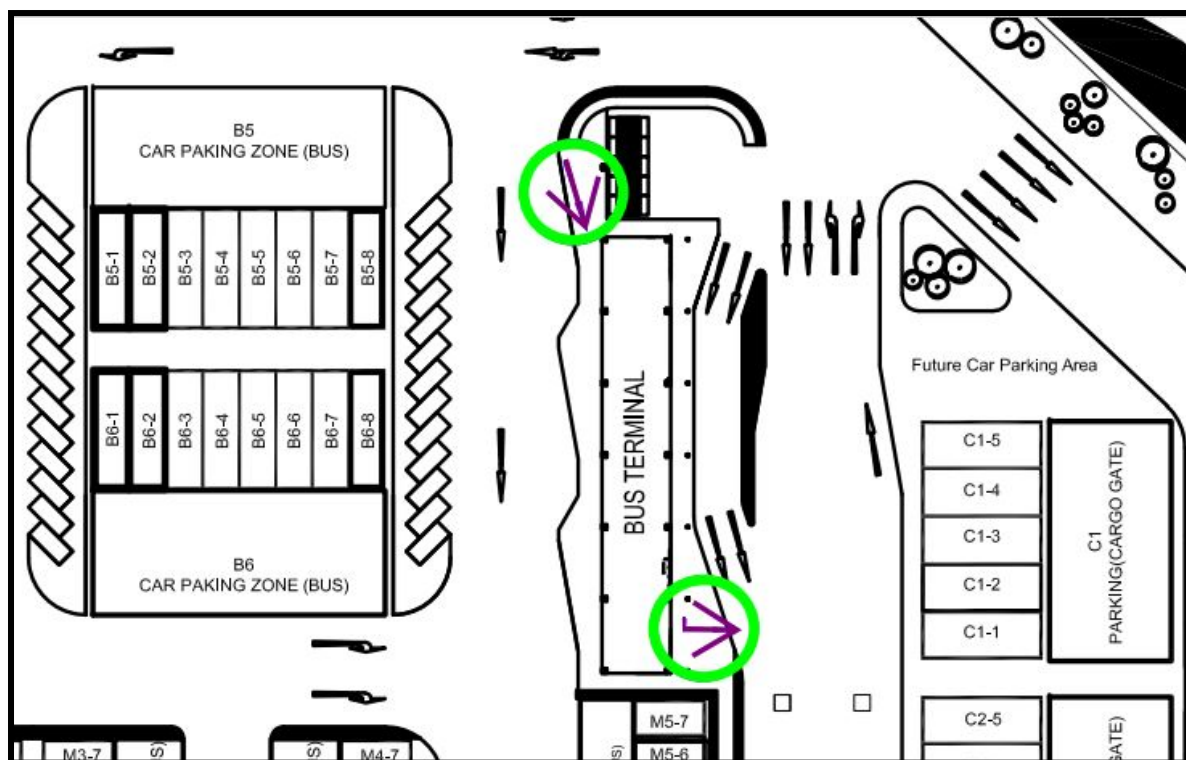


**Figure 4.30** Layout Plan for Designated locations of the trees

Source: Khant Shwe Pyi Co., Ltd

4.6.4. Accessible Walk way for Disabled person

In order to convenient for disabled person, a designated, accessible path with a smooth, slip-resistant surface will be implemented from the terminal entrance/exit to all bus boarding areas. Clear and prominent signage should be present throughout the terminal, indicating the location of the accessible walkway. Designated rest areas with benches or seating should be available along the walkway at regular intervals. The following layout plan shows the designated accessible walk way for disabled person at bus terminal.



**Figure 4.31 Accessible Walk Way for Disabled Person**

Source: Khant Shwe Pyi Co., Ltd

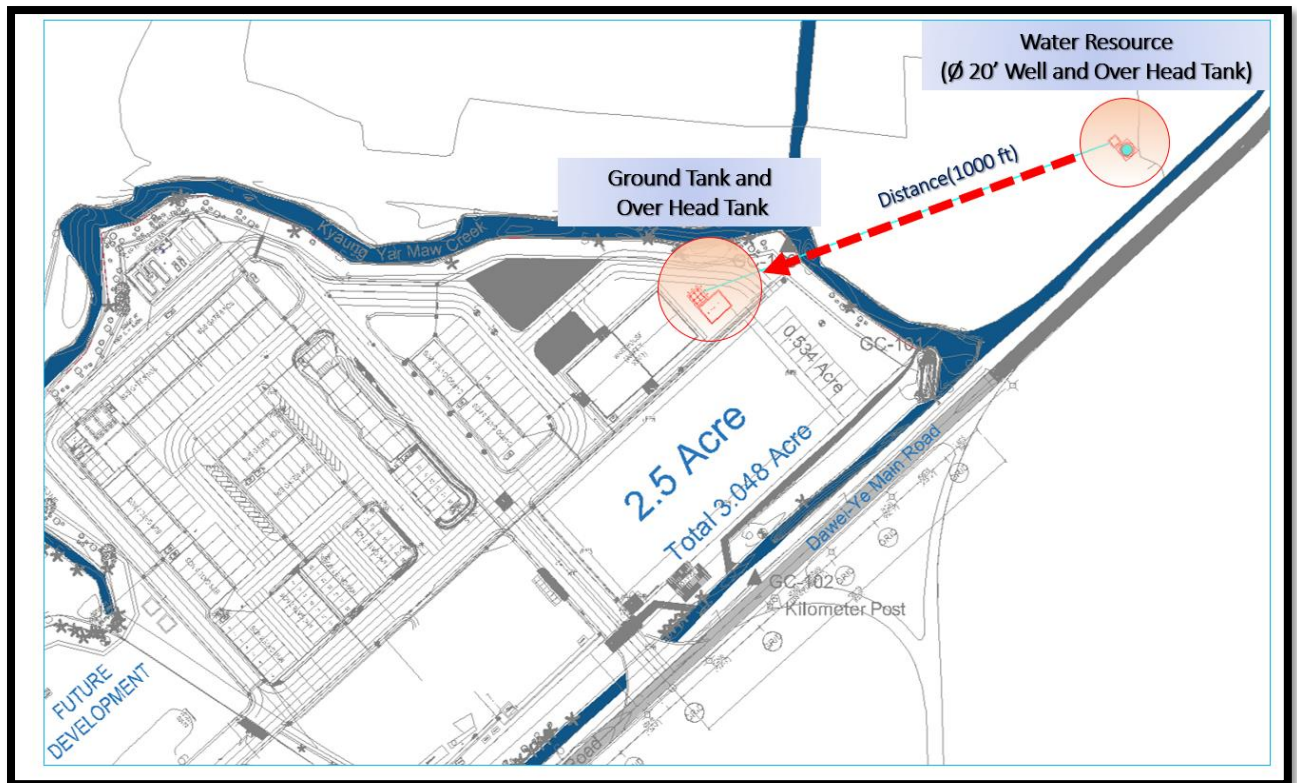
#### **4.7 Resource Requirements**

##### **4.7.1. Manpower Requirement**

There is total around 200 workers for construction work and earth work. The workers are hired near local area to create better job opportunities for local people. Totally 73 legal staff and near 200 external staff. 72 staff are from Myanmar and 1 staff is hired from foreign. Also 15 numbers of places are given to staff to stay within project site.

##### **4.7.2. Water Consumption**

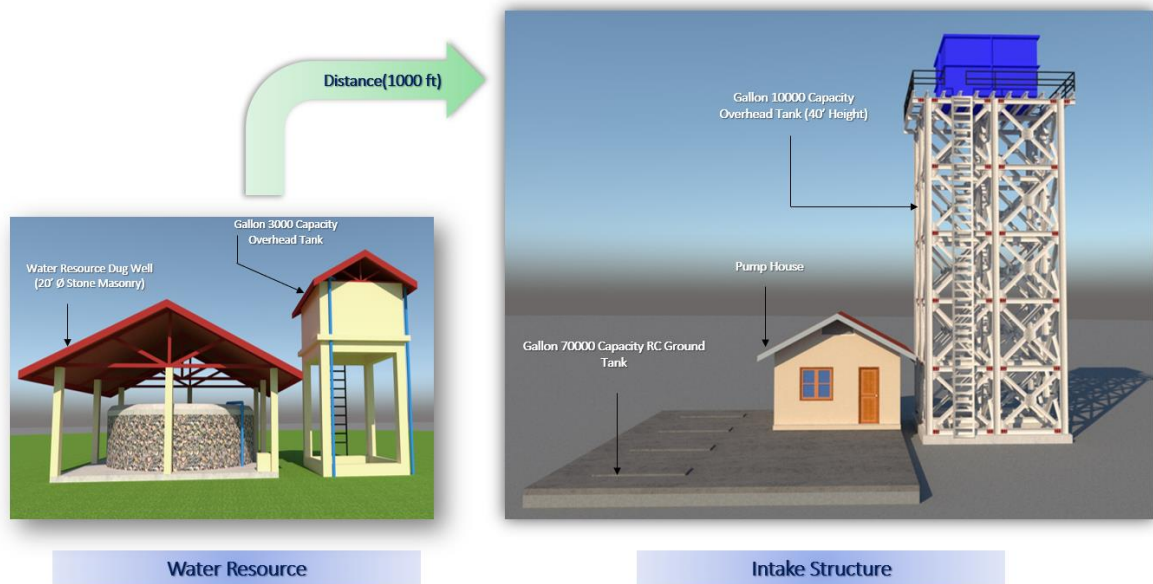
During construction, 8 hand scoop water holes and 2 feet square are used as construction water consumption. One big well is also found at distance of 1000 ft from project water resource ground tank and use as ground water as shown in figure. From the measured water quality results, water quality in this big well is tested and not able to use as drinking water, due to high in mercury continece. Currently, it will be applied as main sources of water usage for the proposed project, however, for further construction, operation and decommission phases all of drinking water will be purchased fresh water from outsources. The expected total usage of water is 50,000 Liters per day during operation.



**Figure 4.32 Location of ground water well and overhead tank**

Source: Khant Shwe Pyi Co., Ltd

As shown in following figure, ground water is delivered to ground tank and overhead tank in project site for water resource. The big ground well located at outside of project area is 20 ft wide and gallon 3000 capacity overhead tank is placed near that well. From the distance 1000 ft ground water is delivered to ground tank located inside of project area, which has 70000 gallons capacity RC ground tank. Then, water is pumped to overhead tank of 40 ft height with 10000 gallons capacity as intake water resource.



**Figure 4.33 Images of ground well, ground tanks and overhead tanks**

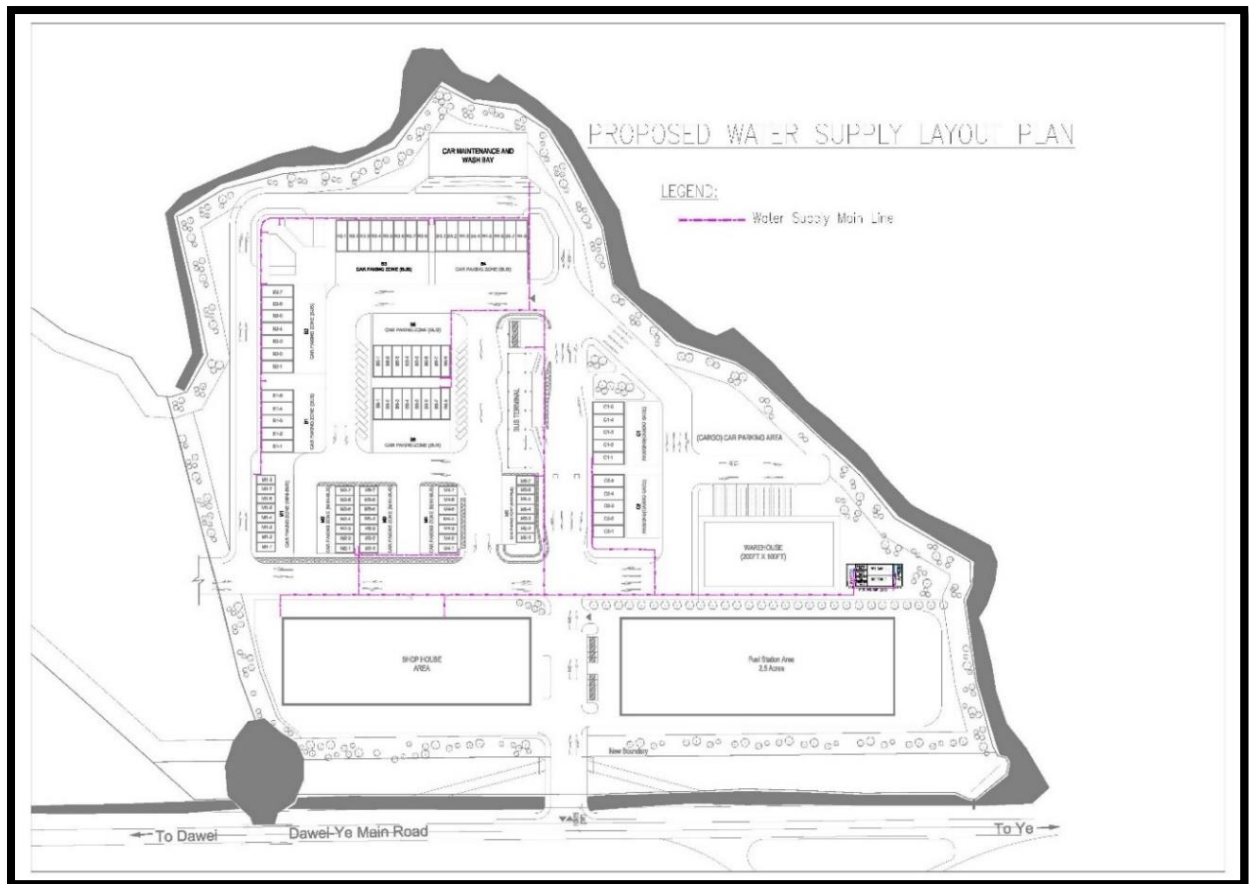
Source: Khant Shwe Pyi Co., Ltd



**Figure 4.34 Images of 20 ft wide ground water well**

Source: Khant Shwe Pyi Co., Ltd

Water supply for operation of bus terminal is as shown in below figure.



**Figure 4.35 Water supply layout plan**

Source: Khant Shwe Pyi Co., Ltd



**Figure 4.36 Underground water pipe line images**

Source: Khant Shwe Pyi Co., Ltd



**Figure 4.37 Current images of 7000 capacity groundwater tank**

Source: Khant Shwe Pyi Co., Ltd

#### 4.7.3. Electricity and Fuel Consumption

There is three transformers and one generator for construction phase and 2 generators will be used in operation phase. A part from the emergency case normally electricity available from the Dawei power station. Transformer capacity of 11KVA and connect with other accessories. Electricity in proposed project is mainly consume for lighting purpose.

#### **In Operation Period**

##### *Electricity Supply Source from MOEE*

- 1). 11/0.4 KV-315 KVA Transformer (30 Kilowatt per hour — Kilowatt per hour) = 1 Nos
- 2). 11/0.4 KV-400 KVA Transformer (30 Kilowatt per hour — 50 Kilowatt per hour) = 1Nos
- 3). 11/0.4 KV-315 KVA Transformer (30 Kilowatt per hour — 50 Kilowatt per hour) = 1 Nos

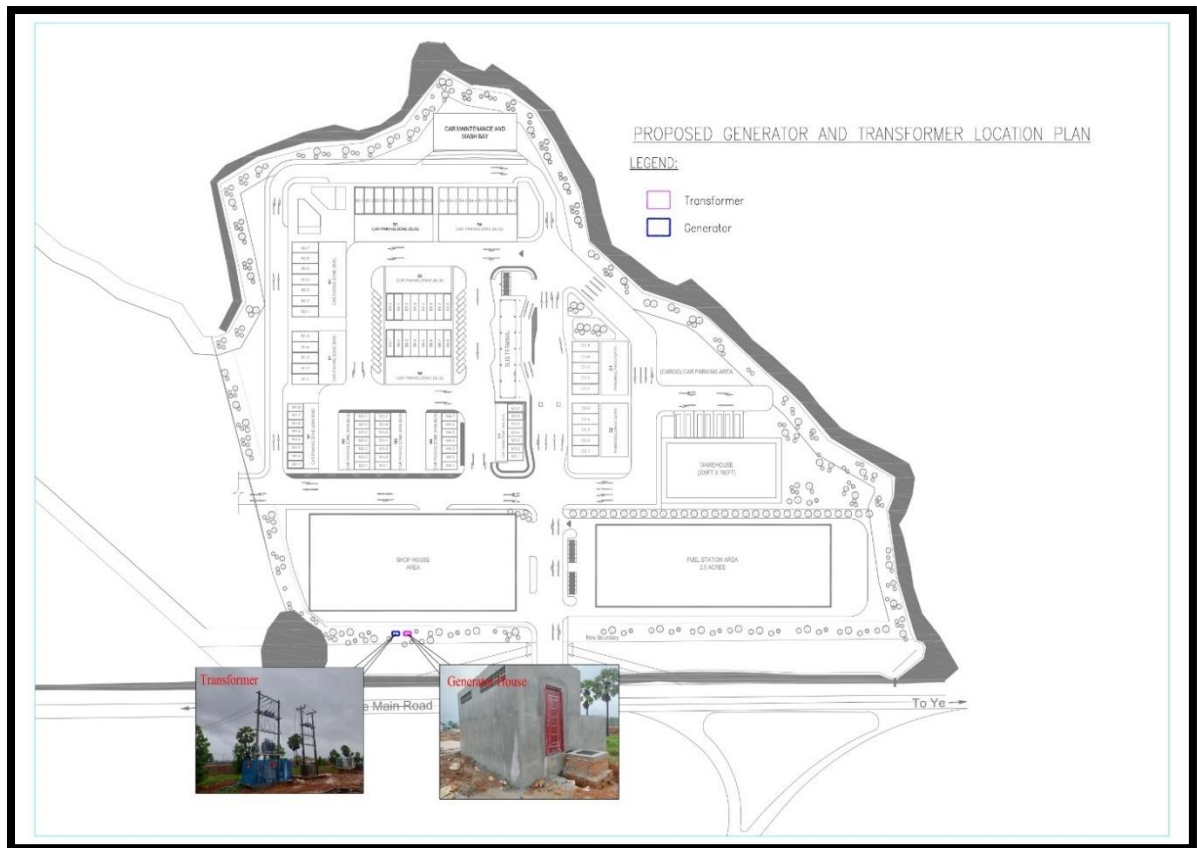
##### *Stand By Generator*

- 1). 250 KVA — (10 to 12 Gallons per hour)
- 2). 100 KVA — (10 to 12 Gallons per hour)

##### *Pump House Diesel Engine (80 HP)*

- 1). Diesel Engine (80 HP) - 2.5 or 3 Gallons Per Hour (For Emergency Case and Fire Protection System)

250 KVA and 100 KVA generators use 10 to 12 fuel gallons per hour for each. Another, fuel usage for proposed project is 250 liters per day for machinery, equipment and generators. The following figure shows the location of transformer and generators for proposed project site. Electric Pump for water pump house (80HP) use 2.5- 3 gallons per hours. Airconditioning is installed only at admistative area with 3 Ceiling type airconditions and 8 Split Type airconditioning with R32 gas type.



**Figure 4.38 Location of transformer and generators**

Source: Khant Shwe Pyi Co., Ltd



**Figure 4.39 Electrical System in project site**

Source: Khant Shwe Pyi Co., Ltd

#### 4.7.4. Waste Management in Terminal

Waste management in Bus Terminal is consider based on three different phases: Construction phase, Operation phase and demolishing phase.

In Construction Stage, waste generation is significant due to excavation, demolition, and material handling.

- Solid Waste: Construction debris, packaging materials, and discarded materials fall into this category.
- Liquid Waste: Includes wastewater from construction activities, such as concrete mixing, cleaning, and dewatering.

Management Practices: Separate solid and liquid waste at the source, reuse materials (e.g., bricks, steel) and recycle where possible, ensure safe disposal of hazardous waste, prevent soil erosion to minimize sediment runoff and build Sediment Basins Collect sediment runoff for proper disposal of liquid waste.

In Operation Stage, waste continues to be generated during the operational phase of a bus terminal.

- Solid Waste: Includes daily waste from passengers, staff, and maintenance activities.
- Liquid Waste: Wastewater from cleaning, maintenance, and vehicle washing.

Management Practices: Collection regular waste and transportation to designated disposal sites, separate recyclables, organic waste, and hazardous materials, ensure to treat liquid waste (e.g., oil-water separators) before discharge, compostible organic waste into separate compost, promote recycling of materials like paper, plastic, and glass, awareness campaigns should do twice a year to educate staff and passengers about waste management.

In decommission Stage, when a bus terminal reaches the end of its life cycle, proper demolishing structures to minimize waste, salvage reusable materials (e.g., steel, fixtures), dispose of non-reusable materials responsibly and restore the site to its natural state as much as possible.

#### ***Undertaking Waste Generation and Collection:***

Ensure that generated waste is placed within the designated Solid Waste Collection Area. - Regularly monitor waste accumulation and maintain cleanliness.

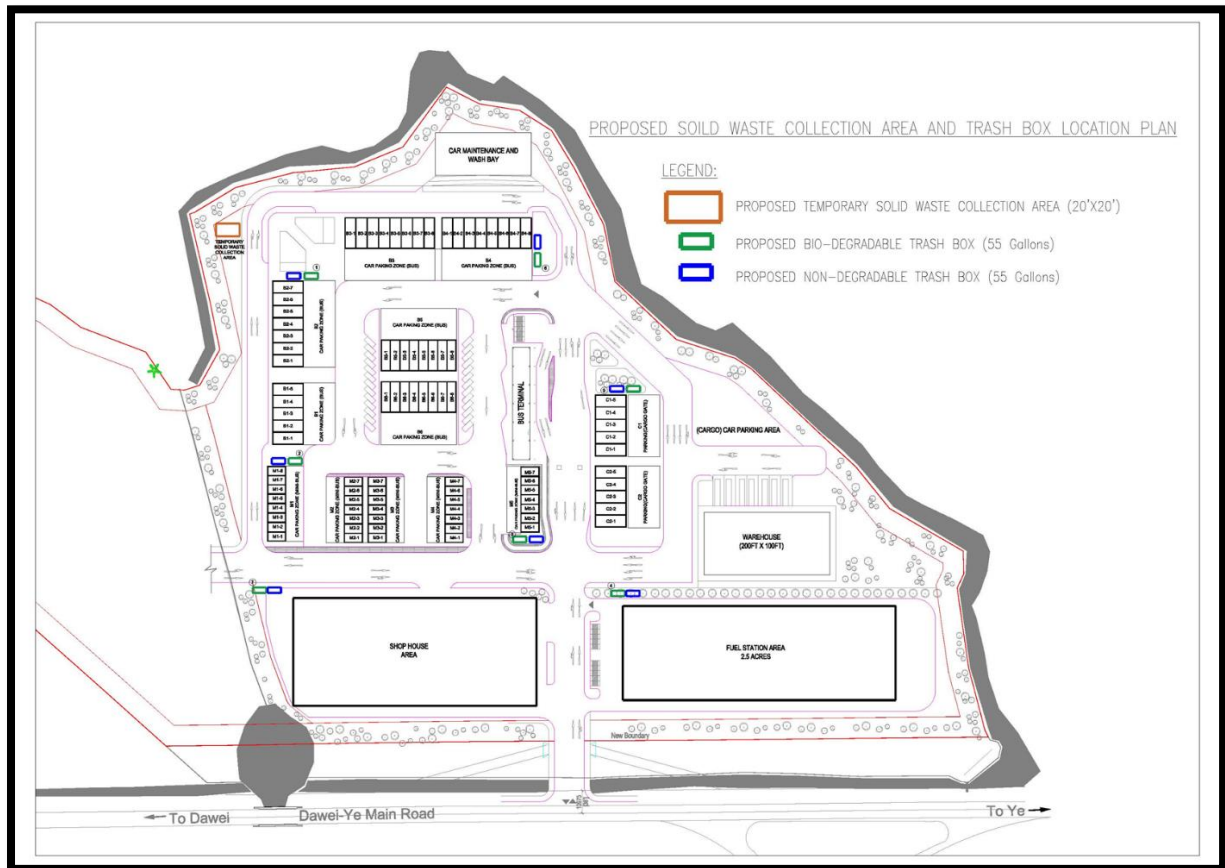
***Waste Collection Area Preparation:*** - In the outer area of the operation area, create a designated temporary solid waste disposal area with 20 feet by 20 feet. By excavating a hole around this area to facilitate proper waste disposal and to control unnecessary expansion.

***Waste Bin Placement:*** - Within each block of the highway bus yard, strategically position two types of waste bins: - Non-Biodegradable Waste Bin (55 Gallons): For materials that do not naturally decompose. - Biodegradable Waste Bin (55 Gallons): For organic materials that break down over time.



*Temporary Disposal:* - Local waste collection contractors should collect waste from the Solid Waste Collection Area on a weekly basis., these contractors will transport the waste to appropriate disposal sites. Thus, all waste will be temporary collected in designated area explain in above.

*Ongoing Disposal Process:* - The disposal process is currently in progress, ensuring proper waste management and environmental responsibility, including construction waste.



**Figure 4.40 Waste Collection area and trash box location plan**

Source: Khant Shwe Pyi Co., Ltd

In proposed project site, KSP has designated the last day of the third week of every month as the waste collection day after office time. All of the staffs must be involved in this activity to support clean environment.



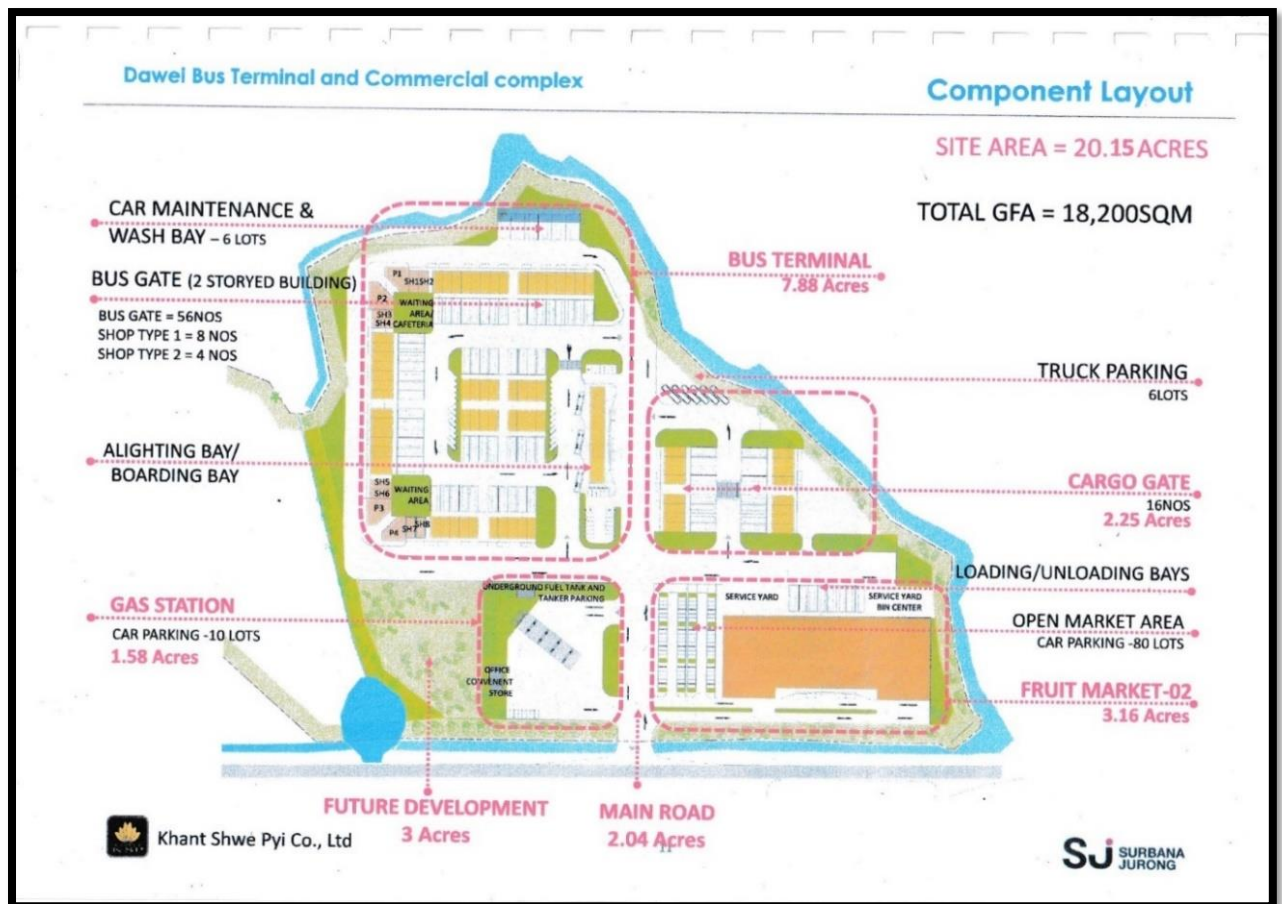
**Figure 4.41 Waste collection day KSP**

*Source: Khant Shwe Pyi Co., Ltd*

**4.8 Project Alternatives**

**a) Design Alternative**

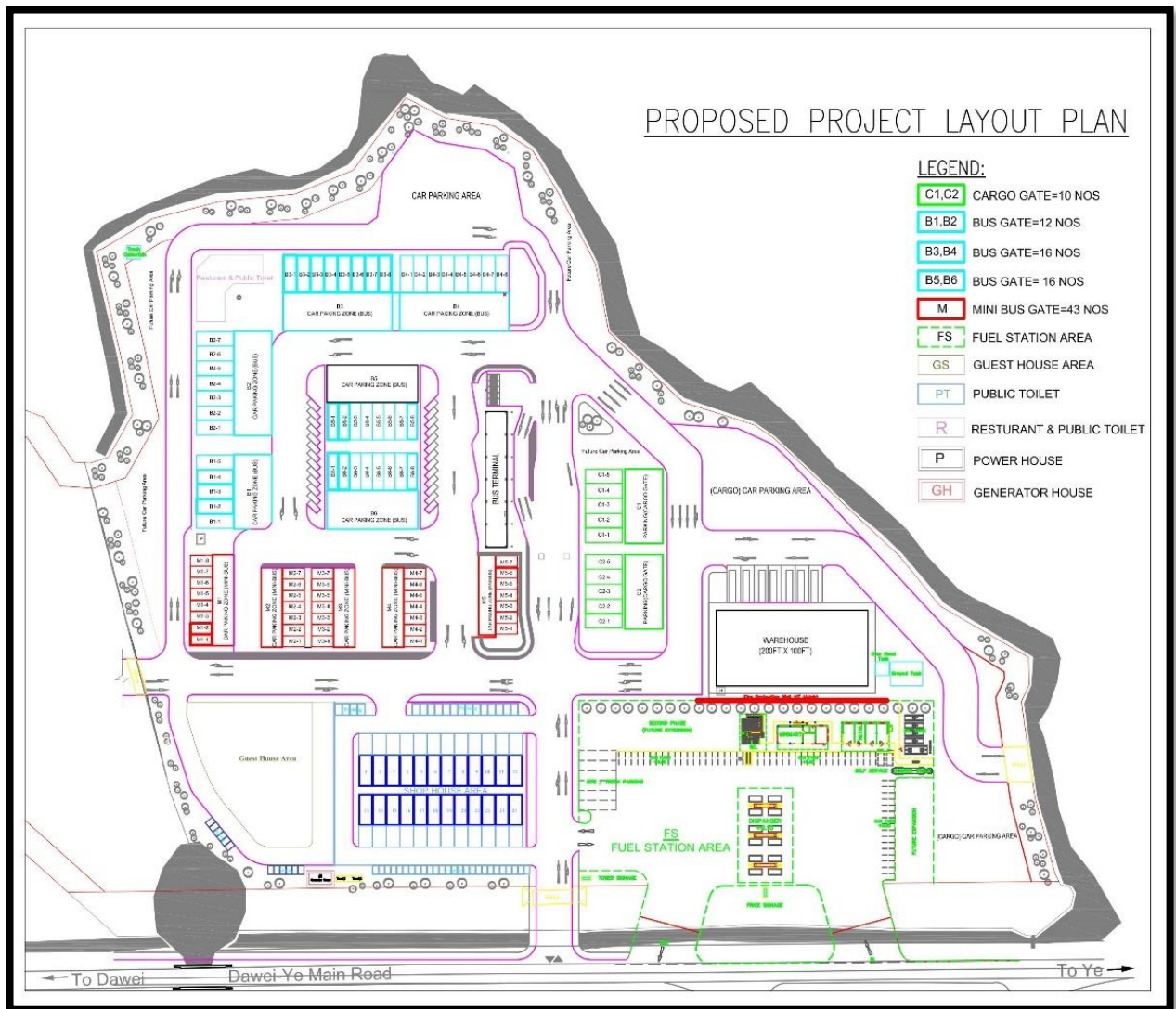
Khat Shwe Pyi has proposed two different designs, the first design was including bus terminal 7.88 Acres, cargo gates 2,.25 acres, fruit market 3.16 acres and gas station 1.58 acres located on left side of the proposed project entrance. Wash bay, alighting bay/boarding bay such as care maintenance will be in cluded with bus terminal. The detail plan can be seen in figure below.



**Figure 4.42 Previous layout plan of Bus Terminal**

Source: Khant Shwe Pyi Co., Ltd

However, the design has changed with different allocation and different purposes. The formal fuel station area has remoted to right side from the main entrance. Fruit market has eliminated in order to minimize unplsant odor emission. For insteand, clean shop houses will be included at the left side of the entrance. Guest house will be included for relaxation purpose for passengers. In order to reduce oil and grease generation, wash bay and car maintainace area has emimated. More car paking areas are constructed. Cargo terminals has minimized and large warehouse has built from aside. Current design of road way in the bus terminal has 20 ft right of way with 2 lanes which let the buses conveniently move around without congestion in the compound. In the terminal, buildings are divided into big bus gates building, minibus gates buildings and cargo gates buildings. Each gate is assembled with specific area. This layout plan can improve easy access to find the preferable gates by customers. Moreover, the current layout plan has low risks of fire hazard as the location of the oil storage tanks is not near to the villages. Ten feet height fire retatining wall has build between fuel station and warehouse to prevent unnessary fire hazard. The final detail drawing is shown as follow.



**Figure 4.43 Current layout plan of Bus Terminal**

Source: Khant Shwe Pyi Co., Ltd

**b) Location Alternatives**

There are important reasons why the present project site was considered as well-suited location for the project.

*Land Availability*

Khant Shwe Pyi (KSP) selected the terminal site outside of the city as wide land area is available at the project site. KSP owns most of the proposed site area and surrounding land areas can be further acquired and utilized for extension of the project. There were no other locations considered for the project site which can be approved or provided by the local administration and authority. Since the main objective of the project is to have better transportation without traffic congestion inside Dawei City, current location was the most suitable one to become the project site.

*Avoidance of Traffic Congestion*

If the location of the bus terminal was chosen at location inside Dawei City, or other places, there would be traffic congestions due to narrow right of way causing inconveniences to the public.

*Accessibility*

Selected location of the project site is easily accessible from the Ye-Dawei highway. Selected location of the project site is easily accessible from the Ye-Dawei highway. If the location of the Bus terminal was changed to others place, the transportation and communication for local people would be more difficult as this project is located right beside the Ye-Dawei highway and away from populated place in order to avoid the traffic congestion.

*Impacts on Natural and Social Environment*

If KSP selected forested area with biodiversity for the project, there would be some habitat loss of fauna and flora. As the current project site is mostly barren land with negligible presence of natural vegetation, the impacts on the natural environment can be avoided. As there is land available for tree planting at the present location, it can also improve the green environment. Moreover, the current location of the project is not too near to the local community resulting low risks which can be happened due to the operation of the project.

**c) No project Alternative**

The “No Project Alternative” which assumes the continuation of existing conditions on the Project site without implementation of the project. In the following table pros and cons of this alternative are compared.

**Table 4.7 Pros and Cons of “No project alternative**

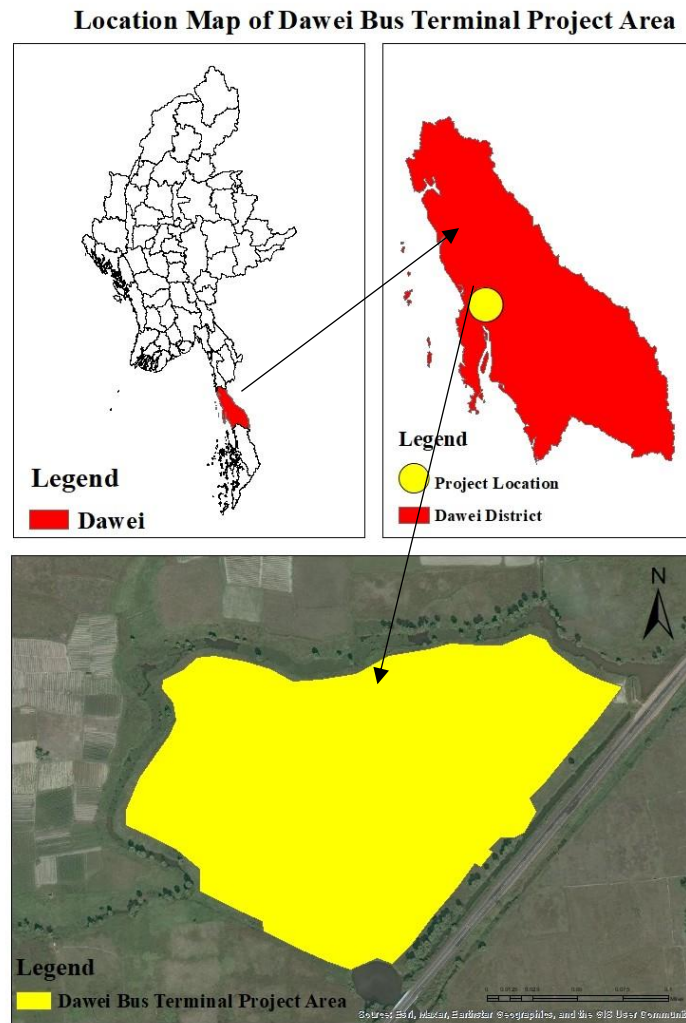
<b>Pros</b>	<b>Cons</b>
<ul style="list-style-type: none"> <li>• There will have no impact (even minimal) from any construction and extraction activities</li> <li>• No emissions, noise and any other impacts on the surrounding environment will be expected so natural resources and biodiversity will be impacted by the activities of the project</li> <li>• No additional traffic in proposed area.</li> <li>• Traffic load will not be raised in the surrounding area.</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of job opportunity.</li> <li>• There will be no development in local community.</li> <li>• Transportation mood will be limited to cars and tricycle only.</li> <li>• Trades or other communications can be more difficult.</li> <li>• Less Tourist and travelers.</li> <li>• No improvement and opportunity for local businesses.</li> </ul>

With this alternative ease and convenient travelling of the people will not be possible, traffic congestions in Dawei City cannot be avoided and local people cannot be benefitted from opportunity offered by the proposed project. On the other hand, negative impacts caused by the project activities can be minimized to the acceptable level through the implementation of effective environmental management plan.

## 5. DESCRIPTION OF THE SURROUNDING ENVIRONMENT

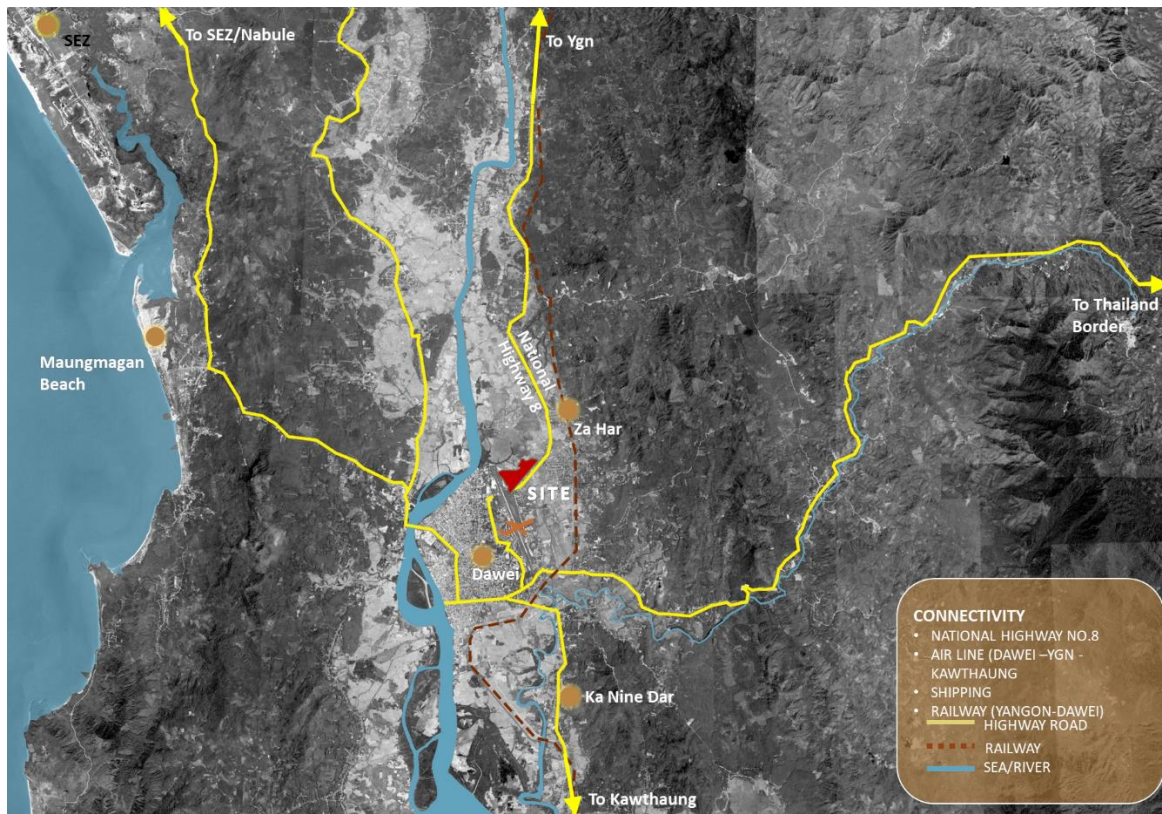
### 5.1. Setting the Study Limits

The proposed study area is located in Tanintharyi Region, Dawei District. Dawei is the capital of the Tanintharyi Division in southern Myanmar. Located at the head of the Dawei river estuary and bordering the Andaman Sea, Dawei features an extreme tropical monsoon climate, which the area along with risks associated with a coastal climate including coastal erosion, sea level rise and saline intrusion. It is estimated that 85 percent of local livelihoods rely on plantation. (Loewen,2012). Dawei is a strategic transport and economic hub as part of the East-West Economic Corridor. Among the planned developments are the Dawei Special Economic Zone (DSEZ), a road and rail link to Kanchanaburi Province in Thailand, and the Dawei deep-sea port linking the Indian Ocean to the Mekong Region. Regionalization is shaping urbanization processes in Dawei, and the city is expecting rapid population growth with 100,000 new jobs expected to be created by 2025 through the Dawei project. SEZ development and urbanization processes will place significant stress on existing resources, making the city and region more prone to climate hazards.



Source: E Guard Study Team (2023)

The proposed project is located right beside the Dawei-Ye/Ye-Dawei highway road, as the selected project location is outskirts of Dawei City, it is a perfect place for highway bus terminal. The main highway also links to Yangon, which is known as commercial city, thus improving logistics through the bus terminal can also contribute to the development of the local economy.

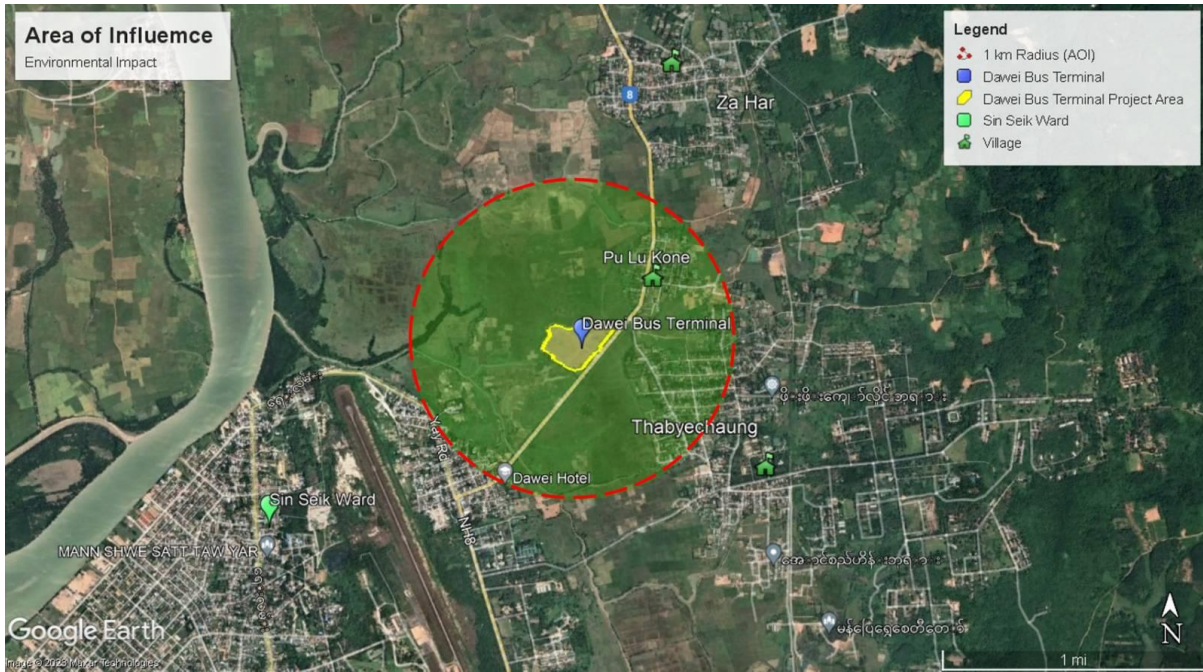


**Figure 5.2 Connectivity of roadway near Dawei Bus Terminal Project**

Source: Khant Shwe Pyi Co., Ltd

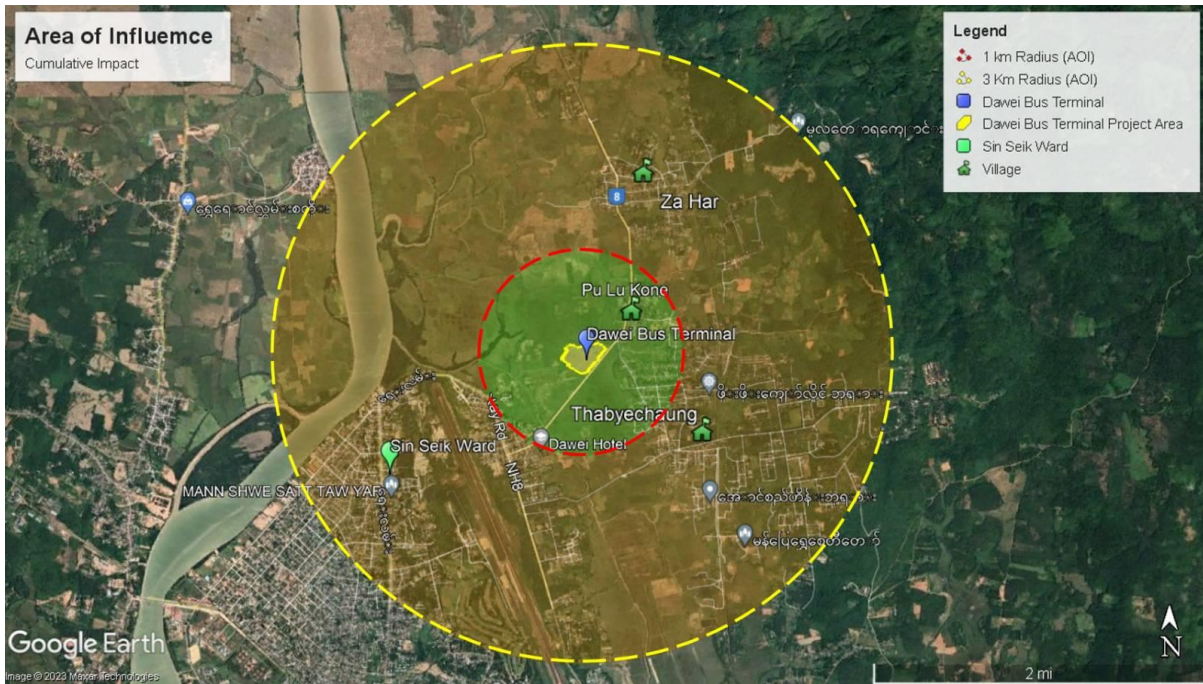
### 5.1.1 Scope of Study Area Limits

The study area for EIA study of this project is defined to be the area within 1 kilometer radius from the center of the site as primary impact zone and 3-kilometer radius as secondary impact zone. The project is located at outer area of Dawei township, which is away from residential area surrounded by farm land and there is no vicinity historical building or places near the project area.



**Figure 5.3 1km area of influence for scope of project**

Source: E Guard Study Team (2023)



**Figure 5.4 3 km area of influence for cumulative impacts of project**

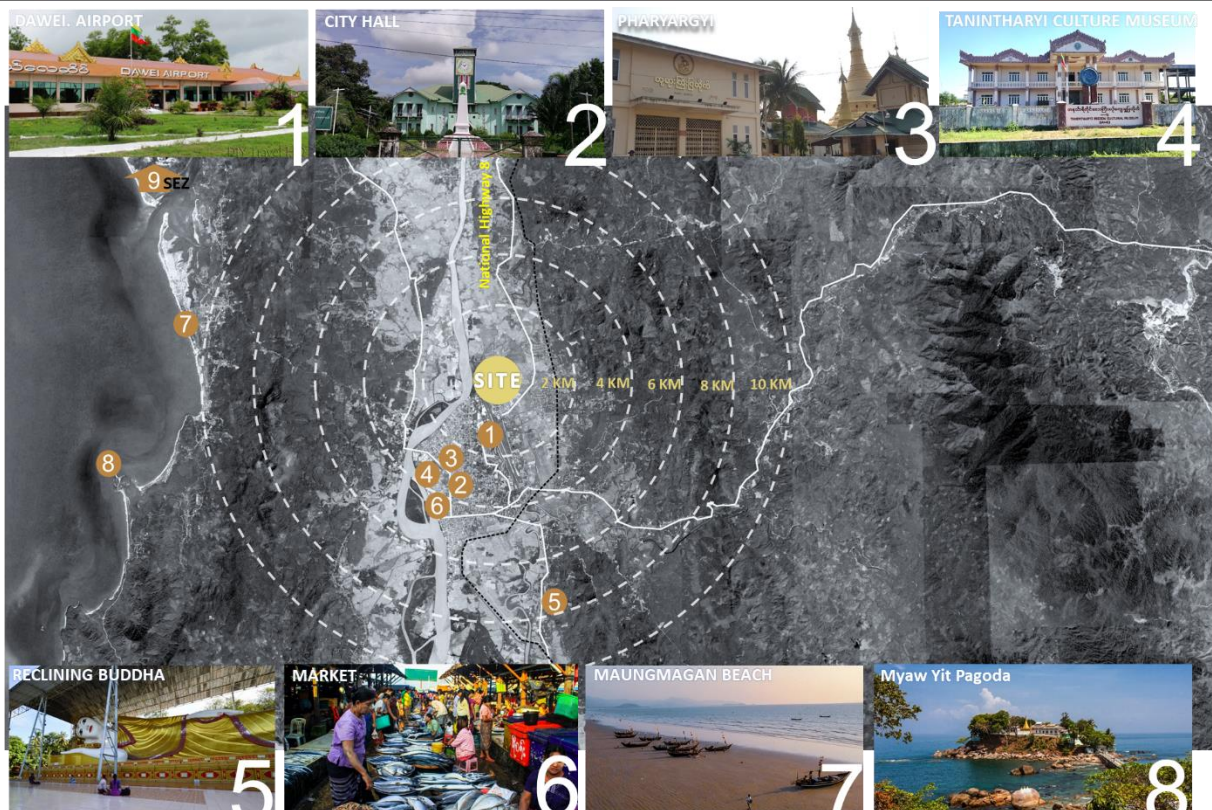
Source: E Guard Study Team (2023)

Surrounding Environment

Around 10 km away from the project site, there is the city hall of Dawei which is the administrative center of the Tanintharyi Region. The project area is also close to the Dawei airport which handles domestic flights. The airport is not far from the city hall and has a passenger terminal building. Another landmark near the project area is the Pha Yar Gyi Pagoda



which is a Buddhist temple dedicated to local cultural site. The pagoda is about 3 kilometers from the project site and has a distinctive architecture with golden pagoda statues. The project area also has access to various cultural attractions, such as the Tanintharyi Cultural Museum which showcases the history and traditions of the local people. The museum is about 3 kilometers from the project site and has a collection of artifacts, paintings, and handicrafts. Another cultural site near the project area is the Reclining Pagoda, which was built by King Mindon in 1890. The pagoda is about 8 kilometers from the project site and has a serene atmosphere with gardens. At the left side of the image below, there are also places offering a variety of shopping options, such as markets, beaches (street stalls), and Maung Ma Kan beaches. These are places where everyone can buy fresh produce, local delicacies, souvenirs, and other items at affordable prices. One of the other popular destinations is Myaw Yit Pagoda which dates back to 1890. The temple was built on a beautiful island. It is a place where the relics of Buddha are housed and is located about 12 kilometers from the project site.



**Figure 5.5 Surrounding Environment of the Project Site**

**5.2. Objectives**

In order to support the development of Dawei region from one side, Khant Shwe Pyi Co., Ltd. the following activities will be carried out by Khant Shwe Pyi Co., Ltd. With emphasis on;

- a) Domestic and foreign travelers can travel peacefully and blissfully.
- b) To be able to provide high-level service to the guests who will travel in Dawei.
- c) More vehicle lines are also able to open bus terminal at reasonable rates.

- d) Fruits and other Vegetables goods from Yangon and Kanchanaburi, Thailand no longer need to enter the city, which can greatly reduce traffic congestion in the city.
- e) Providing more employment opportunities and regional development to local residents at Dawei.

### 5.3. Physical Components

#### 5.3.1. Natural Hazards

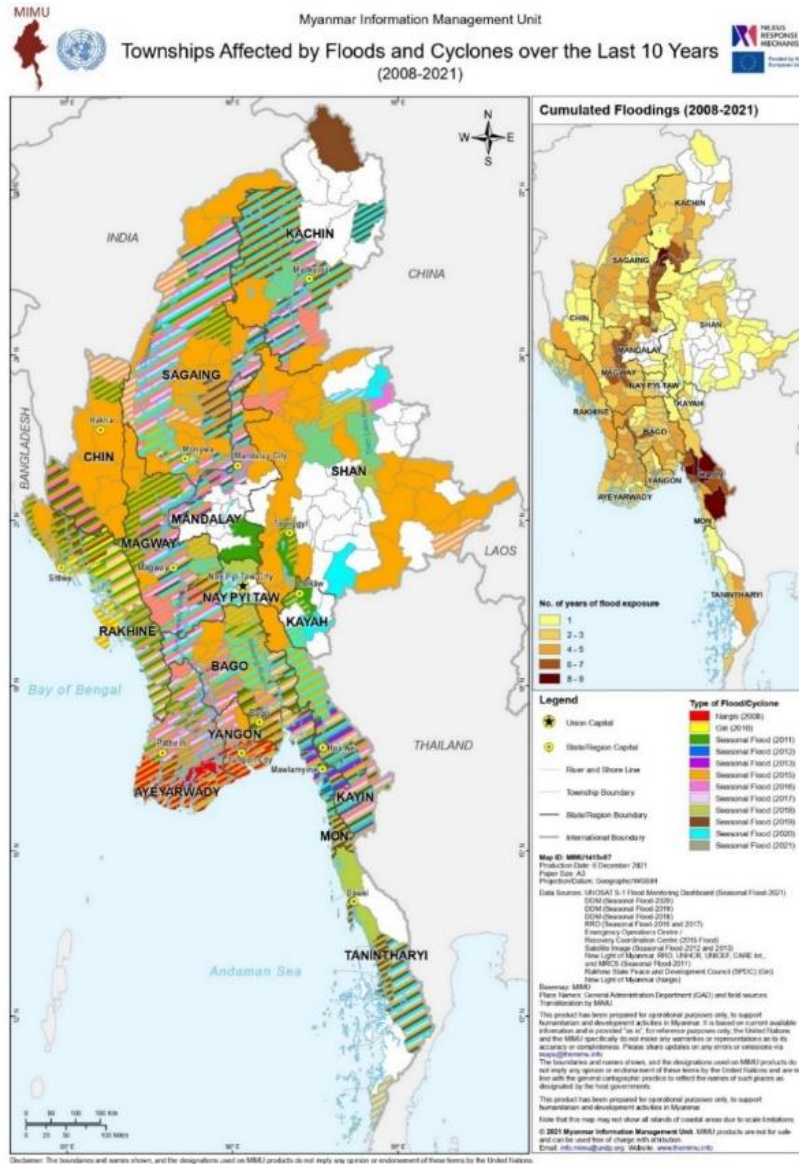
The coast and the country's southern regions in and around the Ayeyarwady Delta and around the Rakhine, Mon, and Tanintharyi coastlines experience the highest exposure to tropical cyclones. In Myanmar, 50% of the total number of disasters was related to floods followed by storm (23%), earthquake (15%), and mass movement-wet (12%), whereas 73% of the total affected people by disasters were due to storm followed by floods in 1980-2011.

In Dawei township, although there was no disaster of storm, tsunami, earthquake, and flooding, it suffered three times of fire disaster, two times of flood, and 3 times of storms from October, 2018 to September, 2019. Dawei township has suffered only seasonal floods. The loss is as follow-

**Table 5.1 Loss of value (million/ Kyat) due to disasters**

No.	Type	Frequency of Occurrence	Number of dead	Damage of building	Loss of value (million/ Kyat)
1.	Fire disaster	3	-	4	5.68
2.	Flood	2	-	2	0.50
3.	Storm	3	-	4	0.75
<b>Total</b>		<b>8</b>	<b>-</b>	<b>10</b>	<b>6.93</b>

Source: Dawei Township Information (GAD,2019)

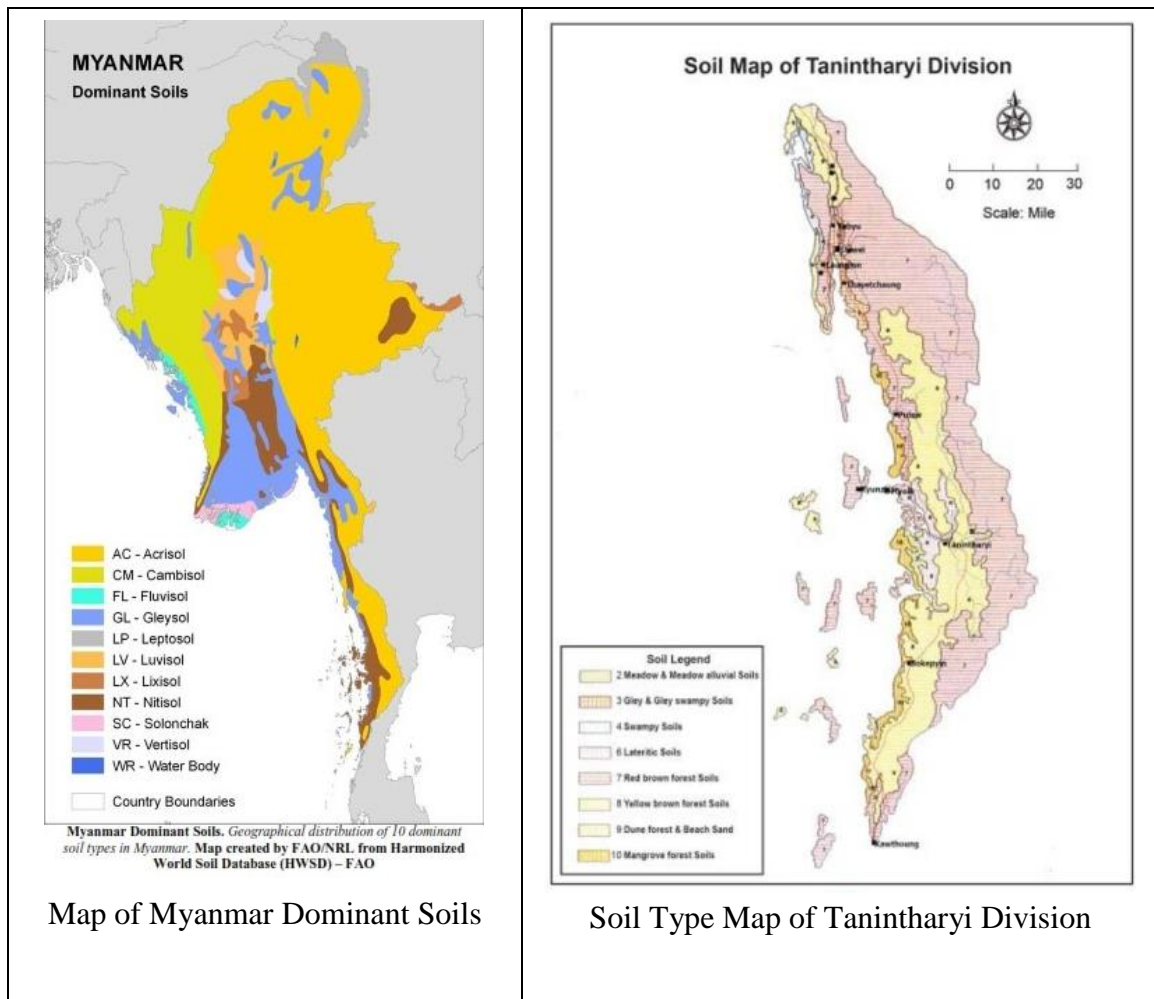


**Figure 5.6 Townships Affected by Floods and Cyclones over the Last 10 Years**

Source: Myanmar Information Management Unit

5.3.2. Topography and Soil

Dawei Township is a hilly region with less flood plain area and mountains running from north to south. The east of the township is high mountains and the mines are located in this region. The Dawei river flows in the west of Dawei township. The proposed project is located in Tanintharyi region, and the project site is located near Dawei river. The dominant soils of Tanintharyi Region are Acrisol, Nitisol, and Gleysol. In Dawei district, Acrisol soil is the dominant soil and the soil type of Dawei district is Gley and Gley swampy soils. Meadow Gley soil and swampy soil occur in the regions of lower depressions where the lands are inundated for more than 6 months in a year. The texture of these soils is clayey to clay, has a very strong acid reaction, and contains a large amount of iron. Moreover, soils with long periods of moisture content have large amounts of aluminum, iron, Sulphur and manganese. These are toxic to plants. The humus contains large amounts of phosphorus and is deficient in potassium. Rice and jute can be grown on these soils after the flood recedes.



**Figure 5.7 Soil Map of Tanintharyi Division**

Source: Myanmar Dominant Soils, Soil Types and Characteristics of Myanmar

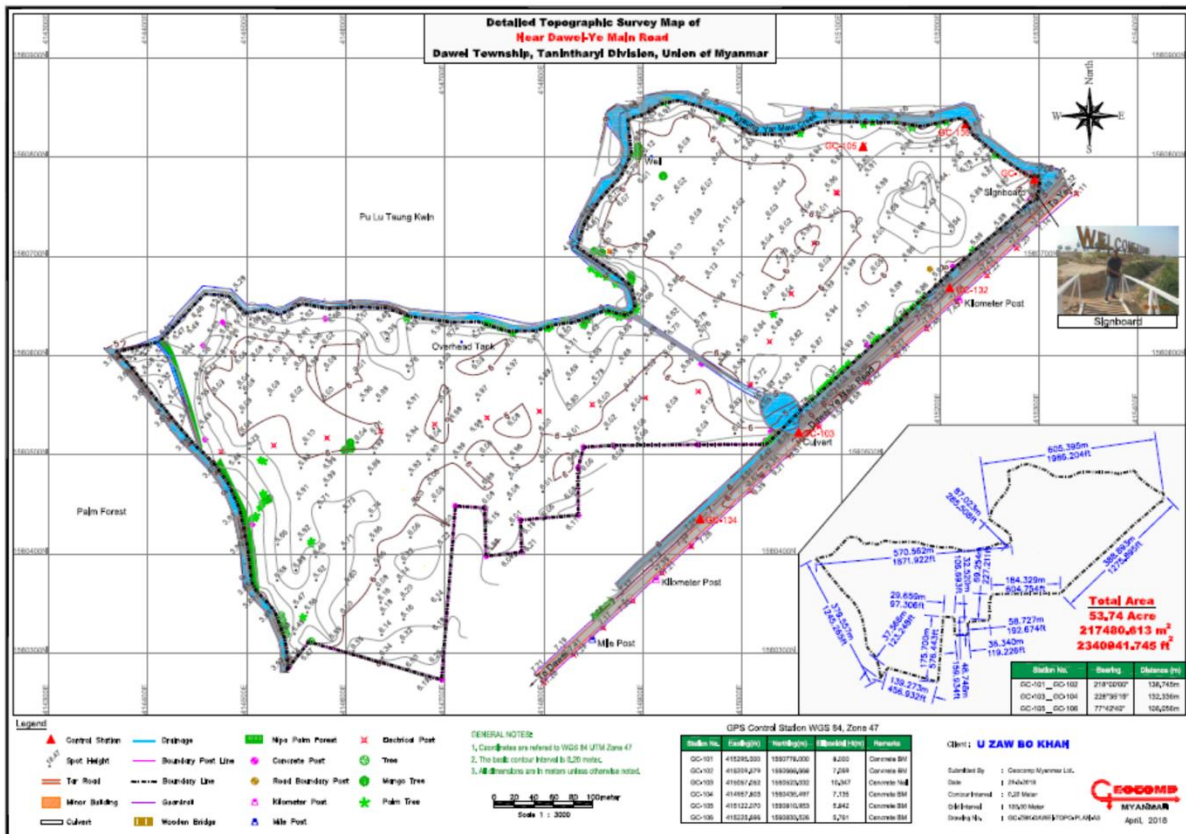


Figure 5.8 Topography map of bus terminal project site

Source: Khant Shwe Pyi Co., Ltd

5.3.3. Climate

Myanmar has a tropical to subtropical monsoon climate with three seasons: the hot dry inter-monsoonal season (mid-February to mid- May), the rainy southwest monsoon (mid-May to late October), and the cool, relatively dry northeast monsoon (late October to mid-February). The coast and country’s southern regions in and around the Ayeyarwady Delta and around the Rakhine, Mon, and Tanintharyi coastlines experience a climate typical of Southeast Asia. The coastal regions and the western and southeastern ranges receive more than 200 inches (5,000 mm) of precipitation annually, while the delta regions receive about 100 inches (2,500 mm). In Dawei township, according to GAD data, the climate is hot and humid and the highest temperature is 38.5° C and the lowest temperature is 15°C. The following table shows the annual rainfall and temperature of Dawei township.

Table 5.2 Annual rainfall of Dawei township for 30 years

No.	Year	Yearly (Mean) Precipitation Change - Dawei (mm)	No.	Year	Yearly (Mean) Precipitation Change - Dawei (mm)
1	1994	3972.4	16	2009	4127.5
2	1995	3324.5	17	2010	2594.5
3	1996	3543.5	18	2011	3698.7
4	1997	3662.2	19	2012	3960.2

No.	Year	Yearly (Mean) Precipitation Change - Dawei (mm)	No.	Year	Yearly (Mean) Precipitation Change - Dawei (mm)
5	1998	2868.3	20	2013	3564.8
6	1999	3820.3	21	2014	3275.9
7	2000	3656.1	22	2015	3199.8
8	2001	3567.9	23	2016	2907.8
9	2002	3808.2	24	2017	3288
10	2003	3373.2	25	2018	4072.8
11	2004	2977.8	26	2019	3625.7
12	2005	3726	27	2020	2743.6
13	2006	3528.3	28	2021	3802.1
14	2007	3567.9	29	2022	3540.5
15	2008	3662.2	30	2023	3275.9

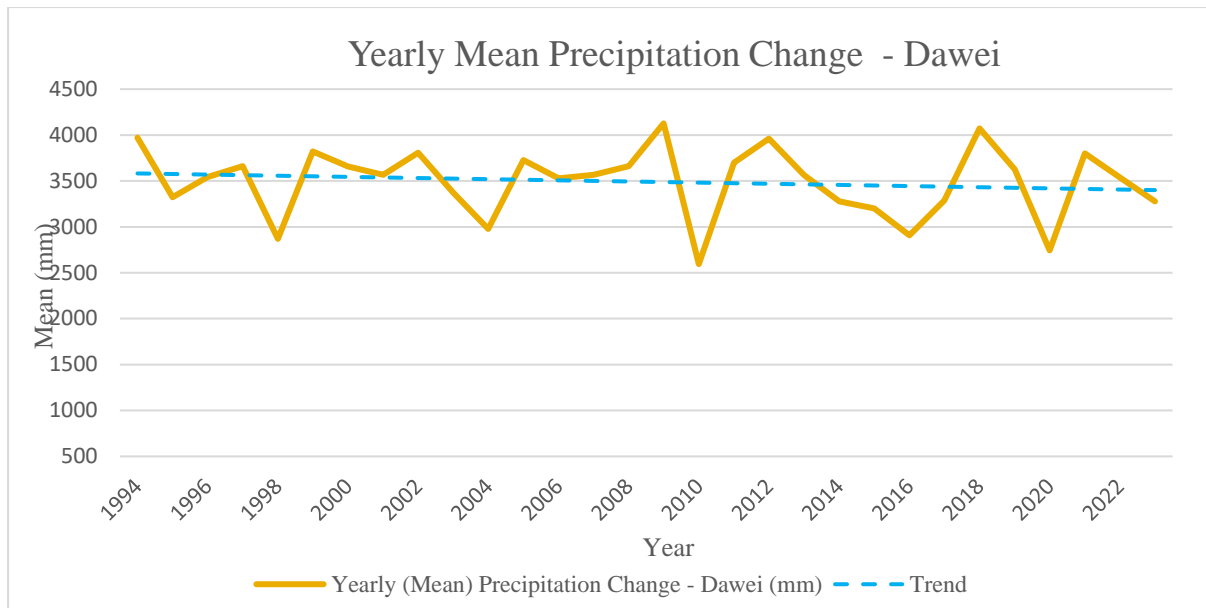
Source: [www.metoblue.com](http://www.metoblue.com)

**Table 5.3 Annual temperature of Dawei township for 30 years**

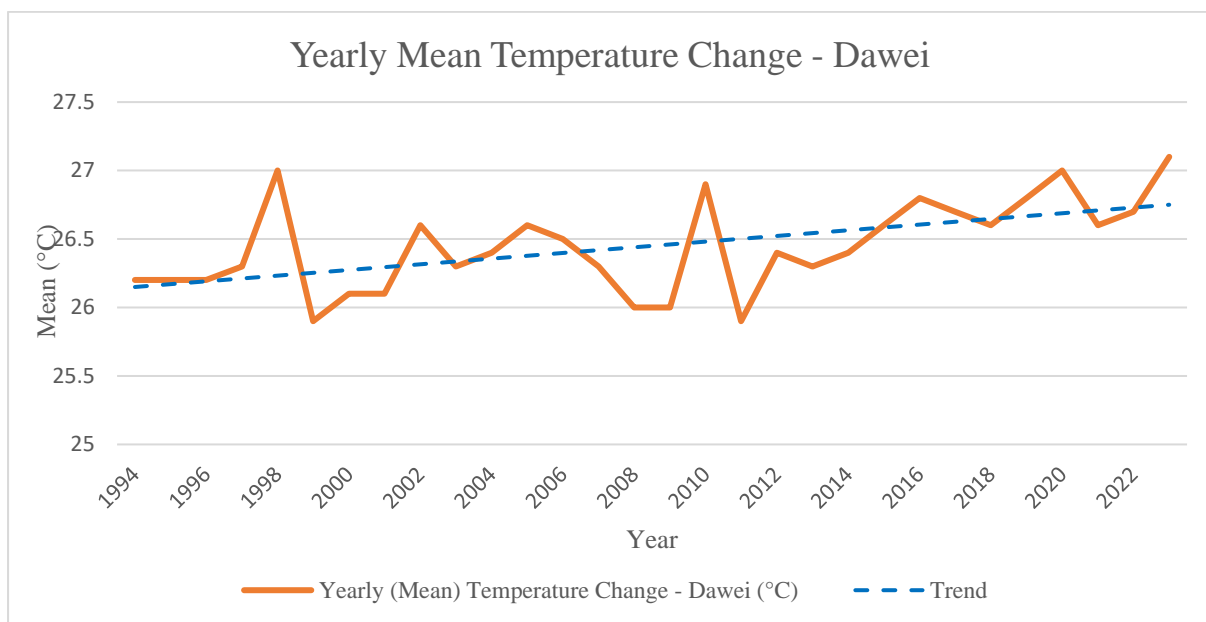
No.	Year	Yearly (Mean) Temperature Change - Dawei (°C)	No.	Year	Yearly (Mean) Temperature Change - Dawei (°C)
1	1994	26.2	16	2009	26
2	1995	26.2	17	2010	26.9
3	1996	26.2	18	2011	25.9
4	1997	26.3	19	2012	26.4
5	1998	27	20	2013	26.3
6	1999	25.9	21	2014	26.4
7	2000	26.1	22	2015	26.6
8	2001	26.1	23	2016	26.8
9	2002	26.6	24	2017	26.7
10	2003	26.3	25	2018	26.6
11	2004	26.4	26	2019	26.8
12	2005	26.6	27	2020	27
13	2006	26.5	28	2021	26.6
14	2007	26.3	29	2022	26.7
15	2008	26	30	2023	27.1

Source: [www.metoblue.com](http://www.metoblue.com)

The following figure shows the average rainfall amount (mm) and rainy days of Dawei township from 1994 to 2023.



**Figure 5.9 Average Precipitation Change - Dawei (mm)**



**Figure 5.10 Average Temperature Change - Dawei (°C)**

5.3.4. Geology

Tanintharyi Region is located in the Shan-Tenasserim metallogenic province. This province is at least 300km wide and 1500 km long. It is made up of a succession of clastic and carbonates series, Paleozoic to Mesozoic in age, lying on a Precambrian basement. It is made up of a succession of clastic and carbonates series, Paleozoic to Mesozoic in age, lying on a Precambrian basement.

Dawei township is located North Latitude between 13° 17' to 14° 36' and East Longitude between 99° 12' to 98° 27'. It is 60.86 miles from east to west and 71.38 miles from south to north. It is bordered by Loang Lone township in the west, Thayet Chaung township in the south,

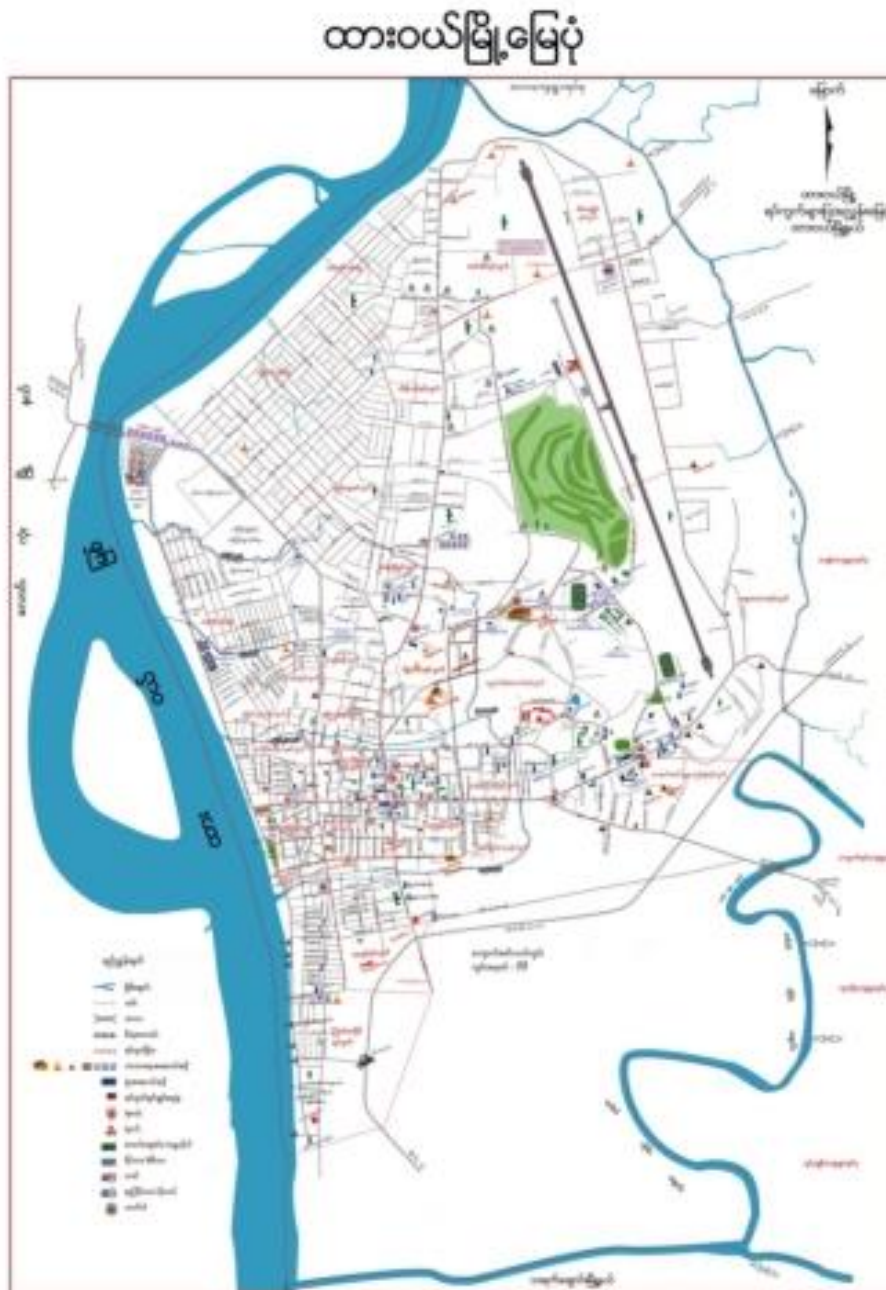
Myittar town in the east and Ye Phyu township in the north of Dawei. Dawei township is located 112 feet (34 meters) above sea level. The following table shows the area of Dawei township and Myitta town.

**Table 5.4 Area of Dawei Township**

No.	Township/Town	Area of town (Square mile)	Area of Village Tract (Square mile)	Area of Township (Square mile)
1	Dawei	10.03	2622.43	2632.46
2	Myittar	3.68	-	3.68
	<b>Total</b>	<b>13.71</b>	<b>2622.43</b>	<b>2636.14</b>

*Source: Dawei Township Information (GAD,2019)*





**Figure 5.11 Map of Dawei Township**

*Source: Dawei Township Information (GAD,2019)*

### 5.3.5. Hydrology/Hydrogeology

Dawei township is an area with abundant rivers and rivers are flowing from north to south. Dawei river is the prominent river and it is located in the west of Dawei township. Pauk Taing stream, Bam stream, Kamaung Thwe stream, and Shwe Gu stream are the prominent streams. Most of the water resources in Dawei township are freshwater streams and these are used in agriculture.

5.3.6. Vegetation Cover

The current environmental condition in Dawei township is 54.09 % of forest cover. Dawei township conserves (31320) acres of reserved forests, (122324) acres of protected public forests, and (116474) acres of protected areas. Natural regenerations that are found in Dawei township are nipa palm, casuarina, cashew, mango, *Careya arborea Roxb.*, *Dipterocarpus baudii*, *Ficus carcia*, *Hopea odorata*, *Pentace griffithii*, *Michelia champaca*, *Cinnamomum iners*, *Xylia xylocarpa*, and *Dipterocarpus obtusifolius*.

Source: Dawei Township Information (GAD,2019)

**5.4. Baseline Environmental Measurement**


The objective of baseline data collection is to establish the meaningful and relevant information of the environmental as primary data collection. The methodology had been designed to know the nature and degree of pollution from various sources in the environment. Baseline environmental parameters were defined according to the guideline, which applies to projects. All necessary criteria such as site selections for sampling and analysis of ambient air quality, odor level, water quality and noise and vibration level of the project site were identified by environmental specialists of E Guard environmental services.

**Davis Vantage Pro2 Wireless Weather Station**

Provides detailed current weather conditions and expanded forecasts - all at a glance. The Vantage Pro2 uses a frequency-hopping spread spectrum radio from 902 MHz to 928 MHz to transmit and receive data up to 1,000' (300m) line of sight. In addition, the weather station features a bubble level, improved anemometer base, redesigned wind cups, and factory-calibrated wind direction. The integrated sensor suite combines temperature and humidity sensors, rain collector with an aluminum-plated tipping bucket, and anemometer into one package for easy setup. Measure inside and outside temperature and humidity, heat index, barometric pressure, dew point, rainfall, wind direction and speed, and wind chill.



<p><b>Haz-Scanner EPAS</b>                  PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>2</sub>, SO<sub>2</sub>, CO, CO<sub>2</sub>,                  Temperature, and Relative Humidity</p>	
<p><b>Aeroqual S 500 (VOC)</b>                  Sensor Type: GSS                  Range: 0 – 25 ppm                  Minimum detection limit: 0.1 ppm                  Accuracy of Factory Calibration: &lt;math&gt;\pm 0.1\text{ppm}+10\%&lt;/math&gt;                  Resolution: 0.1 ppm                  Response time: 60s</p>	
<p><b>Digital Sound Level Meter</b>                  Noise</p>	
<p><b>Vibration Level Meter VM-55</b>                  VM-55 that has been designed to meet the measurement requirements of audio engineers, audio installers, health prevention in various environments and all other vibration measurement applications.</p>	
<p><b>Water Sampling Bottles</b>                  Water Quality</p>	

<p><b>HORIBA U-50, Multiparameter Water Quality Meter</b></p> <p>Multiple sensors allow for the measurement of 11 parameters simultaneously. (pH, pH(mv), ORP, DO, Salinity, TDS, Seawater Specific Gravity, Temperature, Turbidity, Water depth)</p> <p>Patented auto-calibration features provide hassle free calibration of pH, dissolved oxygen, conductivity and turbidity.</p> <p>Ultra-sensitive Turbidity Sensors (Models U-50) Precision has been improved over conventional instruments.</p> <p>Improved stability of the dissolved oxygen sensor has been achieved with a new 3 electrode design for fast response and polarographic sensor for ease of maintenance.</p> <p>pH and ORP electrodes can be replaced individually to reduce replacement costs.</p>	
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5.4.1. Ambient Air Quality

The emissions of dust particles and gases were measured for 24 hrs continuously at the selected sites using the Portable Haz Scanner Environmental Parameter Air Station (EPAS) and Aeroqual S500. The EPAS provides direct readings in real time with data logging capabilities. The Aeroqual handheld monitors have been specifically designed to incorporate Aeroqual’s in-depth knowledge of accurate ambient gas measurement and can be used with a wide range of gas sensor heads. The sensor heads are interchangeable and therefore multiple heads can be used on the same base unit.

**Table 5.5 Locations of Air Quality Measuring Points for Dry Season and Wet Season**

Date	Item	GPS Coordinates	Locations	Parameters
<p><b>04.05.2023 – 05.05.2023</b> <b>04.09.2023 – 05.09.2023</b></p>	<p><b>Air Quality Measuring Point 1</b></p>	<p>Lat: 14° 06' 57.98" N Long: 98° 12' 43.99" E</p>	<p>In the project site</p>	<p><b>Gas Emission:</b> CO, CO<sub>2</sub>, SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub> <b>Dust Emission:</b> PM<sub>10</sub>, PM<sub>2.5</sub></p>

<p><b>05.05.2023 – 06.05.2023</b> <b>05.09.2023 – 06.09.2023</b></p>	<p><b>Air Quality Measuring Point 2</b></p>	<p>Lat: 14° 06' 48.07" N Long: 98° 13' 24.95" E</p>	<p>Nga Gyin Inn Monastery (At Tha Byay Chaung Village)</p>	<p><b>Gas Emission:</b> CO, CO<sub>2</sub>, SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub> <b>Dust Emission:</b> PM<sub>10</sub>, PM<sub>2.5</sub></p>
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**Dry Season**



**Air Quality Measuring at Point 1 (In the Project Site)**



**Air Quality Measuring at Point 2 (At Nga Gyin Inn Monastery)**

**Wet Season**



**Air Quality Measuring at Point 1 (In the Project Site)**



**Air Quality Measuring at Point 2 (At Nga Gyin Inn Monastery)**

**Figure 5.12 Baseline Air Quality Measuring at Project Site and Nga Gyin Inn Monastery**

Source: E Guard EQ team (2023)

Air quality measuring was done at point 1 (In the Project Site) on 4<sup>th</sup> to 5<sup>th</sup> May 2023 and point 2 (at Tha Byay Chaung Village) on 5<sup>th</sup> to 6<sup>st</sup> May 2023 for the dry season. Air quality measurement was done at point 1(In the Project Site) on 4<sup>th</sup> to 5<sup>th</sup> September 2023 and point 2 (at Tha Byay Chaung Village) on 5<sup>th</sup> to 6<sup>st</sup> September 2023 for the wet season. The observed values of parameters are compared with National Environmental Quality (Emission) Guideline, National Ambient Air Quality Standards and American Conference of Governmental Industrial Hygienists. According to the comparison results, the observed values of the parameters are under the guideline value.



**Figure 5.13 Locations of Air Quality Measuring Points**

Source: E Guard Study Team (2023)

**Table 5.6 Observed Values of Air Quality Measuring at Point 1 and Point 2 in the dry season and wet season**

Air Quality Parameters		Observed Values						
		SO <sub>2</sub>	NO <sub>2</sub>	CO	CO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	Ozone
Point 1 Project Site (Source)	Dry Season	0.27	2.70	0.02	423.51	25.70	12.86	22.44
	Wet Season	0.25	2.64	0.01	411.24	6.69	2.22	26.77
Point 2 Nga Gyin Inn Monastery (Receptor)	Dry Season	0.19	2.54	0.01	425.93	21.65	12.34	22.35
	Wet Season	0.13	2.51	0.01	422.44	6.78	2.23	25.31

Unit	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$
Guideline Value	20	200	9	5000	50	25	100
Guideline	NEQG	NEQG	NAAQS	ACGIH	NEQG	NEQG	NEQG
Averaging Period	24 hours	1 hour	8 hours	8 hours	24 hours	24 hours	8 hours

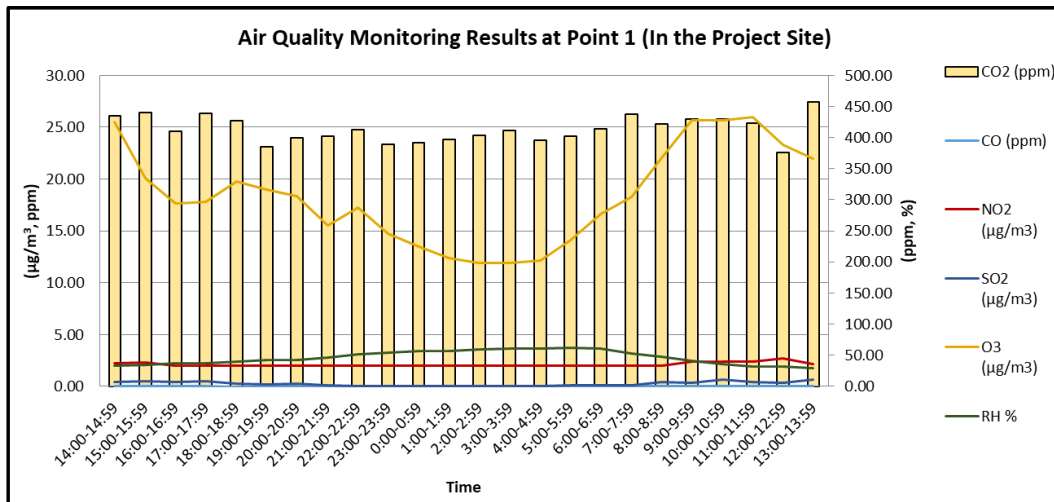


Figure 5.14 Air Quality Analysis (NO<sub>2</sub>, SO<sub>2</sub>, CO<sub>2</sub>, CO and O<sub>3</sub>) Graph for AQM-1 at the project site in the Dry Season

Source: E Guard EQ Team (2023)

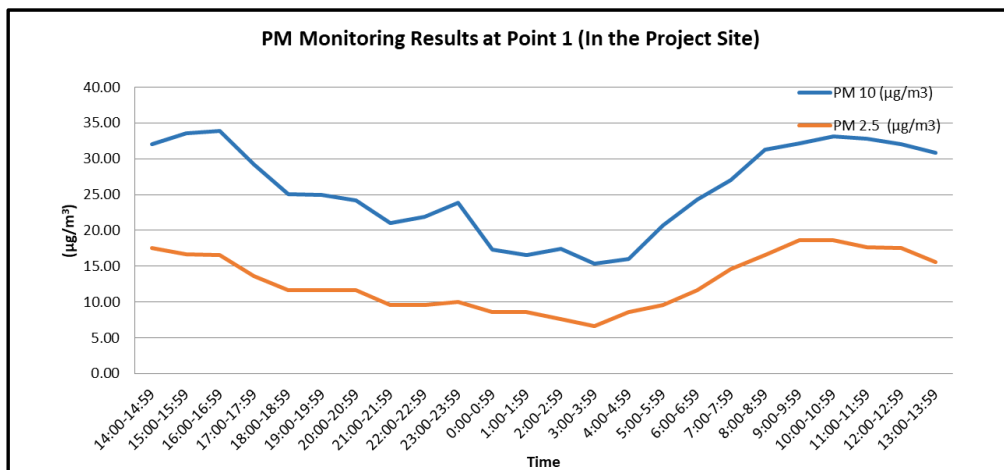
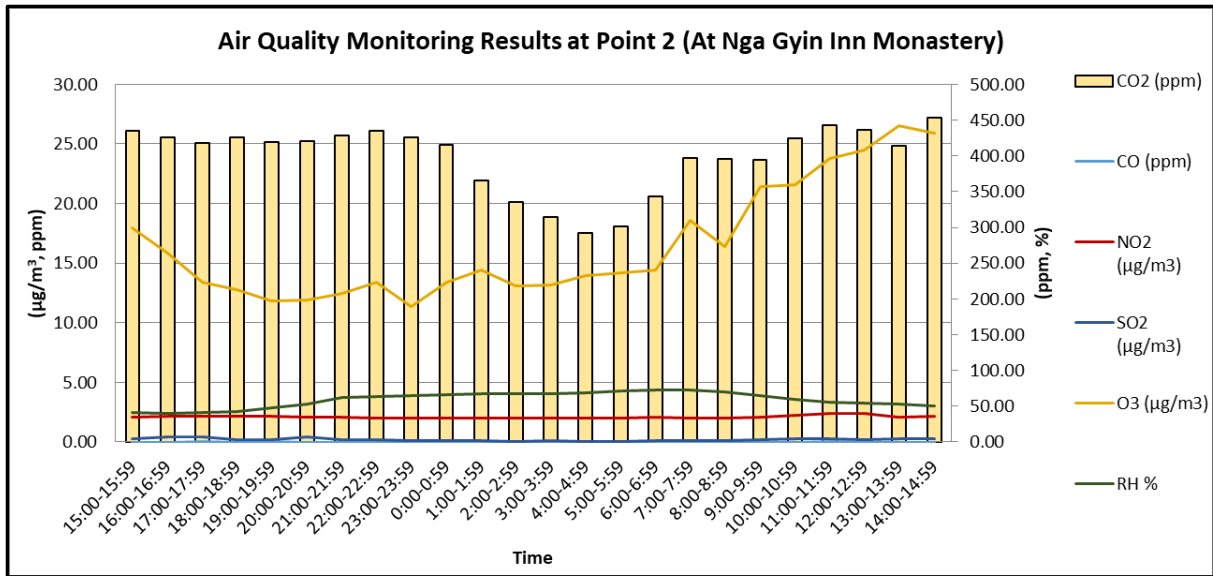


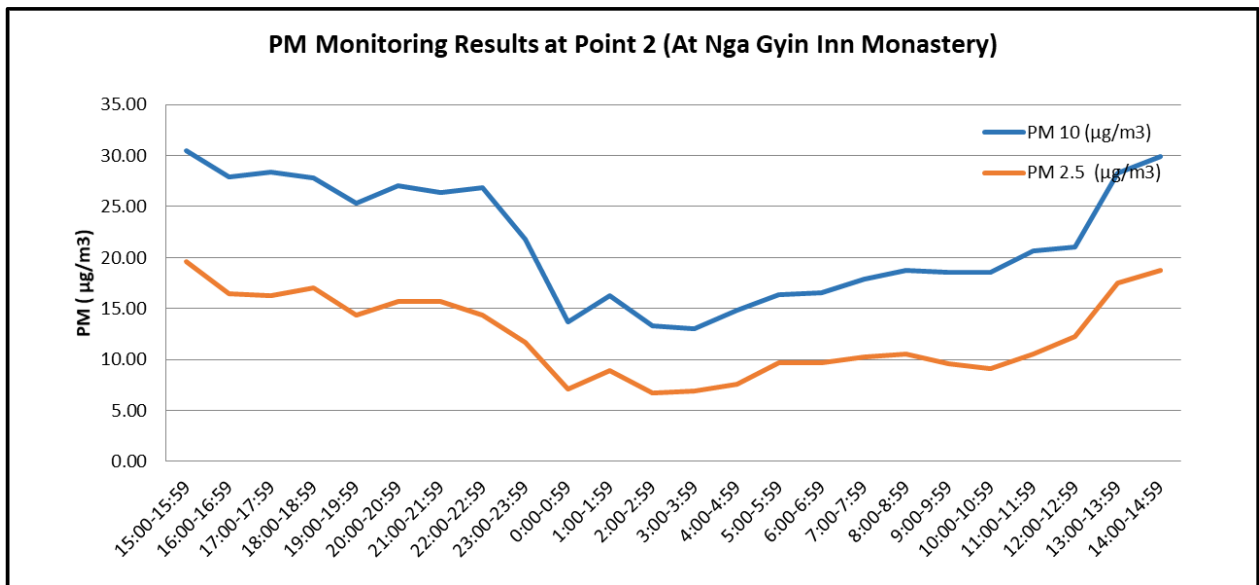
Figure 5.15 Air Quality (PM<sub>10</sub>, PM<sub>2.5</sub>) Analysis Graph for AQM -1 at the project site in the Dry Season

Source: E Guard EQ Team (2023)



**Figure 5.16 Air Quality Analysis (CO, CO<sub>2</sub>, NO<sub>2</sub>, SO<sub>2</sub>, O<sub>3</sub>) Analysis Graph for AQM -2 at Nga Gyin Inn Monastery of Tha Pyay Chaung Village in the Dry Season**

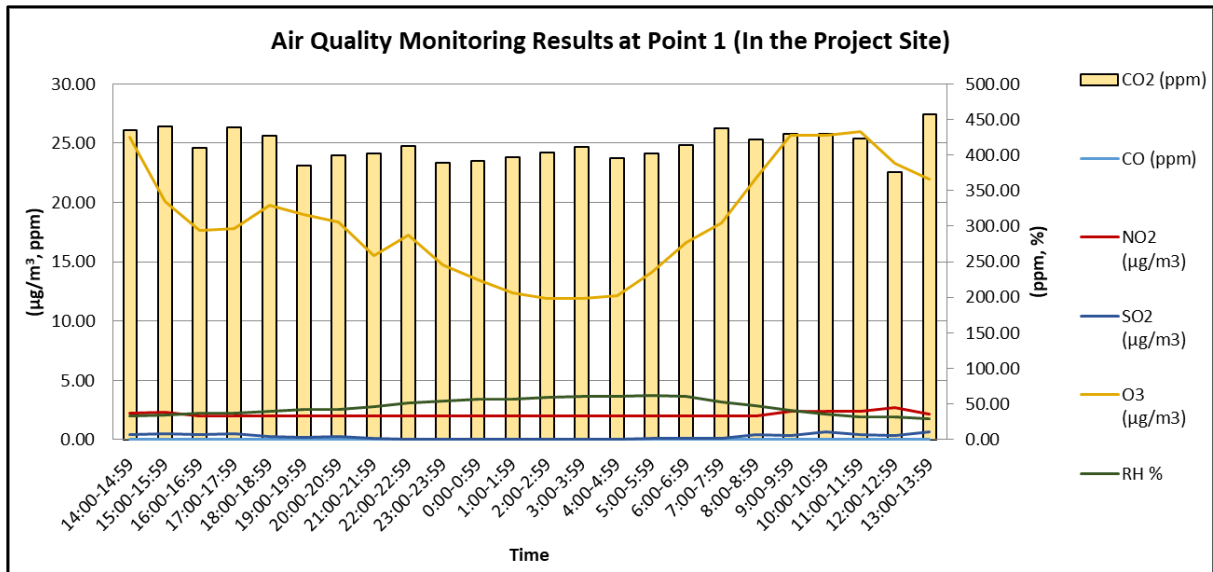
Source: E Guard EQ Team (2023)



**Figure 5.17 Air Quality (PM<sub>10</sub>, PM<sub>2.5</sub>) Analysis Graph for AQM -2 at Nga Gyin Inn Monastery of Tha Pyay Chaung Village in the dry season**

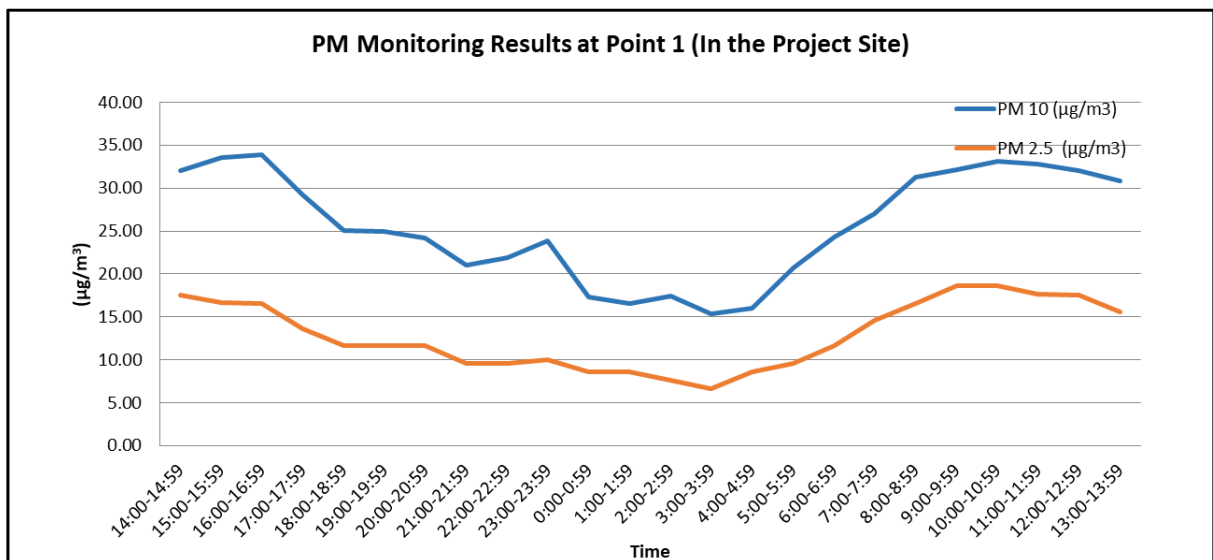
Source: E Guard EQ Team (2023)





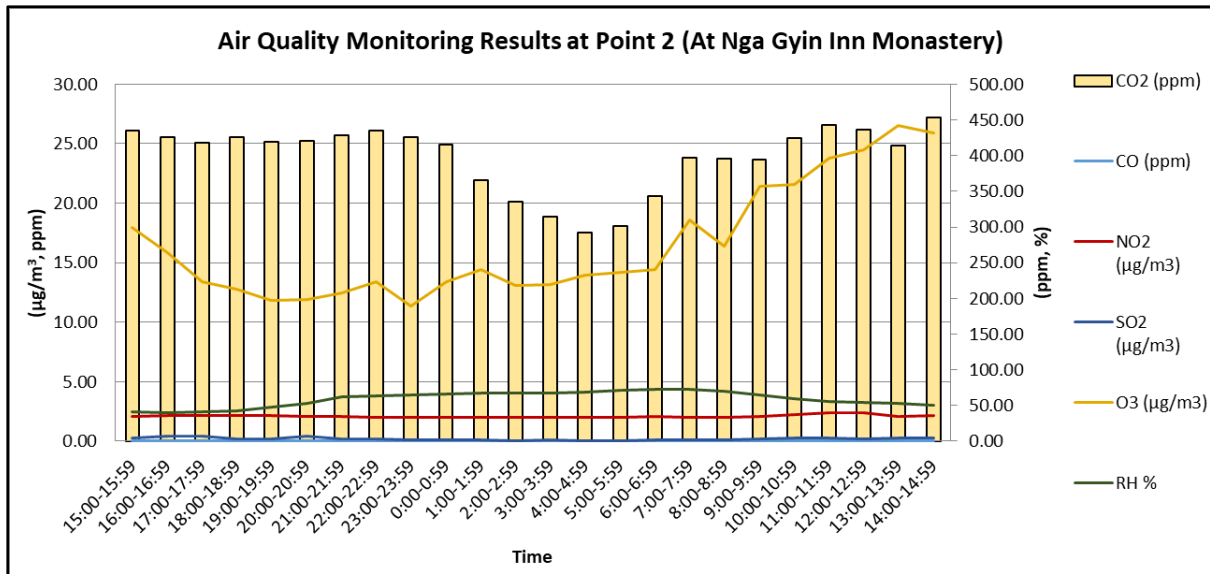
**Figure 5.18 Air Quality Analysis (CO, CO<sub>2</sub>, NO<sub>2</sub>, SO<sub>2</sub>, O<sub>3</sub>) Graph for AQM -1 at the project site in the wet season**

Source: E Guard EQ Team (2023)



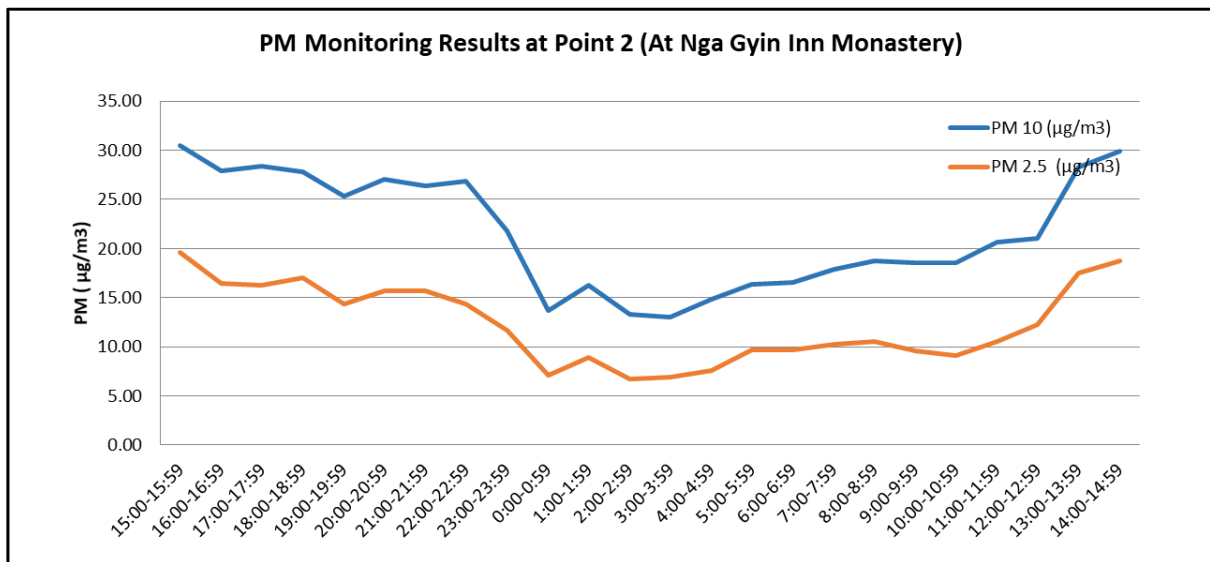
**Figure 5.19 Air Quality (PM<sub>10</sub>, PM<sub>2.5</sub>) Analysis Graph for AQM -1 at the project site in the wet season**

Source: E Guard EQ Team (2023)



**Figure 5.20 Air Quality Analysis (CO, CO<sub>2</sub>, NO<sub>2</sub>, SO<sub>2</sub>, O<sub>3</sub>) Analysis Graph for AQM -2 at Nga Gyin Inn Monastery of Tha Pyay Chaung Village in the wet season**

Source: E Guard EQ Team (2023)

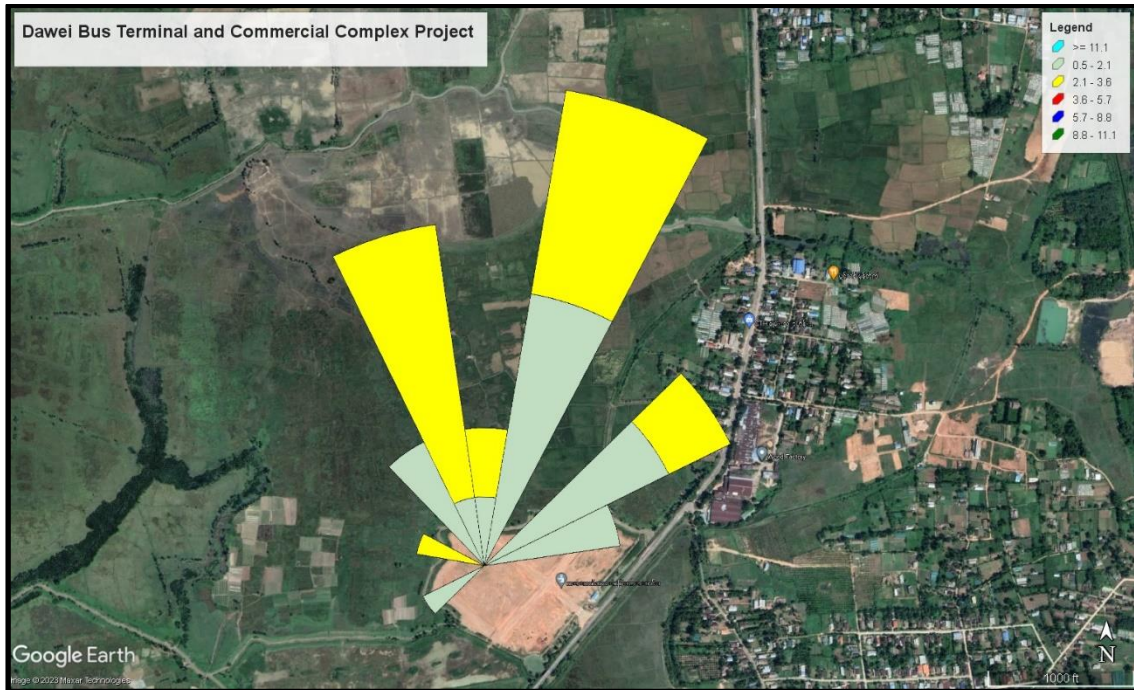


**Figure 5.21 Air Quality (PM<sub>10</sub>, PM<sub>2.5</sub>) Analysis Graph for AQM -2 at Nga Gyin Inn Monastery of Tha Pyay Chaung Village in the wet season**

Source: E Guard EQ Team (2023)

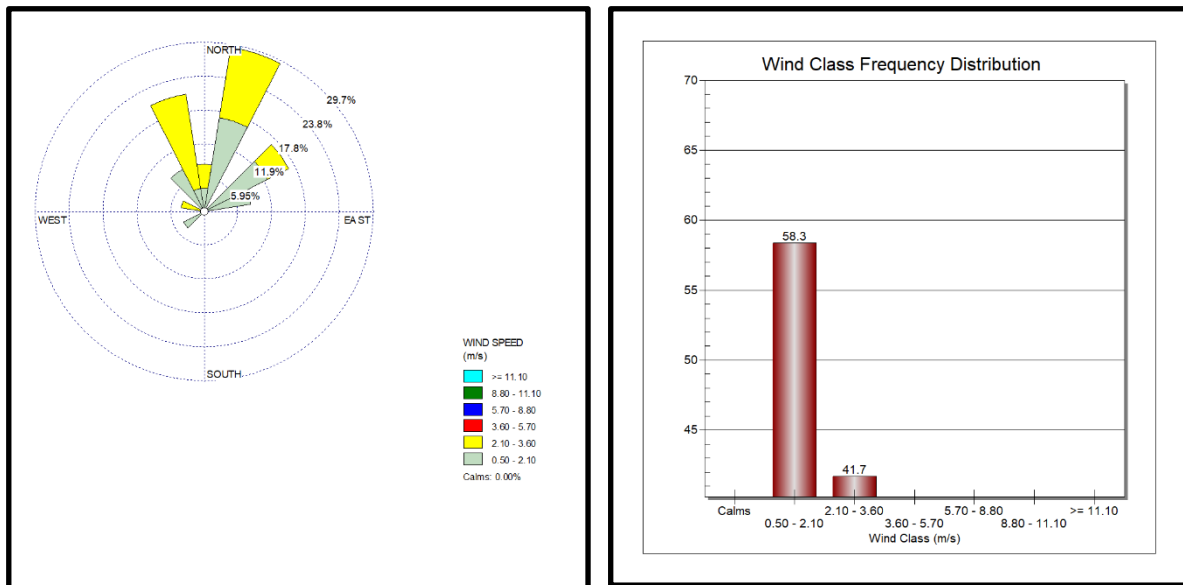
**Wind Speed and Wind Direction**

The following figures describe the wind speed, wind direction and wind class frequency distribution of the proposed project site at point 1 on 4<sup>th</sup> to 5<sup>th</sup> May 2023 and point 2 on 5<sup>th</sup> to 6<sup>th</sup> May 2023 during dry season and on 4<sup>th</sup> September to 6<sup>th</sup> September, 2023 during wet season. According to the observed data, the wind blows from North East with the highest speed of 3.2 m/s at point 1 and from North East with the highest speed of 2.4 m/s at point 2 during dry season. According to the data, the wind direction is following during wet season.



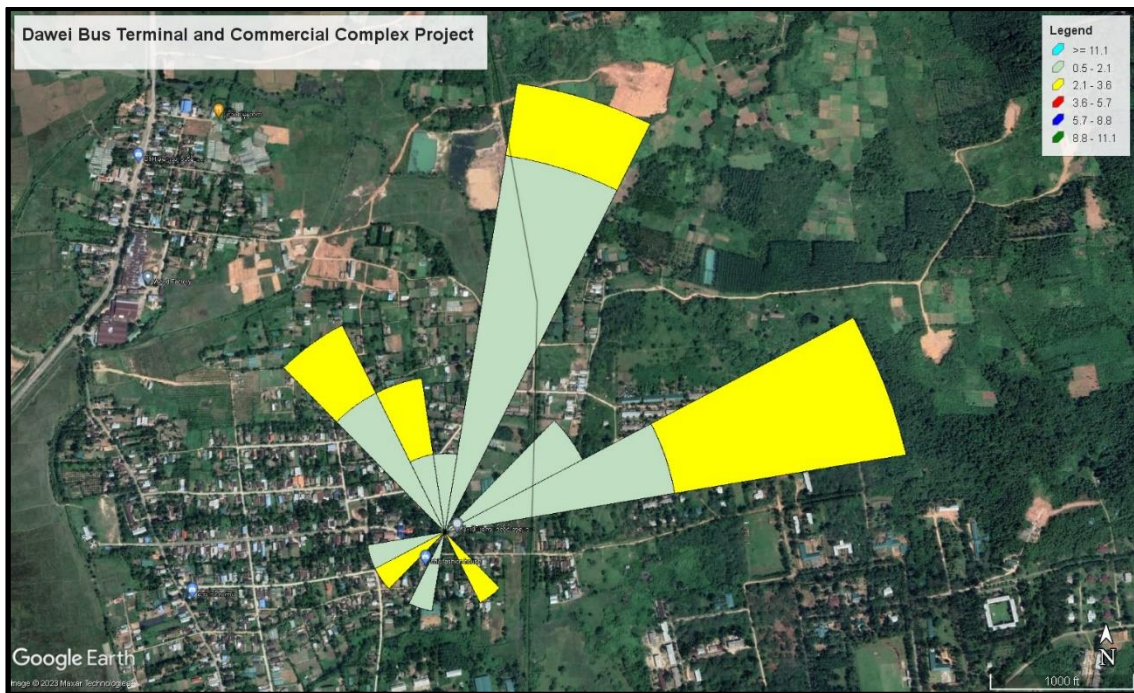
**Figure 5.22 Wind Speed and Wind Direction at Air Quality Measuring Point 1 in the dry season**

Source: E Guard EQ Team (2023)



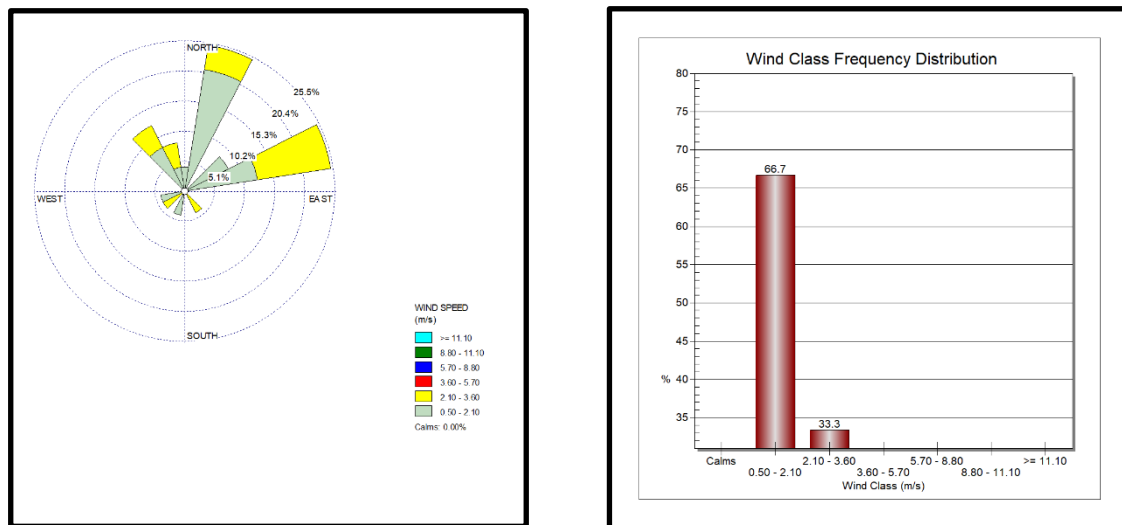
**Figure 5.23 Wind Speed Data and Wind Class Frequency Distribution at Air Quality Measuring Point 1 in the dry season**

Source: E Guard EQ Team (2023)



**Figure 5.24 Wind Speed and Wind Direction at Air Quality Measuring Point 2 in the dry season**

Source: E Guard EQ Team (2023)



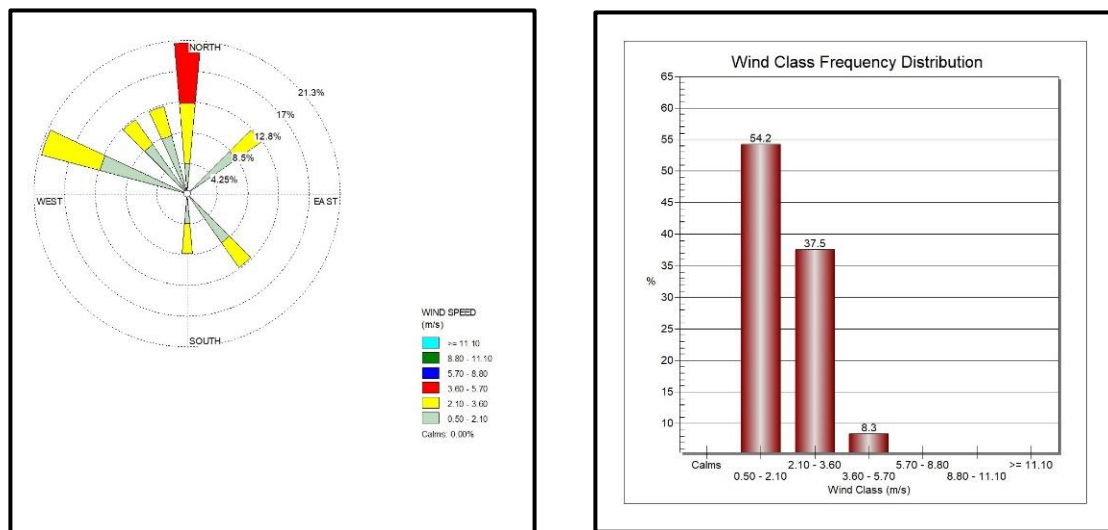
**Figure 5.25 Wind Speed Data and Wind Class Frequency Distribution at Air Quality Measuring Point 2 in the dry season**

Source: E Guard EQ Team (2023)



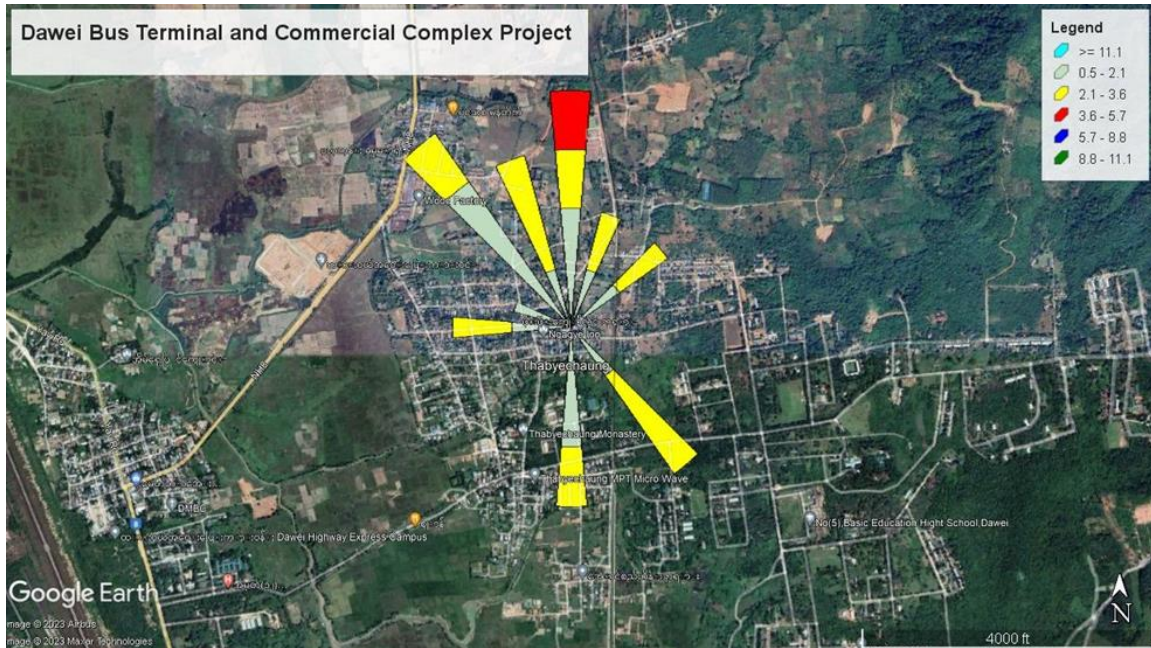
**Figure 5.26 Wind Speed and Wind Direction at Air Quality Measuring Point 1 in the wet season**

Source: E Guard EQ Team (2023)



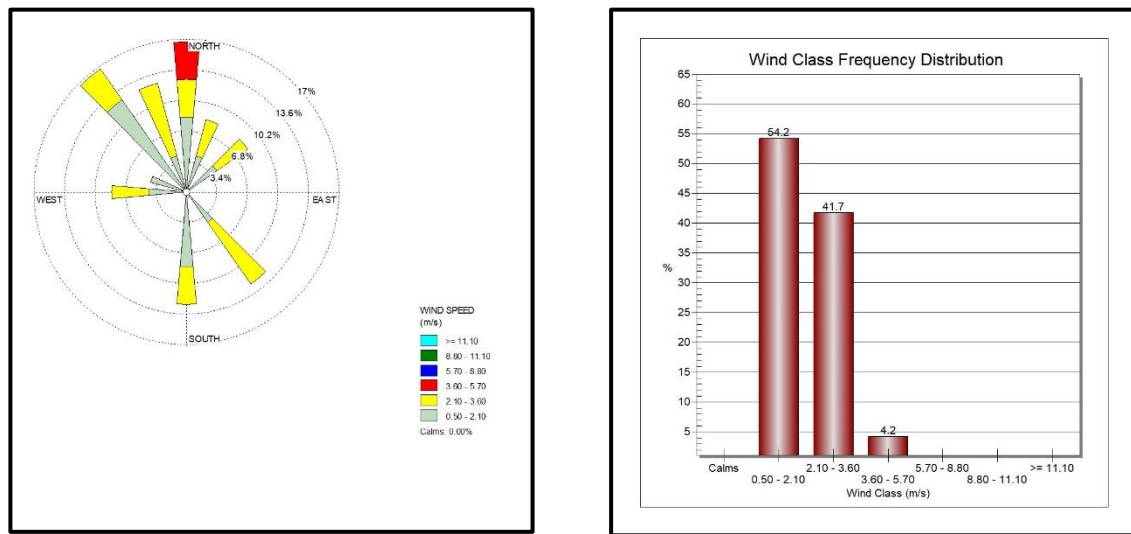
**Figure 5.27 Wind Speed Data and Wind Class Frequency Distribution at Air Quality Measuring Point 1 in the wet season**

Source: E Guard EQ Team (2023)



**Figure 5.28 Wind Speed and Wind Direction at Air Quality Measuring Point 2 in the wet season**

Source: E Guard EQ Team (2023)



**Figure 5.29 Wind Speed Data and Wind Class Frequency Distribution at Air Quality Measuring Point 2 in the wet season**

Source: E Guard EQ Team (2023)

5.4.2. Noise and Vibration

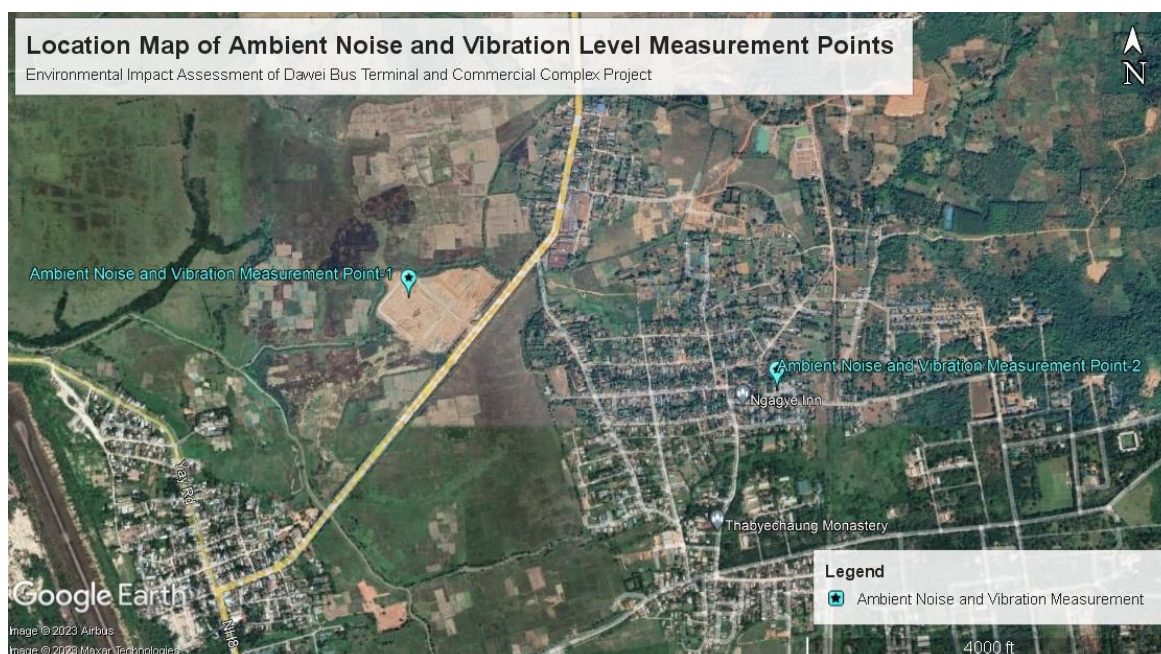
Noise level LAeq (dBA) was measured at the selected locations regarding as source and receptor. Duration and frequency were measured for 24hrs continuously at the selected sites using the digital sound level meter for noise level. Noise and vibration levels were measured at the same time with air quality measurement. Measurement range of noise level measuring meter is 20-130 dBA. The environmental noise quality was recorded at every 1 minute for 24

hours. Hourly averaged noise levels in energy weighted values of day and night time average is shown in the following tables.

Vibration measurement includes data analysis and test services to minimize environmental impacts. The analysis describes the existing vibration environment in the project area and identifies the potential for significant impacts. Table shows the results of vibration studies for two locations as source and receptor, at the proposed project site and at residential area receptively. As the Environmental Quality Emission Guidelines (NEQG) Myanmar does not specify the standard for vibration, the vibration standards for Japan developed by Ministry of Environment were referred as regulatory standards for this study. The resultant noise levels and vibration were shown at the following tables.

**Table 5.7 Locations of Noise and Vibration Points for Dry season and Wet season**

Item	GPS Coordinates	Locations	Parameters
<b>Noise and Vibration Level Measuring Point 1</b>	Lat: 14° 6'57.98"N Long: 98°12'43.99"E	In the project site	<b>Noise: (LAeq (dB (A)) 1hr interval for 24 hours)</b>
<b>Noise and Vibration Level Measuring Point 2</b>	Lat: 14° 6'48.07"N Long: 98°13'24.95"E	Nga Gyin Inn Monastery (At Tha Byay Chaung Village)	

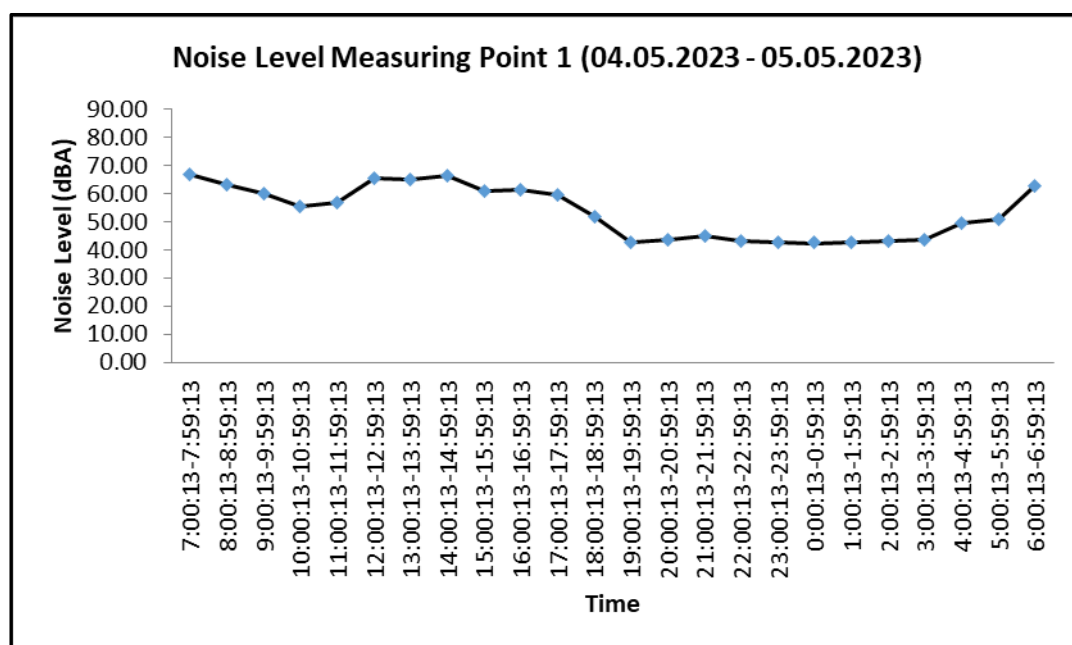


**Figure 5.30 Locations of Noise and Vibration Level Measuring Points**

Source: E Guard EQ Team (2023)

**Table 5.8 Summary of Noise Survey in the dry season and wet season**

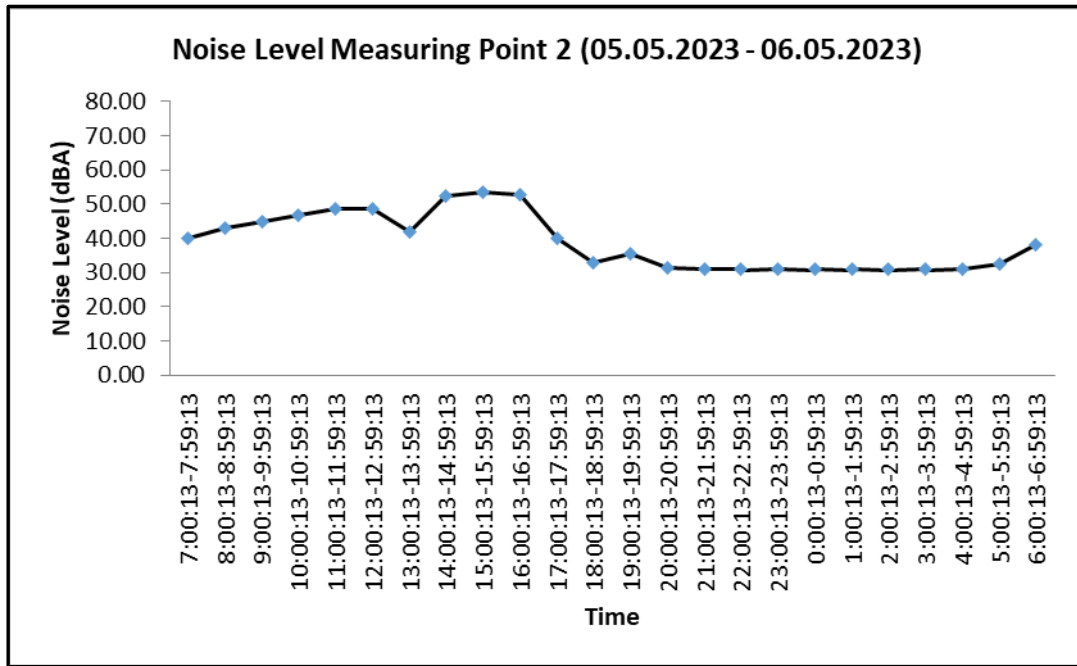
Location	Season	Measured Values (dB (A))	
		Day Time (07:00-22:00)	Night Time (22:00-7:00)
Project Site	Dry Season	57.53	46.80
	Wet Season	56.92	45.44
Nga Gyin Inn Monastery (At Tha Byay Chaung Village)	Dry Season	42.92	31.98
	Wet Season	42.87	35.69
<b>Noise Level Standards from National Environmental Quality (Emission) Guideline</b>			
Standard Value (NEQG) for industrial, commercial	Source	70	70
Standard Value (NEQG) for residential	Receptor	55	45



**Figure 5.31 Daytime and Night Time Noise Data at the project site in the dry season**

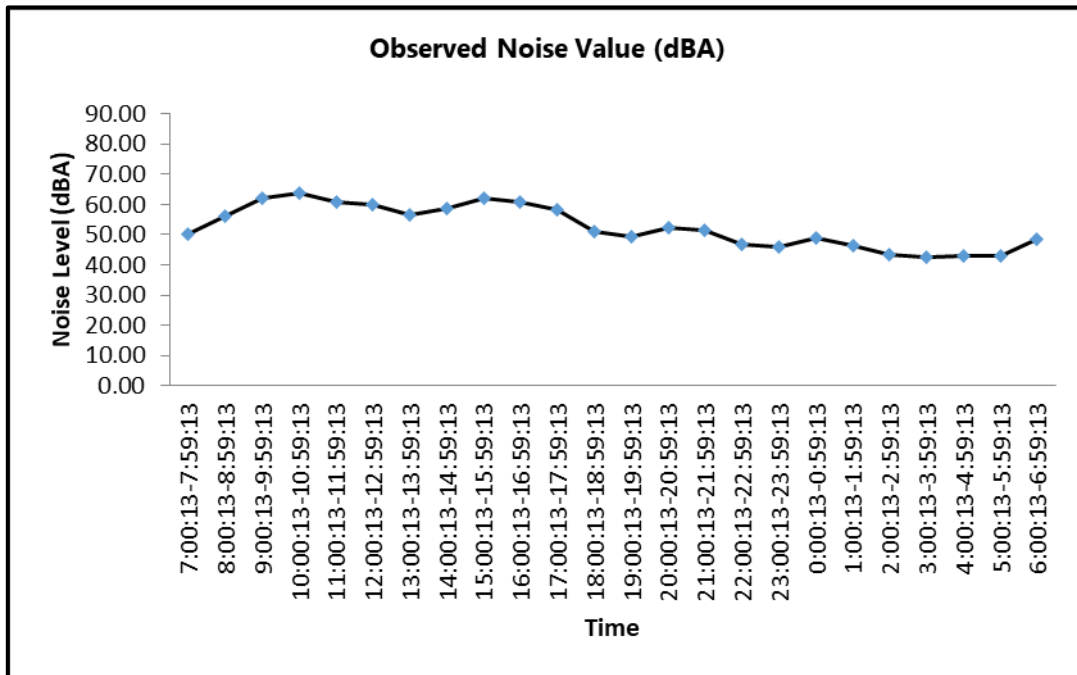
Source: E Guard EQ Team (2023)





**Figure 5.32 Daytime and Night Time Noise Data at the Nga Gyin Inn Monastery (At Tha Byay Chaung Village) in the dry season**

Source: E Guard EQ Team (2023)



**Figure 5.33 Daytime and Night Time Noise Data at the project site in the wet season**

Source: E Guard EQ Team (2023)

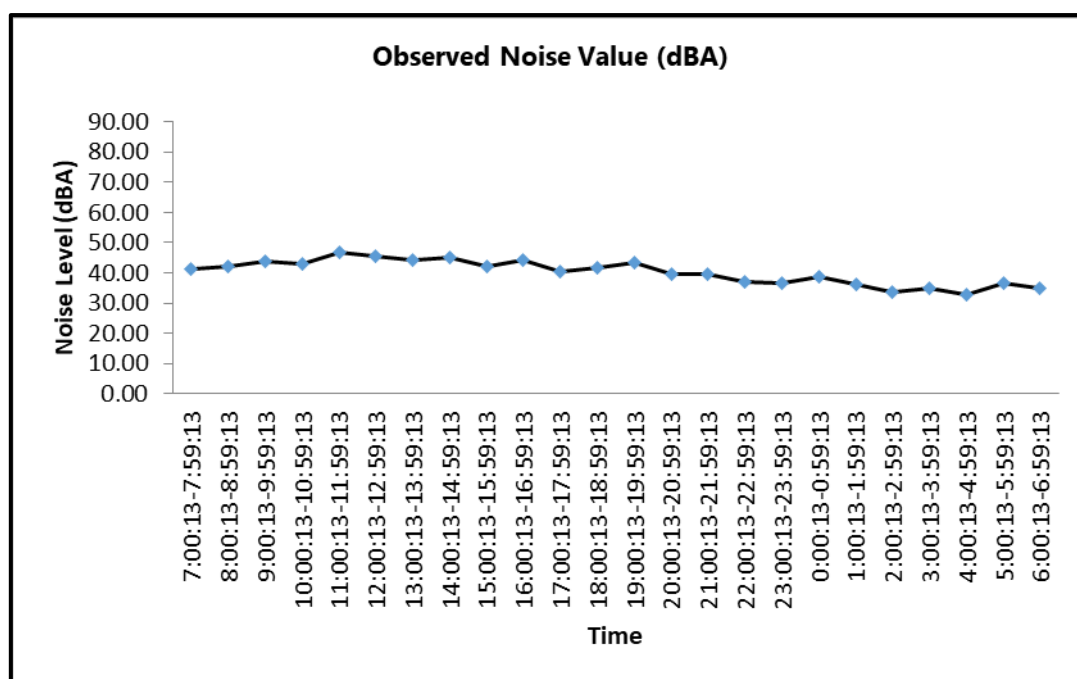


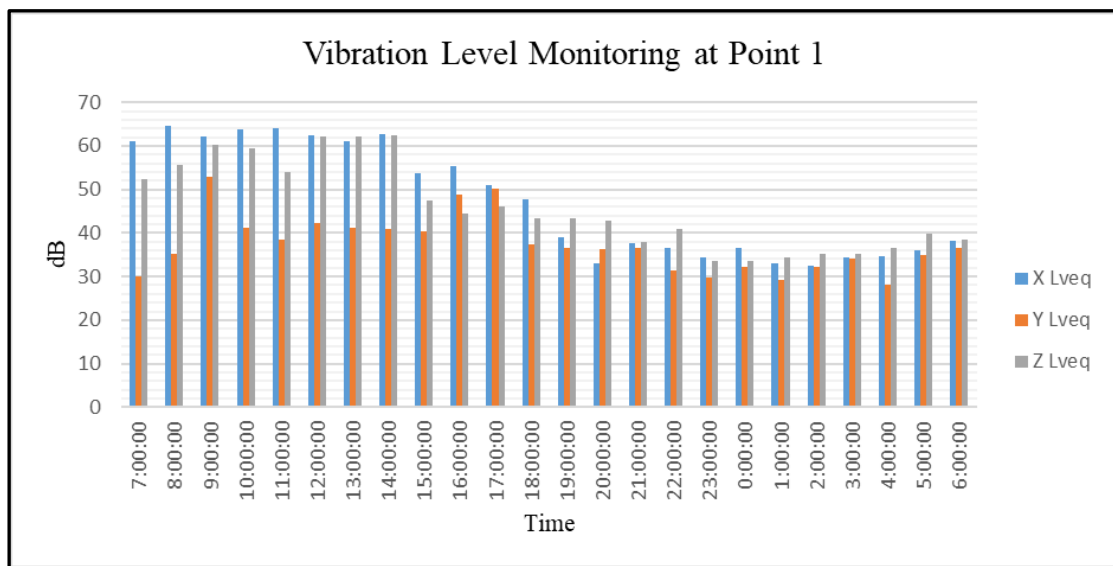
Figure 5.34 Daytime and Night Time Noise Data at the Nga Gyin Inn Monastery (At Tha Byay Chaung Village) in the wet season

Source: E Guard EQ Team (2023)

Table 5.9 Summary of Vibration Survey for Dry season and Wet season

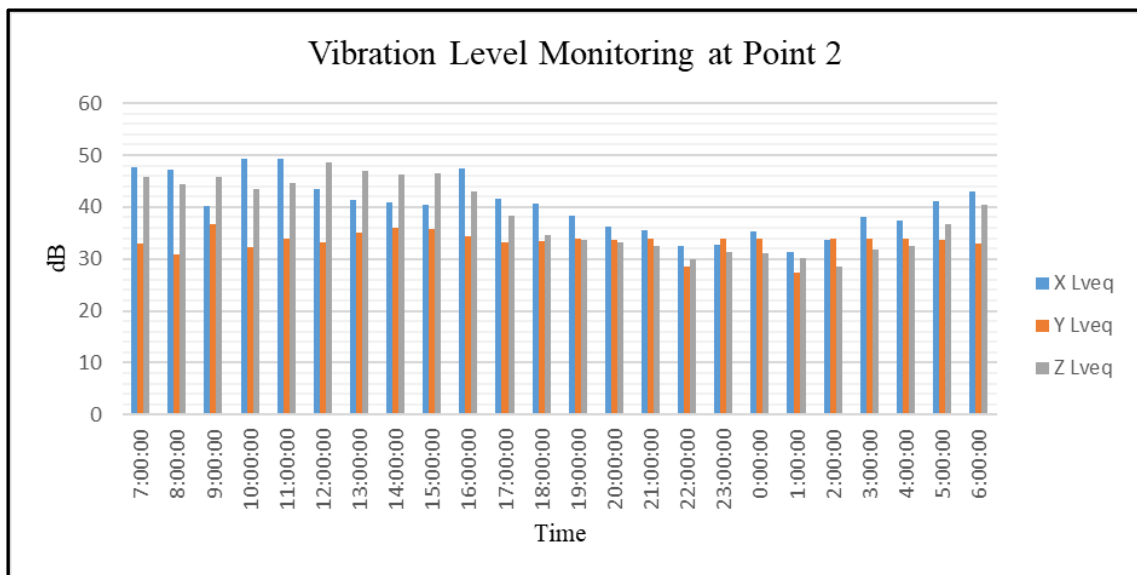
Location	Season	X-Lveq		Y-Lveq		Z-Lveq	
		Daytime (7:00-22:00)	Night Time (22:00-7:00)	Daytime (7:00-22:00)	Night Time (22:00-7:00)	Daytime (7:00-22:00)	Night Time (22:00-7:00)
Point 1 (Project site)	Dry Season	54.64	35.13	40.59	32.04	51.6	36.44
	Wet Season	53.01	35.53	38.45	31.53	43.90	34.93
Point 2 (Nga Gyin Inn Monastery)	Dry Season	42.67	36.14	33.95	32.49	41.81	32.51
	Wet Season	42.83	33.44	33.32	31.55	40.44	31.54
<i>Regulatory Standards for Vibration Emitted from Ministry of the Environment Government of Japan</i>							
Time Area		Day Time	Night Time	Applicable Areas			

I		60-65 dB	55-60 dB	Areas where maintenance of quiet is particularly needed to preserve a good living environment and where quiet is needed for as they are used for residential purposes.
II		65-70 dB	60-65 dB	Areas used for commercial and industrial as well as residential purposes where there is a need to preserve the living environment of local residents and areas mainly serving industrial purposes which are in need of measures to prevent the living environment of local residents from deteriorating.



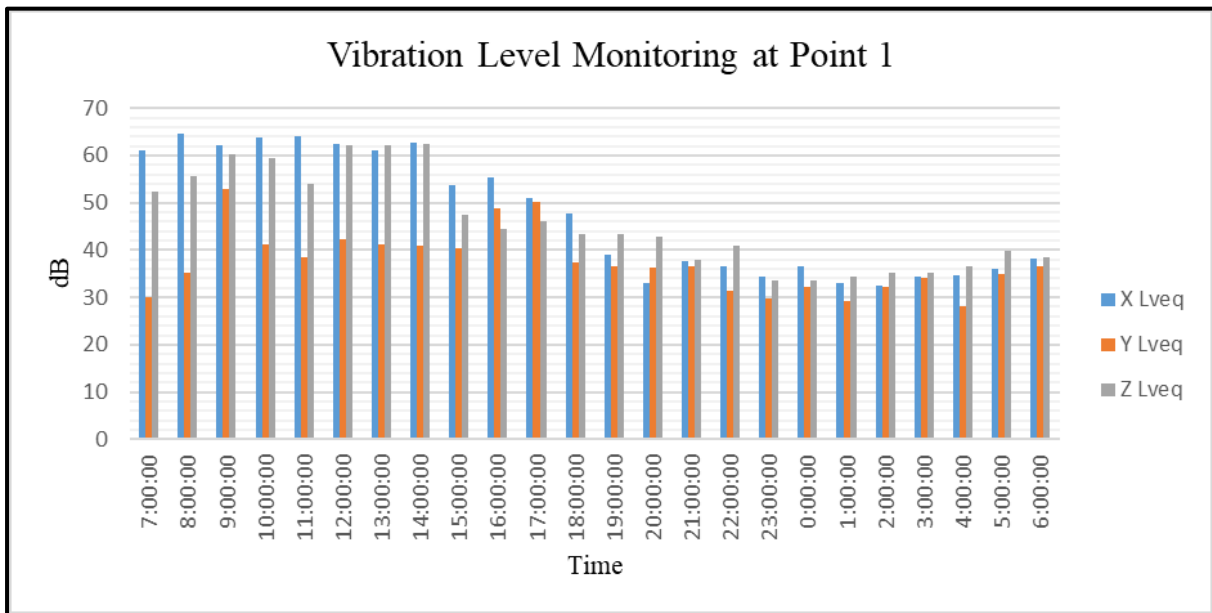
**Figure 5.35 Daytime and Night Time Vibration Data at Point 1 (Project Site) in the dry season**

Source: E Guard EQ Team (2023)



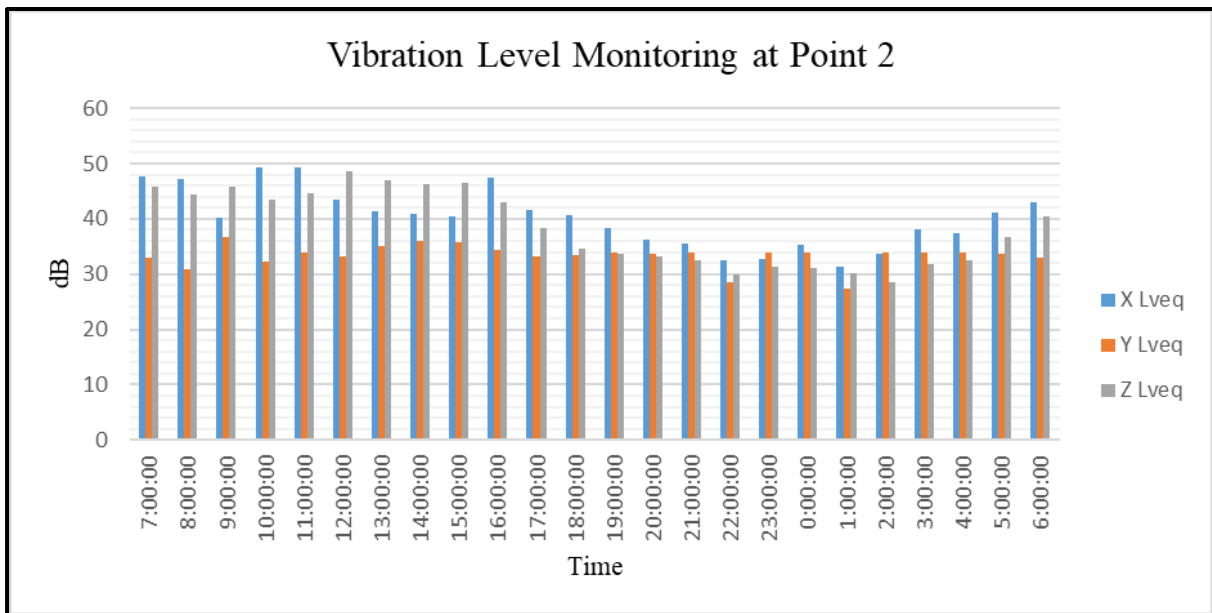
**Figure 5.36 Daytime and Night Time Vibration Data at Point 2 (Nga Gyin Inn Monastery) in the dry season**

Source: E Guard EQ Team (2023)



**Figure 5.37 Daytime and Night Time Vibration Data at Point 1 (Project Site) in the wet season**

Source: E Guard EQ Team (2023)



**Figure 5.38 Daytime and Night Time Vibration Data at Point 2 (Nga Gyin Inn Monastery) in the wet season**

Source: E Guard EQ Team (2023)

According to the comparison of the observed values with guidelines, the noise and vibration levels of daytime and night time at both Point 1 and Point 2 during dry and wet season are under the guideline value of both Residential and Industrial.

### 5.4.3. Water Quality

Water samples were collected using appropriate sampling equipment and procedures. The sampling team has pre-arranged with the labs in Yangon and Yezin for analysis and logistic arrangement made to reach the preserved samples with unique IDs to the designated labs within 48hrs.

The following laboratories were used for analysis of sampled water.

1. ISO Lab, No-18, Lanthit Road, Insein Township, Yangon. Tel; 01 540 955, 732251575
2. PRO Lab, No. (9), Sabae Housing, Pyi Htaung Su Road, (26) Ward, South Dagon Tsp, Yangon, Myanmar. Tel: 09 893 767424
3. Water Quality Laboratory, Forest Research Institute, Yezin, Nay Pyi Taw. Tel: 09 430 19169, 09 420 705131

**Table 5.10 Location of Ground Water (Well Water) Quality Sampling Point in the dry season**

Item	GPS Coordinates	Locations	Parameters
Ground Water (Well Water)	Lat: 14°07'03.79" N Long: 98°12'57.55" E	From the well near the project site	Iron, Total Hardness, Total Suspended Solids, Total Coliform, pH, Turbidity, Total Dissolved SopHplids, Ammonia, Nitrate, BOD, COD, Total Nitrogen, Total Phosphorus, Arsenic, Copper, Zinc, Chromium, Mercury

The following table shows the prior locations for water sampling points. These water samples were not taken in dry season since water from these locations are dried up during the site visit and unable to take samples.

**Table 5.11 Prior Locations for Water Sampling Points in the dry season**

Item	GPS Coordinates	Locations
Ground Water (Well Water)	Lat: 14° 7'3.79"N Long: 98°12'57.55"E	From the well near the project site
Surface Water Quality (Point 1)	Lat: 14° 7'0.93"N Long: 98°12'53.36"E	From the creek near the project site
Surface Water Quality (Point 2)	Lat: 14° 6'53.99"N Long: 98°12'42.03"E	From the creek near the project site
Drainage Water	Lat: 14° 7'0.44"N Long: 98°12'46.60"E	Final waste water discharge point of the project site

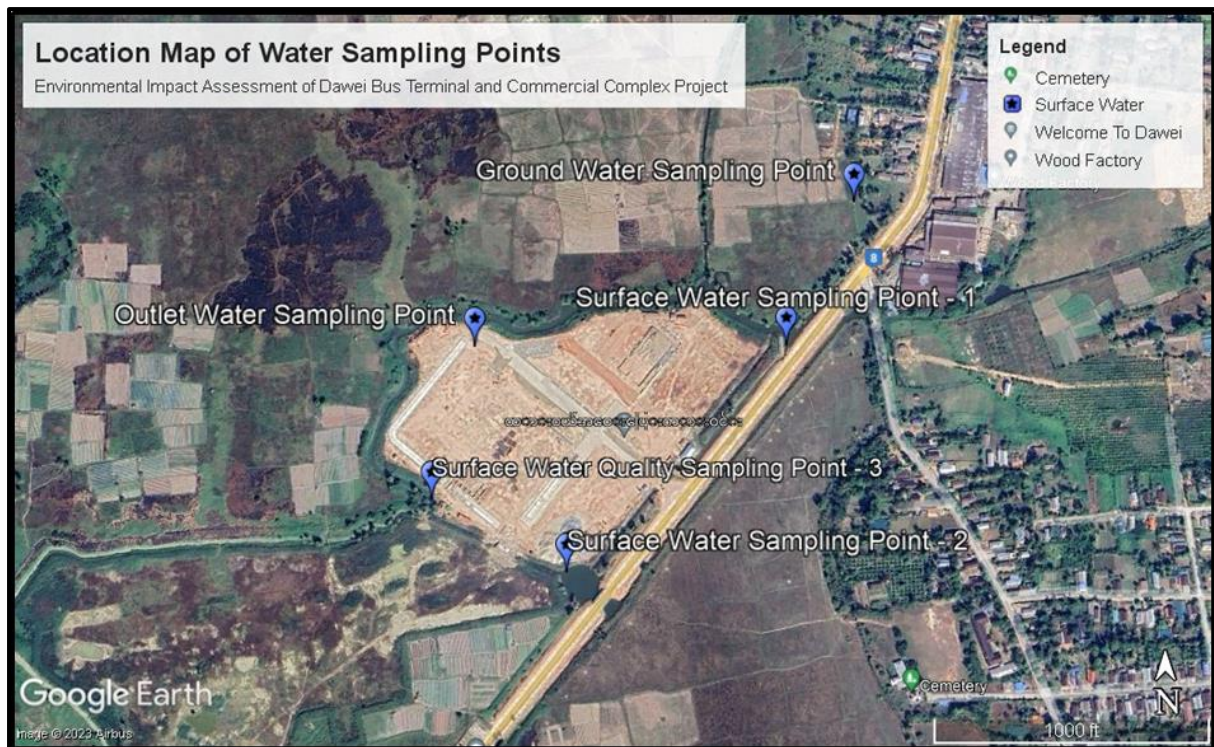
**Table 5.12 Locations of Surface Water, Ground Water (Well Water) and Outlet Water Points in the Wet Season**

Sampling Water Quality			
Surface Water	SW-1	14° 06'59.91"N, 98° 12'55.31"E	North – East of the project site
	SW-2	14° 06'51.83"N, 98° 12'47.11"E	South – West of the Project Site
	SW-3	14° 6'54.46"N, 98° 12'42.14"E	South of the Project Site
Outlet Water	WW	14° 06'59.97"N, 98° 12'43.78"E	West of the Project Site
Ground Water	GW	14° 07'5.03"N, 98° 12'57.85"E	North of the project site



**Figure 5.39 Location of Ground Water (Well Water) Sampling Point in the dry season**

Source: E Guard EQ Team (2023)



**Figure 5.40 Location Map of Water Sampling Points in the wet season**

Source: E Guard EQ Team (2023)

**Table 5.13 Comparison of Lab Results and Guideline (Ground Water Quality) in the dry season**

Item	Unit	Ground Water (Well Water) Quality	Thailand Ground Water Quality Standard
Iron	mg/L	1.75	-
Total Hardness	mg/L	80	-
Total Suspended Solids	mg/L	40	-
Total Coliform Bacteria	MPN/ml	9.3	-
pH	-	9.11	-
Turbidity	FNU	38.19	-
Total Dissolved Solids	mg/L	224	-
Ammonia	mg/L	0.58	-
Nitrate	mg/L	1.67	-
Biological Oxygen Demand	mg/L	0.94	-

Chemical Oxygen Demand	mg/L	5	-
Total Nitrogen	mg/L	1.22	-
Total Phosphorus	µg/L	40.48	-
Arsenic	µg/L	0.72	10
Copper	µg/L	11.01	1000
Zinc	µg/L	2.76	5000
Chromium	µg/L	9.6	-
Mercury	µg/L	1.35	1
Chlorine (Residual)	mg/L	Nil	-

According to the comparison of tested Ground Water from proposed project and Ground Water Quality Standard in Thailand, the results of tested parameters are below the guideline limit except Mercury. The ground water from the site can be used for construction purpose but not suitable for drinking and domestic purpose.



**Figure 5.41 Ground Water (Well Water) Sampling at Proposed Project in the dry season**

Source: E Guard EQ Team (2023)

**Table 5.14 Results of Ground Water quality at the West of the Project Site in the wet season**

Sample Name- Ground Water quality at West of the Project Site in the wet season				
Item	Unit	Ground Water Quality	National Drinking Water Quality Standards	Laboratories



pH	mg/L	7.31	6.5 – 8.5	FRI
Turbidity	-	32.31 (FNU)	5 (NTU)	FRI
Total Dissolved Solids	mg/L	191	1000	FRI
Total Suspended Solids	mg/L	4	-	FRI
Ammonia	100 ml	0.048	-	FRI
Nitrate	mg/L	0.041	50	FRI
BOD	mg/L	2.41	-	FRI
COD	mg/L	3.5	-	FRI
Total Nitrogen	mg/L	2.69	-	FRI
Total Phosphorus	µg/L	7.92	-	FRI
Arsenic	mg/L	ND	0.05	FRI
Copper	mg/L	ND	2	FRI
Zinc	mg/L	0.00238	3	FRI
Chromium	mg/L	ND	0.05	FRI
Mercury	mg/L	ND	0.001	FRI
Total Coliform	MPN/ 100 ml	4.3	3	PRO Lab
Iron	mg/L	0.58	0.3	ISO
Chlorine (residual)	mg/L	Nil	-	ISO
Total Hardness	mg/L as CaCO <sub>3</sub>	76	500	ISO



**Figure 5.42 Ground Water (Well Water) Sampling at Proposed Project in the wet season**

Source: E Guard EQ Team (2023)

**Table 5.15 Results of Surface Water quality at the North-East of the Project Site in the wet season**

Sample Name- Surface Water quality at North-East of the Project Site in the wet season				
Item	Unit	Surface Water Quality	WHO Water Quality Standards (2018)	Laboratories
pH	-	7.00	6.5 - 8.5	FRI
Fluoride	mg/L	0.131	1.5	FRI
Nitrate	mg/L	0.047	50	FRI
Sulphate	mg/L	1.33	250	FRI
Ammonia	mg/L	0.018	NA	FRI
Total Suspended Solids	mg/L	8.25	NA	FRI
BOD	mg/L	2.63	NA	FRI
COD	mg/L	6	NA	FRI
Total Nitrogen	mg/L	1.47	NA	FRI
Total Phosphorus	µg/L	14.01	NA	FRI
Lead	mg/L	0.0054	0.01	FRI
Cadmium	mg/L	0.0002	0.003	FRI
Arsenic	mg/L	ND	0.01	FRI
Copper	mg/L	ND	2	FRI
Zinc	mg/L	0.012	5	FRI
Nickel	mg/L	0.0024	0.07	FRI
Mercury	µg/L	ND	-	FRI
Chromium (Hexavalent)	mg/L	0.014	NA	PRO-Lab
Chromium (Total)	mg/L	< 0.01	0.05	PRO-Lab
Free Chlorine	mg/L	Nil	5	PRO-Lab
Oil and Grease	mg/L	12	NA	PRO-Lab

Phenols	mg/L	Nil	0.002	PRO-Lab
Silver	mg/L	< 0.02	0.05	PRO-Lab
Sulfide	µg/L	19	NA	PRO-Lab
Selenium	mg/L	< 0.1	0.01	PRO-Lab
Total Cyanide	mg/L	< 0.01	-	PRO-Lab
Total Coliform	MPN/ml	4.3	ND	PRO-Lab
Iron	mg/l	0.78	0.3	ISO
Cyanide	mg/l	0.029	0.07	ISO

**Table 5.16 Results of Surface Water quality at the South of the Project Site in the wet season**

Sample Name- Surface Water quality at South of the Project Site in the wet season				
Item	Unit	Surface Water Quality	WHO Water Quality Standards (2018)	Laboratories
pH	-	7.04	6.5 - 8.5	FRI
Fluoride	mg/L	0.135	1.5	FRI
Nitrate	mg/L	0.035	50	FRI
Sulphate	mg/L	1.37	250	FRI
Ammonia	mg/L	0.02	NA	FRI
Total Suspended Solids	mg/L	8.52	NA	FRI
BOD	mg/L	2.35	NA	FRI
COD	mg/L	6.02	NA	FRI
Total Nitrogen	mg/L	2	NA	FRI
Total Phosphorus	µg/L	15.45	NA	FRI
Lead	mg/L	0.0006	0.01	FRI
Cadmium	mg/L	0.00007	0.003	FRI
Arsenic	mg/L	ND	0.01	FRI
Copper	mg/L	ND	2	FRI
Zinc	mg/L	0.012	5	FRI

Nickel	mg/L	0.0025	0.07	FRI
Mercury	µg/L	ND	-	FRI
Chromium (Hexavalent)	mg/L	0.014	NA	PRO-Lab
Chromium (Total)	mg/L	< 0.01	0.05	PRO-Lab
Free Chlorine	mg/L	Nil	5	PRO-Lab
Oil and Grease	mg/L	13	NA	PRO-Lab
Phenols	mg/L	Nil	0.002	PRO-Lab
Silver	mg/L	< 0.02	0.05	PRO-Lab
Sulfide	µg/L	17	NA	PRO-Lab
Selenium	mg/L	< 0.1	0.01	PRO-Lab
Total Cyanide	mg/L	< 0.01	-	PRO-Lab
Total Coliform	MPN/ml	46	ND	PRO-Lab
Iron	mg/l	0.71	0.3	ISO
Cyanide	mg/l	0.01	0.07	ISO

**Table 5.17 Results of Surface Water quality at the South-West of the Project Site in the wet season**

Sample Name- Surface Water quality at South-West of the Project Site in the wet season				
Item	Unit	Surface Water Quality	WHO Water Quality Standards (2018)	Laboratories
pH	-	7.05	6.5 - 8.5	FRI
Fluoride	mg/L	0.11	1.5	FRI
Nitrate	mg/L	0.09	50	FRI
Sulphate	mg/L	1.65	250	FRI
Ammonia	mg/L	0.028	NA	FRI
Total Suspended Solids	mg/L	8.32	NA	FRI
BOD	mg/L	2.71	NA	FRI
COD	mg/L	6.07	NA	FRI
Total Nitrogen	mg/L	1.52	NA	FRI

Total Phosphorus	µg/L	14.07	NA	FRI
Lead	mg/L	0.0005	0.01	FRI
Cadmium	mg/L	0.0001	0.003	FRI
Arsenic	mg/L	ND	0.01	FRI
Copper	mg/L	ND	2	FRI
Zinc	mg/L	0.012	5	FRI
Nickel	mg/L	0.0021	0.07	FRI
Mercury	µg/L	ND	-	FRI
Chromium (Hexavalent)	mg/L	0.012	NA	PRO-Lab
Chromium (Total)	mg/L	< 0.01	0.05	PRO-Lab
Free Chlorine	mg/L	Nil	5	PRO-Lab
Oil and Grease	mg/L	8	NA	PRO-Lab
Phenols	mg/L	Nil	0.002	PRO-Lab
Silver	mg/L	< 0.02	0.05	PRO-Lab
Sulfide	µg/L	18	NA	PRO-Lab
Selenium	mg/L	< 0.1	0.01	PRO-Lab
Total Cyanide	mg/L	< 0.01	-	PRO-Lab
Total Coliform	MPN/ml	15	ND	PRO-Lab
Iron	mg/l	0.61	0.3	ISO
Cyanide	mg/l	0.011	0.07	ISO

**Table 5.18 Results of Outlet Water quality at the North of the Project Site in the wet season**

Sample Name- Outlet Water quality at North of the Project Site in the wet season				
Item	Unit	Outlet Water Quality	National Environmental Quality (Emission) Guideline	Laboratories
Biological Oxygen Demand	mg/L	4.56	50	FRI
Chemical Oxygen Demand	mg/L	6	250	FRI

pH	S.U <sup>a</sup>	6.78	6-9	FRI
Total coliform bacteria	100 ml	4.3	100	PRO-Lab
Total Nitrogen	mg/L	1.86	10	FRI
Total Phosphorus	mg/L	0.01548	2	FRI
Total Suspended solids	mg/L	4.4	50	FRI
Turbidity	FNU	11.15	-	FRI
Total Dissolved Solids	mg/L	68	-	FRI
Ammonia	mg/L	0.01	10	FRI
Arsenic	mg/L	ND	0.1	FRI
Copper	mg/L	ND	0.5	FRI
Zinc	mg/L	0.00095	2	FRI
Chromium (total)	mg/L	ND	0.5	FRI
Mercury	mg/L	ND	0.01	FRI
Nitrate	mg/L	0.33	-	FRI
Total Hardness	mg/L	36	-	ISO
Iron	mg/L	0.69	3.5	ISO
Chlorine (residual)	mg/L	Nil	0.2	ISO

According to the results and guidelines, all other parameters are within the relating guidelines except 'Iron' of surface water 1, 2, 3 and ground water. Iron property of these water may be higher than the guideline values due to the natural condition of the land.



Sampling the Surface Water Point 1 in the wet season



Sampling the Surface Water Point 2 in the wet season



Sampling the Surface Water Point 3 in the wet season



Sampling the Outlet Water from the Project Site in the wet season

**Figure 5.43 Water Sampling at Project Site in the dry and wet season**

Source: E Guard EQ Team (2023)

5.4.4. Odor Measurement

Odor measurement was made at specific points in the project site in order to know the smell and odor conditions at the specific points whether the results are higher than the guideline values (NEQG).

**Table 5.19 Locations of the Odor Measuring Points for dry season and wet season**

No.	Point	Location	Location
1.	Odor Measuring Point 1	Near the Entrance of the Market Place	14° 6'57.56"N 98°12'51.76"E
2.	Odor Measuring Point 2	At the Fuel Station	14° 6'52.73"N 98°12'46.72"E
3.	Odor Measuring Point 3	Near the Center of the Project Site (At the Parking Lot)	14° 6'56.64"N 98°12'44.12"E
4.	Odor Measuring Point 4	Near the Disposal Area	14° 6'56.18"N 98°12'40.86"E



**Figure 5.44 Locations of Odor Measuring Points for dry season and wet season**

Source: E Guard EQ Team (2023)



**Table 5.20 Comparison of Measured Results and Guideline Values for dry season and wet season**

No.	Point	National Environmental Quality (Emission) Guideline (odorant unit)	Result (odorant unit)
1.	Odor Measuring Point 1	5 - 10	0
2.	Odor Measuring Point 2	5 - 10	0
3.	Odor Measuring Point 3	5 - 10	0
4.	Odor Measuring Point 4	5 - 10	0

According to the comparison results, the observed odor values are under the guideline value.



**Odor Measuring at Point 1 (Near the Entrance of the Market Place) in the dry season**



**Odor Measuring at Point 2 (At the Fuel Station) in the dry season**



**Odor Measuring at Point 3 (Near the Center of the Project Site) in the dry season**



**Odor Measuring at Point 4 (Near the Disposal Area) in the dry season**



**Odor Measuring at Point 1 (Near the Entrance of the Market Place) in the wet season**



**Odor Measuring at Point 2 (At the Fuel Station) in the wet season**



**Odor Measuring at Point 3 (Near the Center of the Project Site) in the wet season**



**Odor Measuring at Point 4 (Near the Disposal Area) in the wet season**

**Figure 5.45 Odor Measurement at Project Site**

*Source: E Guard EQ Team (2023)*

#### 5.4.5. Soil Quality

Sediment Sampling were collected by the sediment trap. The sampling team has pre-arranged with the labs in Yezin for analysis and logistic arrangement made to reach the preserved samples with unique IDs to the designated labs within 48hrs.

**Table 5.21 Location of Soil Quality Sampling Point in the dry season**

Item	GPS Coordinates	Location	Parameters
Soil Quality Sampling Point	Lat: 14° 6'52.24"N Long: 98° 12'44.83"E	Near the boundary of the Phase I project site (Inside the boundary of Phase II project site)	pH, Phosphorus, Potassium



**Figure 5.46 Location of Soil Quality Sampling Point in the dry season**

Source: E Guard Study Team (2023)

Soil quality results are shown in Table by comparing with the values.

**Table 5.22 Result of soil quality**

Parameters	Unit	Observed Values	Thailand National Environmental Quality (Emission) Guideline, 2020 (Exclude from Grazing and Agricultural Lands)
pH		7.27	-
Total Phosphorus	(µg/kg)	0.00064	-

Parameters	Unit	Observed Values	Thailand National Environmental Quality (Emission) Guideline, 2020 (Exclude from Grazing and Agricultural Lands)
Potassium	( $\mu\text{g}/\text{kg}$ )	0.0126	-

Source for Standard Guideline: Thailand updates the environmental standard for soil/ Envilience ASIA



**Figure 5.47 Soil Quality Sampling at Proposed Project**

Source: E Guard EQ Team (2023)

#### 5.4.6. Traffic Survey

The traffic count data for various vehicle types are collected as base line for Dwei Bus Terminal and transportation management. The way of transportation is taken on Ye-Dawei/Dawei-Ye highway main road. Traffic counts are carried out on 12 hours per each seasons(wet and dry). Start from 6am and ends at 6pm as there was curfew order in Dawei after 6pm at that time. The survey point is at the entrance of bus terminal which is another of transportation check point. By collecting traffic counts at the point, traffic flow from Dawei-Ye, Ye-Dawei and traffic counts that come to bus terminal.

#### **Methodology**

Traffic flow had been analyzed by surveying on the number of vehicles at two points. Data were recorded using tally sheets. It is the simplest means of conducting manual counts and also one of the non-intrusive methods. To establish base line data on traffic conditions, traffic counting was carried out at two stations within the studying area on dry season and wet season. The data can be recorded with a tick mark on a prepared field form. Traffic count form is shown in Appendix 8.

The following table shows a breakdown of the traffic counts and sample of the data collections.

**Table 5.23 Vehicle type and classification**

Vehicle Type	Categories
Motorcycle/Tri-Motorcycle	Motorcycles and tri-motorcycles (commonly known as tuk-tuks or auto-rickshaws) are considered through traffic.
Car	Cars are ubiquitous and form a substantial portion of daily traffic. (Example- Salon, Hiace)
Express Travel Bus (Large/Small)	Include highway bus of all large and mini size. (Example- Large express car, Various kind of travel vehicles including roof rack, etc)
Truck (Small)	Smaller trucks, like pickup trucks , light truck and vans, also contribute to traffic. Also, considers trucks for deliveries to construction work and other kinds of trucks except 12 wheel truck, Fuel tanker truck (Example- Dump truck, Construction truck, Light truck, Hi-Jet, etc).
Truck (Large)	Large trucks, such as heavy goods vehicels/cargo truck with ten wheels and fruit/vegetable delivery trucks are all considered. (Exampel-10- or 12-wheel truck, Fuel tanker truck

Traffic condition is normally assessed in terms of road capacity relative to traffic volume V/C ratio. This ratio is considered as a baseline traffic flow condition which can be used to evaluate the consequences of the project impact on local transportation.

$$\text{V/C ratio} = \frac{\text{Traffic Volume}}{\text{Carry Capacity of Respective Road}}$$

The calculation of V/C ratio requires the following steps:

- 1) Convert the number of vehicles from observation to Passenger Car Unit (PCU) by using Passenger Car Equivalents (PCE) factor specified for each type of vehicles as indicated in the following table:
- 2) In order to find out the traffic carrying capacity and highway types, the following information from Thailand is adopted as there is no information regarding this aspect locally.

**Table 5.24 Passenger car equivalent (PCE) values for each vehicle type**

Vehicle Types	PCE
Bicycle	0.2
Motorcycle	0.5
Car & Taxi	1

Van, Pick-up & 4WD	1
Passenger Truck/ Small Bus	2.2
Large Bus	3.5
Small Truck	3.5
Truck (2 axles)	4
Truck (3 axles)	5
Truck (more than 4 axles)	5

Source: HCM (Highway Capacity Manual), Farooq and Akram (2016)

Passenger Car Unit (PCU) represent the impact of a large vehicle on a road by expressing it as the number of equivalent passenger vehicles derived from number of vehicles.

Passenger Car Equivalent (PCE) is a metric unit used in transportation, to assess traffic flow rate on a highway. A Passenger Car Equivalent is essentially the impact that a mode of transport has on traffic variables (such as headway, speed, density) compared to a single car. Highway capacity is measured in (PCE/h) daily. According to HCM (Highway Capacity Manual), the values of passenger car equivalent (PCE) for different vehicles were listed Table (Farooq and Akram, 2016).

Basic Hourly Car Capacity (BHCC) in PCU is calculated depending on the observed carriageway widths of the subject road sections. This came up with standard BHCC values (in PCU) for different road widths, as following table. The width of Ye-Dawei and Dawei-Ye lanes are around 4 meters for each lane; thus, Passenger Car Units (PCU) 600 is considered.

**Table 5.25 Traffic Carrying Capacity and Highway Types**

Carriage Width	Hourly PCU	
	Rual	Urban
Single<4meters	600	600
4-5 meters	1200	1200
5.1-6.0 meters	1900	1600
6.1-6.7 meters	2000	1700
6.8-7.3 meters	2400	1800
2x6.7 or 2x7.3 meters	7200	6700

**Traffic Survey Analysis**

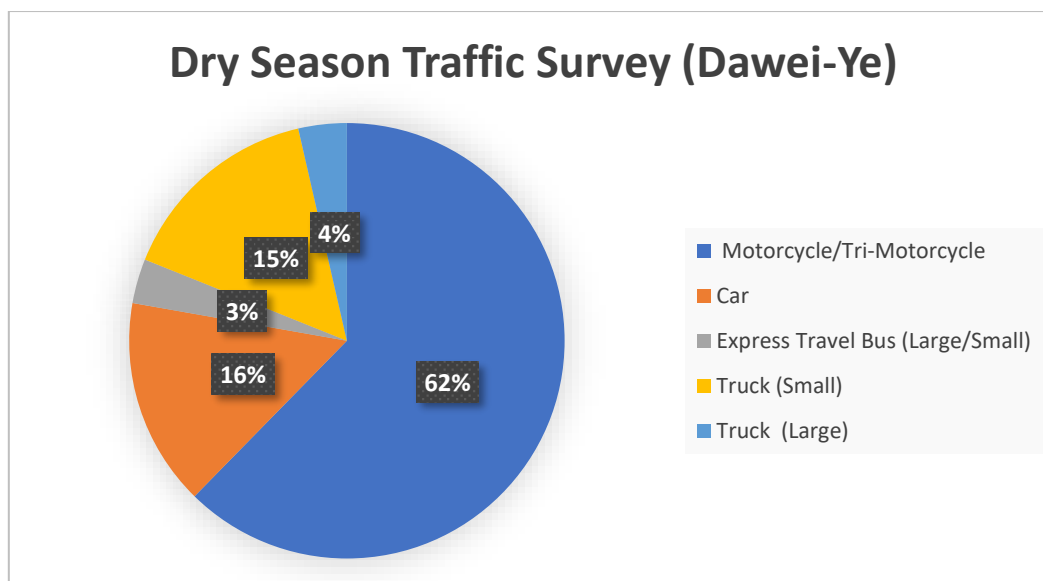
The traffic counts in both dry and wet seasons. The survey time is 12 hours stating from 6am and ends at 6pm. The follwing tables and pie chard shows the traffic analysis and amount of traffic per categories. According to results, both routes from Dawei-Ye and Ye- Dawei has very good traffic flow. And it can be seen that the transport mode of local people is Motorcycles/Tri-Motorcycles. V/C ratio is considered for this purpose

The following table show the result of traffic survey from Dawei-Ye (Dry Season).

**Table 5.26 Result of traffic survey from Dawei-Ye (Dry Season)**

Dawei-Ye	Motorcycle/ Tri- Motorcycle	Car	Express Travel Bus (Large/S mall)	Truck (Small)	Truck (Large)	Total
Passenger Car Equivalents Factor (PCE)	0.5	1	3.5	3.5	4	
06:00AM– 07:00AM	125	24		18	5	172
07:00AM– 08:00AM	135	20	6	21	4	186
08:00AM– 9:00AM	118	28	8	28	5	187
9:00AM– 10:00AM	115	24	7	21	5	172
10:00AM– 11:00PM	115	31	6	29	3	184
11:00PM– 12:00PM	87	31	3	27	4	152
12:00PM– 01:00PM	82	18	7	22	6	135
01:00PM– 02:00PM	53	22	6	24	9	114
02:00PM– 03:00PM	38	23	3	25	6	95
03:00PM– 04:00PM	70	18	3	24	6	121
04:00PM– 05:00PM	76	21	4	13	7	121
05:00PM– 06:00PM	80	11	5	17	3	116
Total (Vehicles/12 hours)	1094	271	58	269	63	1755
<b>Total Traffic volume (V) (PCU/12-hrs) (Vehicles*PCE)</b>	547	271	203	942	252	2215

Source: E Guard Study Team (2023)



**Figure 5.48 Traffic Survey for Dry Season (Dawei-Ye)**

Source: E Guard Study Team (2023)

The following table show the result of traffic survey from Ye-Dawei (Dry Season).

**Table 5.27 Result of traffic survey from Ye-Dawei (Dry Season)**

Ye-Dawei	Motorcycle/Tri-Motorcycle	Car	Express Travel Bus (Large/Small)	Truck (Small)	Truck (Large)	Total
Passenger Car Equivalents Factor (PCE)	0.5	1	3.5	3.5	4	
06:00AM– 07:00AM	110	11			3	124
07:00AM– 08:00AM	146	17	6	28	4	201
08:00AM– 9:00AM	135	28	6	35	4	208
9:00AM– 10:00AM	116	31	6	16	2	171
10:00AM– 11:00PM	85	23	8	17	6	139
11:00PM– 12:00PM	75	21	4	22	6	128
12:00PM– 01:00PM	52	19	5	20	3	99
01:00PM– 02:00PM	42	34	6	24	5	111
02:00PM– 03:00PM	53	17	10	20	1	101
03:00PM– 04:00PM	67	40	6	30	6	149
04:00PM– 05:00PM	73	18	2	20	7	120
05:00PM– 06:00PM	83	39		6	1	129



Ye-Dawei	Motorcycle/Tri-Motorcycle	Car	Express Travel Bus (Large/Small)	Truck (Small)	Truck (Large)	Total
Total (Vehicles/12 hours)	1037	298	59	238	48	1680
<b>Total Traffic volume (V) (PCU/12-hrs)</b>	518.5	298	206.5	833	192	2048

Source: E Guard Study Team (2023)

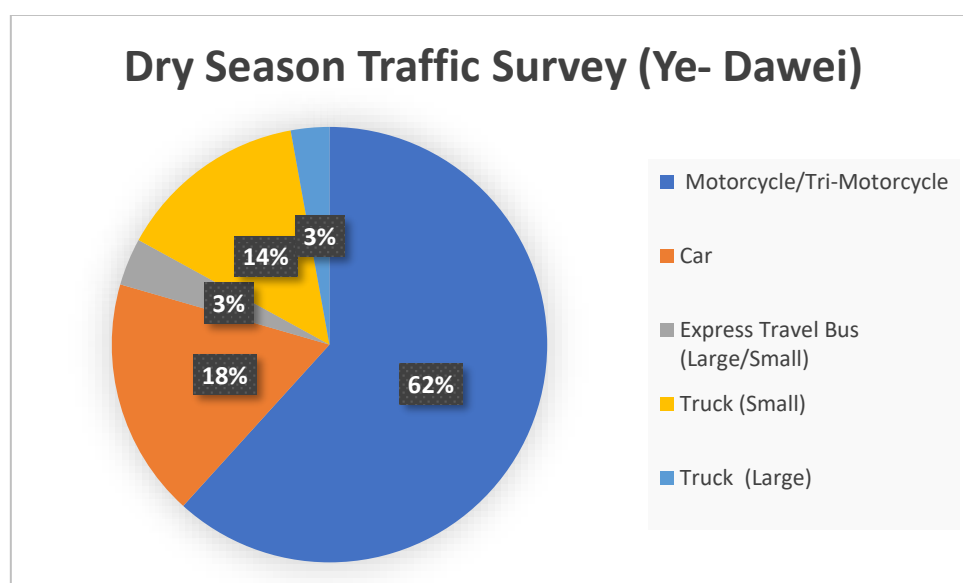


Figure 5.49 Traffic Survey for Dry Season (Ye-Dawei)

Source: E Guard Study Team (2023)

The following table show the result of traffic survey from Dawei-Ye (Wet Season).

Table 5.28 Result of traffic survey from Dawei-Ye (Wet Season)

Dawei-Ye	Motorcycle/Tri-Motorcycle	Car	Express Travel Bus (Large/Small)	Truck (Small)	Truck (Large)	Total
Passenger Car Equivalents Factor (PCE)	0.5	1	3.5	3.5	4	
06:00AM– 07:00AM	75	34	0	7	4	120
07:00AM– 08:00AM	49	15	5	21	6	96
08:00AM– 9:00AM	69	20	7	10	4	110
9:00AM– 10:00AM	65	21	6	11	4	107
10:00AM– 11:00PM	87	12	4	20	11	134

11:00PM– 12:00PM	63	15	3	7	8	96
12:00PM– 01:00PM	73	23	7	13	7	123
01:00PM– 02:00PM	54	14	3	46	11	128
02:00PM– 03:00PM	38	14	6	12	5	75
03:00PM– 04:00PM	67	12	3	8	15	105
04:00PM– 05:00PM	57	5	1	8	5	76
05:00PM– 06:00PM	83	22	1	0	3	109
Total (Vehicles/12 hours)	780	207	46	163	83	1279
<b>Total Traffic volume (V) (PCU/12-hrs) (Vehicles*PCE)</b>	390	207	161	571	332	<b>1661</b>

Source: E Guard Study Team (2023)

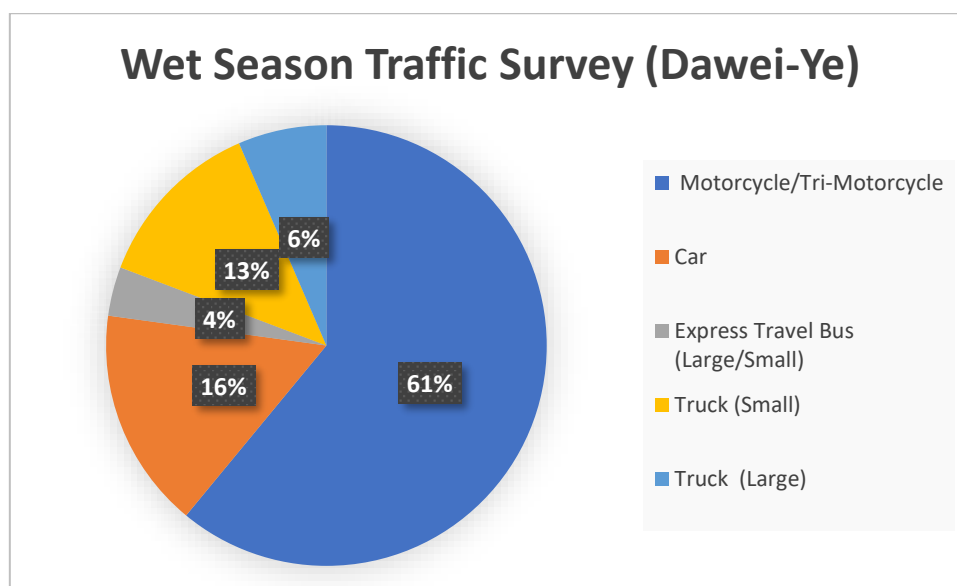


Figure 5.50 Traffic Survey for Wet Season (Dawei-Ye)

Source: E Guard Study Team (2023)

Table 5.29 Result of traffic survey from Ye-Dawei (Wet Season)

Ye-Dawei	Motorcycle	van/pickup	Large Bus	Small Truck	Truck (2 axles)	Total
Passenger Car Equivalents Factor (PCE)	0.5	1	3.5	3.5	4	
06:00AM– 07:00AM	67	15	0	1	4	87
07:00AM– 08:00AM	89	14	1	10	2	116

08:00AM– 9:00AM	80	32	8	10	4	134
9:00AM– 10:00AM	69	17	8	9	7	110
10:00AM– 11:00PM	70	21	7	7	8	113
11:00PM– 12:00PM	66	13	4	8	8	99
12:00PM– 01:00PM	66	14	2	11	5	98
01:00PM– 02:00PM	65	26	6	36	10	143
02:00PM– 03:00PM	80	11	5	10	3	109
03:00PM– 04:00PM	55	17	11	23	9	115
04:00PM– 05:00PM	48	11	6	13	6	84
05:00PM– 06:00PM	58	34	0	5	7	104
Total (Vehicles/12 hours)	813	225	58	143	73	1312
<b>Total Traffic volume (V) (PCU/12-hrs)</b>	406.5	225	203	500.5	292	1627

Source: E Guard Study Team (2023)

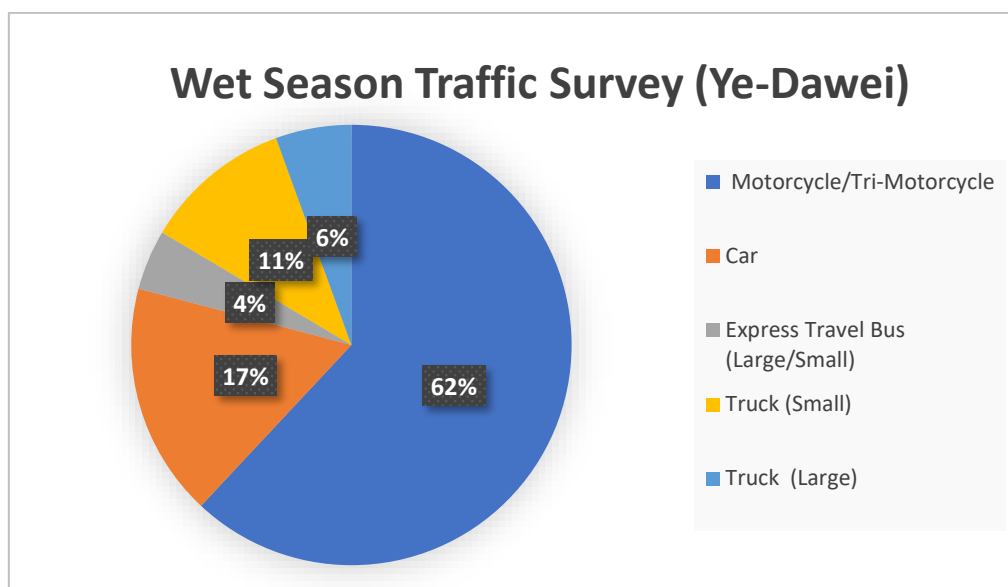


Figure 5.51 Traffic Survey for Wet Season (Ye-Dawei)

Source: E Guard Study Team (2023)

#### 5.4.7. Summary

To be submized, in the main highway road traffic condition is normally assessed in terms of road capacity relative to traffic volume, V/C ratio is commonly used for this purpose. Here also as Myanmar has no standards, range of V/C ratios for traffic condition classification is also adopted from Thailand. The following flow counts were analysed in proposed area using comparison analysis. The traffic count study provides valuable insights into the composition of traffic on the provincial roadway. From the result of both seasons, the traffic composition analysis for the Dawei-Ye and Ye-Dawei routes reveals distinct patterns in vehicle usage. Motorcycle and Tri-Motorcycle are widely used for transporting goods and passengers, making

up about half of the traffic on both routes. This indicates their crucial role in local and regional transport. The high prevalence of motorcycles and tri-motorcycles suggests a need for considerations of designated lanes or parking areas in the bus terminal. Small Trucks are used on both of Dawei-Ye and Ye-Dawei routes. At the time of study period, travel bus such as express are not significantly use, however, it can possibly increase in the future due to operation of the bus terminal and increasing economic activities and trade flows in the region. Currently, traffic flow of the road is very good for all season according to the range of V/C ration. It is expected that the traffic flow conditions will increase when the bus terminal is in operation.

**Table 5.30 Range of V/C Ratio for Traffic Condition Classification**

No.	Range of V/C Ratio	Classification of Traffic Condition
1	0.88- 1.00	Severe Traffic congestion
2	0.67- 0.88	Heavy traffic congestion
3	0.52- 0.67	Satisfactorily traffic flow
4	0.36- 0.57	Good traffic flow
5	0.20- 0.36	Very good traffic flow

(Source: Paopong, 1997)

**Table 5.31 Dry Season**

Description	Dawei-Ye (Dry)	Ye-Dawei (Dry)
Total Traffic volume (V) (PCU/12-hrs)	2215	2048
Traffic volume per 1 hour (V) (PCU/hr)	184.54	170.67
Carrying capacity (C) (PCU/hr)	600	600
V/C ratio	0.31	0.28
Classification of Traffic Condition	Very good traffic flow	Very good traffic flow

Source: E Guard Study Team (2023)

**Table 5.32 Wet Season**

Description	Dawei-Ye (Wet)	Ye-Dawei (Wet)
Total Traffic volume (V) (PCU/12-hrs)	1661	1627
Traffic volume per 1 hour (V) (PCU/hr)	138.38	135.58
Carrying capacity (C) (PCU/hr)	600	600
V/C ratio	0.23	0.23
Classification of Traffic Condition	Very good traffic flow	Very good traffic flow

Source: E Guard Study Team (2023)

### 5.5. Biological Components

Since the project area is located beside the Ye-Dawei highway in the vicinity of Dawei City, the project site and its surroundings are gradually changing from rural/ agricultural land to suburban areas. According to the Dawei township profile from General Administration Department, natural regeneration found in Dawei township are *Nypa fruticans*, *Casuarina equisetifolia*, *Anacardium occidentale*, *Magifera indica*, *Careya arborea Roxb.*, *Dipterocarpus*

*baudii*, *Ficus carcia*, *Hopea odorata*, *Pentace griffithii*, *Michelia champaca*, *Cinnamomum iners*, *Xylia xylocarpa*, and *Dipterocarpus obtusifolius*. Dawei township boasts a rich variety of wildlife including barking deer, sambar deer, bears, serow, wild boar, tapir, elephants, gaur, monkeys, snakes, and pangolins, among others. However, these flora and fauna species were not observed during the site visit and only trees that were planted by the project proponent were found in the project site.



**Figure 5.52 Project Site Located beside Ye-Dawei Highway (Left), and Site Clearing with Adjacent Land in the Background**

Source: E Guard Study Team (2023)

Discussions with site management personnel indicated that the vegetation of the project site had long been removed, and the natural habitats had been turned into areas dominated by barren land. It was confirmed by the observations of site visit. The area has already lost its natural habitat as the harbinger of urban expansion process. No evidence of the presence of recent natural vegetation cover was seen in the project site and surrounding areas. In dry season the area usually turns into barren land mixed with dry grassland.

Obviously, the area can no longer provide habitats for any natural flora and fauna species. Although water in small creeks bordering the project site dries up during the summertime, sporadic small-sized farms cultivated for family subsistence were observed on the land adjacent to the site where water supply is available. Herbaceous plants (mostly annual) in form of weeds grow throughout the wet season. These plants, however, cannot be seen in the dry season because their life cycle completes within one growing season. Plants such as *Mimosa pudica* (Sensitive plant), *Convolvulus arvensis* (Field bindweed), *Ipomoea triloba* (Sandar Chhou), *Physalis angulata*, *Spermacoce latifolia* (Broad-Leaf Buttonweed), *Microstegium vimineum* (Japanese stiltgrass), are observed in the wet season. The IUCN Red List indicates that plant species found in the project vicinity are not listed as threatened. Based on the absence of IUCN Red List species in the project area, there is likely no significant negative impact on biodiversity.



*Mimosa pudica* (Sensitive plant)  
(LC)



*Convolvulus arvensis* (Field bindweed)  
(NE)



*Ipomoea triloba* (Sandar Chhou)  
(NE)



*Physalis angulata*  
(LC)



*Spermacoce latifolia* (Broad-Leaf  
Buttonweed)  
(NE)



*Microstegium vimineum* (Japanese stiltgrass)  
(NE)

**Figure 5.53 Plants that are found in the wet season**

Source: E Guard Study Team (2023)



**Figure 5.54 Biological Environment of the Project Site during Dry Season**



**Figure 5.55 Biological Environment of the Project Site during Wet Season**

*Source: E Guard Study Team (2023)*

The permanent forest estates, reserved forests including nature reserved forests and public protected forests, usually contain diverse flora and fauna species within the forest ecosystems which are protected under the Forest Law (2018) and the Conservation of Biodiversity and Protected Areas Law (2018).

In order to avoid biodiversity loss and degradation of ecosystem services, establishing nature reserved forests is a common method. Nature reserved forests are one of the most strictly managed types of protected areas. Moreover, they have played a positive role in water conservation, soil retention, sandstorm prevention, carbon sequestration, biodiversity protection and carbon stocks. There are 17 reserved forests, 2 protected public forests and one nature reserved forest in Dawei district. Myaw Yit nature reserved forest and Maung Ma Gan protected public forest are the nearest permanent forest estates.

Key Biodiversity Areas (KBAs) are the most important places in the world for species and their habitats. The KBA Program supports the identification, mapping, monitoring and conservation of KBAs to help safeguard the most critical sites for nature on our planet – from rainforests to reefs, mountains to marshes, deserts to grasslands and to the deepest parts of the oceans. According to the data of key biodiversity area organization, Myanmar contains 142 known key biodiversity areas (KBA). There are two key biodiversity areas in Dawei district.



**Figure 5.56 Key biodiversity area in Dawei District**

Source: <https://www.keybiodiversityareas.org/sites/search>

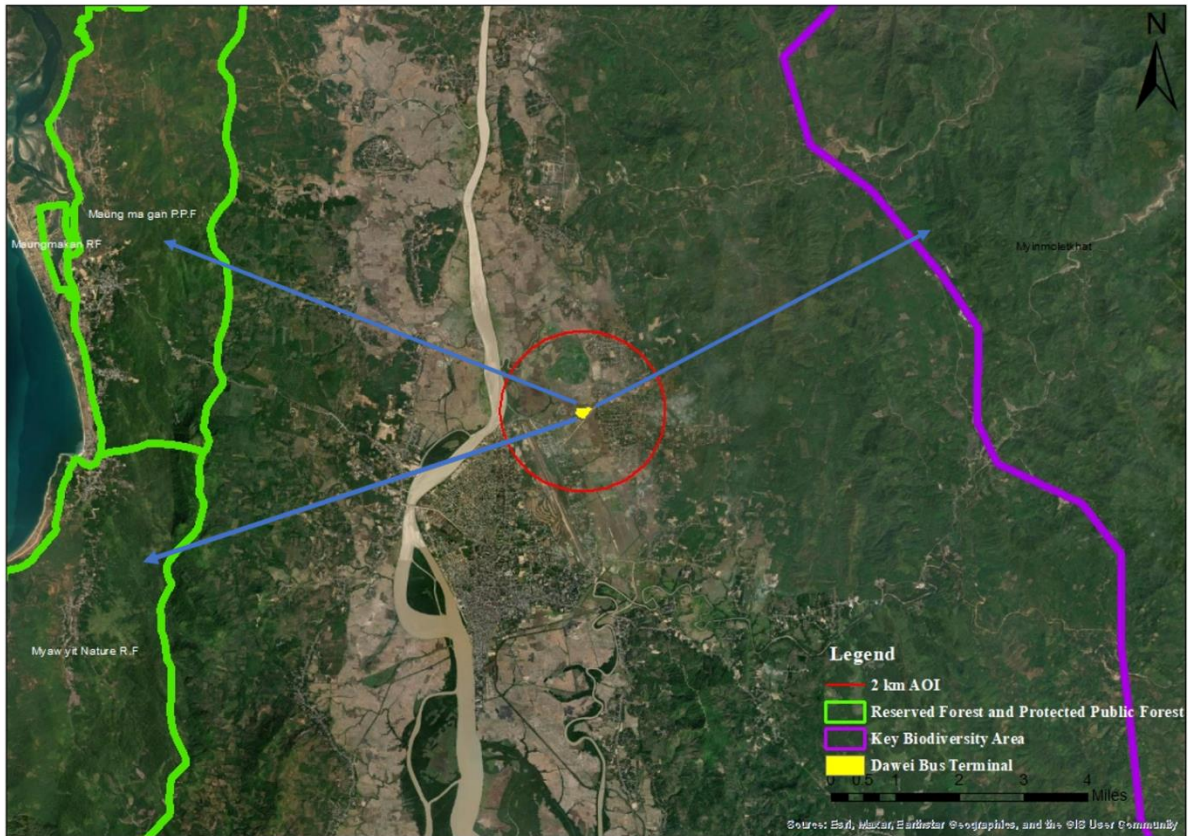
**Table 5.33 Key biodiversity in Dawei District**

KBA Name	Tanintharyi Nature Reserve	Myint Mo Let Khat
Area (km <sup>2</sup> )	1629.32	8185.62
Location	14.5477 N, 98.3075 E	13.7738 N, 98.7278 E
Type	Terrestrial	Terrestrial
Global KBA Criteria	Ale	-
KBA classification	Global	Global/ Regional TBD

Source: <https://www.keybiodiversityareas.org/sites/search>

Myint Mo Let Khet, a terrestrial key biodiversity area, is located 5.6 miles away from the project site whereas Maung Ma Gan protected public forest and Myaw Yit nature reserved forest are located away (approximately 5.8 and 6.6 miles, respectively) from the project site. The project’s impacts on the wider biodiversity thus can be considered as negligible due to long distances from the project location.





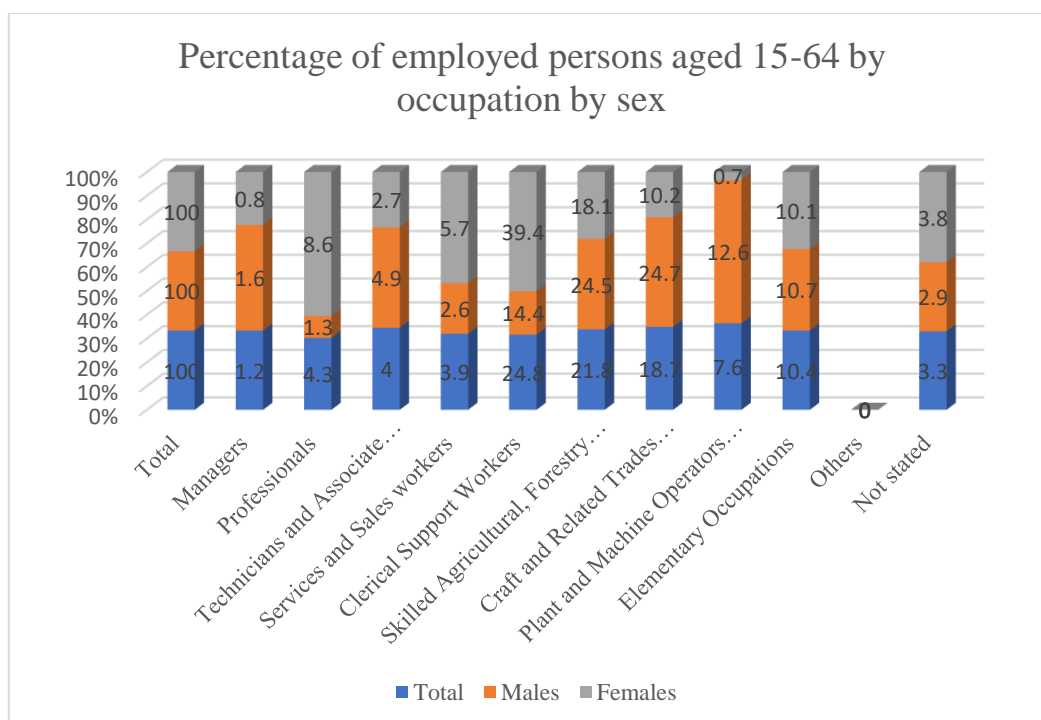
**Figure 5.57 Location of the Project Area in Relation to Reserved Forests and Key Biodiversity Area**

Source: E Guard Study Team (2023)

**5.6. Socio-Economic Components**

**5.6.1. Income and Livelihoods**

In Dawei Township, 24.8 percent of the employed persons aged 15-64 are services and sales workers and is the highest proportion, followed by 21.8 percent in skilled agricultural, forestry and fishery workers. Analysis by sex shows that 24.7 percent of males are craft and related trades workers and 39.4 percent of females are services and sales workers.



**Figure 5.58 Percentage of employed persons aged 15-64 by occupation by sex, Dawei Township**

Source: Dawei Township Report (Department of Population, Oct-2017)

**Table 5.34 Employment status of Dawei township**

No.	Township	Workable	Current employed person	Unemployed person	Percentage of Unemployment
1.	Dawei	64280	43593	20687	32.18 %
	Total	64280	43593	20687	32.18 %

Source: Dawei Township Information (GAD,2019)

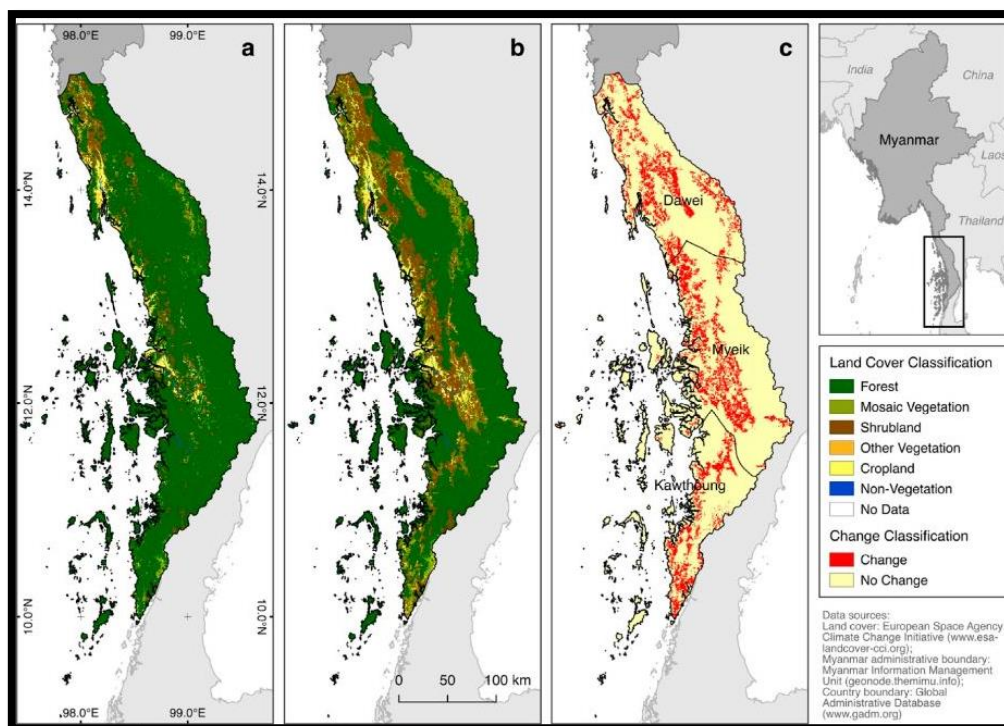
5.6.2. Land Use

The following table shows the areas and types of land use in Dawei township.

**Table 5.35 Areas of types of land use in Dawei township**

<i>No.</i>	<i>Type of land use</i>	<i>Area (acre)</i>
		<i>Dawei</i>
<i>1.</i>	<i>Total areas of arable land</i>	<i>61270</i>
	<i>(a) (a) Agricultural land</i>	<i>8240</i>
	<i>(b) (b) Upland</i>	<i>-</i>
	<i>(c) (c) Garden land</i>	<i>52635</i>
	<i>(d) (d) Nipa Palm land</i>	<i>395</i>
<i>2.</i>	<i>Total area of fallow land</i>	<i>3881</i>
	<i>(e) (a) Agricultural land</i>	<i>3881</i>
	<i>(f) (b) Upland land</i>	<i>-</i>
	<i>(g) (c) Garden land</i>	<i>-</i>
	<i>(h) (d) Nipa Palm land</i>	<i>-</i>
<i>3.</i>	<i>Pasture land</i>	<i>2695</i>
<i>4.</i>	<i>Industrial land</i>	<i>75</i>
<i>5.</i>	<i>Town land</i>	<i>1900</i>
<i>6.</i>	<i>Village land</i>	<i>291</i>
<i>7.</i>	<i>Others</i>	<i>126148</i>
<i>8.</i>	<i>Reserved forest and protected public forest area</i>	<i>126036</i>
<i>9.</i>	<i>Indigenous forest</i>	<i>557588</i>
<i>10.</i>	<i>Virgin land</i>	<i>143156</i>
<i>11.</i>	<i>Non-arable land</i>	<i>31676</i>
	<i>Total area</i>	<i>1054716</i>

Source: Dawei Township Information (GAD,2019)



**Figure 5.59 Map of Land Cover**

(Source: <https://www.mdpi.com/2071-1050/11/4/1139>)

### 5.6.3. Population Data

In Dawei township, the total population is 125,605 and there are more females than males with 92 males per 100 females. The majority of the people in the township live in urban areas with (63.8%). The population density of Dawei township is 29 persons per square kilometer. There are 4.6 persons living in each household in Dawei township. This is more than the Union average (4.4 persons/ household).

**Table 5.36 Demographic Characteristics of Dawei Township**

<b>Total population</b>	<b>125,605</b>		
Males	60,044		
Females	65,561		
Sex ratio	92 males per 100 females		
Percentage of urban population	63.8%		
Area (Km2)	4,268.3**		
Population density (persons per Km2)	29.4 persons		
Number of wards	15		
Number of village tracts	17		
	<b>Total</b>	<b>Urban</b>	<b>Rural</b>

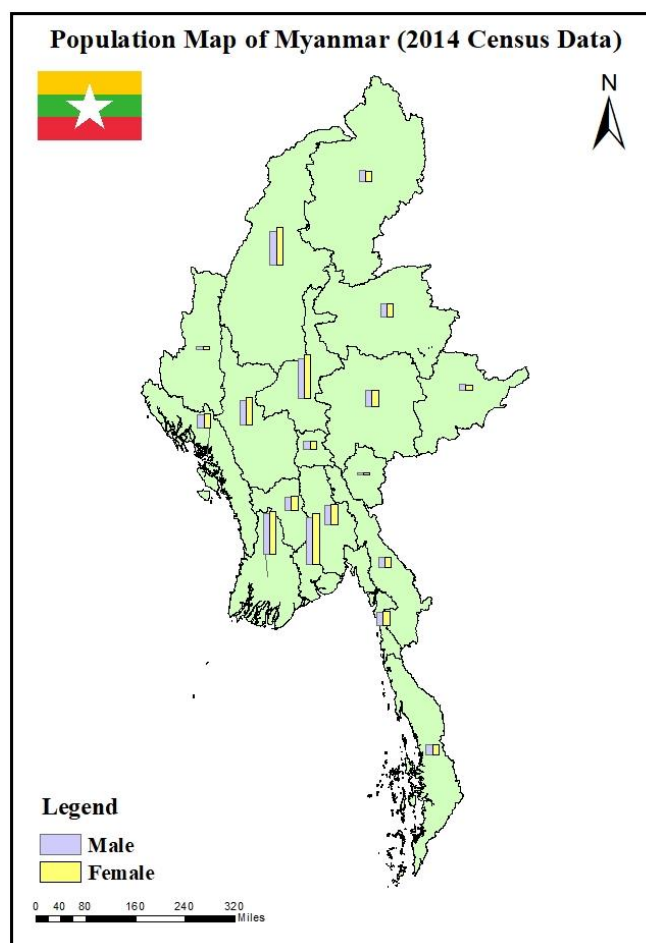
<b>Population in conventional households</b>	<b>115,544</b>	<b>73,904</b>	<b>41,640</b>
<b>Number of conventional households</b>	<b>24,943</b>	<b>15,382</b>	<b>9,561</b>
<b>Mean household size</b>	<b>4.6 persons ***</b>		

Source: Dawei Township Report (Department of Population, Oct-2017)

Note: \* Includes both household population and institution population.

\*\* Settlement and Land Record Department, Ministry of Agriculture, Livestock and Irrigation, (2014-2015)

\*\*\* Calculated based on conventional household population



**Figure 5.60 Population Map of Myanmar**

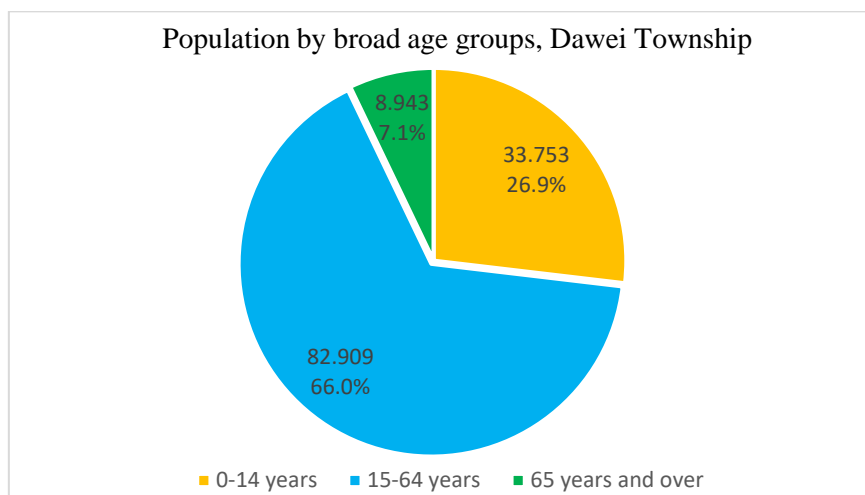
Source: E Guard Study Team (2023)

The population of Dawei township at the end of September, 2019 is as follows.

**Table 5.37 Number of Houses and Households (Dawei Township)**

No.	Township/Town	Content	Houses	Household	Ward	Village Tract	Village
1.	Dawei Township	Urban	13080	14337	15	-	-
		Rural	12634	12906	-	25	106
	<b>Total</b>		<b>25714</b>	<b>27243</b>	<b>15</b>	<b>25</b>	<b>106</b>

Source: Dawei Township Information (GAD,2019)



**Figure 5.61 Population by broad age groups, Dawei Township**

Source: E Guard Study Team (2023)

The proportion of productive working population between 15 to 64 years of age in Dawei Township is 66.0 percent. The proportion of children aged 14 and below together with the proportion of the elderly aged 65 and over are less than the proportion of the working age group population. Fewer proportions of children and elderly reduce the dependency of those age groups on the working age population.

5.6.4. Education Status

**Table 5.38 Youth literacy rate (15-24), Dawei Township**

Sex	Total population (15-24)	Literacy Rate (15-24)
Total	19,245	97.0
Males	9,021	96.7
Females	10,224	97.4

Source: Dawei Township Report (Department of Population, Oct-2017)

The literacy rate of those aged 15 and over in Dawei Township is 95.1%. It is higher than the literacy rate of Tanintharyi Region (92.8%) and the Union (89.5%). Female literacy rate is 94.0 % and for males is 96.5%. The literacy rate for youth is 97.0% with 97.4% for females and 96.7% for males.

**Table 5.39 Population aged 25 and over by highest level of education completed, urban/rural and sex**

				Primary School							
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	Total	None	% Never attended	(Grade 1-4)	(Grade 5)	Middle School	High School	Diploma	University/College	Post graduate	Vocational	Other
Total	69,780	4,535	6.5	14,311	15,825	14,935	10,127	233	8,680	581	103	450
Urban	46,194	2,141	4.6	7,609	8,577	10,910	8,420	180	7,593	485	91	188
Rural	23,586	2,394	10.2	6,702	7,248	4,025	1,707	53	1,087	96	12	262
Males	32,083	1,709	5.3	3,163	6,881	8,271	5,610	155	3,716	170	71	337
Females	37,697	2,826	7.5	9,148	8,944	6,664	4,517	78	4,964	411	32	113

Source: Dawei Township Report (Department of Population, Oct-2017)

About 6.5 per cent of the population aged 25 and over have never been to school. Of the rural population aged 25 and over, 10.2 percent have never been to school. There are 5.3 percent of males aged 25 and over who have never attended school as against 7.5 percent for females. Among those aged 25 and over, 22.7 percent has completed primary school (grade 5) and only 12.4 percent has completed university/college education.

## 5.7. Public Health Components

### 5.7.1. Mortality and Morbidity

**Table 5.40 Number of Population of Birth Rate, Mortality and Migration of Dawei Township**

No.	Township	Previous Population	Birth rate	Mortality rate	Migration Population (In)	Migration Population (Out)	Current Population
1.	Dawei Township	136,031	2,119	875	1,332	496	138,111
	Total	136,031	2,119	875	1,332	496	138,111

Source: Dawei Township Information (GAD,2019)

### 5.7.2. Occurrence of Diseases

In Dawei township, the most common diseases are malaria, diarrhea, tuberculosis, dysentery, and hepatitis. According to the data, diarrhea is the most occurring disease with a record of 1,400 cases and no death has occurred. The second occurring disease is dysentery with a record of 416 cases. Moreover, hepatitis occurred 222 cases, malaria occurred 183 cases, and tuberculosis (TB) with 143 cases but no dead cases occurred. There are 121 cases of HIV/AIDS

and 22 dead cases have occurred in the year 2018-2019. The following table shows the details of occurred diseases.

**Table 5.41 Most common occurred diseases in Dawei township**

No.	Township	Types of diseases											
		Malaria		Diarrhea		TB		Dysentery		Hepatitis		HIV/AIDS	
		Case	Death	Case	Death	Case	Death	Case	Death	Case	Death	Case	Death
1.	Dawei	183	-	1400	-	143	-	416	-	222	-	121	22
	<b>Total</b>	<b>183</b>	<b>-</b>	<b>1400</b>	<b>-</b>	<b>143</b>	<b>-</b>	<b>416</b>	<b>-</b>	<b>222</b>	<b>-</b>	<b>121</b>	<b>22</b>

Source: Dawei Township Information (GAD,2019)

## 5.8. Cultural Components

### 5.8.1. Cultural Heritage

In Dawei township, there are many monastic facilities and pagodas are famous as Shin Koe Shin pagodas. The following tables describe monastic facilities and famous pagodas.

**Table 5.42 Monastic Facilities in Dawei Township**

No.	Township	Pagodas	Shrines	Monasteries	Convent School	Chapels
1.	Dawei Township	183	189	191	48	15
2.	Myitttar	-	4	3	-	-
	<b>Total</b>	<b>183</b>	<b>193</b>	<b>194</b>	<b>48</b>	<b>15</b>

Source: Dawei Township Information (GAD,2019)

**Table 5.43 Famous pagodas in Dawei Township**

No.	Township/Town	Name of Pagodas	Location
1.	Dawei	Shwe Taung Sar Pagoda	Painnetaw Ward
2.	Dawei	Shin Mutti Pagoda	Shin Mutti Village
3.	Dawei	Shin Pin Kayu Pagoda	Ka Nyone Ward
4.	Dawei	Shin Oataw Pagoda	Painnetaw Ward
5.	Dawei	Shin Datwae Pagoda	Maung Mei Shaung Village
6.	Dawei	Shwe Thar Hlaung Pagoda	Ka Naing Dar Village
7.	Dawei	(27) Taung Yat Taw Maw Pagoda	Bon Maw Ward
8.	Dawei	Shin Pin Thar Yu Pagoda	San Chi Ward
	<b>Total</b>	<b>8</b>	<b>8</b>

Source: Dawei Township Information (GAD,2019)



### 5.9. Methodology and design for social survey

E Guard's social team used a case study research design with quantitative research method for primary data collection related with socioeconomic condition of local people living in the vicinity of the project area. The face-to-face interview with a systematic questionnaire was conducted to understand the socioeconomic conditions of people living around the project location and to know the opinions of local people on positive impacts and negative impacts of the project. The interview was carried out at Dawei City Hall on 5th May 2023 and 5<sup>th</sup> September 2023 after public consultation meetings hold for this project. The social survey questionnaire has ten-main sections, and the details are stated in the following table.

**Table 5.44 Sections and parameters of household questionnaire**

Sr.	Section	Parameters
1	General Information of the respondents	- Gender, age, relationship with household heads, address, religion, ethnicity, education, health status, occupation
2	Information of family members	- relationship with household heads, gender, religion, ethnicity, education, health status, occupation, family size, household types,
3	Information of households	- monthly income and expenditure, changes in household's income, pattern of change, saving, main occupation,
4	Living status	- access to electricity, sources of drinking and domestic water, cooking fuel, toilet type, roof type, materials of wall and floor, common diseases, access to health care facilities
5	Household Assets And Livestock and Agriculture	- ownership of residential and commercial land, agricultural machines, TV, refrigerator, motorbike, motor vehicle, generators, hand phones, telephones - working status of livestock and agriculture, year, type and number of livestock, fishery, types of fishes, yield, types of crops
6	Water source for Livestock and Agriculture	- source of water for Livestock and Agriculture, difficulty of water availability, solution for water deficiency
7	Health Status	- access to health care centers and preference of health care services
8	Natural Disasters	- experience of natural disaster, year of cases by type of natural disaster
9	Transportation	- type of transportation, type of transportation to Dawei and other places, vehicles and condition
10	Opinions on the project	- awareness of the project, source of awareness, opinion on the development by the project, experience of social survey, operation of other project, health impacts by the nearby projects, pros and cons of the project, existence of environmental impacts by other projects, causing factors and type of impacts, existence of environmental impacts by the project, causing factors and type of impacts, suggestions for the natural and social environment, other suggestions to the project owner

5.9.1. Sampling Method

Simple method was used for the household survey for this project. E Guard team conducted interviewing the local people who attended the public consultations. The attendees of the public consultation were requested to join the interview after the closing ceremony of public consultation. The following figures are shown activities of social surveying to nearby households and interviewing local people at public consultation.



Interviewing Local People at Public Consultation



Household Survey

**Figure 5.62 Photo Records of Social Survey**

5.9.2. Data Analysis for Social Survey

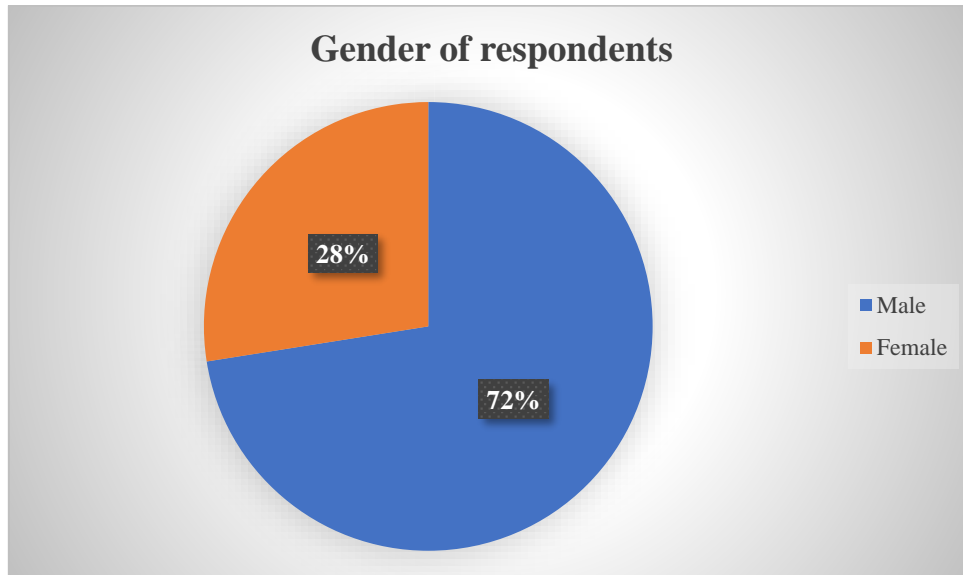
The collected primary data through using face-to-face interviews were processed by using The International Business Machines Corporation’s Statistical Package for Social Science (IBM SPSS) and was analyzed by using descriptive statistics for the general information which are mentioned in Table 5.44.

Results of Data Analysis

The results of data analysis conducted after collecting socioeconomic data of the local households are described in the following tables for each component of the questionnaire used for social survey. In Appendix 7, more social conditions and social-economic survey datas are attached.

1) Gender of respondents

The following table and figure show the number and percentage of respondents by their gender. As per the results of the data analysis, the numbers of male respondents are higher than that of female respondents. The results of data analysis show that 27.5% of total respondents are female. The respondents' records are shown detail in Appendix 7.

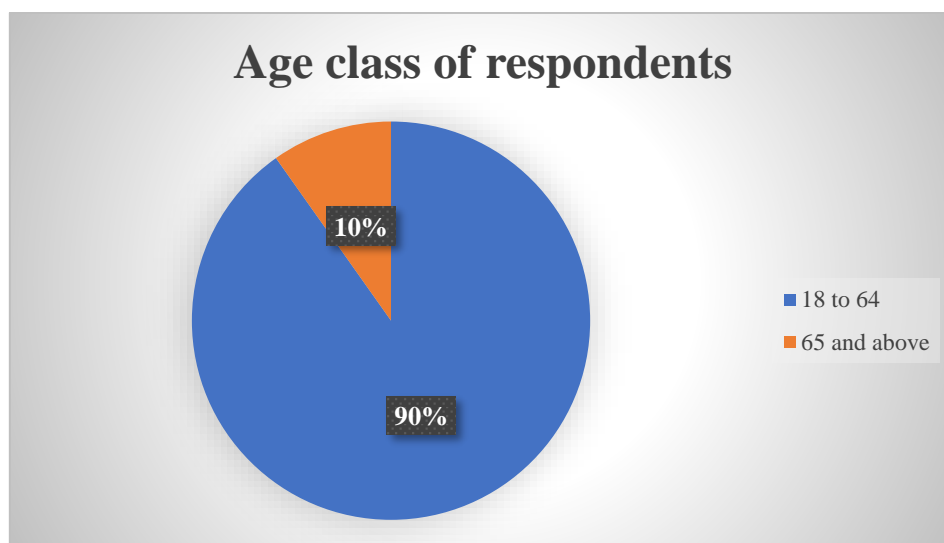


**Figure 5.63 Gender of the respondents**

Source: E Guard Social Team (2023)

2) Age class of respondents

The following table and figure describe the frequency and percentages of the respondents by their age class. The age class of most respondents is the class ranged between 18 and 64 years old although one-tenth of total interviewees are elderlys. The respondents' records are shown detail in Appendix 7.



**Figure 5.64 Age class of respondents**

Source: E Guard Social Team (2023)

3) Religion of respondents

The following table and figure state the religion of the respondents. According to the results of data analysis, most respondents are Buddhism and only one respondent has belief in Christianity. The respondents' records are shown detail in Appendix 7.

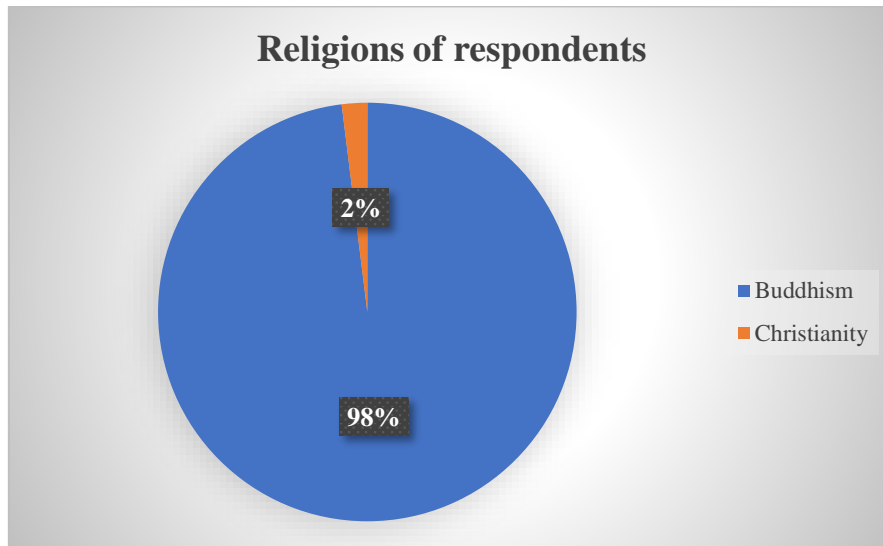


Figure 5.65 Religions of respondents

Source: E Guard Social Team (2023)

4) Ethnicity of respondents

The following table and figure describe the ethnicity of respondent describing that most of respondents are Burmar. Only one respondent in Ein Shey Pyin Ward is found to be Karen. The respondents' records are shown detail in Appendix 7.

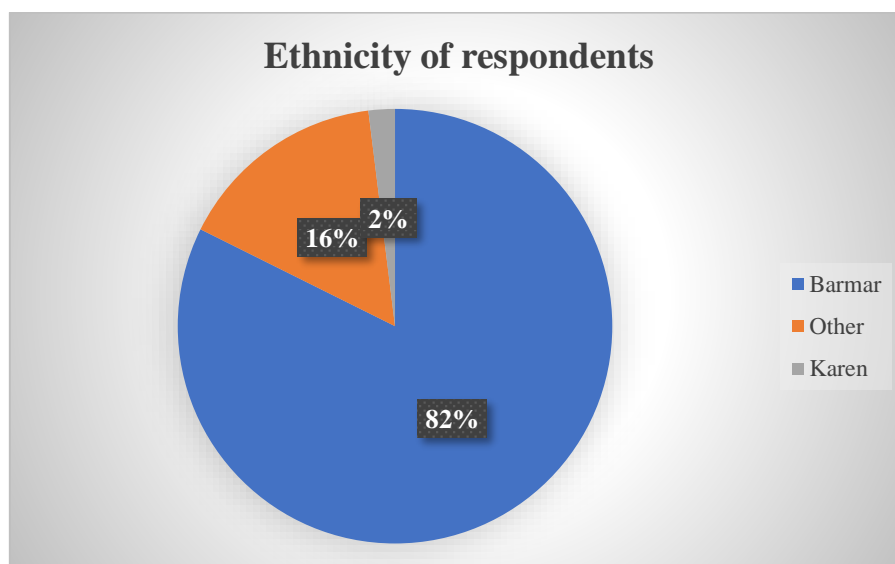
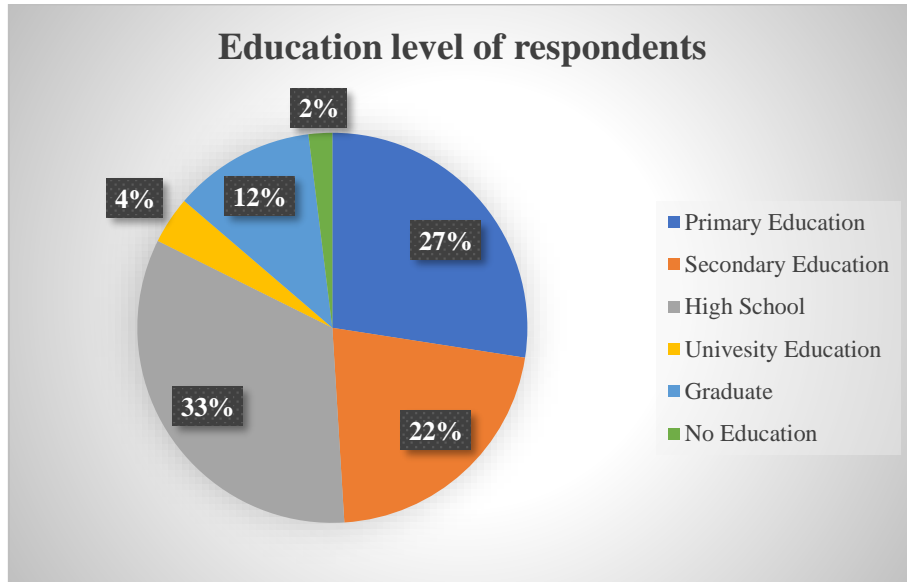


Figure 5.66 Ethnicity of respondents

Source: E Guard Social Team (2023)

5) Education level of respondents

The following table and figure describe the number and percentage of respondents by their education level, and it shows around one-third of respondents have finished high school education. The respondents' records are shown detail in Appendix 7.

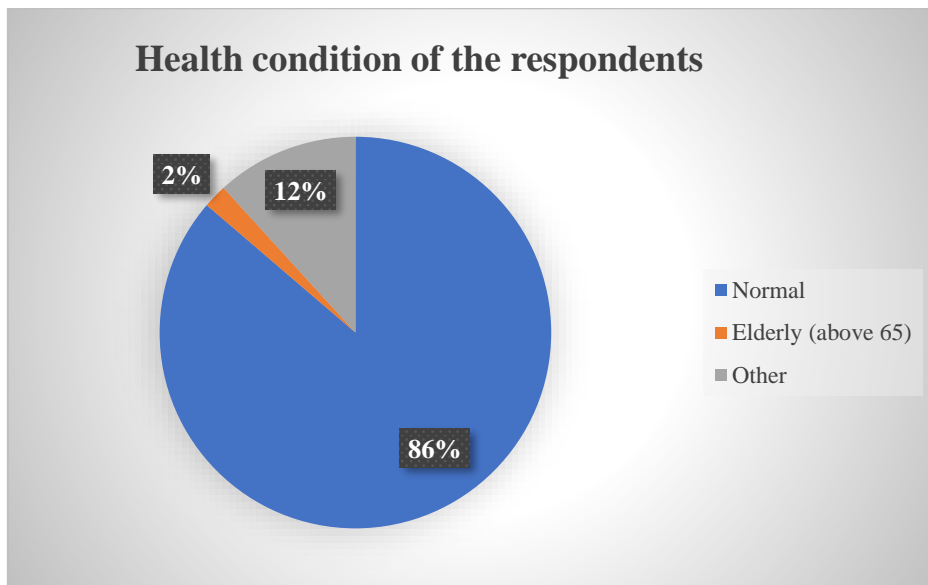


**Figure 5.67 Education level of the respondents**

Source: E Guard Social Team (2023)

6) Health condition of respondents

The health condition of most respondents in all villages and wards are normal although one respondent from Maung Ma Shaung Village is suffering from elderly diseases. The respondents' records are shown detail in Appendix 7.

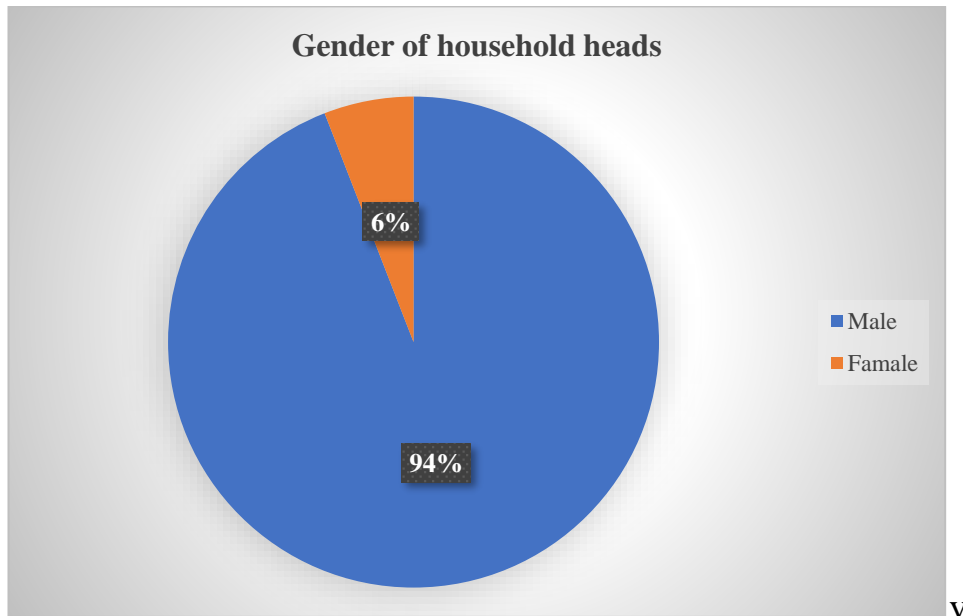


**Figure 5.68 Health condition of the respondents**

Source: E Guard Social Team (2023)

7) Gender of the household heads

The following table states the gender of the household head of the respondents. According to the results of social survey, 94% of the household heads are men. The respondents' records are shown detail in Appendix 7.

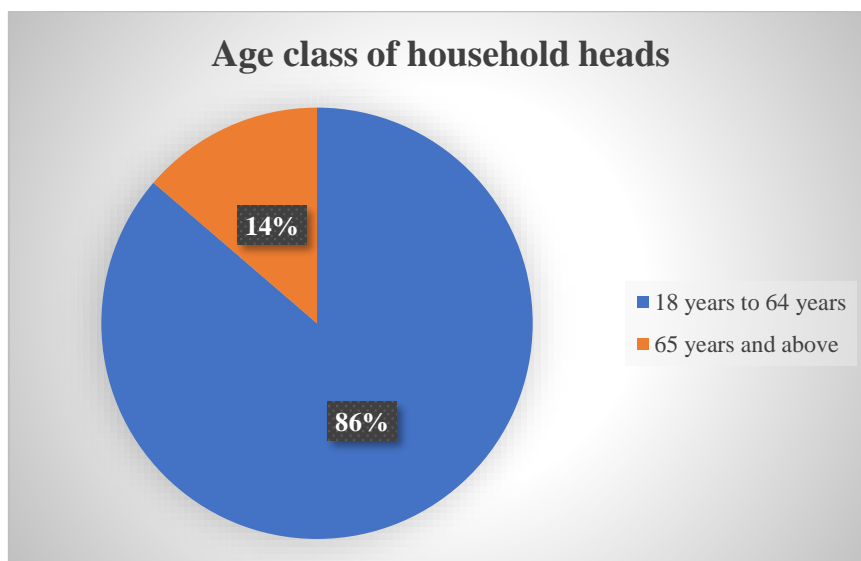


**Figure 5.69 Gender of household heads**

Source: E Guard Social Team (2023)

8) Age class of household heads

According to the social survey's results, most household heads' age class ranges between 18 and 64 years. Elderly household heads are 15.7% of all respondents. The respondents' records are shown detail in Appendix 7.

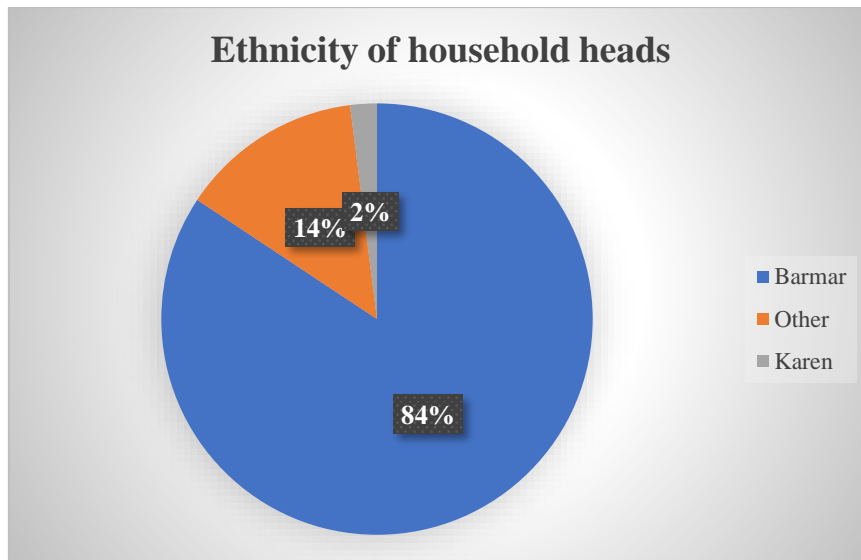


**Figure 5.70 Age classes of household heads**

Source: E Guard Social Team (2023)

9) Ethnicity of household heads

The following pie chart states the ethnicity of household heads and the data show that most household heads are Burma. The respondents' records are shown detail in Appendix 7.

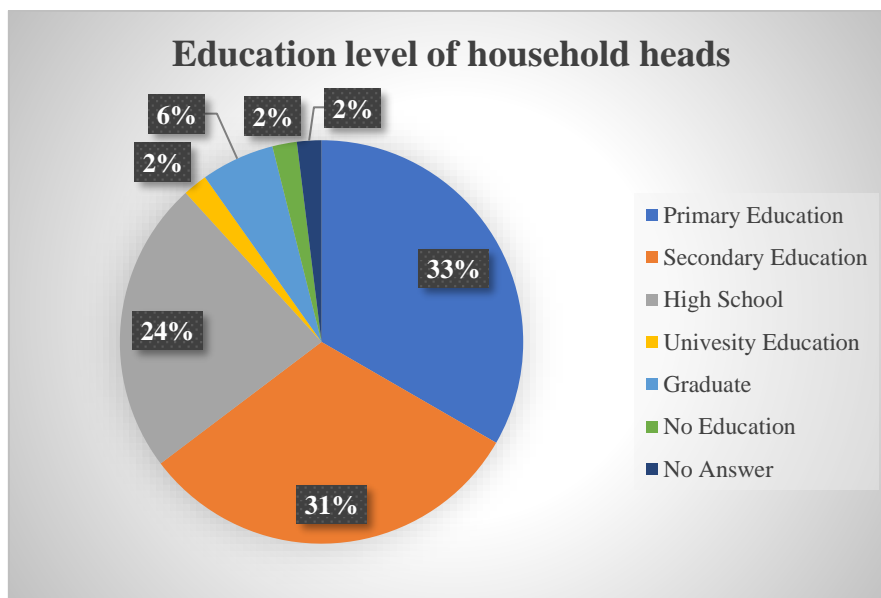


**Figure 5.71 Ethnicity of household heads**

Source: E Guard Social Team (2023)

10) Education level of household heads

The education level of household heads is stated in the following table and figure. Only 17 household heads have finished primary education and 16 household heads have finished secondary education. The respondent's records are shown detail in Appendix 7.

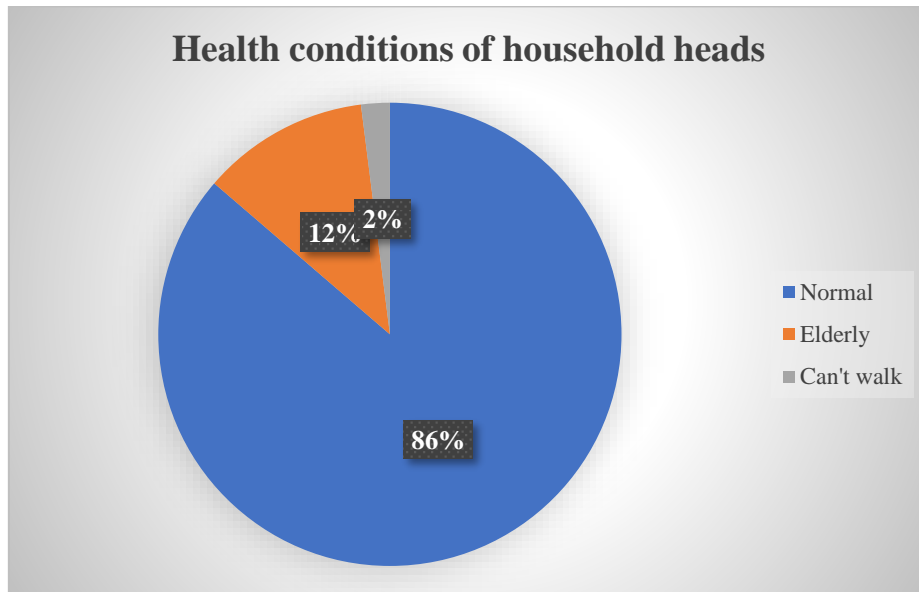


**Figure 5.72 Education level of household heads**

Source: E Guard Social Team (2023)

11) Health condition of household heads

The number and percentages of households' heads by their health conditions is shown in the following table and figure. Health conditions of most household heads are normal. They didn't suffer from any diseases. But some elderly household heads who are aged 65 and over 65 years are not able to speak. The respondent's records are shown detail in Appendix 7.



**Figure 5.73 Health Condition of household heads**

Source: E Guard Social Team (2023)



12) Occupations of household heads

The following table states the number and percentages of household heads by their occupations. Eight household heads of the respondents are private company staff and seven of that are carpenters.

**Table 5.45 Occupations of household heads**

Name of Ward/ Village	Occupation of the household heads												Total	
	Farmer	Home Business (store, restaurant, etc..)	Carpenter	Dependent	Driver	Gardening	Agribusiness	Government Staff	Private Company Staff	Daily Worker	Business Owner	Other		No Answer
Dawei	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Ein Shey Pyin Ward	0	2	0	0	2	0	0	2	1	0	0	1	1	9
Maung Ma Shaung Village	0	0	0	0	0	1	1	0	0	0	0	0	0	2
Myaung Pale Ward	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Oh Loat Ward	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Pu Lu Kone Village	1	1	1	0	0	1	0	0	2	2	0	0	0	8
San Chi Ward	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Shan Ma Lae Swal Ward	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Shin Moke Tee Village	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Sin Pu Ninn Ward	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Sin Seik Ward	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Tha Byay Chaung Village	1	2	3	2	1	0	1	3	1	0	0	0	0	14

We Gyun Ward	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Za Har Village	0	0	2	1	0	1	0	0	3	2	0	0	0	9
Frequency	2	5	7	4	4	5	2	6	8	4	1	2	1	51
Percentage	3.9	9.8	13.7	7.8	7.8	9.8	3.9	11.8	15.7	7.8	2.0	3.9	2.0	100.0

Source: E Guard Social Team (2023)

13) Number of family members

The following figure describe the family size of the respondents. Fourteen respondents have three family members, and thirteen respondents have four family members. One respondent from Sin Pu Nin Ward has ten family members. The respondents’ records are shown detail in Appendix 7.

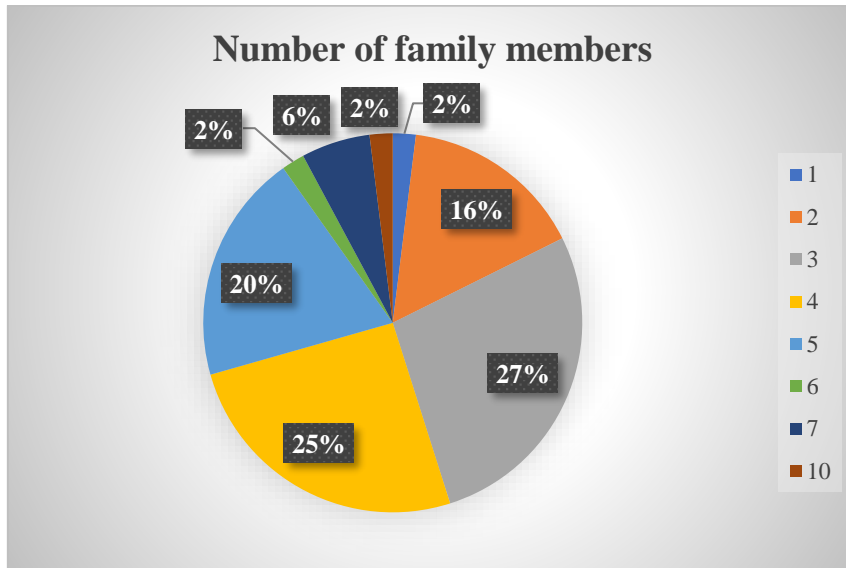


Figure 5.74 Number of family members

Source: E Guard Social Team (2023)

14) Type of households

The following figure mention the household type of the respondents (i.e., whether household is headed by men or women). Most households of the respondents are headed by men and only five households of respondents are headed by elderly men. The respondents’ records are shown detail in Appendix 7.

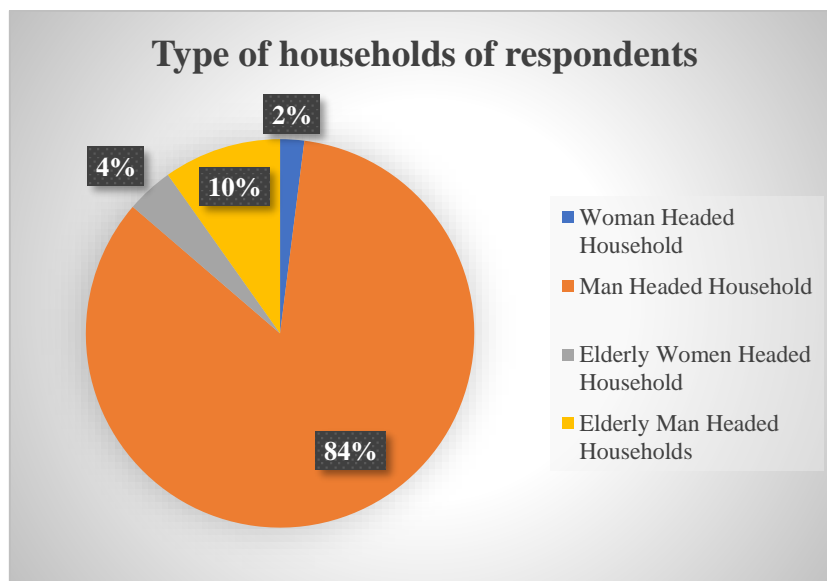
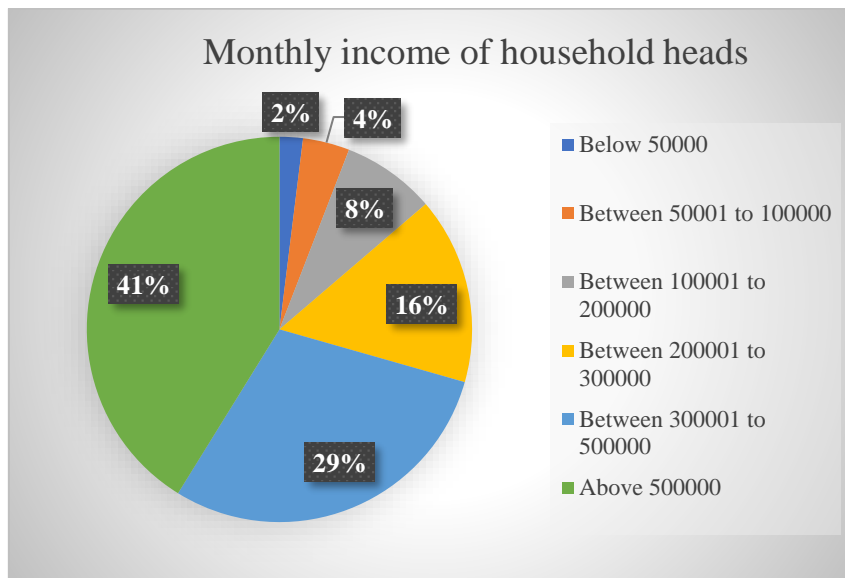


Figure 5.75 Type of households of respondents

Source: E Guard Social Team (2023)

15) Monthly income of households

The following table and figure show the income level of the respondents in Myanmar Kyat (MMK). Over 40 percent of the total respondents earn above 500,000 MMK. Only one respondent from Tha Byay Chaung has an income level below 50,000 MMK. The respondents' records are shown detail in Appendix 7.

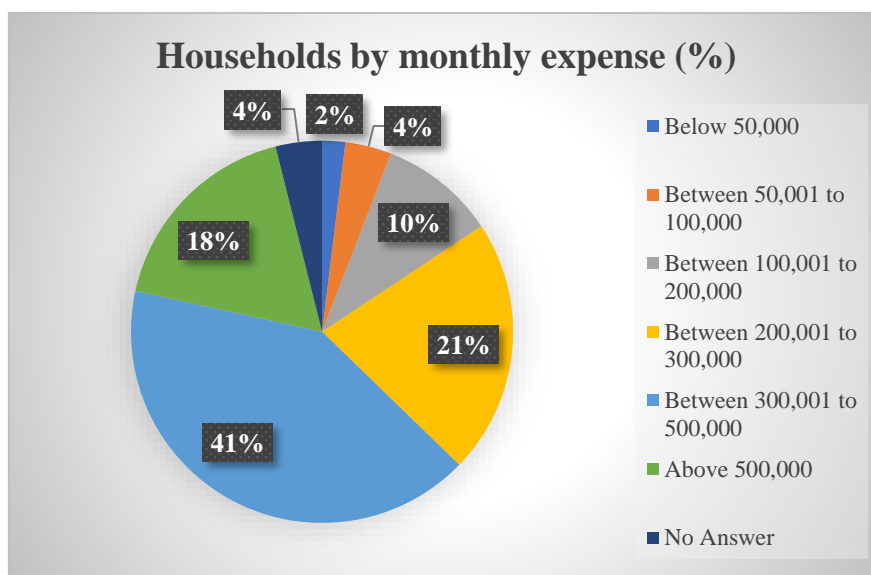


**Figure 5.76 Monthly income of household heads**

Source: E Guard Social Team (2023)

16) Monthly expense of households

The following table and figure state the monthly expense of the households of the respondents in Myanmar Kyats (MMK). Nearly half of households of respondents have an expense level between 300,001 MMK to 500,000 MMK. The respondents' records are shown detail in Appendix 7.

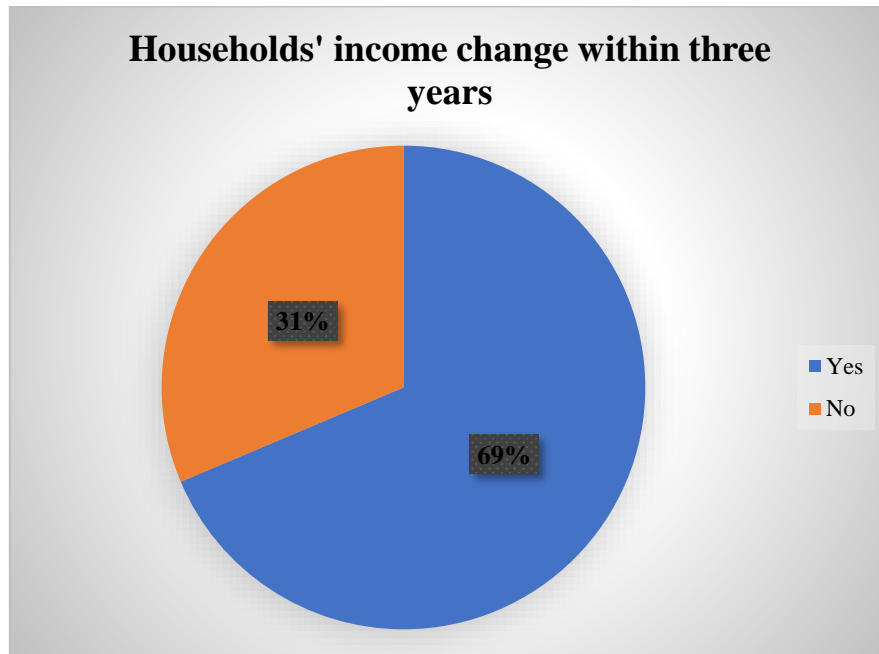


**Figure 5.77 Monthly expenses of the respondents**

Source: E Guard Social Team (2023)

17) Income changes of the households within three years

The following table and figure state the income changes of the households of the respondents within three years. The majority of the households of the respondents faced income changes within three years. The respondents' records are shown detail in Appendix 7.

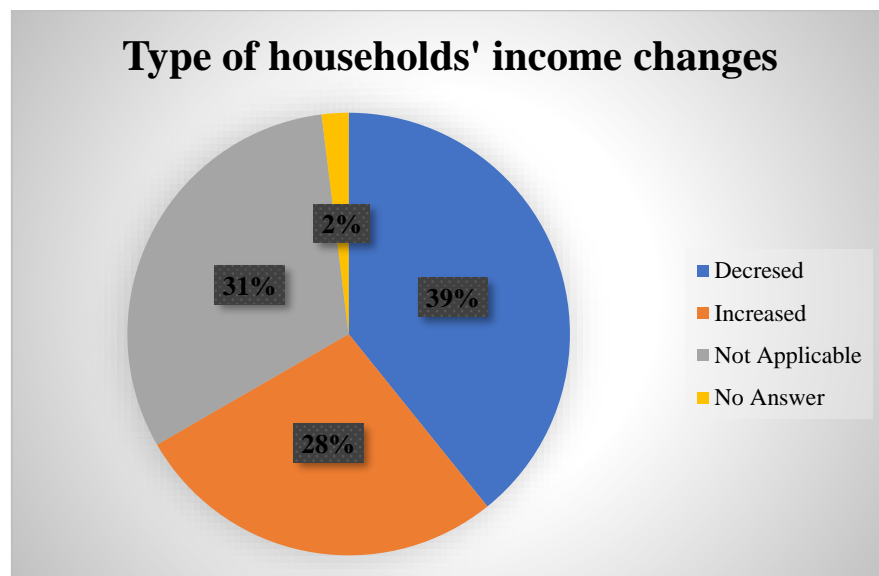


**Figure 5.78 Households' income changes within three years**

Source: E Guard Social Team (2023)

18) Type of income changes

The following table and figure describe the type of income changes of the households of the respondents in the past three years and the data show that income of the most households decreased within three years. The respondents' records are shown detail in Appendix 7.

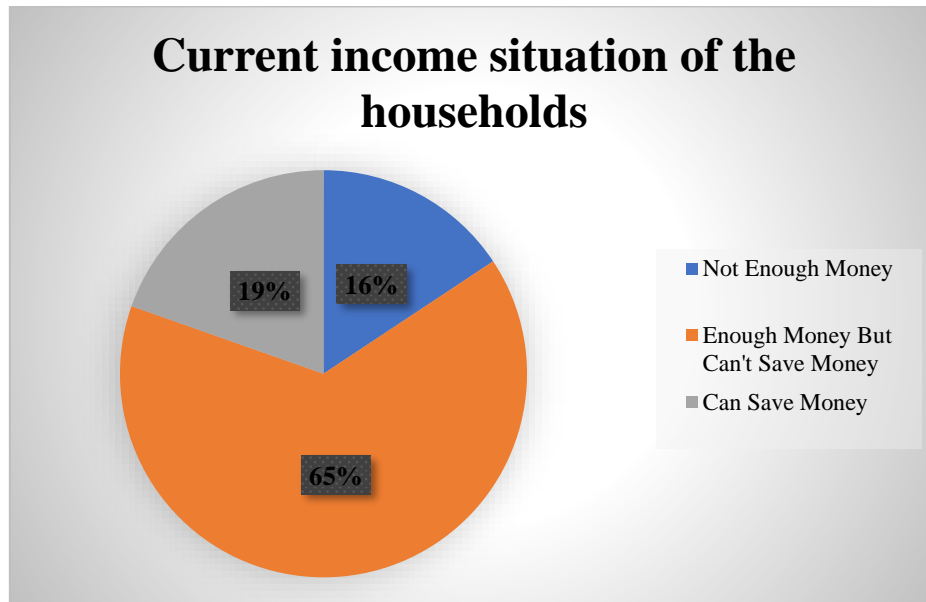


**Figure 5.79 Type of households' income changes**

Source: E Guard Social Team (2023)

19) Current income situation of households

The following table states the current income situation of the interviewed households. Although most of the households of the respondents have enough money for their expenses, they can't save money. The respondents' records are shown detail in Appendix 7.

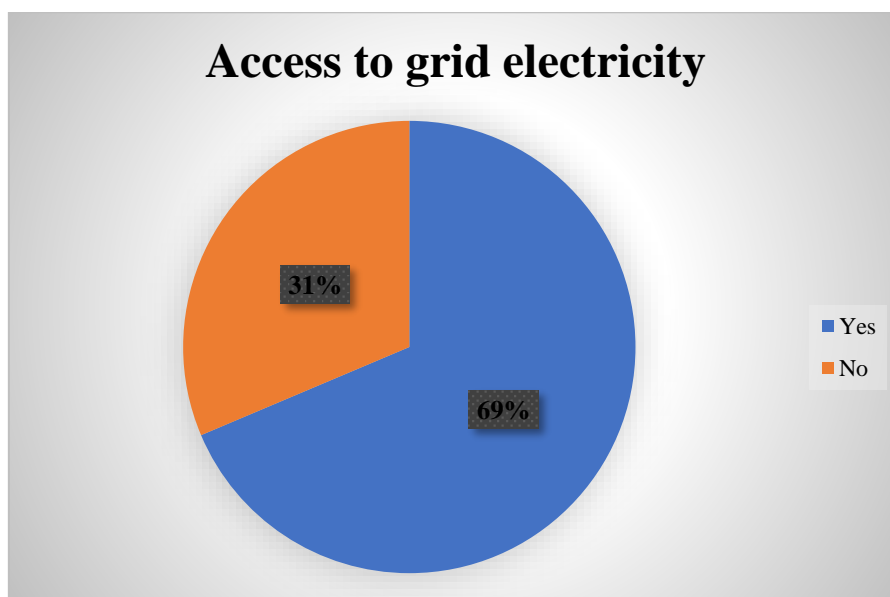


**Figure 5.80 Current income situation of households**

Source: E Guard Social Team (2023)

20) Access to grid electricity

The results of data analysis related to households' grid electricity access are shown in the following table. Most households of the respondents have government electricity access. The respondents' records are shown detail in Appendix 7.



**Figure 5.81 Access to grid electricity**

Source: E Guard Social Team (2023)

21) Sources of electricity during black out

Most interviewed respondents use private electricity as electricity source when government electricity is cut off. Some use candles, candle plus solar and battery. The respondents’ records are shown detail in Appendix 7.

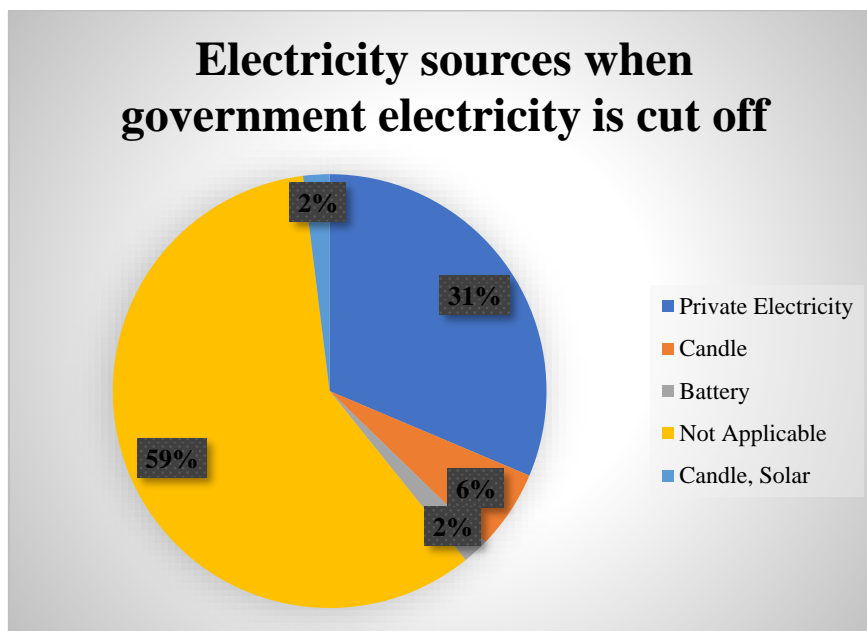


Figure 5.82 Electricity sources during blackouts

Source: E Guard Social Team (2023)

22) Sources of drinking water

Most of the respondents use well for drinking and 41.2% of the total respondents use well as the main source of drinking water. The following table states the drinking water source of the respondents.

Table 5.46 Source of drinking water

Name of Ward/ Village	Sources of getting drinking water						Total
	Well	Lake	Water treatment plan/ bottles	Water treatment plan/ bottle, Rainwater	Well, Rainwater	Well, water treatment plan/ bottles	
Dawei	0	0	1	0	0	0	1
Ein Shey Pyin Ward	5	0	4	0	0	0	9
Maung Ma Shaung Village	1	0	1	0	0	0	2
Myaung Pale Ward	0	0	1	0	0	0	1

Name of Ward/ Village	Sources of getting drinking water						Total
	Well	Lake	Water treatment plan/ bottles	Water treatment plan/ bottle, Rainwater	Well, Rainwater	Well, water treatment plan/ bottles	
Oh Loat Ward	0	0	1	0	0	0	1
Pu Lu Kone Village	5	0	3	0	0	0	8
San Chi Ward	0	0	1	0	0	0	1
Shan Ma Lae Swal Ward	0	0	1	0	0	0	1
Shin Moke Tee Village	0	0	1	0	0	0	1
Sin Pu Ninn Ward	0	0	1	0	0	0	1
Sin Seik Ward	0	0	1	0	0	0	1
Tha Byay Chaung Village	3	1	7	1	1	1	14
We Gyun Ward	1	0	0	0	0	0	1
Za Har Village	6	0	3	0	0	0	9
Frequency	21	1	26	1	1	1	51
Percentage	41.2	2.0	51.0	2.0	2.0	2.0	100.0

Source: E Guard Social Team (2023)

### 23) Sources of domestic water

Sources of domestic water used by households are mentioned in the table below and according to the results of the data analysis collected during the social survey, most households of the respondents use tube-well as the main source of domestic water.

**Table 5.47 Sources of domestic water**

Name of Ward/ Village	Sources of getting domestic water				Total
	Well	Water treatment plan/Bottles	Others	Well, Rainwater	
Dawei	1	0	0	0	1



Name of Ward/ Village	Sources of getting domestic water				Total
	Well	Water treatment plan/Bottles	Others	Well, Rainwater	
Ein Shey Pyin Ward	9	0	0	0	9
Maung Ma Shaung Village	2	0	0	0	2
Myaung Pale Ward	0	0	1	0	1
Oh Loat Ward	1	0	0	0	1
Pu Lu Kone Village	7	1	0	0	8
San Chi Ward	1	0	0	0	1
Shan Ma Lae Swal Ward	1	0	0	0	1
Shin Moke Tee Village	1	0	0	0	1
Sin Pu Ninn Ward	1	0	0	0	1
Sin Seik Ward	1	0	0	0	1
Tha Byay Chaung Village	12	0	0	2	14
We Gyun Ward	1	0	0	0	1
Za Har Village	9	0	0	0	9
Frequency	47	1	1	2	51
Percentage	92.2	2.0	2.0	3.9	100.0

Source: E Guard Social Team (2023)

24) Fuel used for cooking

The following table shows the fuel sources used by the households of the respondents for cooking. Electricity is the main fuel used for cooking. Some of the households of the respondents use more than one fuel source for cooking. Some use wood and charcoal for cooking as fuel source.

**Table 5.48 Fuel used for cooking**

Name of Ward/ Village	Fuel used for cooking											Total
	Electricity	Gas	Kerosene	Wood	Charcoal	Electricity, Charcoal	Electricity, Gas	Electricity, Gas, Charcoal	Electricity, Gas, Wood	Electricity, Wood	Wood, Charcoal	
Dawei	1	0	0	0	0	0	0	0	0	0	0	1
Ein Shey Pyin Ward	4	1	1	0	2	0	1	0	0	0	0	9
Maung Ma Shaung Village	1	0	0	1	0	0	0	0	0	0	0	2

Name of Ward/ Village	Fuel used for cooking											Total
	Electricity	Gas	Kerosene	Wood	Charcoal	Electricity, Charcoal	Electricity, Gas	Electricity, Gas, Charcoal	Electricity, Gas, Wood	Electricity, Wood	Wood, Charcoal	
Myaung Pale Ward	0	0	0	0	0	0	1	0	0	0	0	1
Oh Loat Ward	1	0	0	0	0	0	0	0	0	0	0	1
Pu Lu Kone Village	2	0	0	3	1	0	0	0	0	1	1	8
San Chi Ward	0	0	0	0	0	0	0	1	0	0	0	1
Shan Ma Lae Swal Ward	0	0	0	0	0	0	0	1	0	0	0	1
Shin Moke Tee Village	0	0	0	0	0	1	0	0	0	0	0	1
Sin Pu Ninn Ward	0	0	0	0	0	0	1	0	0	0	0	1
Sin Seik Ward	0	0	0	0	0	0	0	0	1	0	0	1
Tha Byay Chaung Village	4	0	1	3	1	0	1	4	0	0	0	14
We Gyun Ward	0	1	0	0	0	0	0	0	0	0	0	1
Za Har Village	0	0	0	2	5	0	0	0	0	2	0	9
Frquency	13	2	2	9	9	1	4	6	1	3	1	51
Percentage	25.5	3.9	3.9	17.6	17.6	2.0	7.8	11.8	2.0	5.9	2.0	100.0

Source: E Guard Social Team (2023)

25) Type of toilets

The following figure show types of toilets used in the houses of the respondents. Over 80% of the households of the respondents use flushing toilets while other uses pest-controlled toilet. The respondents' records are shown detail in Appendix 7.

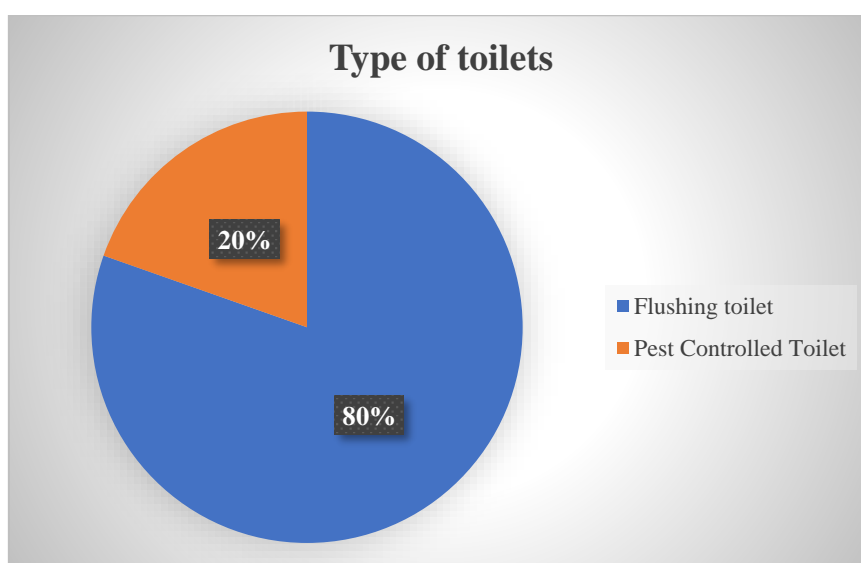


Figure 5.83 Type of toilets

Source: E Guard Social Team (2023)

26) Type of roofs

Type of roofing materials used in the households is stated in the following figure. Most households of the respondents use tin plates for roofing their houses and other households use dani, brick and other materials for the roof of their houses. The respondents' records are shown detail in Appendix 7.

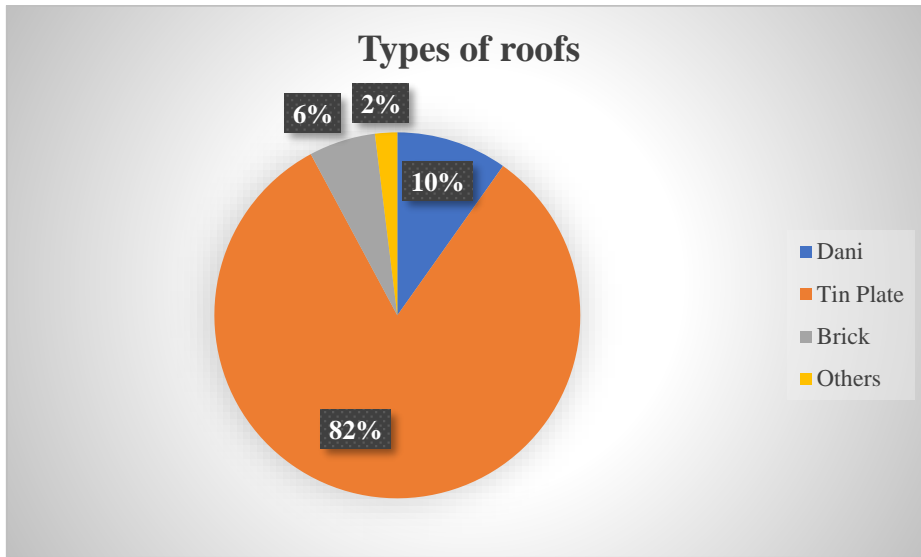


Figure 5.84 Types of roofs

Source: E Guard Social Team (2023)

27) Type of walls

The following table and figure show types of walls used by the respondents' households. Nearly 80% of the households use bricks for the walls of their houses and some use wood and dani for that purpose. The respondents' records are shown detail in Appendix 7.

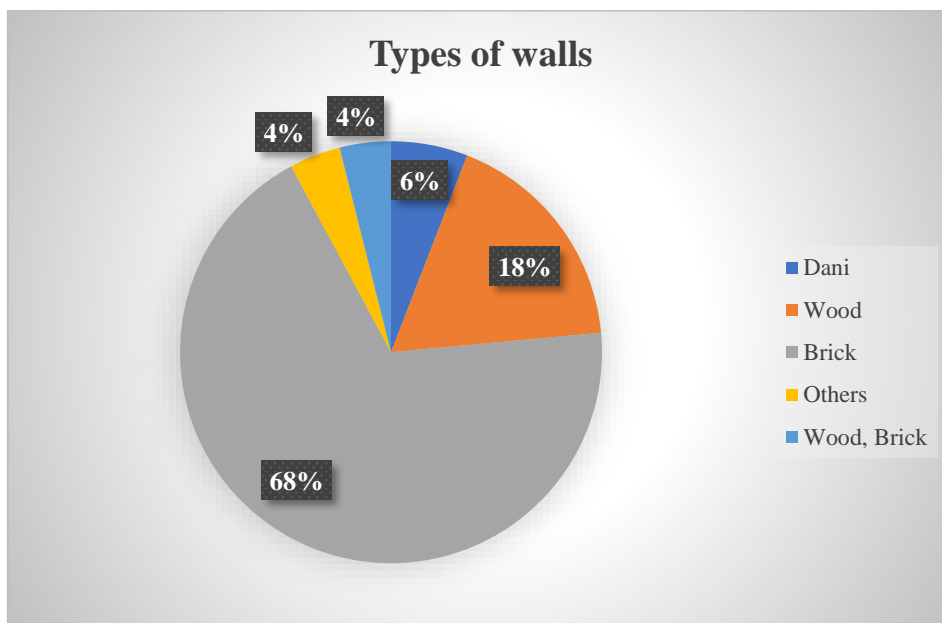


Figure 5.85 Types of walls

Source: E Guard Social Team (2023)

28) Type of floors

The following figure show the types of materials used for floors. Only half percentage of the households of the respondents use brick for housing’s floors. The respondents’ records are shown detail in Appendix 7.

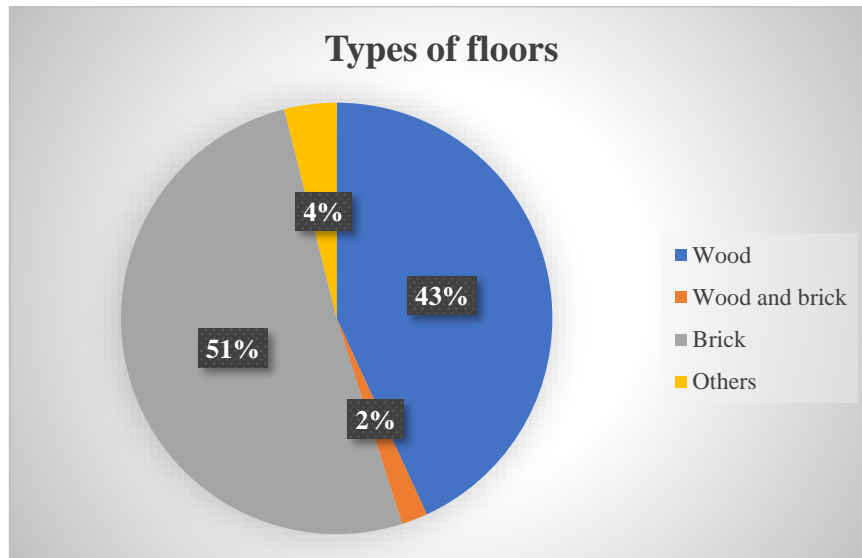


Figure 5.86 Types of floors

Source: E Guard Social Team (2023)

29) Ownership of residential land

The following figure state the residential land ownership of the respondents, and most respondents have their own residential land. The respondents’ records are shown detail in Appendix 7.

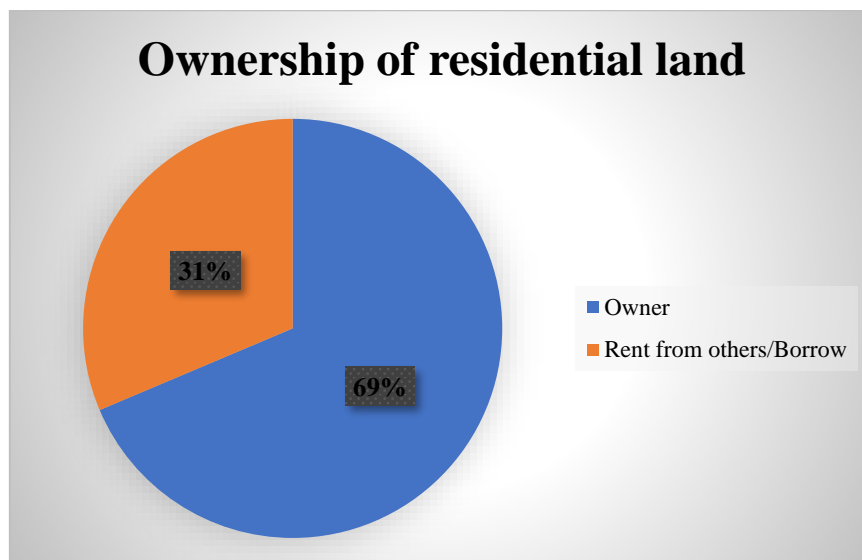
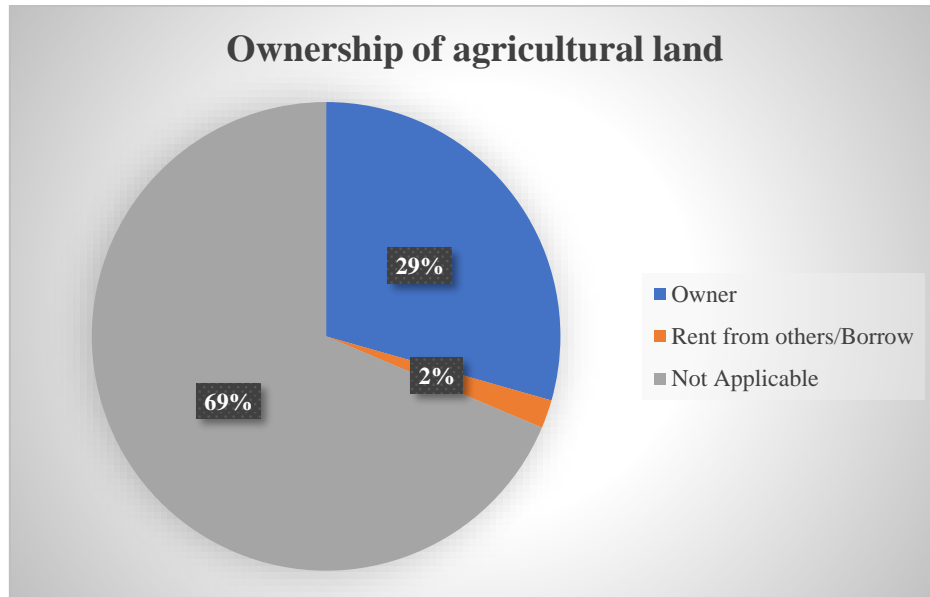


Figure 5.87 Ownership of residential land

Source: E Guard Social Team (2023)

30) Ownership of agricultural land

The following figure shows the ownership of agricultural land. Most of the households of the respondents do not have their own agricultural land. Only fifteen households of the respondents have their own agricultural land although one household rent it from other. The respondents' records are shown detail in Appendix 7.

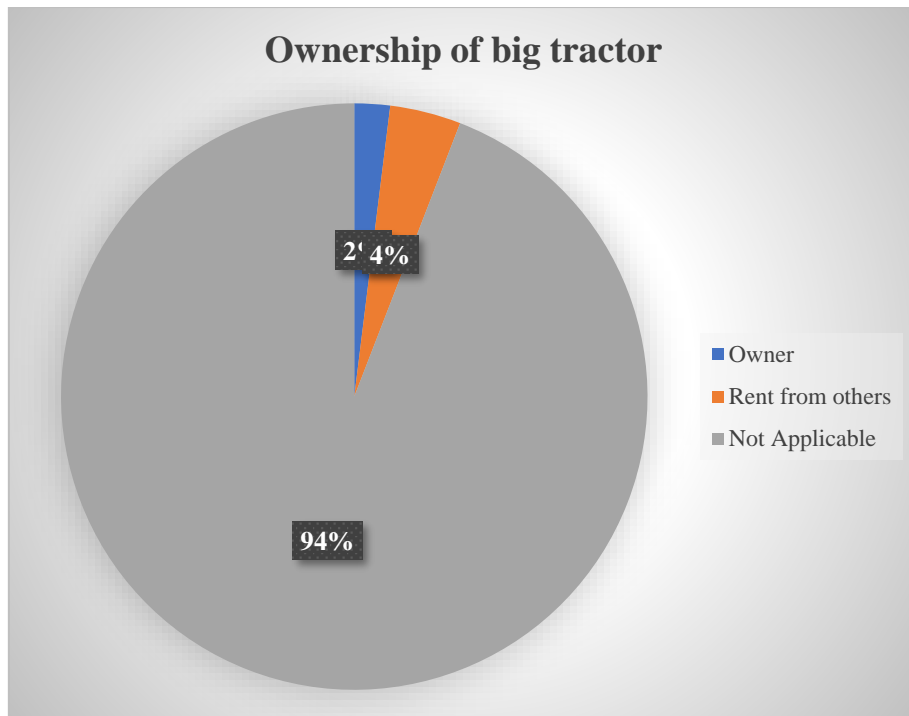


**Figure 5.88 Ownership of agricultural land**

Source: E Guard Social Team (2023)

31) Ownership of big tractor

The following table shows the status of ownership of big tractor. The data mentions that most of the respondents don't have own big tractors. One respondent from San Chi Ward owns big tractor and two respondents from Tha Byay Chaung village rent big tractors from other. The respondents' records are shown detail in Appendix 7.

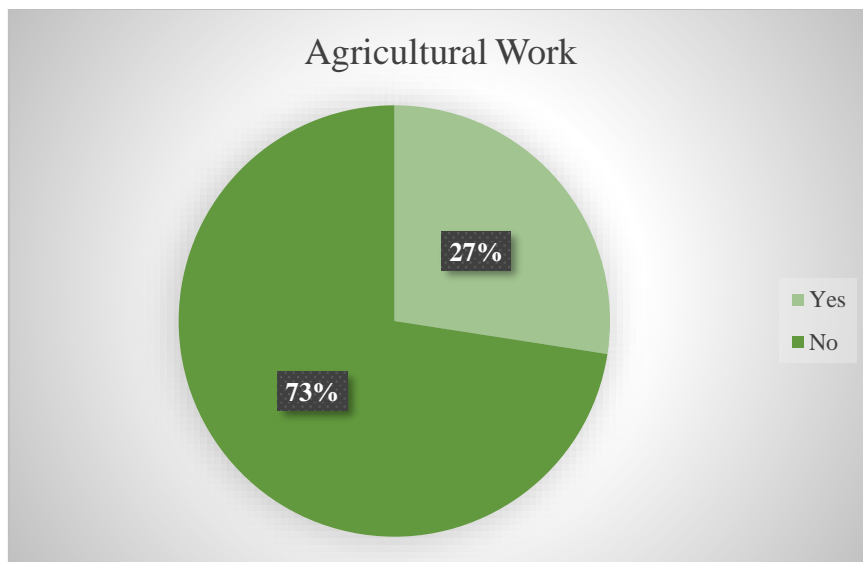


**Figure 5.89 Ownership of big tractor**

Source: E Guard Social Team (2023)

32) Agriculture work

The following figure shows the status of working in agriculture of the respondents. Only 27.5 % of the respondents are working in the agricultural sector. The respondents’ records are shown detail in Appendix 7.



**Figure 5.90 Agricultural work**

Source: E Guard Social Team (2023)

33) Water sources for agriculture

The following figure describe the water sources for agricultural work. Respondents take water from rivers, wells, rainwater, dam water, lakes, and natural water needed for agriculture. The respondents’ records are shown detail in Appendix 7.

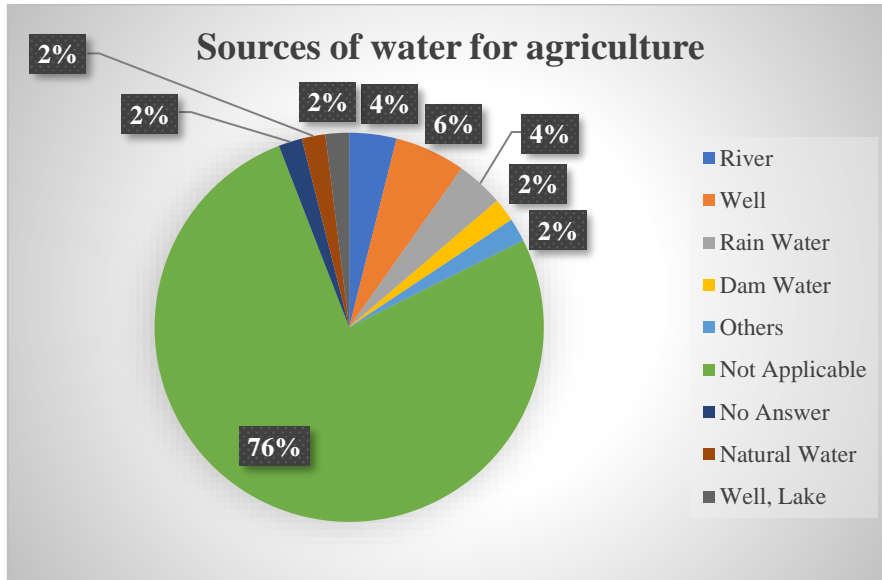


Figure 5.91 Sources of water for agriculture

Source: E Guard Social Team (2023)

34) Sources of getting water for livestock

The following figure represent water sources for livestock of the respondents’ households. They take water from wells and use rainwater for livestock. The respondents’ records are shown detail in Appendix 7.

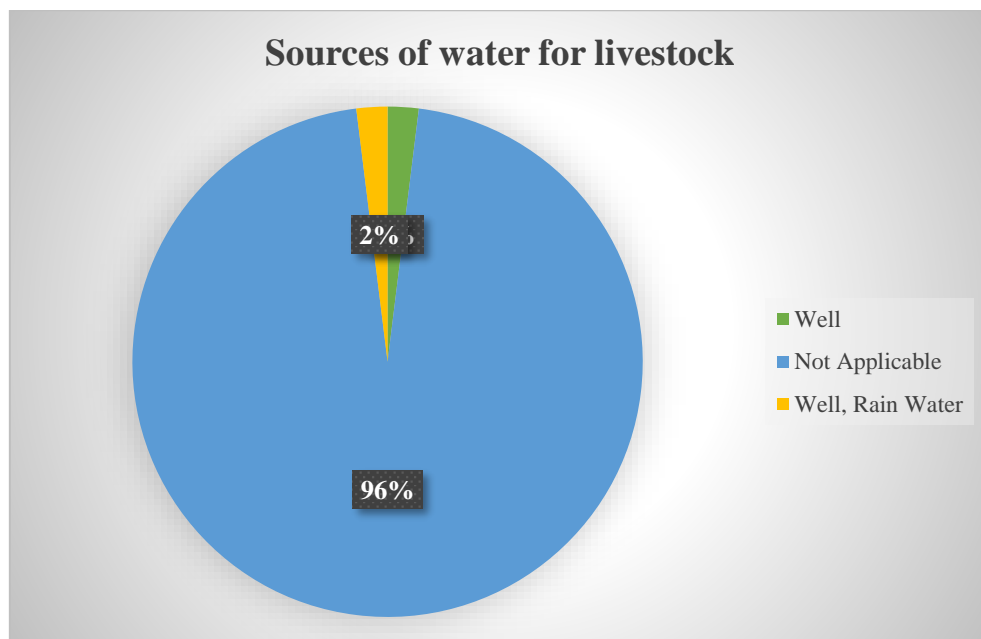
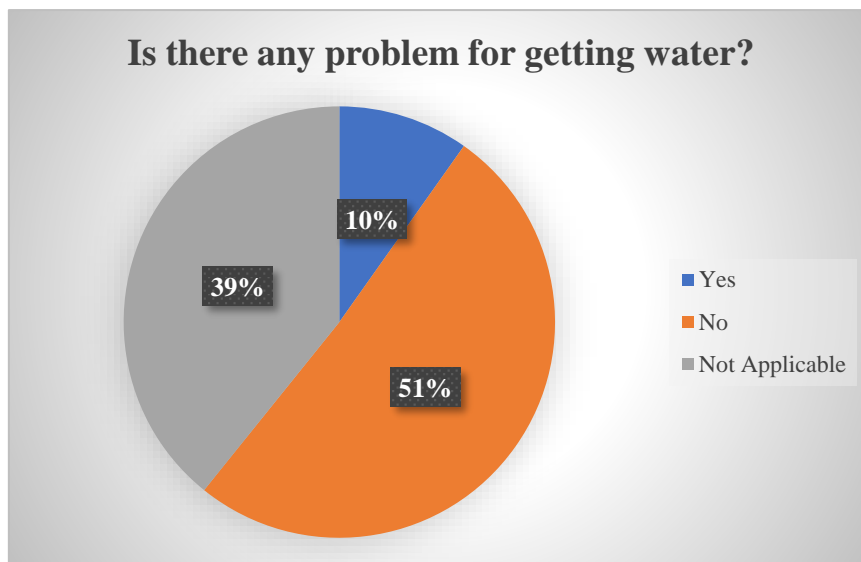


Figure 5.92 Sources of water for livestock

Source: E Guard Social Team (2023)

35) Water shortage for agriculture and livestock

The following figure mention the data of water shortages for agricultural work and livestock of the respondents. Many respondents have no problem in getting water. Only four respondents from Tha Byay Chaung Village and one respondent from Ein Shae Pyin Ward had some problems in getting water for agricultural purposes. The respondents’ records are shown detail in Appendix 7.



**Figure 5.93 Water shortage for agriculture and livelihood**

Source: E Guard Social Team (2023)

36) Solutions for water shortage

The following table states the ways to solve water shortage problem for their agricultural and livestock raising. While some respondents take water from wells, some buy water from village to solve water shortage problem.

**Table 5.49 Solutions for water shortage**

Name of Ward/ Village	Solutions for water shortage				Total
	Take water form well	Buy water from village	No Answer	Not Applicable	
Dawei	0	0	0	1	1
Ein Shey Pyin Ward	0	0	1	8	9
Maung Ma Shaung Village	0	0	0	2	2
Myaung Pale Ward	0	0	0	1	1
Oh Loat Ward	0	0	0	1	1
Pu Lu Kone Village	0	0	0	8	8
San Chi Ward	0	0	0	1	1



Name of Ward/ Village	Solutions for water shortage				Total
	Take water form well	Buy water from village	No Answer	Not Applicable	
Shan Ma Lae Swal Ward	0	0	0	1	1
Shin Moke Tee Village	0	0	0	1	1
Sin Pu Ninn Ward	0	0	0	1	1
Sin Seik Ward	0	0	0	1	1
Tha Byay Chaung Village	2	2	0	10	14
We Gyun Ward	0	0	0	1	1
Za Har Village	0	0	0	9	9
Frequency	2	2	1	46	51
Percentage	3.9	3.9	2	90.2	100.0

37) Common diseases

The following figure shows the common diseases that the households of the respondents used to suffer from in the past. Around 30 percent of the total respondents used to suffer from normal illnesses. The respondents’ records are shown detail in Appendix 7.

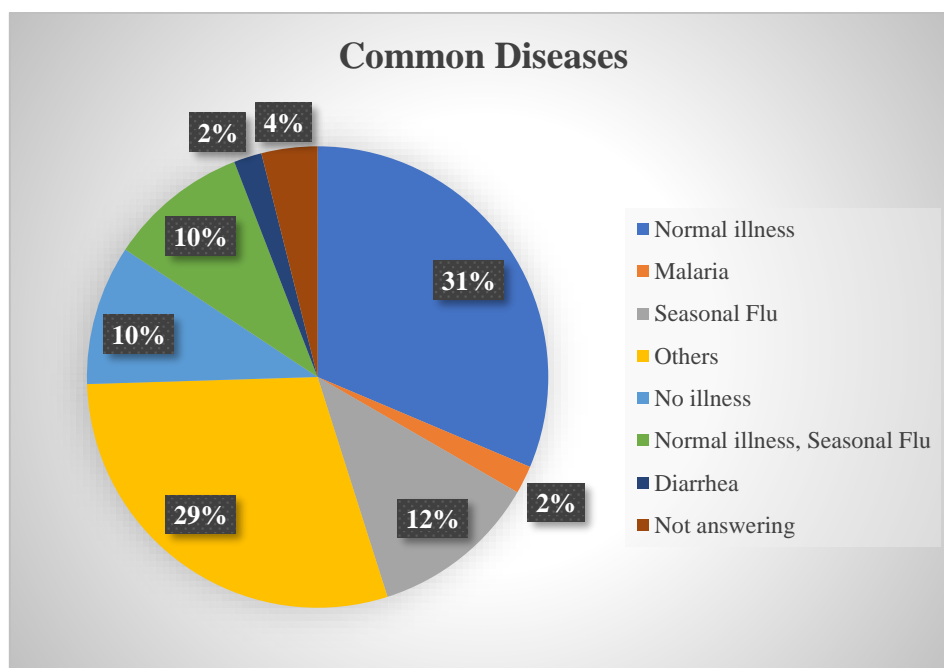


Figure 5.94 Common diseases

Source: E Guard Social Team (2023)

38) Health care centers

The following figure mention the treatment places used by the households of the respondents for their poor health conditions. Most households used to go to private clinics to take treatment in case of bad health conditions. The respondents' records are shown detail in Appendix 7.

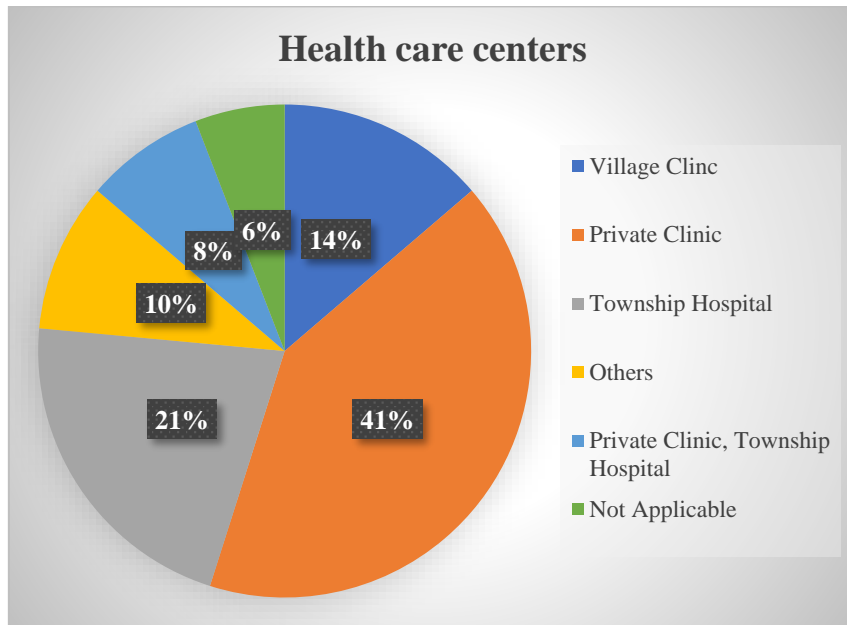


Figure 5.95 Health care centers

Source: E Guard Social Team (2023)

39) Earthquake Experience

The following figure describe the occurrence of earthquakes and only five respondents, one from Ein Shey Pyin Ward Sin Seik Ward, Tha Byay Chaung Village, and one from Za Har Village had experienced an earthquake. The respondents' records are shown detail in Appendix 7.

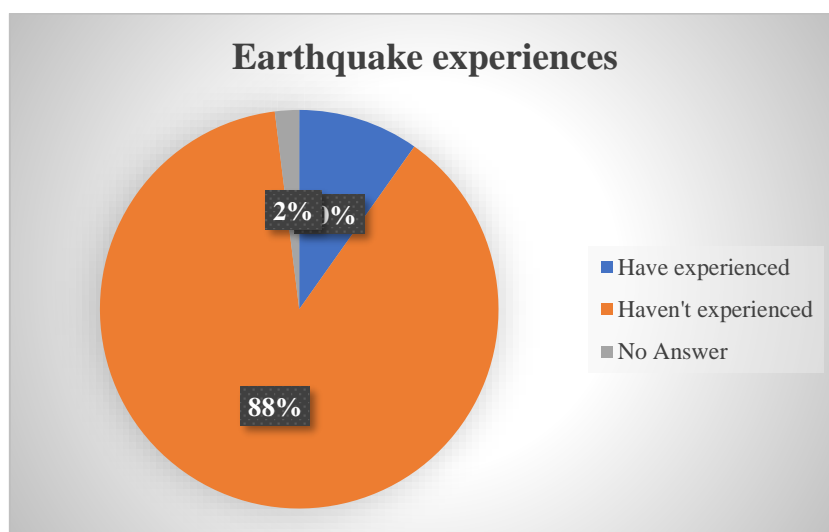
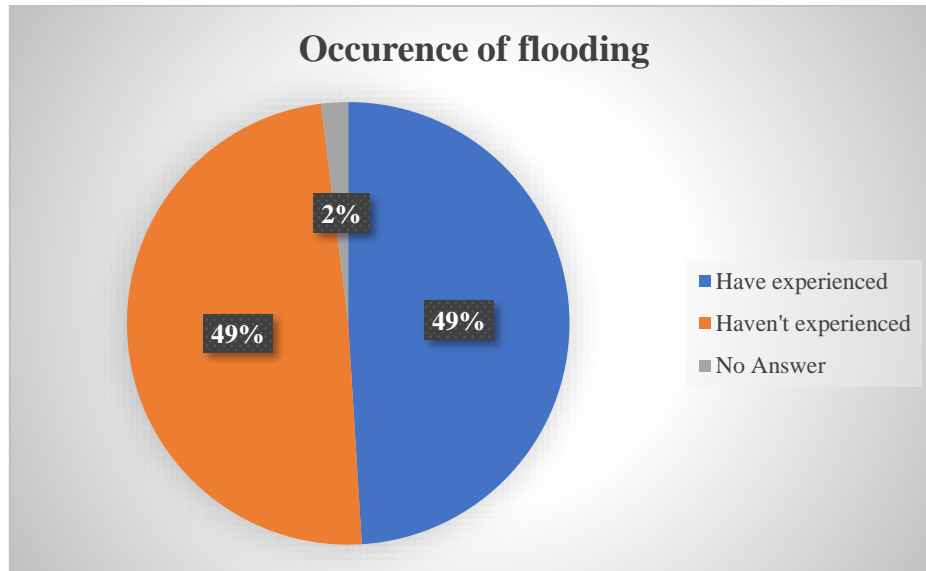


Figure 5.96 Earthquake experiences

Source: E Guard Social Team (2023)

40) Occurrence of flooding

The following figure states the occurrence of flooding in the communities living in the surrounding areas of the project site. The percentage of households with the experience of flooding is equal to that of households with no experience of flooding in their areas. The respondents' records are shown detail in Appendix 7.

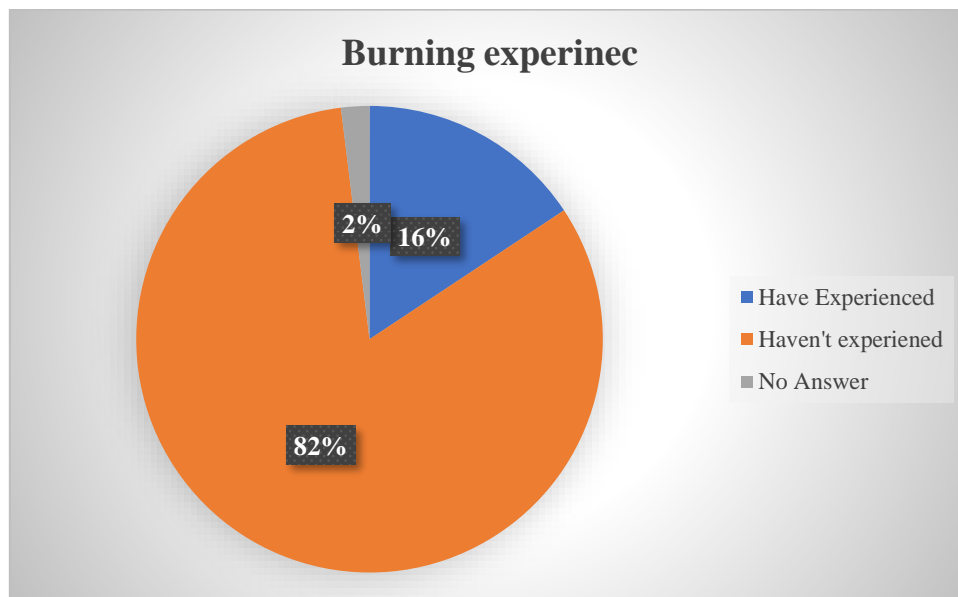


**Figure 5.97 Occurrence of flooding**

Source: E Guard Social Team (2023)

41) Burning experience

The figure below mentions the experience of burning in the villages and wards in the vicinity of the project site. Almost fourth-fiffth percentage of the respondents had not experienced burning in the past. The respondents' records are shown detail in Appendix 7.



**Figure 5.98 Burning experience**

Source: E Guard Social Team (2023)

## 42) Year of occurrence of burning

The following table states years with burning occurrence. Respondents from Tha Byay Chaung village faced burning in 2021 and 2022. Respondent from Sin Seik Ward faced burning in 2023.

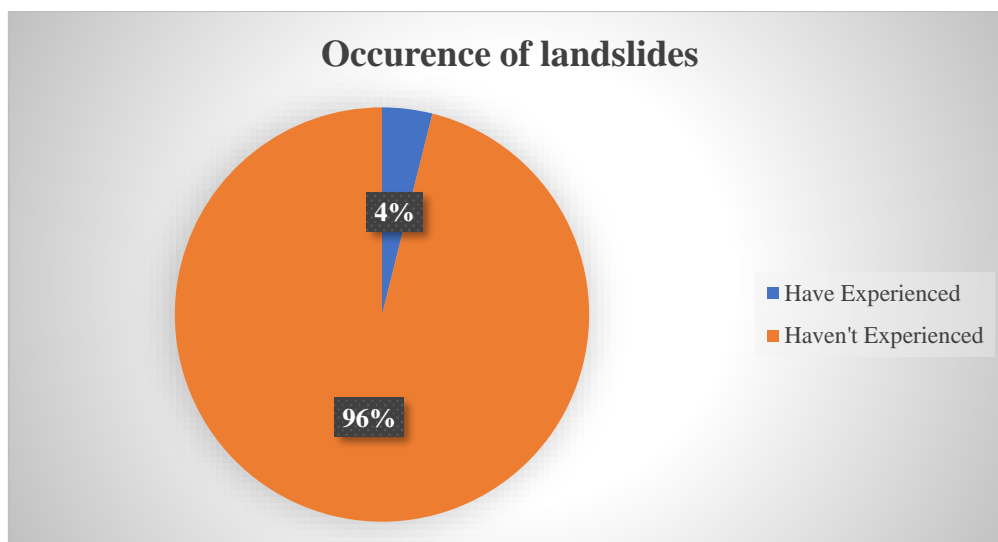
**Table 5.50 Year of occurrence burning**

Name of Ward/ Village	Years that have experienced burning							Total
	2022	2023	2010	2015	2021	Not Applicable	No Answer	
Dawei	0	0	0	0	0	1	0	1
Ein Shey Pyin Ward	0	0	0	1	0	8	0	9
Maung Ma Shaung Village	0	0	0	0	0	2	0	2
Myaung Pale Ward	0	0	0	0	0	1	0	1
Oh Loat Ward	0	0	0	0	0	1	0	1
Pu Lu Kone Village	0	0	0	0	0	8	0	8
San Chi Ward	0	0	0	0	0	1	0	1
Shan Ma Lae Swal Ward	0	0	1	0	0	0	0	1
Shin Moke Tee Village	0	0	0	0	0	1	0	1
Sin Pu Ninn Ward	0	0	0	0	0	1	0	1
Sin Seik Ward	0	1	0	0	0	0	0	1
Tha Byay Chaung Village	1	1	0	0	3	9	0	14
We Gyun Ward	0	0	0	0	0	1	0	1
Za Har Village	0	0	0	0	0	8	1	9
Frequency	1	2	1	1	3	42	1	51
Percentage	2.0	3.9	2.0	2.0	5.9	2.0	3.9	100.0

Source: E Guard Social Team (2023)

## 43) Occurrence of landslides

The following figure states the occurrence of landslides in the villages and wards. Almost all respondents from the villages and wards didn't face any landslides near to their villages. The respondents' records are shown detail in Appendix 7.



**Figure 5.99 Occurrence of landslides**

Source: E Guard Social Team (2023)

44) Type of transportation to Dawei

The following table mentions the type of transportation that the respondents use for going to Dawei from their places. All respondents use land road transport when they go to Dawei from their villages and wards.

**Table 5.51 Type of transportation to Dawei**

Name of Ward/ Village	Type of transportation that used for going to Dawei from village	Total
	Land road	
Dawei	1	1
Ein Shey Pyin Ward	9	9
Maung Ma Shaung Village	2	2
Myaung Pale Ward	1	1
Oh Loat Ward	1	1
Pu Lu Kone Village	8	8
San Chi Ward	1	1
Shan Ma Lae Swal Ward	1	1
Shin Moke Tee Village	1	1
Sin Pu Ninn Ward	1	1
Sin Seik Ward	1	1
Tha Byay Chaung Village	14	14

Name of Ward/ Village	Type of transportation that used for going to Dawei from village		Total
	Land road		
We Gyun Ward	1		1
Za Har Village	9		9
Frequency	51		51
Percentage	100.0		100.0

Source: E Guard Social Team (2023)

45) Type of vehicles

Type of vehicles used by the households is stated in the following figure. Most respondents use motorcycles when they go to Dawei from their places. Over 62 percent (i.e., 63%) of the respondes use motorcycles to go to Dawei. The respondents’ records are shown detail in Appendix 7.

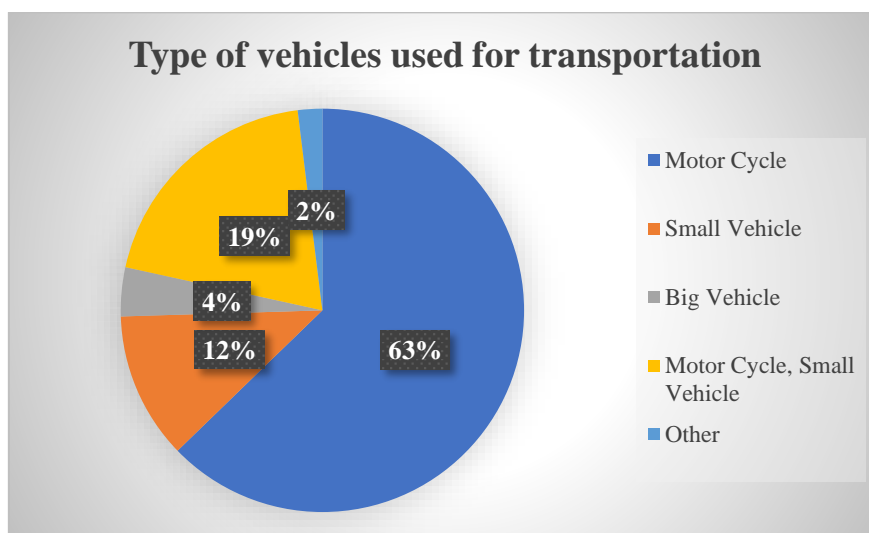


Figure 5.100 Type of vehicles used for transportation

Source: E Guard Social Team (2023)

46) Transportation used to other places

The following table shows the type of transportation used by the respondents for going to other places from their villages. Most respondents use land road although some also use air way.

Table 5.52 Transportation to other places

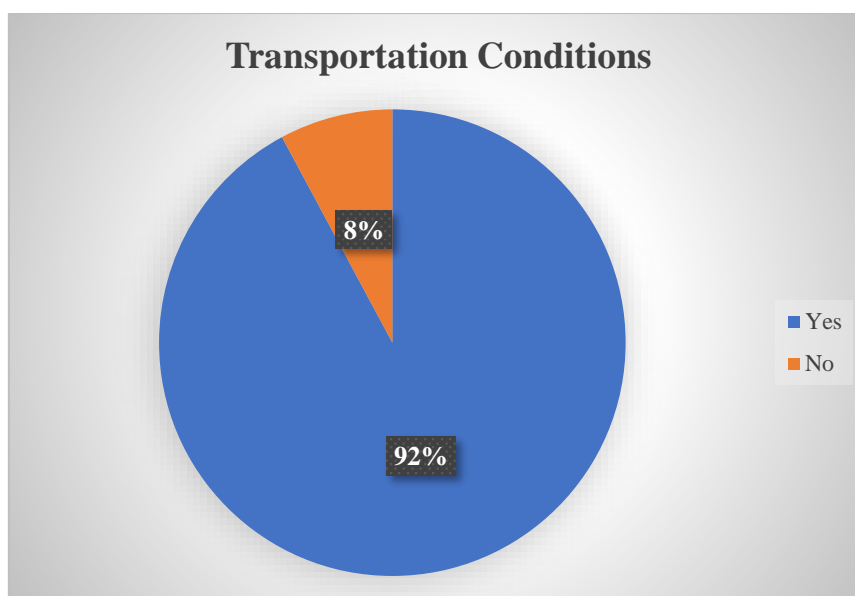
Name of Ward/ Village	Type of transportation that used for going to another town from village			Total
	Landroad	Landroad, Air Way	No Answer	
Dawei	1	0	0	1

Name of Ward/ Village	Type of transportation that used for going to another town from village			Total
	Landroad	Landroad, Air Way	No Answer	
Ein Shey Pyin Ward	9	0	0	9
Maung Ma Shaung Village	2	0	0	2
Myaung Pale Ward	1	0	0	1
Oh Loat Ward	1	0	0	1
Pu Lu Kone Village	7	0	1	8
San Chi Ward	1	0	0	1
Shan Ma Lae Swal Ward	1	0	0	1
Shin Moke Tee Village	1	0	0	1
Sin Pu Ninn Ward	0	1	0	1
Sin Seik Ward	1	0	0	1
Tha Byay Chaung Village	13	0	1	14
We Gyun Ward	1	0	0	1
Za Har Village	9	0	0	9
Frequency	48	1	2	51
Percentage	94.1	2.0	3.9	100.0

Source: E Guard Social Team (2023)

#### 47) Transportation Conditions

The following figure state the condition of the transportation in the local area. The condition of the transportation is good in many villages and wards for which the socio-economic survey was conducted. The respondents' records are shown detail in Appendix 7.



**Figure 5.101 Transportation Conditions**

Source: E Guard Social Team (2023)

48) Awareness of the project

The following table mentions the awareness of the project and around a fourth-fifth of the respondents have already known about the project.

**Table 5.53 Awareness of the project**

Name of Ward/ Village	Awareness of the project		Total
	I know	I don't know	
Dawei	1	0	1
Ein Shey Pyin Ward	5	4	9
Maung Ma Shaung Village	2	0	2
Myaung Pale Ward	1	0	1
Oh Loat Ward	1	0	1
Pu Lu Kone Village	7	1	8
San Chi Ward	1	0	1
Shan Ma Lae Swal Ward	0	1	1
Shin Moke Tee Village	1	0	1
Sin Pu Ninn Ward	1	0	1
Sin Seik Ward	1	0	1
Tha Byay Chaung Village	13	1	14
We Gyun Ward	1	0	1



Za Har Village	7	2	9
Frequency	42	9	51
Percentage	82.4	17.6	100.0

Source: E Guard Social Team (2023)

49) Sources of awareness

The following figure show the source of awareness of the project and most of respondents knew it from their friends and families. The respondents’ records are shown detail in Appendix 7.

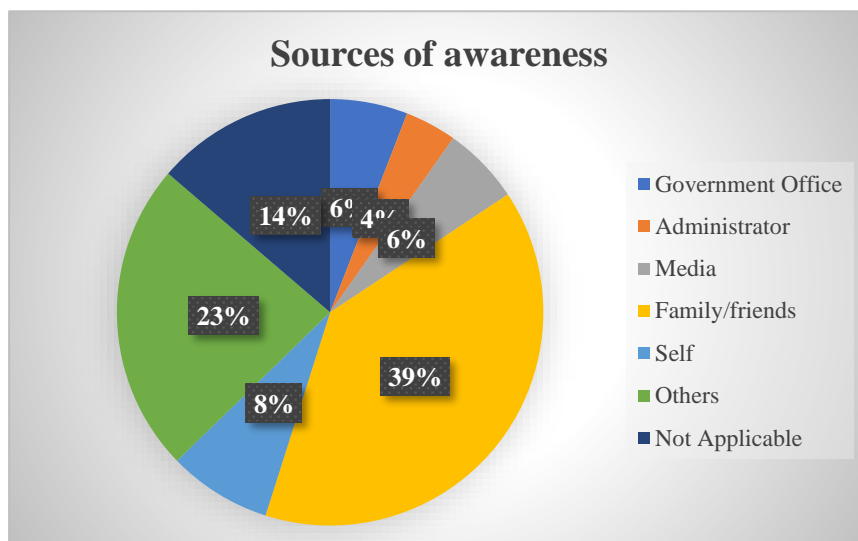
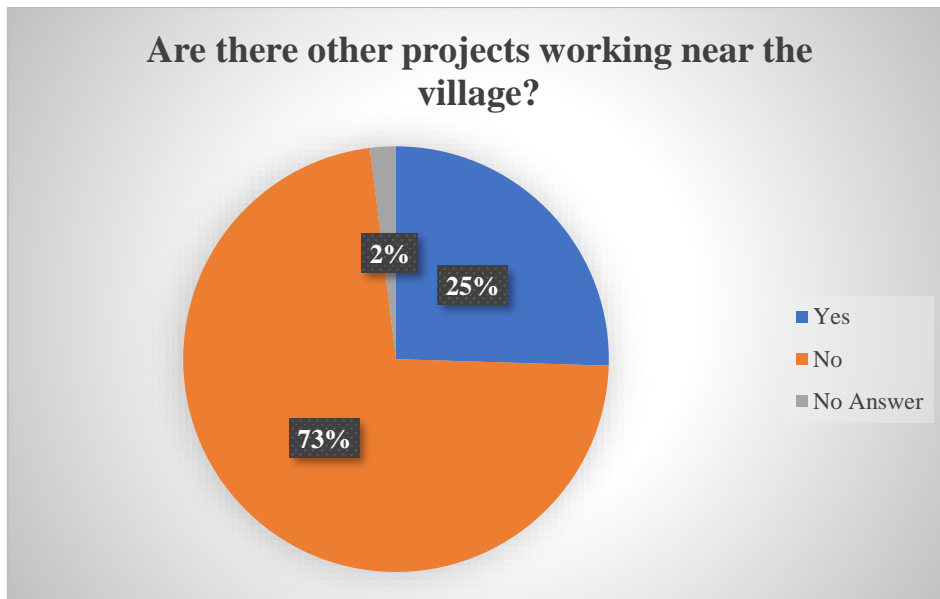


Figure 5.102 Sources of awareness

Source: E Guard Social Team (2023)

50) Other projects

The following figure show the number and percentage of the respondents by the existence of other projects in the vicinity of the project areas. Most of the respondents said that there aren't other projects near to the villages. The respondents’ records are shown detail in Appendix 7.

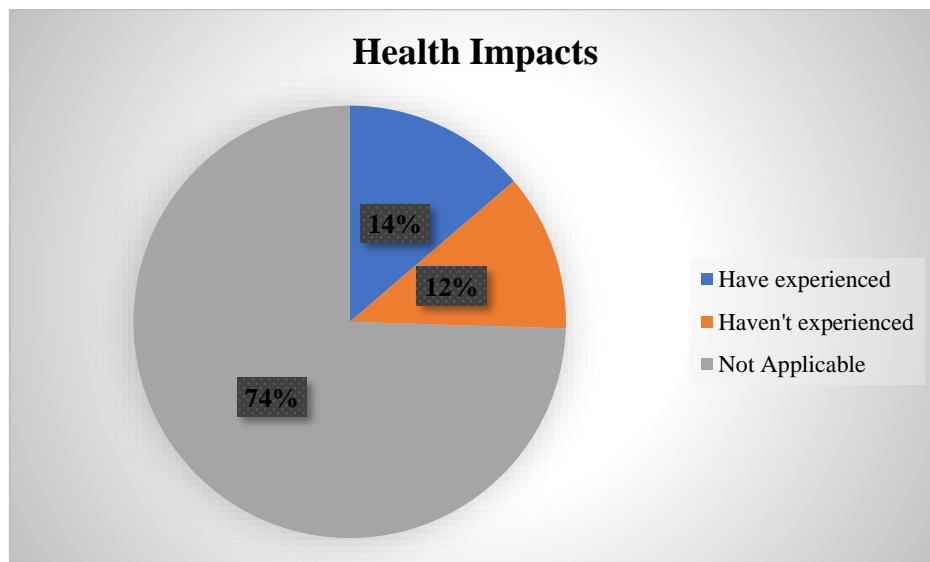


**Figure 5.103 Other projects**

Source: E Guard Social Team (2023)

51) Health impacts due to other projects

The following figure describe the incidents of health impacts due to other projects which are in the surrounding areas of the project site. While only 13.7 percent of the respondents had experienced the incidents of health impact due to other projects, 11.8 percent of the respondents didn't have any experience. The respondents' records are shown detail in Appendix 7.



**Figure 5.104 Health impacts due to other projects**

Source: E Guard Social Team (2023)

52) Diseases caused by other projects

The following table shows the diseases caused by the other projects and some respondents get bad smell, hand injury and impacts on eye because of nearby projects.

**Table 5.54 Diseases by nearby projects**

Name of Ward/ Village	What diseases do you suffer from nearby project?					Total
	Impact on eyes because of sawdust	Bad Smell	Bad Smell, Impact on eyes because of sawdust	Hand Injury	Not Applicable	
Dawei	0	0	0	0	1	1
Ein Shey Pyin Ward	0	0	0	0	9	9
Maung Ma Shaung Village	0	0	0	0	2	2
Myaung Pale Ward	0	0	0	0	1	1
Oh Loat Ward	0	0	0	0	1	1
Pu Lu Kone Village	0	1	0	0	7	8
San Chi Ward	0	0	0	0	1	1
Shan Ma Lae Swal Ward	0	0	0	0	1	1
Shin Moke Tee Village	0	0	0	0	1	1
Sin Pu Ninn Ward	0	0	0	0	1	1
Sin Seik Ward	0	0	0	0	1	1
Tha Byay Chaung Village	1	2	1	1	9	14
We Gyun Ward	0	0	0	0	1	1
Za Har Village	0	1	0	0	8	9
Frequency	1	4	1	1	44	51
Percentage	2.0	7.9	2.0	2.0	86.3	100.0

Source: E Guard Social Team (2023)

53) Positive impact

The following table states the estimated positive impacts for villages and wards which can be caused due to operation of this project. Most of the respondents think that the transportation, job opportunities, education, livelihood, and economy will be better due to operation of this project.

**Table 5.55 Positive impacts**

Name of Ward/ Village	Name of village/ Ward														Frequency	Percentage
	Dawei	Ein Shey Pyin Ward	Maung Ma Shaung Village	Myaung Pale Ward	Oh Loat Ward	Pu Lu Kone Village	San Chi Ward	Shan Ma Lae Swal Ward	Shin Moke Tee Village	Sin Pu Ninn Ward	Sin Seik Ward	Tha Byay Chaung Village	We Gyun Ward	Za Har Village		
The locals can get job opportunities.	0	1	0	0	0	0	1	0	0	0	0	2	0	4	8	15.8
The locals can get more chance for social welfare and job opportunity.	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2.0
It is good for socioeconomic condition of the local people.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2.0
It is good for for local business.	0	0	0	0	0	2	0	0	0	0	0	1	0	0	3	5.9
It is good for business, get more convenience trading and no expense for transportation.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2.0
It is good for business, transportation, and income	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2	3.9
It is good for economy, social, transportation and livelihood.	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2.0
It is good for education and transportation.	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2.0

Name of Ward/ Village	Name of village/ Ward														Frequency	Percentage
	Dawei	Ein Shey Pyin Ward	Maung Ma Shaung Village	Myaung Pale Ward	Oh Loat Ward	Pu Lu Kone Village	San Chi Ward	Shan Ma Lae Swal Ward	Shin Moke Tee Village	Sin Pu Ninn Ward	Sin Seik Ward	Tha Byay Chaung Village	We Gyun Ward	Za Har Village		
It is good for health, economy, social, education, transportation.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2.0
It is good for job opportunities and livelihood.	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2.0
It is good for job opportunities, transportation, economy.	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2	3.9
It is good for livelihoods.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2.0
It is good for socioeconomic and transportation.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2.0
It is good for socioeconomic conditions of local community.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2.0
It is good for transportation sector.	0	4	2	0	1	1	0	0	0	0	0	0	0	0	8	15.8
It is good for transportation and business.	0	1	0	0	0	1	0	0	0	0	0	4	0	0	5	11.8
It is good for transportation and livelihood.	0	1	0	1	0	0	0	1	0	0	0	0	0	2	5	9.9
I think, it will be developed for business and transportation.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2.0
If possible, operate it a neat and tidy way.	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2.0

Name of Ward/ Village	Name of village/ Ward														Frequency	Percentage
	Dawei	Ein Shey Pyin Ward	Maung Ma Shaung Village	Myaung Pale Ward	Oh Loat Ward	Pu Lu Kone Village	San Chi Ward	Shan Ma Lae Swal Ward	Shin Moke Tee Village	Sin Pu Ninn Ward	Sin Seik Ward	Tha Byay Chaung Village	We Gyun Ward	Za Har Village		
It is more convenient project than the existing bus terminal and located far away from the Town.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2.0
No answer	0	0	0	0	0	0	0	0	0	1	0	1	0	1	3	5.9
I don't know	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2.0
Total	1	9	2	1	1	8	1	1	1	1	1	14	1	9	51	100.0

Source: E Guard Social Team (2023)

54) Negative impacts

Negative impacts which are estimated by the respondents are stated in the following table. Some have worries about the environmental related impacts.

**Table 5.56 Negative impact for your village people**

Negative Impacts	Name of Village/ Ward														Frequency	Percentage
	Dawei	Ein Shey Pyin Ward	Maung Ma Shaung Village	Myaung Pale Ward	Oh Loat Ward	Pu Lu Kone Village	San Chi Ward	Shan Ma Lae Swal Ward	Shin Moke Tee Village	Sin Pu Ninn Ward	Sin Seik Ward	Tha Byay Chaung Village	We Gyun Ward	Za Har Village		
The number of cars will be increased than before.	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2.0
It can cause air pollution.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2.0
We worry about vibration and noise.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2.0
We worry about solid wastes.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2.0
Yes, it can impact on environment and traffic.	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2.0
We are afraid of carbon dioxide emitted from cars.	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2.0
There would be more crimes when the operation of this project starts.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2.0
It will have no impacts if there is no pollution.	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	2.0

Negative Impacts	Name of Village/ Ward														Frequency	Percentage
	Dawei	Ein Shey Pyin Ward	Maung Ma Shaung Village	Myaung Pale Ward	Oh Loat Ward	Pu Lu Kone Village	San Chi Ward	Shan Ma Lae Swal Ward	Shin Moke Tee Village	Sin Pu Ninn Ward	Sin Seik Ward	Tha Byay Chaung Village	We Gyun Ward	Za Har Village		
It will have noise pollution from car passing to that station.	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2.0
We worry about for local people as there are more people when operating projects.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2.0
We worry about the elderlys because of car passing, vibration and noise.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2.0
We worry about the population and pollution for our health.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2.0
No Answer	0	1	0	0	0	0	0	0	0	1	0	3	0	1	6	11.8
No Impact	1	7	2	0	1	8	0	0	0	0	0	3	1	8	31	60.8
No idea	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	3.9
Total	1	9	2	1	1	8	1	1	1	1	1	14	1	9	51	100.0

Source: E Guard Social Team (2023)



55) Suggestions for natural environment

The following table shows suggestions given by the respondents to the project owner for the natural environment during social survey. Those suggestions include caring for air pollution, plants and animal damage and planting more trees and disposing of wastes systematically.

**Table 5.57 Suggestions for natural environment**

Suggestions for natural environment	Name of Ward/ Village														Frequency	Percentage
	Dawei	Ein Shey Pyin Ward	Maung Ma Shaung Village	Myaung Pale Ward	Oh Loat Ward	Pu Lu Kone Village	San Chi Ward	Shan Ma Lae Swal Ward	Shin Moke Tee Village	Sin Pu Ninn Ward	Sin Seik Ward	Tha Byay Chaung Village	We Gyun Ward	Za Har Village		
I suggest caring about air pollution, plants and animals' damage.	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2.0
I suggest to plant more trees and to throw trash systematically.	1	1	0	0	0	0	1	0	1	0	0	1	0	2	7	13.9
I want to suggest throw the wastes and trash systematically.	0	1	0	0	0	2	0	0	0	0	0	3	0	0	6	11.8
If draining system is not	0	1	0	0	0	0	0	0	0	0	1	0	0	0	2	4.0

Suggestions for natural environment	Name of Ward/ Village														Frequency	Percentage
	Dawei	Ein Shey Pyin Ward	Maung Ma Shaung Village	Myaung Pale Ward	Oh Loat Ward	Pu Lu Kone Village	San Chi Ward	Shan Ma Lae Swal Ward	Shin Moke Tee Village	Sin Pu Ninn Ward	Sin Seik Ward	Tha Byay Chaung Village	We Gyun Ward	Za Har Village		
good, it will impact on river and streams. Please manage it in a systematic way.																
Please grow plants for the beauty of environment	0	0	0	0	0	1	0	0	0	0	0	3	0	1	5	9.9
We wish to carry out discharging of wastewater and to maintain the rubbish in a systematic way.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2.0
We wish to throw waste	0	0	0	0	0	1	0	0	0	0	0	3	0	0	4	7.8

Suggestions for natural environment	Name of Ward/ Village														Frequency	Percentage
	Dawei	Ein Shey Pyin Ward	Maung Ma Shaung Village	Myaung Pale Ward	Oh Loat Ward	Pu Lu Kone Village	San Chi Ward	Shan Ma Lae Swal Ward	Shin Moke Tee Village	Sin Pu Ninn Ward	Sin Seik Ward	Tha Byay Chaung Village	We Gyun Ward	Za Har Village		
with discipline.																
To create smoking place, park	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2.0
No Answer	0	0	0	0	0	2	0	0	0	1	0	4	0	2	9	17.6
No Suggestion	0	5	2	1	1	3	0	0	0	0	0	2	1	4	19	37.3
Total	1	9	2	1	1	8	1	1	1	1	1	14	1	9	51	100.0

Source: E Guard Social Team (2023)

56) Suggestions for social environment

The following table shows suggestions provided by the respondents to the project owner for the social environment during the social survey. Respondents suggested that giving more job opportunities to the local community based on their skills and education and opening market in the bus station,

**Table 5.58 Suggestions for social environment**

Suggestion for Social environment	Name of Ward/ Village														Frequency	Percentage
	Dawei	Ein Shey Pyin Ward	Maung Ma Shaung Village	Myaung Pale Ward	Oh Loat Ward	Pu Lu Kone Village	San Chi Ward	Shan Ma Lae Swal Ward	Shin Moke Tee Village	Sin Pu Ninn Ward	Sin Seik Ward	Tha Byay Chaung Village	We Gyun Ward	Za Har Village		
Please build housing land near the project area.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2.0
I suggest to offer more job opportunities for local.	0	2	0	1	0	0	1	0	0	0	0	2	0	3	9	17.7
I suggest to open market in the bus terminal.	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2.0
It is a good project for social environment.	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	3.9
It is better to promote business opportunity.	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2.0

Suggestion for Social environment	Name of Ward/ Village														Frequency	Percentage
	Dawei	Ein Shey Pyin Ward	Maung Ma Shaung Village	Myaung Pale Ward	Oh Loat Ward	Pu Lu Kone Village	San Chi Ward	Shan Ma Lae Swal Ward	Shin Moke Tee Village	Sin Pu Ninn Ward	Sin Seik Ward	Tha Byay Chaung Village	We Gyun Ward	Za Har Village		
Please operate CSR plan for local communities.	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	3.9
Please take care of safety and security for our local people.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2.0
No Answer	0	0	0	0	0	4	0	0	0	1	1	5	0	2	13	25.5
No Suggestion	0	5	2	0	1	2	0	0	1	0	0	5	1	4	21	39.2
Total	1	9	2	1	1	8	1	1	1	1	1	14	1	9	51	100.0

Source: E Guard Social Team (2023)

57) Other suggestions for project owner

Some respondents give suggestions to the project owner and their suggestions including managing staff in a systematic way and using good drainage system are stated in the following table.

**Table 5.59 Suggestions for project owner**

Suggestion for Project Owner	Name of Ward/ Village														Frequency	Percentage
	Dawei	Ein Shey Pyin Ward	Maung Ma Shaung Village	Myaung Pale Ward	Oh Loat Ward	Pu Lu Kone Village	San Chi Ward	Shan Ma Lae Swal Ward	Shin Moke Tee Village	Sin Pu Ninn Ward	Sin Seik Ward	Tha Byay Chaung Village	We Gyun Ward	Za Har Village		
It is a good project.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2.0
I suggest managing staff systematically during project operation.	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2.0
I want to suggest doing better drainage system.	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2.0
If possible, we wish to carry out the project for the best in everything.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2.0
Inform to ward administrator if somethings happen in the project area.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2.0

Suggestion for Project Owner	Name of Ward/ Village														Frequency	Percentage
	Dawei	Ein Shey Pyin Ward	Maung Ma Shaung Village	Myaung Pale Ward	Oh Loat Ward	Pu Lu Kone Village	San Chi Ward	Shan Ma Lae Swal Ward	Shin Moke Tee Village	Sin Pu Ninn Ward	Sin Seik Ward	Tha Byay Chaung Village	We Gyun Ward	Za Har Village		
It is better to promote job opportunity.	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2	3.9
We wish to have good relationship with local people.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2.0
We wish to make it in a good way.	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2.0
Thank you for your implementation of this project.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2.0
I would like to make car parking in a systematic way	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2.0
Please carry out the project	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2.0

Suggestion for Project Owner	Name of Ward/ Village														Frequency	Percentage
	Dawei	Ein Shey Pyin Ward	Maung Ma Shaung Village	Myaung Pale Ward	Oh Loat Ward	Pu Lu Kone Village	San Chi Ward	Shan Ma Lae Swal Ward	Shin Moke Tee Village	Sin Pu Ninn Ward	Sin Seik Ward	Tha Byay Chaung Village	We Gyun Ward	Za Har Village		
as fast as possible.																
Please operate the project with less environmental impacts.	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2.0
We wish to carry out it in a safe way.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2.0
No Answer	0	1	0	0	0	3	0	0	0	1	1	4	0	1	11	21.6
No Suggestion	1	5	2	1	1	3	1	0	0	0	0	5	1	6	26	51.0
Total	1	9	2	1	1	8	1	1	1	1	1	14	1	9	51	100.0

Source: E Guard Social Team (2023)



**5.10. Visual Components**

As it is located right beside the highway of Ye-Dawei and/or Dawei-Ye Highway Lane, there are many paddy fields in the vicinity of the project site. Within 5 km radius, there are three factories and two cemeteries near the Dawei bus terminal project area, however, other land area are fields and residential areas.

## 6. IMPACTS AND RISK ASSESSMENT AND MITIGATION MEASURES

### 6.1 Methodology for the Assessment

The assessment of each impact is based on consideration of the magnitude, duration, spatial and frequency of activities, which are going to be carried out during phases and characteristics of the project site. The significance of potential environmental impacts identified during the Basic Assessment has been determined using a ranking scale. The assessment is qualitative and the significance of each impact is classified into five categories.

The following methodology has been applied to assess the environmental impacts of the project mainly on air, water, noise and vibration, waste, socio-economic, biodiversity including human beings, visual, traffic conjunction, health and safety. Each source of impact has been assessed by four parameters, magnitude, duration, extent and probability and each assess have five scales as mentioned below:

**Table 6.1 Impact Assessment Parameters and Its scale**

Assessment	Scale				
	1	2	3	4	5
Magnitude (M)	Insignificant	Small and have no effect on working environment	Moderate and will result in minor changes on working environment	High and will result in significant changes on working environment	Very High and will result in permanent change on working environment
Duration (D)	0-1 year	2-5 year	6-15 year	Life of operation	Post closure
Extent (E)	Limited to the site	Limited to local area	Limited to region	National	International
Probability (P)	Very improbable	Improbable	Probable	Highly probable	Definite

Then, the Significant Point (SP) is calculated by following formula.

$$\text{Significant Point (SP)} = (\text{Magnitude} + \text{Duration} + \text{Extent}) * \text{Probability}$$

Impact Significance: Based on calculated significant point, impact significance can be categorized as following Table 6.2.

**Table 6.2 Impact Significance**

Significant Point (SP)	Impact Significance
<15	Very Low
15-29	Low
30-44	Moderate
45-59	High
>60	Very High

## 6.2 Identification of Impacts on environment

In the current situation, the proposed project has separated into three stages. Construction stage for bus terminals, shops, ware house and other related services. On the operation stage is considered services related impacts. Finally, in Decommission, associated with the demolishing of the proposed project. Potential environmental impacts during decommissioning are likely to be temporary.

Negative impacts: Potential impacts include those related to air, water, waste, noise and vibration, odor, traffic, landuse, health and safety (occupational and community). The possible environmental impacts are identified based on the analysis of environmental baseline information and project activities on each phase.

Positive impacts: There may be some positive impacts in the socio-economic of surrounding environment of the proposed site due to the implementation of the project. Most of the identified impacts have been quantified to the extent possible on the professional judgment.

Biological Impacts are not significant at proposed project site because during the observation of site visit there is no evidence of the presence of recent natural vegetation cover was seen in the project site and surrounding areas the areas.

The overall impacts are categorized as following,

### Impacts on Physical Environment

- Impacts on Air quality
- Impacts on Water Quality
- Impacts of Waste
- Impacts of Noise and vibration
- Impacts of Odor
- Impacts of Soil Quality
- Impacts on Land Use
- Impacts on Transport

### Impacts on Social Environment

- Impacts on Socio-economic

- Impacts on Occupational health and safety
- Impacts on Community health and safety

### 6.3 Potential impacts during construction phase

**Impacts on Air Quality:** In construction phase, construction activities can generate a lot of dust particles and emission from the working vehicles and machines.

**Impacts on Water Quality:** As the waste from construction will dispose under control and there will be a few water usages for construction. However, water pollution at adjacent streams due to illegal disposal of wastes can occur such as construction waste and domestic waste.

**Waste Impacts:** Construction wastes such as used bricks, concretes, iron bars, and other construction related waste will be generated.

**Noise and Vibration Impacts:** Operation machineries would produce noise and vibration.

**Impacts on Soil quality:** It is estimated that there is no impact on soil.

**Impacts on Socio-economic:** In construction stage of the project can provide job opportunity to labors during construction phase and can be carried on till operation if needed. Thus, this will consider as positive impacts to community Socio-economic.

**Traffic Impacts:** Increase of traffic loads due to construction vehicles and due to the use of vehicles for transport of waste from demolishing materials.

**Impacts on Occupational Health and safety:** Some occupational accidents like as slip and fall, heavy object falls from height and more are anticipated.

**Impacts on Community Health and safety:** Emission of dust by construction activities is anticipated. This impact on Community Health and safety is small or low significant. As the temporary jobs can occur for construction works for nearby community. Consequently, impacts from diseases such as COVID 19 during construction and quarrel of workers within workplace can occur.

### 6.4 Potential impacts during operation phase

**Air Quality impacts:** As the project nature is buses travelling, the potential issue is caused by pollutants from vehicles, and generators.

**Water Quality impacts:** The impacts on water can consider on water quality of storm water which flow into storm water drainage. The rain water is collected from terminal rooftop then allow to flow into drain. The water in tube well is use for domestic usage and factory housekeeping. Illegal disposal of kitchen waste water from restaurant and guest house shall be monitor.

**Waste impacts:** There are two type of waste generation, which are separated into solid and liquid waste.

**Solid waste;** Main sources of solid waste generation are domestic waste and trash from restaurant's kitchen. Oil stain waste from fuel station can be generated. Waste is collected by local waste collection service.

**Liquid wastes:** Liquid waste is categorized as waste water from terminal and waste water from gas station.

**Impacts on Soil quality:** In case of dumping site, trashes are dump in the separates bin throughout the terminal and then move to temporary dumping area in contact with the soil, soil contamination may be occurred due to enabling the soil wet and during raining season.

**Noise and Vibration impacts:** Bus vehicles movements and operation of emergency generator may produce noise and vibration.

**Odor impacts:** During operation, Odor and dust can generate at dumping site and fuel station.

**Traffic impacts:** The proposed project mainly create traffic routes which will use bus, motorcycles, cars, and trucks for transportation and the workforce to and from the site. There will be proposed activities will increase traffic congestion

**Impacts on Socio-economic:** More job opportunities may become available and easy access to one of transportation mode will available for local people. The positive impact is assumed by the development of facilities is estimated to the project services and many social infrastructures will be improved. Thus, this will consider as positive impacts to community Socio-economic.

**Impacts on Occupational Health and Safety:** As the project is related with transportation, the occupational health for the workers would be a major and minor traffic accidents. There is a lot of potential impacts such as fall from height, slip and fall and accidental fire.

**Impacts on Community Health and Safety:** The project is currently in construction phase, the closer the project the more impacts can affect on the community health. The affects are mainly cause by noise and vibration, odor and dust emission. However, positive impacts can be considered as nearby area can easy to access for transportation instead of travel for health related.

## **6.5 Potential impacts during decommission phase**

**Impacts on Air Quality:** In decommission phase, demolishing of building can generate a lot of dust particles and emission from the working vehicles and machines.

**Impacts on Water Quality:** As the waste from decommission will dispose under control and there will be a few water usages for construction and domestic. However, water pollution at adjacent streams due to illegal disposal of wastes can occur such as construction waste and domestic waste.

**Waste Impacts:** Demolishing wastes such as used bricks, concretes, iron bars, and other construction related waste will be generated. In addition, domestic waste from workers can be produce which can be considered as non-hazardous wastes.

**Noise and Vibration Impacts:** Operation demolishing machineries would produce noise and vibration.

**Impacts on Soil quality:** It is estimated that impact on soil can be occur on fuel station area.

**Impacts on Socio-economic:** Decommission of the project can cause labors during operation would be unemployed and will impacts to community Socio-economic. However, temporary job opportunity for demolishing would be expected.

**Traffic Impacts:** Increase of traffic loads due to construction vehicles and due to the use of vehicles for transport of waste from demolishing materials.

***Impacts on Occupational Health and safety:*** Some occupational accidents like as slip and fall, heavy object falls from height and more are anticipated.

***Impacts on Community Health and safety:*** Emission of dust by demolishing activities is anticipated. This impact on Community Health and safety is small or low significant. As the temporary jobs can occur for demolishing works for nearby community. Consequently, impacts from diseases such as COVID 19 during demolishing and quarrel of workers within workplace can occur.

**6.6 Environmental Impact and Significant**

**Table 6.3 Environmental Impact Significant**

Category	Aspects	Environment impacts	Project Activities	Significant of Potential Environmental Impacts					Impact Significance
				M	D	E	P	SP	
<b>Construction phase</b>									
Physical Environment	Air Emission	Air Quality	Emission of dust particles, CO2 and SO2 from construction vehicles and machines, emissions from cooking, transportation of visitors and goods, air conditioners and stand-by generators will increase due to the operation of various factories.	2	2	2	3	18	Low
	Water Contamination	Water Quality	The project may impact on ground water quality during construction through accidental contamination if discharges of solid waste from the construction are not properly handled, affecting the water quality due to vehicle maintenance and washing, laundry services.	3	2	2	4	28	Low
	Construction waste and domestic waste generation	Non-hazardous and hazardous Waste	The waste included excavated materials from the earth works and other non-hazardous solid wastes from construction project activities	2	1	1	4	16	Low

Category	Aspects	Environment impacts	Project Activities	Significant of Potential Environmental Impacts					Impact Significance
				M	D	E	P	SP	
			and major solid wastes will be generated form daily cleaning. Hazardous solid waste includes contaminated soils, which could potentially be encountered on-site or small amounts of machinery maintenance materials, such as oily rags, used oil filters, and used oil from transformer, as well as spill cleanup materials from oil and fuel spills.						
	Seasonal Floods	Soil Erossion	The proposed project is built on flat land as there can be low or no landslide. Erosion can be occurred as the project itself surround by small stream.	1	1	1	3	9	Very Low
	Construstion activities	Noise and Vibration	During the construction phase, major sources of noise pollution could be vehicles used for transportation of construction materials and other construction machineries and equipment such as backhoe, tipper, cutter, generator etc.	3	1	2	4	24	Low



Category	Aspects	Environment impacts	Project Activities	Significant of Potential Environmental Impacts					Impact Significance
				M	D	E	P	SP	
	Project Development	Land Use	Land use purpose will be changed by implementing project activities. Farm land may change to infrastructure because of project development.	2	3	1	4	24	Low
Social Environment	Lifting, exposure, slip and fall	Occupational Health and Safety	Vehicle traffic and use of lifting equipment in the movement of machinery and materials on a construction site may pose temporary hazard, such as physical contact, spill, dust emission and noise can happen due to low Occupational Health and Safety standards.	2	5	1	3	24	Low
	Vehical movements	Local Increase of Traffic	The movement of the vehicles and machines in and out of the site will make local increase of construction traffic inevitable.	4	1	2	3	21	Low
	Development of project	Employment and Livelihood	Creating the local job opportunities may have some positive impact but land use change may lead to effect of livelihood condition of local communities						Positive Impact

Category	Aspects	Environment impacts	Project Activities	Significant of Potential Environmental Impacts					Impact Significance
				M	D	E	P	SP	
	Development of project	Tourist Attraction	With the successful completion of the project, the number of worldwide tourists visiting to Dawei City can be increased.						Positive Impact
	Development of project	Economic Development	The operation of the proposed project will result in positive gains for numerous authorities through payments of relevant taxes, rates and fees to respective institutions and government bodies.						Positive Impact
Others	Burning	Fire Hazard	Fire hazard can occur due to forest fire, lightning and human-caused fires such as burning debris, equipment uses and malfunction and etc.	4	4	1	5	45	High
<b>Operation phase</b>									
Physical Environment	Air Emission	Air Quality	Emission of dust particles, CO <sub>2</sub> and SO <sub>2</sub> from vehicles and machines, and strange odor from painting into the surrounding air are unavoidable, and smoke and odor from daily cooking at kitchen and particulates from fossil fuel-	3	4	3	3	30	Moderate

Category	Aspects	Environment impacts	Project Activities	Significant of Potential Environmental Impacts					Impact Significance
				M	D	E	P	SP	
			operated generator and emissions from cooking, transportation of visitors and goods, air conditioners and stand-by generators will increase due to the operation of various factories. VOCs emission is likely to be occurred during operation phase.						
	Water Contamination	Water Quality	The project may impact on ground water quality during construction through accidental contamination. In addition, water pollution may occur, if discharges of solid waste from the food stall and fruit market are not properly handled. Chances for affecting the water quality due to discharge water during the operations stage are very high by vehicle maintenance if the project does not manage the wastewater treatment plant.	4	4	2	3	30	Moderate
	Waste generation at terminal, Kitchen waste	Waste	The waste included excavated materials from the earth works and other non-hazardous solid wastes from construction project activities	3	4	2	4	36	Moderate

Category	Aspects	Environment impacts	Project Activities	Significant of Potential Environmental Impacts					Impact Significance
				M	D	E	P	SP	
			and major solid wastes will be generated from daily shop rooms cleaning, kitchen, restaurant, and reception/office and staff quarters. Hazardous solid waste includes contaminated soils, which could potentially be encountered on-site or small amounts of machinery maintenance materials, such as bus and vehicle maintenance materials from oil and fuel spills						
	Oil spill	Soil	Soil can be contaminated by oil spill and machinery or vehicle maintenance.	3	4	2	4	36	Moderate
	Operation activities and vehicles movements	Noise and Vibration	Major sources of noise pollution could be vehicles used for transportation.	4	4	2	3	30	Moderate
Social Environment	Accidents and diseases	Occupational Health and Safety	During operation occupation health can be consider as accidents due to vehicles and diseases.	4	4	2	3	30	Moderate

Category	Aspects	Environment impacts	Project Activities	Significant of Potential Environmental Impacts					Impact Significance
				M	D	E	P	SP	
	Vehical movements	Local Increase of Traffic	The movement of the vehicles and machines in and out of the bus terminal will make local increase of traffic only for few cases.	4	4	2	3	30	Moderate
	Development of project	Employment and Livelihood	Creating the local job opportunities may have some positive impact but land use change may lead to effect of livelihood condition of local communities						Positive Impacts
	Development of project	Tourist Attraction	With the successful completion of the project, the number of worldwide tourists visiting to Dawei City can be increased.						Positive Impacts
	Development of project	Economic Development	The operation of the proposed project will result in positive gains for numerous authorities through payments of relevant taxes, rates and fees to respective institutions and government bodies.						Positive Impacts

Category	Aspects	Environment impacts	Project Activities	Significant of Potential Environmental Impacts					Impact Significance
				M	D	E	P	SP	
Other		Fire Hazard	Fire hazard can occur due to forest fire, lightning and human-caused fires such as burning debris, equipment uses and malfunction and etc.	3	4	2	4	36	Moderate
<b>Decommission phase</b>									
Physical Environment	Air Emission	Air Quality	Emission of dust particles, CO <sub>2</sub> and SO <sub>2</sub> from vehicles and machines, and strange odor from painting into the surrounding air are unavoidable, and smoke and odor from daily cooking at kitchen and particulates from fossil fuel-operated generator and emissions from cooking, transportation of visitors and goods, air conditioners and stand-by generators will increase due to the operation of various factories. VOCs emission is likely to be occurred since operation phase.	2	2	2	3	18	Low
	Water Contamination	Water Quality	The project may impact on ground water quality during construction through accidental contamination.	3	2	2	4	28	Low

Category	Aspects	Environment impacts	Project Activities	Significant of Potential Environmental Impacts					Impact Significance
				M	D	E	P	SP	
			In addition, water pollution may occur, if discharges of solid waste from the decommission are not properly handled. Chances for affecting the water quality due to discharge water during the operations stage are very high by vehicle maintenance and washing, laundry services if the hotel does not manage the wastewater treatment plant.						
	Decommissioning waste and domestic waste generation	Waste	The waste included excavated materials from the earth works and other non-hazardous solid wastes from construction project activities and major solid wastes will be generated from daily cleaning, Hazardous solid waste includes contaminated soils, which could potentially be encountered on-site or small amounts of machinery maintenance materials, such as oily rags, used oil filters, and used oil from transformer, as well as spill	2	1	1	4	16	Low

Category	Aspects	Environment impacts	Project Activities	Significant of Potential Environmental Impacts					Impact Significance
				M	D	E	P	SP	
			cleanup materials from oil and fuel spills						
	Oil spill and Seasonal Floods	Soil	The proposed project is built on flat land as there can be low or no landslide. Erosion can be occurred as the project itself surround by small stream.	3	1	2	4	24	Low
	Demolishing activities	Noise and Vibration	During the decommission phase, major sources of noise pollution could be vehicles used for transportation of construction materials and other construction machineries and equipment such as backhoe, tipper, cutter, generator etc.	3	1	2	4	24	Low
Social Environment	Demiolishing activities, lifting, exposure, slip and fall	Occupational Health and Safety	Vehicle traffic and use of lifting equipment in the movement of machinery and materials on a construction site may pose temporary hazard, such as physical contact, spill, dust emission and noise can happen due to low Occupational Health and Safety standards.	2	5	1	3	24	Low



Category	Aspects	Environment impacts	Project Activities	Significant of Potential Environmental Impacts					Impact Significance
				M	D	E	P	SP	
	Vehical movements	Local Increase of Traffic	The movement of the vehicles and machines in and out of the site will make local increase of traffic inevitable.	4	1	2	3	21	Low
	Job opportunity	Employment and Livelihood	Creating the local job opportunities may have some positive impact but land use change may lead to effect of livelihood condition of local communities.						Positive Impact
Other	Development of project	Fire hazard	Fire hazard can occur due to forest fire, lightning and human-caused fires such as burning debris, equipment uses and malfunction and etc.	4	4	1	5	45	High

### 6.6.1. Impacts Mitigation Measures

The affected impacts are identified based on above assessment which may include impacts on air quality, water quality, waste, soil, noise and vibration, land use, hydrology, occupational health and safety, infectious diseases such as HIV/AIDS, COVID-19 and local increase of traffic. The detail mitigation about the above impacts is as follow.

#### **Mitigation Measure for Construction Phase**

##### ***Mitigation Measure for Air Quality***

Air emission should not exceed National Emission Quality Standards; therefore, the emissions must be controlled to be within the guidelines by controlling and maintenance of generators, vehicles and machineries to be efficient use of energy. During construction, water sprinkling shall be carried out to suppress fugitive dust during earthworks in construction work. Temporary dust cover should place in case of to protect receptor from dust. Limiting maximum speed of vehicle to 20km/h within construction site. Transportation vehicles and machineries to be properly and timely maintained and serviced regularly to control the emission of air pollutants in order to maintain the emissions.

##### ***Mitigation Measure for Water Quality***

Contaminate water shall be reduced by avoiding construction earthwork in rainy season. Prevent not to contaminate water body due to illegal disposing activities. Preventive measure, such as installing a dust net, for mitigating a dispersion of concrete particle generated during polishing and paving concrete surfaces are required.

##### ***Mitigation Measure for Noise and Vibration***

- Avoid nighttime work as much as possible
- Identify on noise and vibration vulnerable areas before construction
- Regularly maintain vehicles to minimize noise from engines and exhaust systems.

##### ***Mitigation Measure for Waste***

- Construction waste should dump on temporary site then dispose.
- Separate Waste and dispose to local waste collection services.
- Waste water dispose from fuel shop should treated and dispose.



##### ***Mitigation Measure for Soil***





- To avoid incidence landslide, the soil investigation should be implemented before starting the construction.
- Use safe and effective design method for piling, wastewater and rainfall drainage systems, retaining walls should be conducted in project area.
- The protecting buildings should be considered that are to critical infrastructures and facilities from the consequences of landslide hazard and risk.
- Temporary dumping area should place in impermeable ground.
- If accidentally spill oil, clean it up immediately. Contaminated clothing should be removed immediately.



##### ***Mitigation Measure for Occupational Health and Safety***

The project is planning to create two parts: Safety and pleasant working condition and environment system and social welfare for workers to prevent and reduce of occupational health and safety. The following table shows require PPE wears during construction period,

**Table 6.4 PPE for Exposure Activities at Construction phase**

Require PPE	PPE function	Body parts to be protected	In figures
Masks	Protect nose and mouth from dust, smoke and particle inhaling, swallowing	Nose and mouth	
Cap	Protect from dust and falling particles	Head	
Safety glasses	Protect eyes from bright, light, machine	Eyes	

Require PPE	PPE function	Body parts to be protected	In figures
	accident, dust and particles		
Earplugs	Protect ears from high noise	Ear	
Gloves	Protect from heat materials and other hazardous related materials	Hands	
Hand sanitizers	In order to kill germs and protect from pandemic	Hands	

Require PPE	PPE function	Body parts to be protected	In figures
Protective Clothing	Protect body from exposure to electric shocks and other hazardous particles	Body	
Shoes	Protect feet from exposure to accidents and hazardous materials	Foot	

**Mitigation Measure for Local Increase of Traffic**

- Avoid rush hour for construction vehicals logistic.
- Make design for safety traffic within the fuel station.
- Clearly mark pedestrian walkways and vehicle lanes with appropriate barrier and signage.
- Promote the safety driving habits.

**Mitigation Measure for Operation Phase**

**Mitigation Measure for Air Quality**

Open burning of waste materials shall not be allowed. Monitor not to exceed National Emission Quality Standards; therefore, the emissions must be controlled to be within the guidelines. Also, plantation in order to absorb GHG, as plants do a lot in helping fight pollution, mainly air pollution. They help improve the quality of air by absorbing carbon dioxide and releasing oxygen, increasing humidity by transpiring water vapor and passively absorb pollutants on the surface of leaves and on to the plant root-soil system.

Trees remove air pollution by the interception of particulate matter on plant surfaces and the absorption of gaseous pollutants through the leaf stomata.

**Mitigation Measure for Water Quality**

Prevent not to contaminate water body due to illegal disposing activities. Set-up sedimentation ponds at every end of the outlet drains. Discharging wastewater into sewer line, provision of temporary toilet for guests and employee, using leak proof containers for storage and

transportation of oil and grease, and keeping the impervious floors of oil and grease handling areas. Maintain rainwater collection system and implement effective water drainage network of the project

The effluent treatment plant should be well managed and operated effectively so as to keep the quality of effluent water within the acceptable limits of the wastewater disposal standard before the disposal, especially for fuel station.

#### ***Mitigation Measure for Noise and Vibration***

Noise control devices should be applied such as temporary noise barriers and deflectors for impact blasting activities, and exhaust muffling devices for combustion engines. For generator, noise enclosure should be built. Regularly maintain vehicles to minimize noise from engines and exhaust systems.

#### ***Mitigation Measure for Waste***

Proper waste management will be taken into account according to the requirements and directions of the Dawei township development committee. Project activities should be conducted with the use of appropriate health and safety procedures for hazardous waste management in accordance with the regulatory requirement.

#### ***Mitigation Measure for Soil Quality***

- Clean oil-contaminated areas, immediately cover them with a mixture of sand and detergent. Then, dispose of the used sand and detergent in a designated hazardous waste bin.
- Repair the leak permanently to prevent future spills. Then, install the new equipment.
- Never dispose of contaminated oil in ditches.
- Leaking oil can pollute nearby waterways and create a serious fire hazard, potentially even reaching the fuel station.
- The contaminated clothes and plastic bags are separated and disposed of in designated waste bins.
- The water storage tank will be inspected the absence of fuel odor.




#### ***Mitigation Measure for Occupational Health and Safety***





By prioritizing occupational health, physical injury, and safety can cultivate a more ethical, enthusiastic, and energetic working environment. Which provide:

- Provide health care facilities.
- Trainings are provided for worker such as first aid, etc.
- Appropriate PPE should provide during working.
- Warning signs are ensured to set up through project site.
- Medical support or transport should prepare in case of accidents and emergency.

**Table 6.5 Safety precaution**

No.	Description	Warning Sign	Causes and Affect
-----	-------------	--------------	-------------------

<p>1.</p>	<p>Instruction for prevention of traffic accidents in the propose project</p>		<p>Customer vehicles are absolutely necessary to drive carefully by reducing speed. It's crucial that fuel station staff to supervise and display clear signage enforcing the speed limit. This is because the station is a busy area with various vehicles refueling, staff working, and travelers using amenities. Additionally, fuel station staff should ensure that no vehicles block the station's entrance or exit because it is the place where vehicles are passing after refueling. To ensure traffic safety during refueling, deploying security personnel and placing safety cones around fuel tankers is essential as these are areas where tankers come to a stop.</p>
<p>2.</p>	<p>Turn off the engine while refueling in the fuel station</p>		<p>In order to avoid the risk of accidents to the staffs of gas station and refueling customers, customers should apply the car brakes before and during refueling. Turn off the car engine.</p>
<p>3.</p>	<p>Do not use mobile telephones in the fuel station.</p>		<p>For everyone's safety, staff should avoid using mobile phones near pumps. If a call is essential, step at least 20 feet away from pumps, fuel tanks, and fuel tankers. Similarly, drivers should refrain from answering calls while refueling or driving.</p>

<p>4.</p>	<p>No smoking any kind of area near the fuel station.</p>		<p>Smoking is strictly prohibited throughout the gas station for everyone's safety, including passengers during refueling.</p>
<p>5.</p>	<p>Do not sit on the motorcycle while refueling.</p>		<p>Customers never sit on the motorcycle before or during refueling. This precaution is necessary because if the motorcycle were to catch fire during refueling, a person sitting on it could be harmed by the heat. During refueling, station attendants should prevent fuel from spilling onto the overheating engine or exhaust pipe.</p>
<p>6.</p>	<p>Be aware of food selling motorcycles near the fuel storage area.</p>		<p>For food vendors using vehicles with hot plates or gas stoves attached (including motorcycles with sidecars), refueling should allow after extinguishing all flames and allowing the equipment to cool completely. Moreover, for drivers who sell the food, after refueling, it is necessary to notify the customers to ensure any gas odors are gone from vehicles before restarting the stove.</p>
<p>6.</p>	<p>Emergency First Aid Kit install at Project</p>		<p>In addition to personal protective equipment, the propose project should also have readily available first-aid kits and ensure staff are trained in basic CPR. Emergency contact numbers, including those for nearby hospitals, should be clearly displayed on a notice board for quick access in case of an emergency.</p>



***Mitigation Measure for Local Increase of Traffic***

1. **Traffic Management Plan:** Develop and implement a comprehensive traffic management plan to minimize congestion.
2. **Public Transport Integration:** Improve integration with other forms of public transportation to reduce traffic load.
3. **Infrastructure Improvements:** Enhance road infrastructure leading to and from the terminal.

***Mitigation Measure for Fire Hazard***

To prevent fire hazard by providing fire extinguishers, water tank and fire drill, and by preparing evacuation plan. As proposed project includes fuel shop, all employees can face the risk of fire hazards. Therefore, employees who work within the fuel station and terminal staff understand the situation of occurrence of fire hazard, and manage not to occur this situation. In the event of a fire hazard, knowing how to react is crucial. To ensure everyone's safety, all employees should attend fire prevention courses. Supervisors can then reinforce these in the safety toolbox meetings daily or weekly. If the oil leakage occurs, immediately clean by using oil-absorbent sponge. The steps for procedure of cleaning will be reported separately after providing training. No smoking in any area of the fuel station.

**Mitigation Measure for Decommission Phase*****Mitigation Measure for Air Quality***

Air emission should not exceed National Emission Quality Standards; therefore, the emissions must be controlled to be within the guidelines by controlling and maintenance of generators, vehicles and machineries to be efficient use of energy. During demolishing, water sprinkling shall be carried out to suppress fugitive dust during earthworks in demolishing work. Temporary dust cover should place in case of to protect receptor from dust. Transportation vehicles and machineries to be properly and timely maintained and serviced regularly to control the emission of air pollutants in order to maintain the emissions.

***Mitigation Measure for Water Quality***

Contaminate water shall be reduced by avoiding construction/demolishing earthwork in rainy season. Prevent not to contaminate water body due to illegal disposing activities. Preventive measure, such as installing a dust net, for mitigating a dispersion of concrete particle generated during polishing and paving concrete surfaces are required.

***Mitigation Measure for Noise and Vibration***

- Avoid nighttime work as much as possible
- Identify on noise and vibration vulnerable areas before demolishing
- Regularly maintain vehicles to minimize noise from engines and exhaust systems.

***Mitigation Measure for Waste***

- Demolishing waste should dump on temporary site then dispose.
- Separate Waste and dispose to local waste collection services.

- Waste water dispose from fuel shop should treated and dispose.


**Mitigation Measure for Soil**




- To avoid incidence landslide, the soil investigation should be implemented before starting the demolishing.
- Use safe and effective design method for piling, wastewater and rainfall drainage systems, retaining walls should be conducted in project area.
- The protecting buildings should be considered that are to critical infrastructures and facilities from the consequences of landslide hazard and risk.
- Temporary dumping area should place in inpernable ground.
- If accidentally spill oil, clean it up immediately. Contaminated clothing should be removed immediately.





**Mitigation Measure for Occupational Health and Safety**

The project is planning to create two parts: Safety and pleasant working condition and environment system and social welfare for workers to prevent and reduce of occupational health and safety. The following table shows require PPE wears during decommission period,

**Table 6.6 PPE for Exposure Activities at Decommission phase**

Require PPE	PPE function	Body parts to be protected	In figures
Masks	Protect nose and mouth from dust, smoke and particle inhaling, swallowing	Nose and mouth	
Cap	Protect from dust and falling particles	Head	

Require PPE	PPE function	Body parts to be protected	In figures
			
Safety glasses	Protect eyes from bright, light, machine accident, dust and particles	Eyes	
Earplugs	Protect ears from high noise	Ear	

Require PPE	PPE function	Body parts to be protected	In figures
Gloves	Protect from heat materials and other hazardous related materials	Hands	
Hand sanitizers	In order to kill germs and protect from pandemic	Hands	
Protective Clothing	Protect body from exposure to electric shocks and other hazardous particles	Body	
Shoes	Protect feet from exposure to accidents and hazardous materials	Foot	

Require PPE	PPE function	Body parts to be protected	In figures

### ***Mitigation Measure for Local Increase of Traffic***

- Avoid rush hour for construction vehicals logistic.
- Make design for safety traffic within the fuel station.
- Clearly mark pedestrian walkways and vehicle lanes with appropriate barrier and signage.
- Promote the safety driving habits.

## **6.7 Risk Assessment**

An accidental event (risk) is defined as spill and leak, vessel collision, and fire and explosion that have the potential to occur during construction and operation phases. As the Project is being designed, and will be constructed and operated, according to the best practice for preventing the risk and impact on safety, natural hazards, accident in industrial and environment.

However, there is a potential for accidents, malfunctions or unplanned events to occur during any Project phase that cause impacts to safety of community and employee of the Project. These accidental events can be caused by human or technical error or from natural disasters (cyclones/floods, etc.).

### **6.7.1. Risk Identification**

Risk can be identified based on the nature of the project and existing natural environment. Type of risks for this project were categorized as stated in the following table.

**Table 6.7 Risk Identification**

Sr.	Type of Risks	Description
1	Risks related to Natural Hazards	Earthquake, cyclone, sea level rising, flood
2	Risks related to Safety hazards	Accidental spill and leak, falling from heigh, dropping objects, electric shock, material handling
3	Risks related to Accidents	Fire, explosion, Traffic Accidents, Waste water, hazardous & toxic waste disposal

### **6.7.2. Risk Assessment Methodology**

To prioritize hazards, threats, address vulnerabilities, and strengthen risk management is to perform a risk heat map analysis. This method can apply for a project, a business department, or an entire organization.

The purpose of using this method is to create a risk heat map with ratings for impact, probability, velocity, and preparedness. Velocity indicates the speed at which a risk could impact a project, a business, or an organization, as some events have an instantaneous effect while others take years to make an impact. Preparedness measures how ready an organization is to handle a given risk, which depends on the preventive and response controls that are in place and the effectiveness of those controls. After evaluating each risk for these factors, enter your data into the template to generate the heat map. Risks are represented as circles on the map, with numbers corresponding to the risk IDs in the data table. The heat map matrix shows how each risk scores for impact and probability, the color of each circle refers to probability, and the size indicates velocity. The following methodology will be used for risk assessment of the project. The assessment of each risk is based on the consideration of the level of impacts, possible occurrence of impacts and how fast a risk can affect the environment of project. Consequently, consider how much preparation or prevention can make before facing the risk.

**Significant Level Explanation**

Level of Significance: Based on calculated significant point, significance level can be categorized as follows:



**Level of Significance**



**Table 6.8 Definition of the impact significant**

Impact	Potential negative or positive effects of the exposure on the project
Velocity	Velocity indicates how fast a risk may affect an organization or Project Site
Probability	Potential severity of the particular systems or events affected by a threat

Preparedness	Preparedness assessment is the process of determining the various risks and threats an agency and patients might face.
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### 6.7.3. Risks by level of significance

The following table shows the level of significance for each identified risk during all phases of the project.

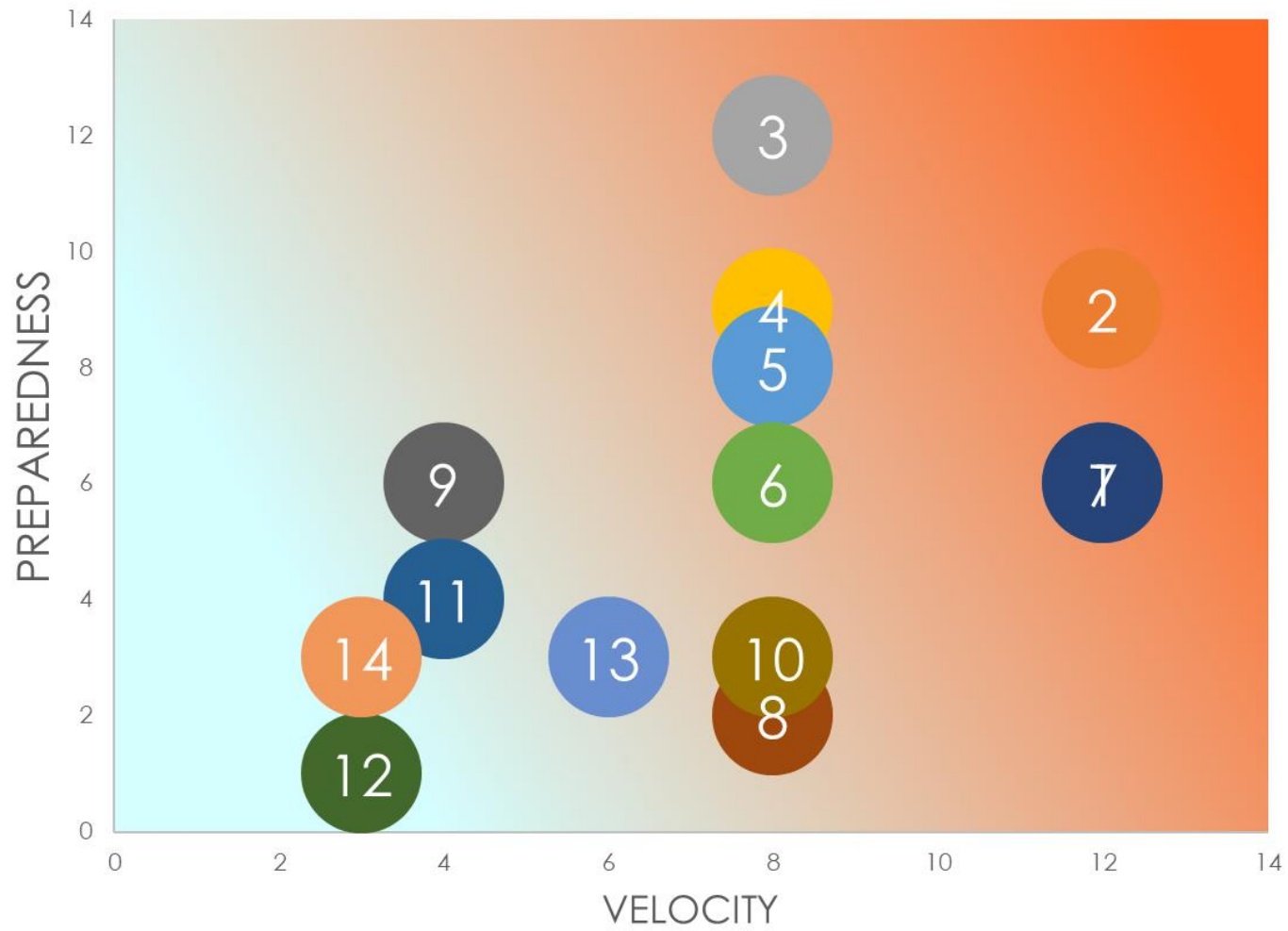
**Table 6.9 Level of significance for each identified risk during all phases**

RISK ID	RISK CATEGORY	RISK DESCRIPTION	IMPACT	PROBABILITY	VELOCITY	PREPAREDNESS	HEAT MAP X	HEAT MAP Y
1	Earthquake	Refers to the risk of damage to a building, system, or other entity from seismic occurrence.	3.0	2.0	4.0	3.0	12	6
2	Cyclone	Cyclones' widespread impacts, from winds, storm surge, strong currents, and inland flooding, put people at risk.	4.0	3.0	3.0	3.0	12	9
3	Sea level rise	Rising sea levels can disrupt coastal wetlands by drowning plant species, increasing salt levels in the soil and water.	2.0	3.0	4.0	4.0	8	12
4	Flood	Flood hazard is one of the two main components of risk, being defined by the probability of exceeding	2.0	3.0	4.0	3.0	8	9



RISK ID	RISK CATEGORY	RISK DESCRIPTION	IMPACT	PROBABILITY	VELOCITY	PREPAREDNESS	HEAT MAP X	HEAT MAP Y
		the maximum rainfall and sea level rise.						
5	Accidental Spill and leak	The spillage or accidental escaping of hazardous substances into the surrounding environment	2.0	4.0	4.0	2.0	8	8
6	Fall from high	Defined as an accident which results in working at height	4.0	3.0	2.0	2.0	8	6
7	Dropping object	Any item that falls or falls over that has the potential to cause injury, death to person or equipment.	4.0	3.0	3.0	2.0	12	6
8	Electric Shock	A risk to a person of death, shock or other injury caused directly or indirectly by electricity.	4.0	2.0	2.0	1.0	8	2
9	Material Handling	Common hazards associated with material handling	4.0	3.0	1.0	2.0	4	6

RISK ID	RISK CATEGORY	RISK DESCRIPTION	IMPACT	PROBABILITY	VELOCITY	PREPAREDNESS	HEAT MAP X	HEAT MAP Y
10	Fire	Accidental fire hazards consequences in terms of loss of life, fire spread, damage etc.	4.0	3.0	2.0	1.0	8	3
11	Explosion	Fires and explosions have been identified as major potential hazards for Oil and Gas	4.0	2.0	1.0	2.0	4	4
12	Traffic Accident	The risk for a vehicle accident is usually predicted to be one of the dominating risks for a bus terminal	3.0	1.0	1.0	1.0	3	1
13	Waste water	Uncontrolled generation of waste water	3.0	3.0	2.0	1.0	6	3
14	Hazardous and toxic waste	Hazardous waste is waste that poses a severe threat to human health or the environment if improperly disposed, such as wastewater treatment sludges	3.0	3.0	1.0	1.0	3	3



**Figure 6.1 Risk Assessment Heat Maps**

Source: E Guard Study Team (2023)

After identified and evaluated a risk, there are several potential responses. The response you choose will depend on the probability of the risk occurring and the potential severity of its impact on a project.

**Avoid:** Avoiding risks is ideal, and especially important if the risk is high impact and likely to occur. Avoidance tactics may require greater investment (in order to develop alternative strategies), but this additional cost and effort is appropriate for high-impact, high-probability negative risks.

**Transfer:** This method refers to transferring risk to another party (for example, the act of purchasing insurance moves the risk to the insurance provider). This response is common for risks that have a high negative impact but a low probability of occurring.

**Mitigate:** Mitigation aims to reduce either the likelihood or the level of impact of a risk, and is used for risks that are likely to occur, but also likely to be low-impact.

**Accept:** Acceptance is an option when there is no other solution, but would only be used for low-impact risks that have a low probability of occurring.

Risks can be internal or external, and projects may face a combination of both. Internal risks may include issues with technology, staffing, financial security, and other factors that can be controlled within your organization. External risks can be harder to predict and control, and may include factors such as issues with suppliers, changes in the political climate or economy, or even the weather. The process of analyzing risks and measuring them on a scale of probability and severity can provide the initial framework for determining which of the above methods will be the most effective response to a given risk. The following table consider how possible can impacts of risk can control.

**Table 6.10 Risk Control Actions**

RISK ID	RISK CATEGORY	RISK DESCRIPTION	RISK CONTROL ACTIONS
1	Earthquake	Refers to the risk of damage to a building, system, or other entity from seismic occurrence.	<p><i>Accept, Transfer</i></p> <ul style="list-style-type: none"> <li>• Proper piling work in foundation before construction to prevent shakes.</li> <li>• Alarm controls</li> <li>• Place for cover and hold</li> </ul>
2	Cyclone	Cyclones' widespread impacts, from winds, storm surge, strong currents, and inland flooding, put people at risk.	<p><i>Accept, Transfer</i></p> <ul style="list-style-type: none"> <li>• Early warning</li> <li>• Monitoring the intensity</li> </ul>

RISK ID	RISK CATEGORY	RISK DESCRIPTION	RISK CONTROL ACTIONS
			<ul style="list-style-type: none"> <li>• Shelters</li> <li>• Timely response</li> </ul>
3	Sea level rise	Rising sea levels can disrupt coastal wetlands by drowning plant species, increasing salt levels in the soil and water.	<i>Avoid, Accept, Transfer</i> <ul style="list-style-type: none"> <li>• Elevate the ground</li> <li>• Monitor sea level</li> </ul>
4	Flood	Flood hazard is one of the two main components of risk, being defined by the probability of exceeding the maximum rainfall and sea level rise.	<i>Avoid, Accept, Transfer</i> <ul style="list-style-type: none"> <li>• Elevate the ground</li> <li>• Monitor sea level</li> <li>• Monitor rain fall</li> </ul>
5	Accidental Spill and leak	The spillage or accidental escaping of hazardous substances into the surrounding environment	<i>Avoid, Mitigate</i> <ul style="list-style-type: none"> <li>• Spill kit</li> <li>• SOP for oil loading and handling</li> <li>• Trained staff</li> </ul>
6	Fall from high	Defined as an accident which results in working at height	<i>Avoid, Mitigate</i> <ul style="list-style-type: none"> <li>• SOP work at height</li> <li>• PPE</li> <li>• Trained staff</li> </ul>
7	Dropping object	Any item that falls or falls over that has the potential to cause injury, death to person or equipment.	<i>Avoid, Mitigate</i> <ul style="list-style-type: none"> <li>• Careful handling</li> <li>• Safety barrier</li> <li>• PPE</li> </ul>
8	Electric Shock	A risk to a person of death, shock or other injury caused	<i>Avoid, Mitigate</i> <ul style="list-style-type: none"> <li>• PPE</li> <li>• Digital sensors</li> </ul>

RISK ID	RISK CATEGORY	RISK DESCRIPTION	RISK CONTROL ACTIONS
		directly or indirectly by electricity.	
9	Material Handling	Common hazards associated with material handling	<i>Avoid, Mitigate</i> <ul style="list-style-type: none"> <li>• Trained staff</li> </ul>
10	Fire	Accidental fire hazards consequences in terms of loss of life, fire spread, damage etc.	<i>Avoid, Mitigate, Transfer</i> <ul style="list-style-type: none"> <li>• Fire sprinkler</li> <li>• Fire Hydrants</li> <li>• Aware of Fire-Sensitive Areas</li> <li>• Digital sensors</li> </ul>
11	Explosion	Fires and explosions have been identified as major potential hazards for Oil and Gas	<i>Avoid, Mitigate, Transfer</i> <ul style="list-style-type: none"> <li>• Aware of Fire-Sensitive Areas</li> <li>• Digital sensors</li> </ul>
12	Traffic Accidents	The risk for a traffic accident is usually predicted to be one of the dominating risks for a Bus Terminal.	<i>Avoid, Mitigate</i> <ul style="list-style-type: none"> <li>• Road signs</li> <li>• Speed limit</li> </ul>
13	Waste water	Uncontrolled generation of waste water	<i>Avoid, Mitigate</i> <ul style="list-style-type: none"> <li>• Treatment plan</li> <li>• Connect with DOWA</li> </ul>
14	Hazardous and toxic waste	Hazardous waste is waste that poses a severe threat to human health or the environment if improperly disposed, such as wastewater treatment sludges	<i>Avoid, Mitigate</i> <ul style="list-style-type: none"> <li>• Proper disposal</li> <li>• Separate bins</li> <li>• Connect with DOWA</li> </ul>

## **7. Cumulative Impact Assessment**

### **7.1 Methodology and Approach**

Cumulative impacts are the successive, incremental and combined impacts from multiple projects or multiple activities located in the same region or affecting the same resource (e.g., a watershed or an airshed). Different projects or different phases of the same project contribute incremental impacts to other existing, planned, or reasonably predictable future projects and developments, leading to an accumulation of impacts. Cumulative impacts result from the successive, incremental, and/or combined effects of an action, project, or activity when added to other existing, planned, and/or reasonably anticipated future ones.

The IFC (2012) defines cumulative impacts as those generally recognized as important on the basis of scientific concerns and or concerns from affected communities. Cumulative impacts in this section refer to the additional impacts that may be generated by other developments or activities in the vicinity of the project site, that when added to the impacts of the construction and operation of the proposed project combine to cause a greater impact.

### **7.2 Anticipated Cumulative Impacts**

The existing activities and businesses around the proposed project site are mostly farmland and rural areas. Therefore, the proposed project cumulative impact has not identified with other developments factories in the same regions of Dawei. Cumulative impacts will be increase at traffic on Ye-Dawei/Dawei-Ye road due to the operation of the proposed project

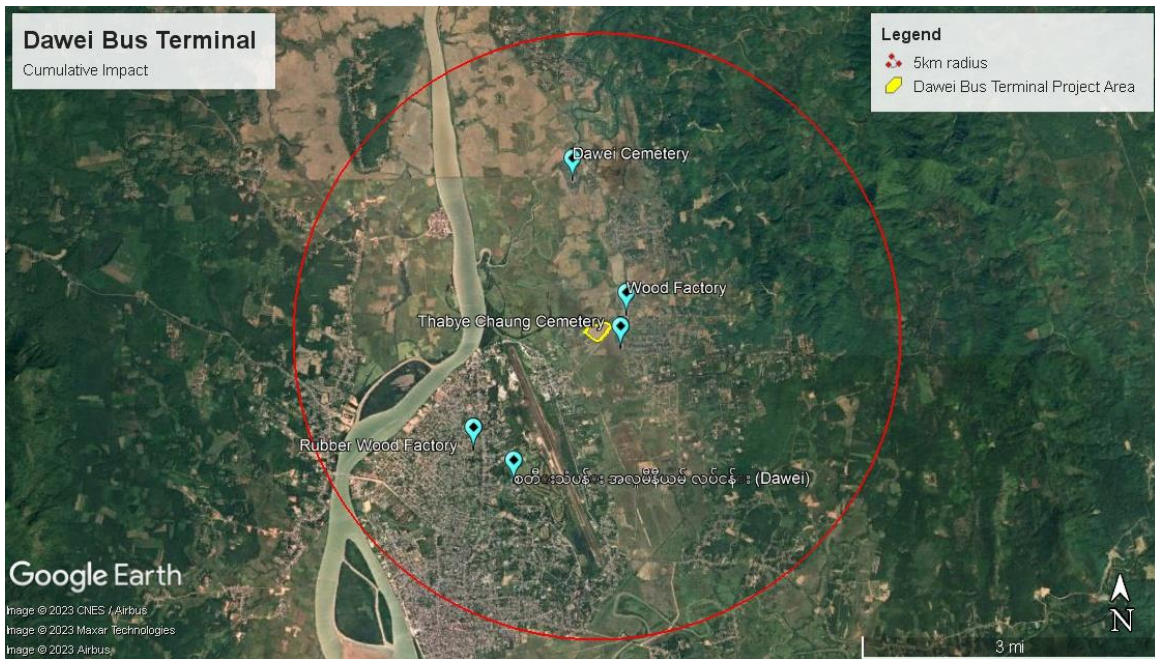
### **7.3 Determining Valued Environmental and Social Components**

The following Valued Environmental and Social Components (VECs) were identified for cumulative impacts of the above-mentioned projects in combination with the project being assessed. The affected community were also consulted to define the VECs to be assessed.

- Air
- Soil
- Receiving waterbody for disposing storm water (Water surface around DBT)
- Social conditions like Community health and safety and infrastructure and facilities

#### **Determining Spatial and Temporal Boundaries**

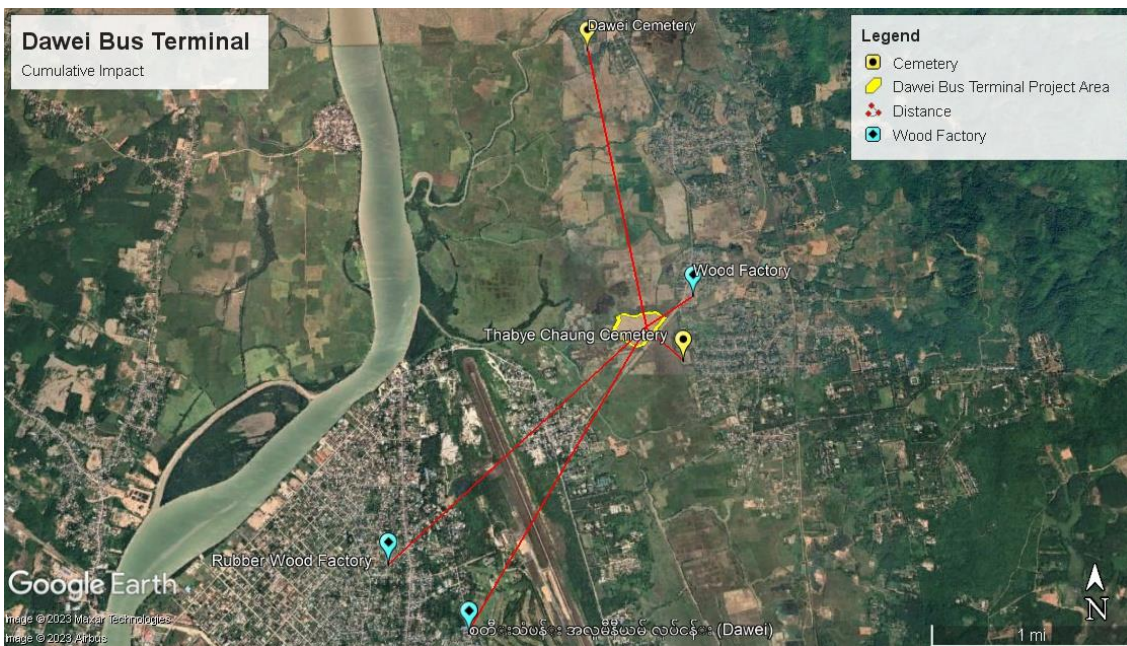
The duration of impacts considered on VECs is the lifetime of the proposed project, including the construction, operation, and decommission phases. The potential effects of the proposed project cannot extend beyond the lifetime of the project and hence this temporal boundary is the most conservative timeframe. The geographic boundaries for VECs (air, soil, and social conditions) for which cumulative impacts were assessed are 5 km radius of the project site which can be seen in the following figure. The spatial boundary was defined based on the facts that the area will be directly affected by the project, potential VECs for cumulative impact assessment, and the distance.



**Figure 7.1 Factories and Cemeteries near the Project Area**

Source: E Guard Study Team (2023)

Within 5 km radius, there are three factories and two cemeteries near the Dawei bus terminal project area, however, other land area are fields and residential areas. The nearest is the Tha Byay Chaung cemetery and it is 0.43 km away from the project area and the second nearest is the wood factory which is located 0.49 km away from the project area. Dawei Cemetery is 2.55 km away from project area and the left which are rubber wood factory and steel, aluminum industry is 2.87 km away from the project area. The locations and distance of factories and cemeteries can be seen in the following figure.



**Figure 7.2 Distance from the project area**

Source: E Guard Study Team (2023)



In considering of cumulative impacts, wood factory and rubber wood factory can produce wood dust particles and recorded as solid waste are generated from wood factory. Wood dust particles can pollute the air and health issues as a negative impact of wood factory. Moreover, wastewater and solid waste can pollute the water of surrounding locality. On the other hand, cemeteries also produce smoke and these smokes are reached to the atmosphere and pollute the air. Dust emission and smoke from nearby factories and cemeteries is anticipated, thus, dust emission of factories and smoke from cemeteries can combine and impact to the local area can consider as cumulative impacts by nearby factories and cemeteries.

**7.4 Assessment of Cumulative Impacts and their significance on VECs**

The potential cumulative impacts are

- The incremental contribution of pollutant emissions in air and if they are neglected, they will convert into main climate change impact.
- Increases in pollutant concentrations in waterbody (Surround water where storm water is disposed without quality control);
- Increases in pollutant concentrations in soil;
- Induced social impacts like in-migration, more traffic congestion and accidents, community health problems.

In order to determine the significance of cumulative impacts, some limits of acceptable change in VEC conditions are needed to which incremental effects can be compared. There is not always an objective technique for determining thresholds and professional judgement was relied upon. The significance of cumulative impacts was determined by the impact assessment methodology for determining potential environmental impacts for ESIA (Section. 6.6 Assessment of Impact Significance) in conjunction with professional judgement and based on the Environmental Management Plan of the project and appropriate mitigation measures for related impacts. It is also believed that the reasonably foreseeable projects will have and follow the sound Environmental Management Plans and appropriate mitigation measures for related impacts.

**Table 7.1 Potential Cumulative Impacts during Operation Phase**

No.	Impacts	Scores				Total Rating Significance Level
		Magnitude	Duration	Extent	Probability	
1	Incremental contribution of air pollutants	3	3	3	4	36 Moderate
2	Increase in pollutant concentrations in soil	1	3	2	3	18 Low

3	Increase in pollutant concentrations in water body	3	3	2	3	24 Low
4	Induced social environmental impact due to possible traffic accident	2	3	2	4	28 Low

The cumulative impact assessment has not identified any cumulative impacts that are considered to be significant (i.e., high significance) and in need of mitigation measures, monitoring or management. The impacts are within the ability of the resource to absorb such changes.

The significance of cumulative impacts is low, however, based on the review of potential impacts and mitigation measures mentioned in different phases, and associated infrastructure will result in significant adverse environmental or socio-economic impacts, considering the cumulative impacts.

## 8. ENVIRONMENTAL MANAGEMENT PLAN

The Environmental Monitoring and Management plan for different phases of the project will also help minimize or avoid the cumulative impacts. The cumulative impacts typically result from the actions of multiple stakeholders, it is necessary to engage with these stakeholders for effective collaboration and coordination.

It is recommended that a wide range of roles and responsibilities are possible. The principles and purpose are meaningful engagement of affected communities, involvement and collaboration with governments, and interaction with third parties. At a minimum, interactions with government, third parties, and affected communities should accomplish the purposes that relate to a client's project- specific cumulative impacts.

The proposed project will be monitored through a well-defined Environmental Monitoring Program. This will be done by direct measurement of parameters related to environmental quality, emissions, discharges, etc.

There are three main sections in this Environmental Management Plan (EMP):

- 1) Mitigation and Monitoring Management Plan
- 2) Emergency response plan
- 3) Cooperate Social Responsibility (CSR) Plan

The objective of Environmental Management Plan is to apply as guideline for environmental and social activities. It can also consider as commitment and reference of proponent who implement this EMP which will be lay under the condition of approval from the Environmental Conservation Department (ECD), Ministry of Natural Resources and Environmental. This report will also serve as monitoring plan for further works of proposed project.

Tables below contains a list of potential environmental issues and the appropriate mitigation measures that must be considered during the operation phase and decommissioning phase of the proposed project.

### 8.1.Environmental Mitigation and Monitoring Management Plan

#### *Environmental Impact mitigation and monitoring plan in operation phase*

In operation phase, impacts are mitigated as detail plan in Section 6.3.1. The applicable impacts are considered for impacts for air quality, noise and vibration, water quality, waste, health and safety: community and occupational health and safety. In addition, risk assessment and impacts for occupational accident are considered in this phase. In order to have efficient mitigation, regular checkup for each impact shall carried out during operation period. As for the monitoring the environmental conditions in operation phase, the detail parameters for specific impacts are show in Table 8.1. The expected budget for both Environmental Mitigation and Management Plan are described for each plan.

#### *Environmental impact mitigation and monitoring plan in decommission phase*

In demolishing phase, impacts are mitigated as detail plan in section 6.6.1. The applicable impacts are considered for impacts for air quality, noise and vibration, waste, health and safety: community and occupational health and safety. In order to have efficient mitigation, regular

checkup for each impact shall carried out during decommission period. As for the monitoring the environmental conditions in decommission phase, the detail parameters for specific impacts are show in Table 8.1. The expected budget for both Environmental Mitigation and Management Plan are described for each plan.

Environmental Management and Monitoring Plans for construction phase, operation phase, and decommissioning phase are as the following tables. Impacts from each phase are considered according to activities of each particular phase.

**Table 8.1 Environmental Monitoring Plan for proposed Project**

Impact Source	Monitoring Item	Monitoring Means	Proposed Monitoring Locations	Guideline parameters	Frequency	Responsibility	Estimated cost (USD)/Yr
Air Quality	<b>Gas Emission:</b> CO, CO <sub>2</sub> , SO <sub>2</sub> , NO <sub>2</sub> , O <sub>3</sub> <b>Dust Emission:</b> PM <sub>10</sub> , PM <sub>2.5</sub>	Site Measurement	Lat: 14° 06' 57.98" N Long: 98° 12' 43.99" E	NEQG	Every six months	KSP	2600
			Lat: 14° 06' 48.07" N Long: 98° 13' 24.95" E				
Noise	Noise level in dB(A)	Site Measurement	Lat: 14° 6' 57.98" N Long: 98° 12' 43.99" E	NEQG	Every three months	KSP	1000
			Lat: 14° 6' 48.07" N Long: 98° 13' 24.95" E				
Water Quality (Ground water)	Iron Total Hardness Total Suspended Solids Total Coliform Bacteria pH Turbidity Total Dissolved Solids	Site Measurement & analysis in Lab	Lat: 14° 7' 3.79" N Long: 98° 12' 57.55" E	Thailand Ground Water Quality Standard	Every six months	KSP	900

Impact Source	Monitoring Item	Monitoring Means	Proposed Monitoring Locations	Guideline parameters	Frequency	Responsibility	Estimated cost (USD)/Yr
	Ammonia Nitrate Biological Oxygen Demand Chemical Oxygen Demand Total Nitrogen Total Phosphorus Arsenic Copper Zinc Chromium Mercury Chlorine (Residual)						
Water Quality (Surface water)	pH Turbidity Total Dissolved Solids Total Suspended Solids Ammonia Nitrate BOD COD Total Nitrogen Total Phosphorus	Site Measurement & analysis in Lab	SW-1 14° 06'59.91"N, 98°12'55.31" E  SW-2 14° 06'51.83"N, 98°12'47.11" E  SW-3 14° 6'54.46"N, 98°12'42.14" E	NEQG,	Every six months	KSP	900

Impact Source	Monitoring Item	Monitoring Means	Proposed Monitoring Locations	Guideline parameters	Frequency	Responsibility	Estimated cost (USD)/Yr
	Arsenic Copper Zinc Chromium Mercury Total Coliform Iron Chlorine (residual) Total Hardness						
Water Quality (Outlet water)	Biological Oxygen Demand Chemical Oxygen Demand pH Total coliform bacteria Total Nitrogen Total Phosphorus Total Suspended solids Turbidity Total Dissolved Solids Ammonia Arsenic Copper	Site Measurement & analysis in Lab	Lat: 14° 7'0.44"N Long: 98°12'46.60" E	NEQG	Every six months	KSP	900

Impact Source	Monitoring Item	Monitoring Means	Proposed Monitoring Locations	Guideline parameters	Frequency	Responsibility	Estimated cost (USD)/Yr
	Zinc Chromium (total) Mercury Nitrate Total Hardness Iron Chlorine (residual)						
Accident	Record of information sharing of factory works for safety Record of hazardous material management, including handling, storage, and transport activities for safety Record of traffic accidents	Check records	Inside Dawei Bus Terminal	General EHS Guidelines (IFC)	Weekly	KSP	-
Utilities consumption	Record of water & fuel used	Check records	-	General EHS Guidelines (IFC)	Monthly	KSP	-



**8.2.Environmental Management Sub Plans**

8.2.1. Air Quality Management Plan

**Objectives**

Monitor air quality to ensure compliance with national and international air quality standards.

**Legal Requirements**

The Management Plans will be completed in accordance with Petroleum and Petroleum Product Law requirements and National Environmental Quality (Emission) Guideline by MONREC. The plans also consider national legislation is provided in Chapter 3.

**Table 8.2 Air Quality Standard and Parameters**

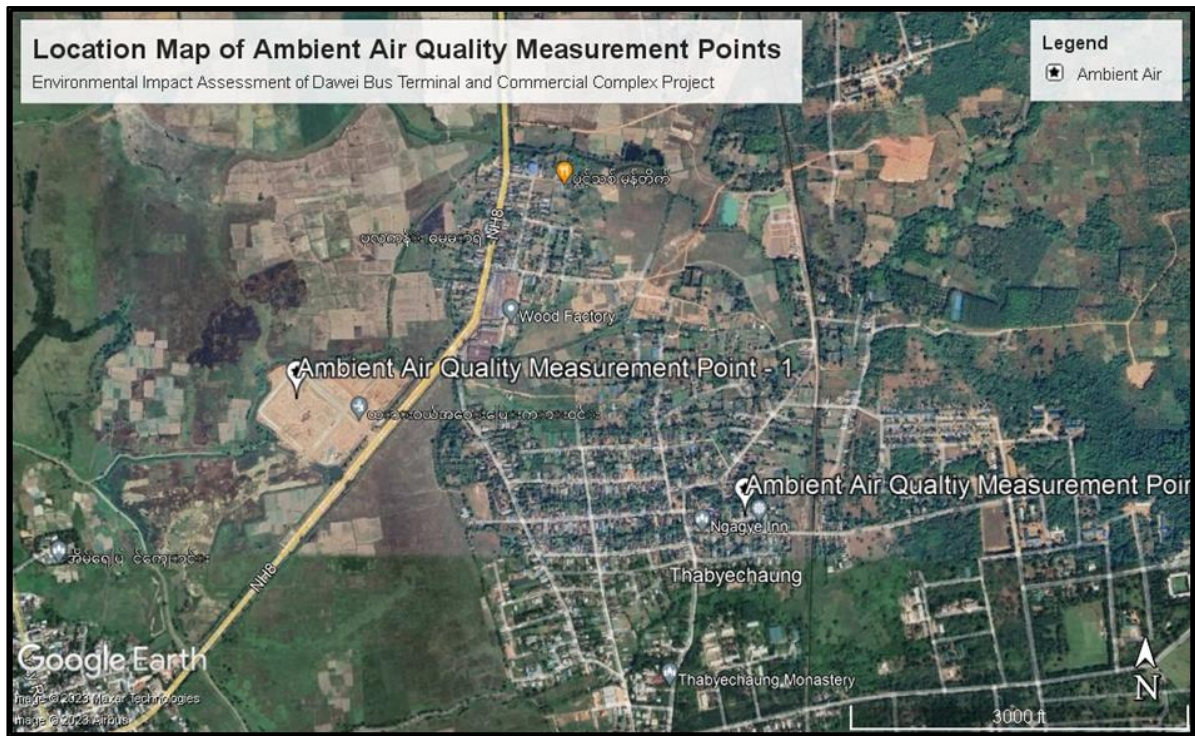
Air Quality	SO <sub>2</sub>	NO <sub>2</sub>	CO	CO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	Ozone
Unit	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>
Guideline Value	20	200	9	5000	50	25	100
Guideline	NEQG	NEQG	NAAQS	ACGIH	NEQG	NEQG	NEQG
Averaging Period	24 hours	1 hour	8 hours	8 hours	24 hours	24 hours	8 hours

**Table 8.3 Air Quality Measurement Points**

Ambient Air Quality Measurement Points		
Locations No.	Points	Coordinate
Air Quality Measurement Point -1	Point-1	Lat: 14° 06' 57.98" N Long: 98° 12' 43.99" E
Air Quality Measurement Point -2	Point-2	Lat: 14° 06' 48.07" N Long: 98° 13' 24.95" E

**Overview Maps and Site Layout for Air Quality**

The following map shows air quality sampling station for project area.



**Figure 8.1 Air Quality Sampling Station for Project Area**

Source: E Guard Study Team (2023)

**Implementation Schedule**

The Air Quality Control Plan will be act out throughout the life of the Project.

**Management Actions Plan and Budget**

The following table shows the Management Action plans with responsibility and budget

**Table 8.4 Management Action plans**

Item	Potential Negative Impact/ Issue	Mitigation and Management Action	Frequency	Estimated cost (USD)	Responsible Party
<b>Operation phase</b>					
Air Quality	Fugitive Dust Emissions, Vehicular Emission	<ul style="list-style-type: none"> <li>Operating with generators should be limited.</li> <li>Air quality should measure to monitor GHG emission from refinery process.</li> </ul>	During operation	4800	Project Management Team and Monthly report to KSP

		Open burning is strictly prohibited.			
<b>Decommission Phase</b>					
Air Quality	- Fugitive Dust from earthworks - Vehicular Emission	<ul style="list-style-type: none"> <li>Water sprinkling shall be carried out to suppress fugitive dust during earthworks in demolishing work</li> <li>Transportation vehicles and machineries to be properly and timely maintained and serviced regularly to control the emission of air pollutants in order to maintain the emissions.</li> </ul>	Daily	100 USD/Day	Contractor and KSP
		Temporary dust cover should place in case of to protect receptor from dust.	As necessary		

8.2.2. Noise and Vibration Management Plan

**Objectives**

Monitor Noise and Vibration of project to ensure compliance with national and international quality standards.

**Legal Requirements**

The Management Plans will be completed in accordance with Petroleum and Petroleum Product Law requirements and National Environmental Quality (Emission) Guideline by MONREC. The plans also consider national legislation is provided in Chapter 3.

**Table 8.5 Noise and Vibration Monitoring Standard**

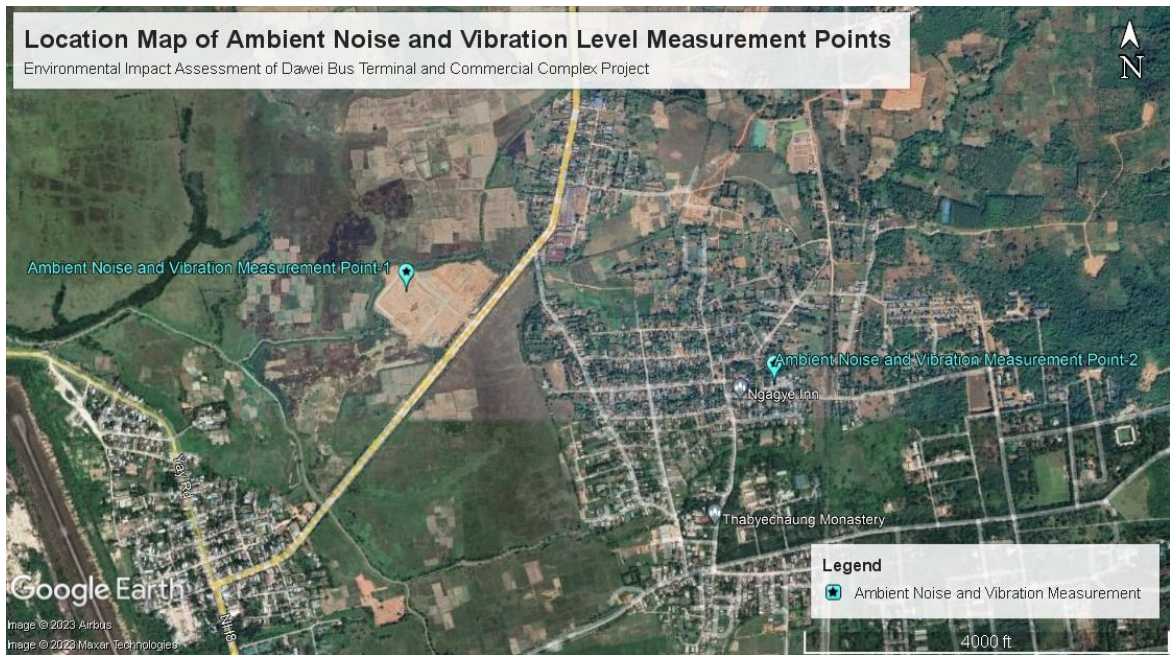
Receptor	One Hour LAeq (dBA)	
	Daytime 07:00 - 22:00 (10:00 - 22:00 for Public Holidays)	Nighttime 22:00 - 07:00 (22:00 - 10:00 for Public Holidays)
<b>Noise</b>		
Residential, institutional, educational	55	45
Industrial, commercial	70	70
<b>Vibration</b>		
Residential, institutional, educational	60-65 dB	55-60 dB
Industrial, commercial	65-70 dB	60-65 dB

**Table 8.6 Noise and Vibration Level Measurements Points with Coordinates**

Locations No.	Points	Coordinate	Locations
<b>Noise and Vibration Level Measurements Points</b>			
Noise and Vibration	Point-1	Lat: 14° 6'57.98"N Long: 98° 12'43.99"E	Inside of the Project Site
Noise and Vibration	Point-2	Lat: 14° 6'48.07"N Long: 98° 13'24.95"E	Outside of the Project Site

**Overview Maps and Site Layout for Noise and Vibration**

The following map shows noise and vibration sampling station for project area.



**Figure 8.2 Noise and Vibration Sampling Station for Project Area**

Source: E Guard Study Team (2023)

**Implementation Schedule**

The Noise and Vibration Control Plan will be act out throughout the life of the Project.

**Management Actions Plan and Budget**

The following table shows the Management Action plans with responsibility and budget.

**Table 8.7 Management Action plans for Noise and Vibration**

Item	Potential Negative Impact/ Issue	Mitigation and Management Action	Frequency	Estimated cost (USD)	Responsible Party
<b>Operation phase</b>					
Noise	Noise due to factory operation activities	Install temporary noise barrier <ul style="list-style-type: none"> <li>• Operation activities should allow only in daytime.</li> <li>• Use of generators should only during blackout time.</li> </ul>	Once During operation period	3000	Project Management Team and Monthly report to KSP

		<ul style="list-style-type: none"> <li>Research on noise/vibration sensitive areas before construction.</li> </ul>			
<b>Decommission Phase</b>					
Noise & vibration	Noise and vibration due to demolition and transportation activities	<ul style="list-style-type: none"> <li>Avoid nighttime work as much as possible Identify on noise and vibration vulnerable areas before construction.</li> </ul>	Daily	-	Contractor and KSP

**Monitoring Plan and Budget**

The following table shows the Monitoring plans with responsibility and budget.

**Table 8.8 Monitoring plans for Noise and Vibration**

Impact Source	Monitoring Item	Monitoring Means	Proposed Monitoring Locations	Guideline parameters	Frequency	Responsibility	Estimated cost (USD)/Yr
<b>Operation Phase</b>							
Noise	Noise level in dB(A)	Site Measurement	Lat: 14° 6'57.98"N Long: 98°12'43.99" E <hr/> Lat: 14° 6'48.07"N Long: 98°13'24.95" E	NEQG	Every three months	KSP	1000
<b>Decommission Phase</b>							

Impact Source	Monitoring Item	Monitoring Means	Proposed Monitoring Locations	Guideline parameters	Frequency	Responsibility	Estimated cost (USD)/Yr
Noise	Noise level in dB(A)	Site Measurement	Lat: 14° 6'57.98"N Long: 98°12'43.99" E Lat: 14° 6'48.07"N Long: 98°13'24.95" E	NEQG	Every three months	KSP	1000

8.2.3. Water Quality Management Plan

**Objectives**

Monitor water quality of project to ensure compliance with national and international quality standards.

**Legal Requirements**

The Management Plans will be completed in accordance with National Environmental Quality (Emission) Guideline by MONREC. The plans also consider national legislation is provided in Chapter 3.

**Table 8.9 Water Quality Standard**

Water Quality Parameter	
Chemical Parameter	BOD, COD, pH, TDS, Arsenic,
Physical Parameter	Total Suspended Solid, Temperature, Turbidity, Hardness
Nutrients	Total Nitrogen, Total Phosphorus, Floride, Chlorine, Nitrate, Zinc, Sulphide
Metal	Mercury, Cyanide, Copper, Ammonia, Chromium, Iron, Lead
Compounds	Oils & grease, Total Coliform Bacteria

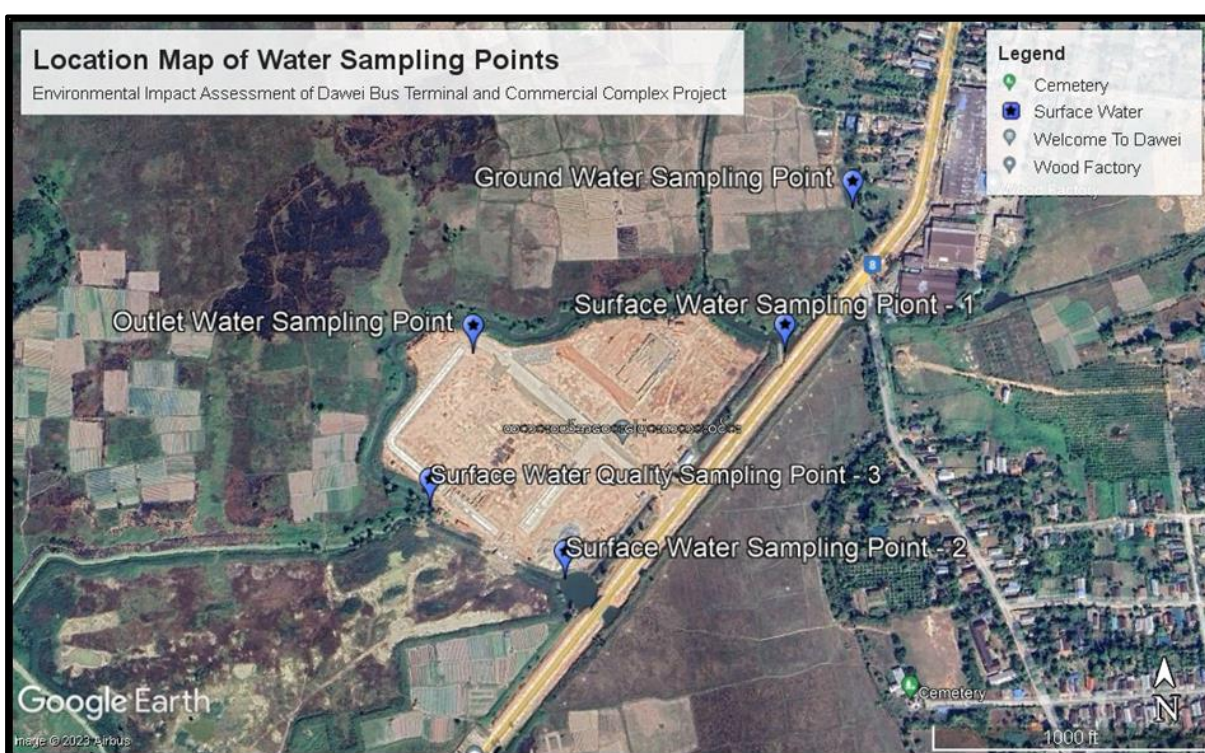
**Table 8.10 Water Quality Sampling Points**

Item	GPS Coordinates	Locations
------	-----------------	-----------

Ground Water (Well Water)	Lat: 14° 7'3.79"N Long: 98° 12'57.55"E	From the well near the project site
Surface Water Quality (Point 1)	Lat: 14° 7'0.93"N Long: 98° 12'53.36"E	From the creek near the project site
Surface Water Quality (Point 2)	Lat: 14° 6'53.99"N Long: 98° 12'42.03"E	From the creek near the project site
Outlet Water	Lat: 14° 7'0.44"N Long: 98° 12'46.60"E	Final waste water discharge point of the project site

**Overview Maps and Site Layout for Water Quality**

The following map shows water quality sampling station for project area.



**Figure 8.3 Water Quality Sampling Station For Project Area**

Source: E Guard Study Team (2023)

**Implementation Schedule**

The Water Quality Control Plan will be act out throughout the life of the Project.





**Figure 8.4 Waste water treatment plan septic tanks**

Source: Khant Shwe Pyi Co., Ltd

**Management Actions Plan and Budget**

The following table shows the Management Action plans with responsibility and budget

**Table 8.11 Management Action plans for Water Quality**

Item	Potential Negative Impact/ Issue	Mitigation and Management Action	Frequency	Estimated cost (USD)	Responsible Party
<b>Operation phase</b>					
Water Quality	Uncontrolled runoff, improper wastewater, solid waste and hazardous material management at the site, affecting surface water quality of watercourse. And office facilities; and Clearing land for operational purposes;	Install waste water treatment plants at food courts and kitchen outlet.	Once	2000	Project Management Team and Monthly report to KSP
		<ul style="list-style-type: none"> <li>Ensure not to spill oil in both</li> </ul>	Ongoing in Operation Phase	1200	

		inland and deport. <ul style="list-style-type: none"> <li>• Provide spill kits.</li> </ul>			
		Monitor and control the water quality of the project	Every six months	700	

The following table shows the Monitoring plans with responsibility and budget

**Table 8.12 Monitoring Plan and Budget**

Impact Source	Monitoring Item	Monitoring Means	Proposed Monitoring Locations	Guideline parameters	Frequency	Responsibility	Estimated cost (USD)/ Yr
Water Quality (Ground water)	Iron Total Hardness Total Suspended Solids Total Coliform Bacteria pH Turbidity Total Dissolved Solids Ammonia Nitrate Biological Oxygen Demand Chemical Oxygen Demand Total Nitrogen	Site Measurement & analysis in Lab	Lat: 14° 7'3.79"N Long: 98°12'57.55"E	Thailand Ground Water Quality Standard	Every six months	KSP	900

Impact Source	Monitoring Item	Monitoring Means	Proposed Monitoring Locations	Guideline parameters	Frequency	Responsibility	Estimated cost (USD)/Yr
	Total Phosphorus Arsenic Copper Zinc Chromium Mercury Chlorine (Residual)						
Water Quality (Surface water)	pH Turbidity Total Dissolved Solids Total Suspended Solids Ammonia Nitrate BOD COD Total Nitrogen Total Phosphorus Arsenic Copper Zinc Chromium Mercury Total Coliform Iron Chlorine (residual) Total Hardness	Site Measurement & analysis in Lab	SW-1 14° 06'59.91"N, 98°12'55.31"E  SW-2 14° 06'51.83"N, 98°12'47.11"E  SW-3 14° 6'54.46"N, 98°12'42.14"E	NEQG,	Every six months	KSP	900

Impact Source	Monitoring Item	Monitoring Means	Proposed Monitoring Locations	Guideline parameters	Frequency	Responsibility	Estimated cost (USD)/Yr
Water Quality (Outlet water)	Biological Oxygen Demand	Site Measurement & analysis in Lab	Lat: 14° 7'0.44"N Long: 98°12'46.60"E	NEQG	Every six months	KSP	900
	Chemical Oxygen Demand						
	pH						
	Total coliform bacteria						
	Total Nitrogen						
	Total Phosphorus						
	Total Suspended solids						
	Turbidity						
	Total Dissolved Solids						
	Ammonia						
	Arsenic						
	Copper						
	Zinc						
	Chromium (total)						
	Mercury						
	Nitrate						
	Total Hardness						
Iron							
Chlorine (residual)							

8.2.4. Oil Spill Contingency Plan

**Objective**

The purpose of the oil spill response plan is to effectively response oil spill incident in terminal operation. The objectives are,

- Ensure minimal impacts to the surrounding environment,
- Provide the tools to identify the most appropriate response procedures,
- Protect sensitive areas and water way
- Mitigate negative effects.

**Legal Requirements**

The plans also consider national legislation is provided in Chapter 3.

**Implementation Schedule**

The Oil Spill Management Plan will be act out throughout the life of the Project.

**Management Actions**

The scope of the plan is to access when oil spill incident occurs in jetty, offshore and onshore operation, to response timely when it happens and to documented record. To respond as in the Oil Spill Contingency Plan (OSCP) to induce minimal damage and loss to the environment before and after the outbreak of the oil spill incident.

- Formation
- Advance Preparation
- Advance Prevention
- To conduct if an oil spill occurs
- To conduct if the TR-1 Stage Oil Spill occurs
- To conduct if the TR-2 Stage Oil Spill occurs
- To conduct if the TR-3 Stage (National Stage) Oil Spill occurs

To take special care not to cause an oil spill incident and if happens, to respond to it as in the Oil Spill Contingency Plan (OSCP) by the following designated persons to induce only minimal damage to the marine environment

1. Cargo operation team
2. PFSD all staff
3. Berthing Vessel & Owner
4. Cargo Owner
5. Max Energy Terminal
6. Nearby Oil Terminal

**Monitoring Plans**

The Environmental Monitoring Report will include the items listed in Table 8.13.

**Table 8.13 The Environmental Monitoring for oil spill**

Impact Source	Monitoring Item	Proposed Monitoring Locations	Frequency	Responsibility
Oil Spill	Amount of spill occur	In Terminal	Record all incident in all phase	Project management team and KSP

**Budget**

The budget for the oil spill response is within the operational cost of the Project.

### 8.2.5. Fire Safety Plan

#### **Objective**

The purpose of Fire safety plan is to deal with combustible materials and gases, as failing to control and manage ignition sources efficiently which can result in very dangerous situations.

#### **Legal Requirements**

The Fire Safety Plan will be completed in accordance with The Myanmar Fire Brigade Law (2015) requirements and Guideline. The plans also consider the Law which provided detail in Chapter 3.

#### **Implementation Schedule**

The Fire Safety Plan will be act out throughout the life of the Project.

#### **Management Actions**

A professional fire risk assessment is key to identifying every potential hazard. The duties of the fire response

- Ensure a fire risk assessment is carried out
- Make sure people working with dangerous substances are trained properly
- Check whether a fire safety policy is in place
- Install general fire precautions and principles of fire prevention ASAP

Although fire is one of the (5) types of enemies, it will be a friend if it is used as effectively. Fire could be an extremely dangerous enemy from only a speck of fire unless it is used as systematically. Fire is called as evil because it can destroy everything which is life and property without giving favor. There were a lot of uncountable lives, properties, and things that were destroyed by fire. In order not to cause unwanted damages from fire as even Nan Pythaad can catch fire from the beginning of a garbage, it will be free from the risk of fire, damages and loss by knowing either how to perform when the fire is occurring or prevent the fuel filling station from burning and following them precisely.

#### **Objectives**

1. To prevent the fire hazard in accordance with the word “To avoid fire before it burns”

#### **Procedure**

2. The methods to perform in the occurrence of fire, the situation of fire burning, and the situation when the fire has not occurred are divided into the following 3 sections.
  - (a) Normal Time : Time that is not occurrence of fire
  - (b) Emergency Time : Fire burning in the surrounding environment
  - (c) Occurrence of Fire Hazard: Occurrence of fire in my own fuel station

#### **Location**

3. DENKO fuel filling station is located on land area of (2.5 acres), ownership no. (8/2-b+9/1) at field number (104/ Kyaung Yar Maw), Tha Byay Chaung village tract, Dawei City, Dawei District, Tanintharyi Region.

#### **Staff**

4. The number of staff is as follow-

(a)	Shop Manager	- (1)
(b)	Vice Manager	- (1)
(c)	Supervisor	- (1)
(d)	Junior Assistant	- (1)
(e)	Sale Clerk/Cashier	- (2)
(f)	Refueling Staff	- (8)
(g)	Security	- (2)
(h)	Cleaning Staff	- (2)
	<b>Total Number of Staff</b>	- (18)

**Normal Time**

5. Normal time is defined as regular selling hours before the fire. In normal time, (5) teams are organized for fire protection as follows.

**(a) Team organization**

- (1) Communication Team
- (2) Security Team
- (3) Firefighting Team
- (4) Rescue Team
- (5) Material Moving Team

**(b) Members in each team**

(1) Communication Team

(aa) One Staff	Shop Manager	Team Leader
(bb) One Staff	Cashier	Member
(cc) One Staff	Cashier	Member

(2) Security Team

(aa) One Staff	Security	Team Leader
(bb) One Staff	Refueling Staff	Member
(cc) One Staff	Cleaning Staff	Member

(3) Firefighting Team

(aa) One Staff	Vice Manager/ Supervisor	Team Leader
(bb) One Staff	Refueling Staff	Member
(cc) One Staff	Refueling Staff	Member
(dd) One Staff	Refueling Staff	Member

(4) Rescue Team

(aa) One Staff	Sale & Marketing	Team Leader
----------------	------------------	-------------

(bb) One Staff	Sale & Marketing	Member
(cc) One Staff	Sale & Marketing	Member

(5) Material Moving Team

(aa) One Staff	Supervisor	Team Leader
(bb) One Staff	Cashier	Member

(c) Responsibilities of each team

- (1) **Communication Team** - Preliminary fire-drills have to be conducted for fire prevention in normal time. Members in this team will collect and prepare communication methods and phone numbers of other members and leaders.
- (2) **Security Team** - In normal time, security team prepare and check the strength of fire extinguishers, electrical wires, walkie-talkie and other security-related cooperation issues, security devices, sand buckets, water buckets, fire hook, fire card, staff lists, lists of things in the shop, and entrance/ exit roads surrounding the shop. In addition, they have to ensure that getting available of foam lotions, having full water in the lank, sand bags, and keeping inside and outside of the shop to be free of garbage.
- (3) **Firefighting Team** - It needs to practice preliminary fire-drill. The systematic usage of fire equipment must be proficient. Auxiliary fire equipment such as fire hook, fire card, water bucket, sand bucket, sand bags are collected by cooperating with the security team. Emergency firefighting techniques and procedures must be learned. Firefighting facilities must be arranged for emergency cases.
- (4) **Rescue Team** - In normal time, the rescue team must know electrical prevention methods and first aid techniques. Life-saving medical boxes are placed and contact numbers of surrounding hospitals and clinics must be maintained.
- (5) **Material Moving Team** - Items to be moved according to priority level must be recorded. Material moving aids must be ready.

**Emergency Time**

6. Emergency time is the occurrence of fire in the next to the environment of shop and it will be organized as follows-

(a) **People organization**

The total (18) members will be organized with 15 members that are mentioned in the above paragraph (6) and other (3) members of part time staff.

(b) **Responsibilities of each team**

- 1) **Communication Team** - In the emergency situation, employees in the team must monitor the surrounding fire situation and report to the head office and responsible person. The following must be constantly pay attention to-
  - (aa) Whether the flames/fire can reach to the shop or not
  - (bb) The situation of fire hazard
  - (cc) How much more time can the fire burn again?
  - (dd) Whether the fire can be extinguished easily or not



- (2) **Security Team** - In the emergency situation, the security team has to take care of the security for people, property, money, documents, and surrounding environment of shop and must be watched in the shop by espionage view and security awareness.
- (3) **Firefighting Team** - The firefighting team should place the fire extinguishers in a ready position in the shop and if the fire disperse to the shop, foam are sprayed to the combustible sources, and it have to perform to cut off emergency break way by switching off the fuel pipeline buttons, to be ready water and fire equipments, and to avoid electrical hazard.
- (4) **Rescue Team** - The rescue team must assemble in the shop in a ready position until the fire is over.
- (5) **Material Moving Team** - If a fire hazard occurs in the vicinity of the shop, money, things, and important property are removed depending on the situation of fire.

### Occurrence of fire hazard

- 7. The occurrence of fire hazard in the shop is considered as an important time.

#### (a) People organization

It will cooperate with 18 members that are mentioned in the above paragraph (7) with 10 members of ward reserve fire brigade. Furthermore, it will follow the instructions of the township fire brigade and the regional fire brigade.

#### (b) Responsibilities of each team

- (1) **Communication Team** - If the time is critical, staff that are included in the communication team have to contact to the responsible person from the head office and township fire department in a hurry. Unless it can call the telephone in the shop, it must contact the nearest telephone. If the telephone line cannot communicate, it must inform and report by renting the motor vehicle or motorcycle.
- (2) **Security Team** - If the emergency time arrives, staff in the security team must perform the entrance and exit for security of property and people in the shop and prevent fraudsters from entering. The security team will cooperate with staff from the department when they arrived. In addition, as other unforeseen cases occur again due to the fire, it has to proceed carefully.
- (3) **Firefighting Team** - When the fire hazard occurs, the firefighting team that is led by the shop manager extinguishes initial fire fighting by using FEX.161 Mobile Foam Fire Extinguisher Trolley until the fire brigade arrives. Water from 10,000 gallon fire tanks are pumped with at least 7 Bar water pressure by using fire pump extinguish not only to the place that is occurrence of fire hazard but also to the fire dispersion places and the fire that is occurred by the combination of fire and oxygen in the air is prevented by covering foam.
- (4) **Rescue Team** - The rescue team will inspect whether the staff is present or not in the staff dormitory, bathroom, lounge, restroom, etc. The injured people are moved to safe places and casualty people are transported to the nearest hospital and clinic quickly.
- (5) **Material Moving Team** - When the fire hazard has occurred, the material moving team has to move takings of fuel oil, voucher, documents and things that are specified according to priority level .

### 8. Administration

At the normal time, the shop manager will supervise the shop. In the emergency and critical time, the supervision and control will be carried out by the head office and responsible person at all levels.

### 9. Communication

- (a) Telephone - Communication officer has to inform the head office, ward administration office, and fire department as fast as possible.
- (b) Communicator - Communicating by dispatching people.
- (c) Contact telephone numbers-

(1)	Director	09-940547112
(2)	General Manager (Planning and Administration Department)	09-957390327
(3)	General Manager (Construction and Maintenance Department)	09-5153006
(4)	General Manager (Retail Shops Control Department)	09-957777046
(5)	Deputy General Manager (Transport, Storage and Distribution Department)	09-940547804
(6)	Deputy General Manager (Marketing and Sales Department)	09-940547871
(7)	Emergency Firebrigade	191/192
(8)	Dawei Township General Administration Department	-
(9)	Dawei Township Fire Department	-
(10)	Dawei Township Chief of Police Force Office	-

### 10. General

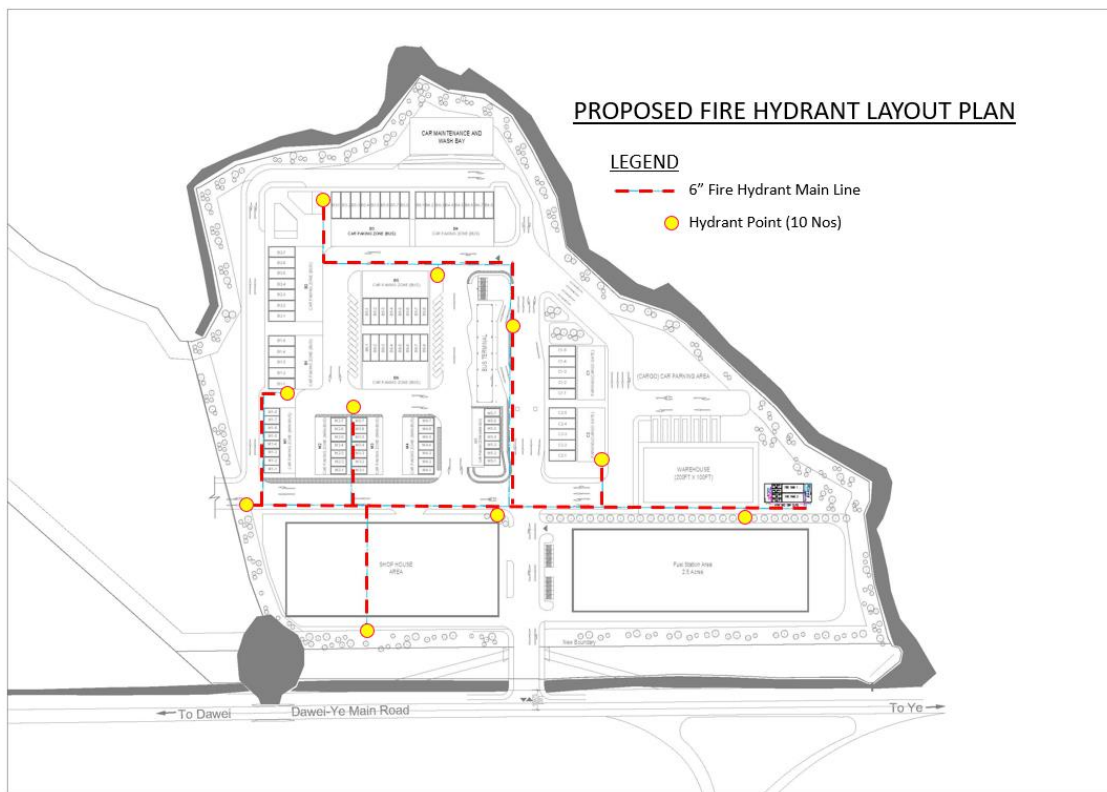
- (a) **Terms** - The following terms must be followed exactly for prevention of fire-

- (1) Don't smoke within the shop,
- (2) Don't use mobile phone,
- (3) Take care of the cleaning inside and outside of the shop,
- (4) Don't use hot plate and rice cooker in the shop,
- (5) Don't take chemical liquids, things, match, and combustible things,
- (6) Use carefully electrical main switches, electrical wires, and plugs,
- (7) Stop the engine while refueling, Perform cleaning by covering sand when the fuel oil is overfilled,

- (8) Always close the fuel tank and oil drain hole in the storage tank except doing the oil measuring and oil filling,
- (9) Don't open the main hole chamber and oil drain chamber cover iron plate slidingly and open them by raising,
- (10) Make clean and dry quickly in the oil drain chamber and surrounding after filling the oil from oil tanker,
- (11) Check the vent pipe occasionally whether the oil fumes come out properly or not from it,
- (12) Check the pump weekly to ensure that there is oil leakage within the pump and nozzles,
- (13) Passengers on the vehicles that are coming to fill up oil don't open the machine cover, use the telephone, hold lighter, and smoke.

**(b) Rehearsal for fire-drill** - The rehearsal for the prevention of fire hazard will be conducted once a month in cooperation of ward reserved fire brigade and shop staff, by taking the help of township fire department and it will be cooperated with the township fire brigade in order to provide firefighting training to the employees.

**Fire Hydrant System**



**Figure 8.5 Fire Hydrant in terminal**

Source: Khant Shwe Pyi Co., Ltd



**Figure 8.6 Fire Hydrants installation**

Source: Khant Shwe Pyi Co., Ltd



**Figure 8.7 Pump house for fire water**

Source: Khant Shwe Pyi Co., Ltd

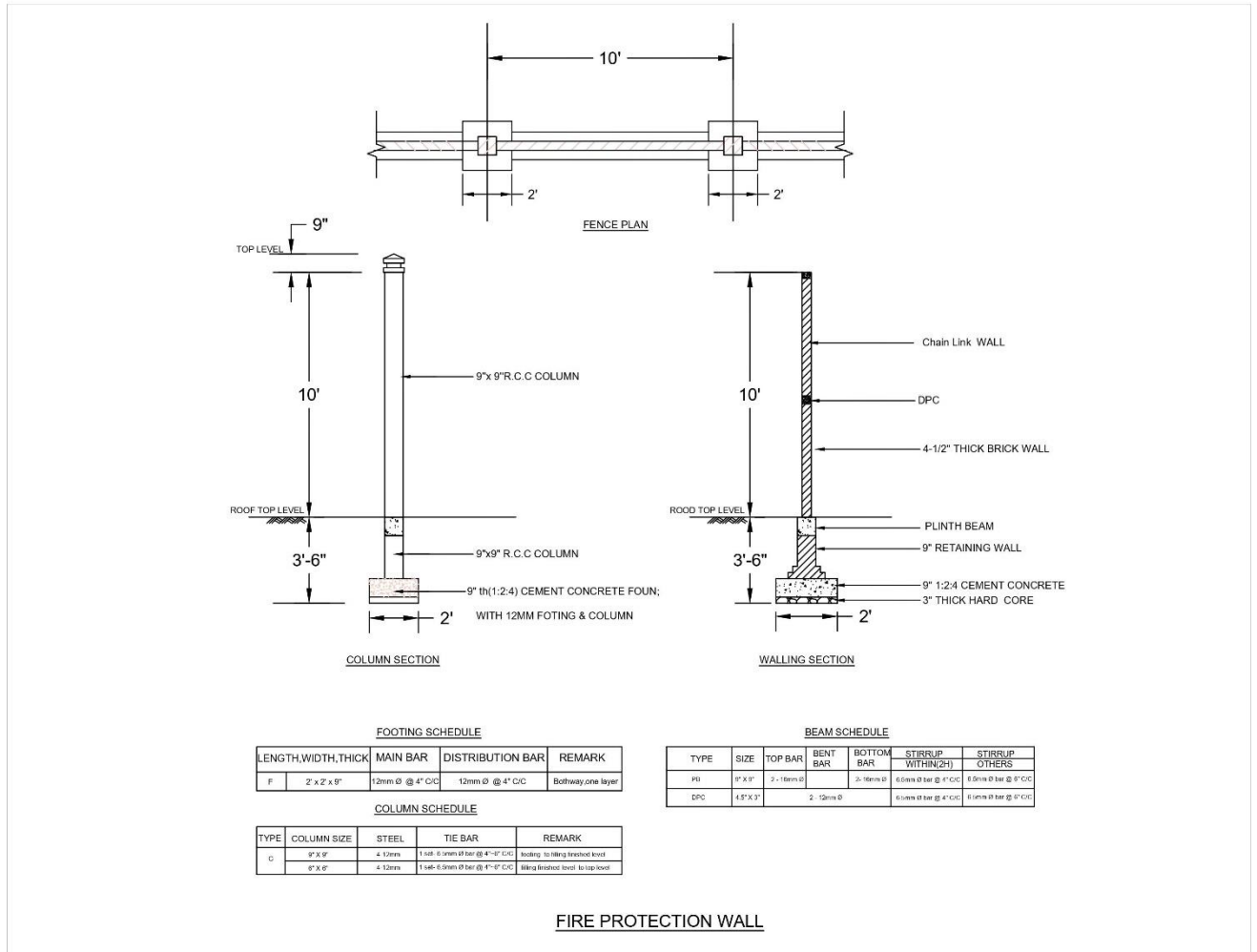
**Table 8.14 Fire extinguishers and Lake in the Fuel Filling Station (Dawei)**

No.	Type	Quantity	Remark
1.	35 Kg (DCP Type)	5 Nos	Tank

2.	4 Kg (DCP Type)	2 Nos	Falling Point
3.	4 Kg (DCP Type)	24 Nos	Pump
4.	Portable Fire Pump	1 Set	-
5.	Ground Water Tank	10000 Gals	-

**Fire wall**

Fire wall is constructed to divide the cargo and fuel shop.



**Figure 8.8 Fire Protection Wall**

Source: Khant Shwe Pyi Co., Ltd

**Alarm Signal**

The alarm signal for a fire or other emergency the KSP Petrochemical VARIABLE pitch note the electric sirens.

NOTE: There will normally be a test of the equipment at :12.00 Hr every Wednesday.

**Communications**

On hearing the fire alarm, a member of the vessel’s staff should man the ship’s radio, switch on to channel 16 and stand by for information.

*Action*

1. Raise alarm
2. Inform main office and terminal
3. Cease all cargo operation and then close all valves
4. Fight fire and prevent fire spreading
5. if required stand by to disconnect hoses or arm
6. Inform all ships
7. Terminal emergency procedure is immediately affected

***Monitoring Plans***

The Environmental Monitoring Report will include the items listed in Table 8.15.

**Table 8.15 The Environmental Monitoring for Fire Safety**

Impact Source	Monitoring Item	Guideline parameters	Frequency	Responsibility
Fire	Cause of combustion	Incident/accident report	Record all incident in all phase	KSP office

***Budget***

The budget for the fire safety control plan is within the operational cost of the Project.

8.2.6. Soil Waste Management Plan

***Objective***

The objective of waste management plan is to control generation in project site and proper waste disposal.

***Legal Requirements***

The Project shall adopt the requirements of local and international legislation as provided detail in Chapter 3.

***Implementation Schedule***

The Soil Waste Management Plan will be act out throughout the life of the Project.

***Management Actions***

The generated solid waste proposed site is disposed to Dawei City Development Affairs Organization. All receipts from Administration are shown in appendix. Generally, type of solid waste generates as domestic waste from dormitory, kitchen waste from canteen and other waste from toilets.

***Monitoring Plans***

The Environmental Monitoring Report will include the items listed in Table 8.16.

**Table 8.16 The Environmental Monitoring for Solid waste management plan**

Impact Source	Monitoring Item	Guideline parameters	Frequency	Responsibility
Solid waste	Waste generation inside project site	Amount of Generation	Every Month	Administration and Main Office

**Budget**

The budget for the gas leakage control plan is within the operational cost of the Project.

8.2.7. Emergency Response Plans

**Objective**

An emergency is an unplanned event when a project operation loses control, or could lose control, of a situation that may result in risks to human health, property, or the environment, either within the facility or in the local community. Emergencies do not normally include safe work practices for frequent upsets or events that are covered by occupational health and safety. Therefore, project proponent should prepare emergency response plan and follow these notification and communication according to the general EHS guidelines.

**Legal Requirements**

The Project shall adopt the requirements of local and international legislation as provided detail in Chapter 3.

**Implementation Schedule**

The Emergency Management Plan will be act out throughout the life of the Project.

**Monitoring Plans**

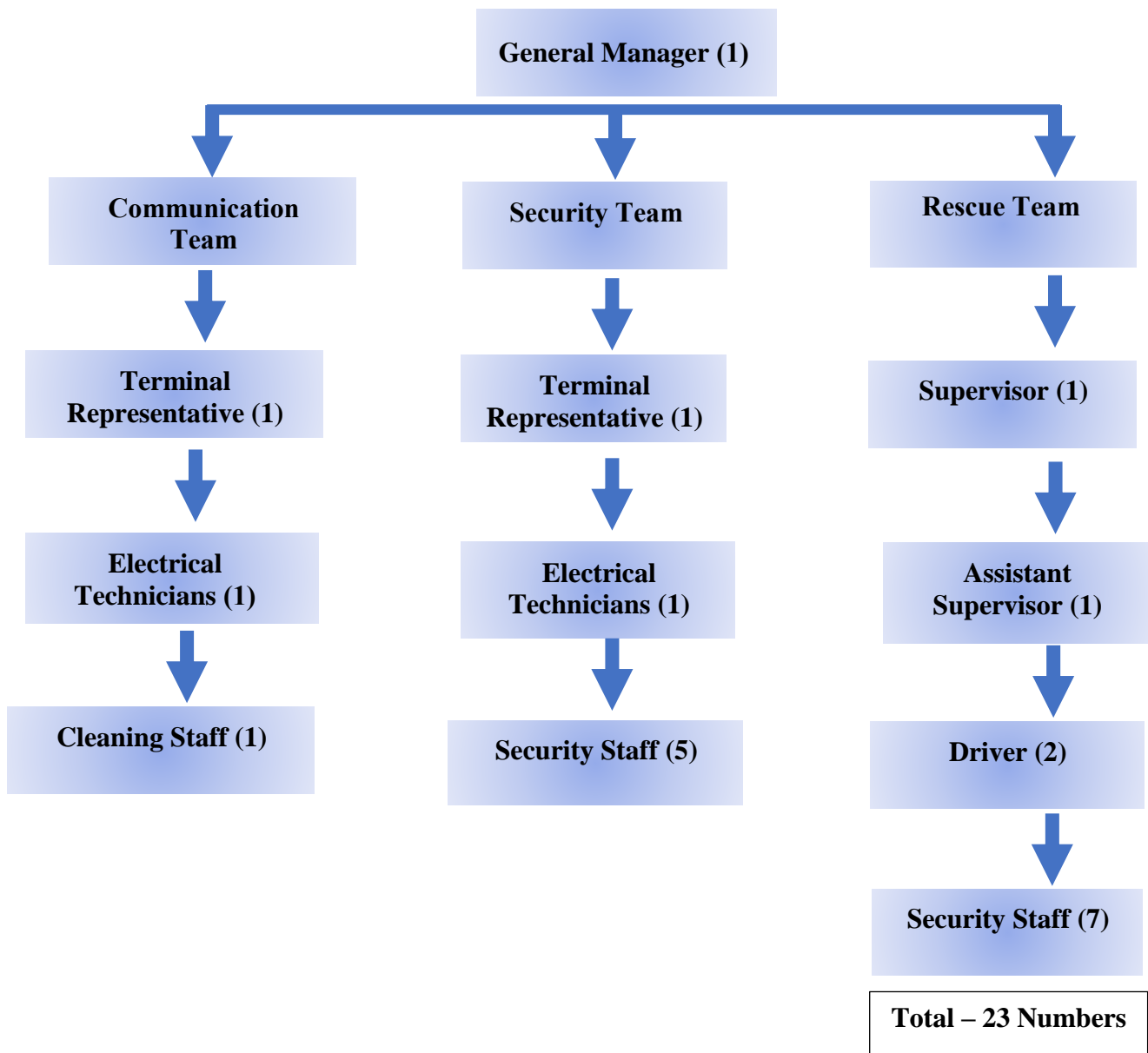
Khant Shwe Pyi Co., Ltd submits the Emergency Response Plan as follows.

Emergency response team is organized with 28 members including team leader for safety of civilians quickly when the emergency cases occur while doing construction. When an accident occurs, assemble in the assembly point and team leader will direct the performing tasks depending on the type of accidents. When the emergency cases are occurred, the emergency team will inform and contact to the relevant departments for doing rescue operations, use machines and fire extinguishers, and if there are injured patients, the emergency team will use first aid methods with first aid kits and must execute to transport quickly to the nearest hospital or clinic to be safe for life.

The members of Emergency Response Team are-

- (1) General Manager (1)
- (2) Responsible person for terminal (2)
- (3) Supervisor (1)

(4) Deputy Supervisor	(1)
(5) Electrical Technicians	(2)
(6) Driver	(3)
(7) Security Staff	(12)
(8) Cleaning Staff	(6)
<b>Total</b>	<b>(28)</b>



**Figure 8.9 Emergency Response Team**

Source: Khant Shwe Pyi Co., Ltd



***Budget***

The budget for the gas leakage control plan is within the operational cost of the Project.

**8.2.8. Environmental Management Training Program**

KSP has been provided the internal training for staffs to improve capacities building.

Training Provided to employees

1. Advance Safety Training
2. Emergency Response Training
3. Fire Fighting Training

In addition, KSP has provided internal staff with training instructed by not only local instructors but also international experts. KSP also provide foreign filed trips to improve knowledge capacity of the employee. In condition related with skill improvement, a separate agreement must be signed individually regarding attending overseas training.

**8.3. Corporate Social Responsibility-CSR**

KSP should set up fixed CSR fund for local community development. KSP Co., Ltd. agrees to contribute about 2% of net profit as CSR fund and they granted annual environmental conservation and monitoring costs will not take account of in this CSR fund.

It is important that CSR activities should be accomplished not only by financial assistance but also by technical assistance and manpower in some donations to retain good relation with local communities. Allocated percent of CSR fund is based on local community needs according to the public survey. Proposed allocated percent of CSR budget are as follow:

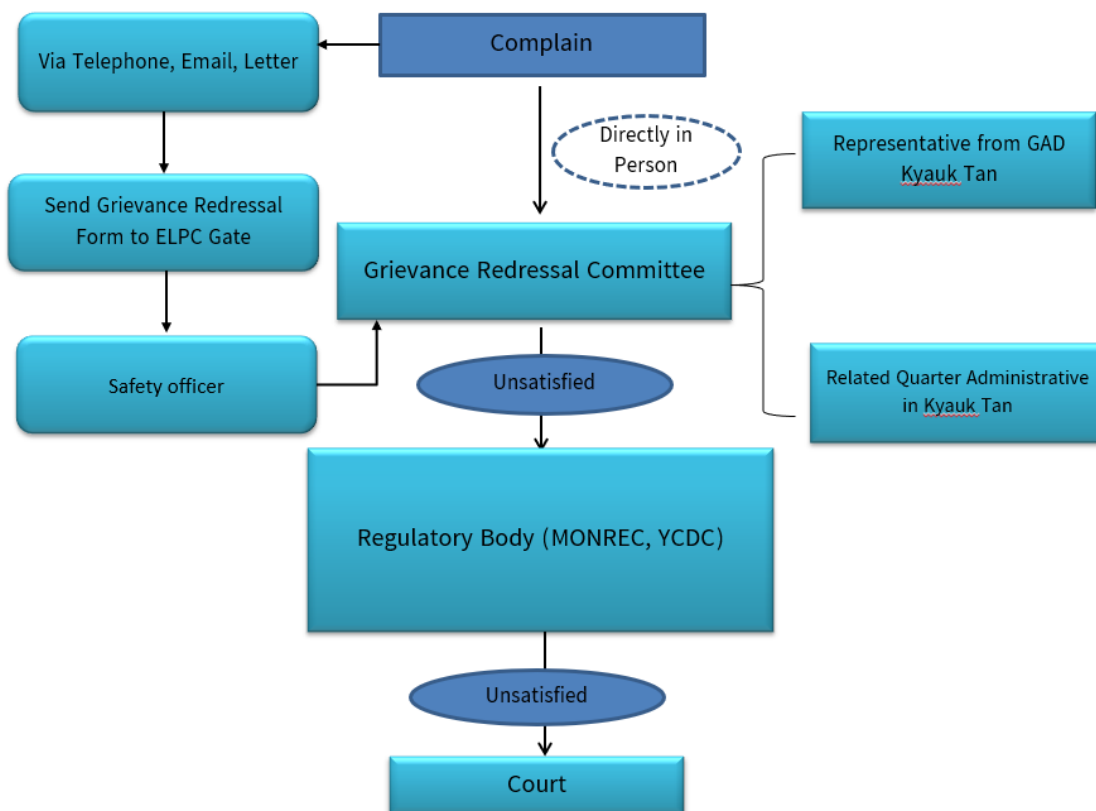
**Table 8.17 CSR program**

<b>No.</b>	<b>Activities</b>	<b>Organization</b>	<b>Frequenc y</b>	<b>Proposed allocatedpercent of CSR budget (%)</b>
1.	Donation for socio-economic development and environmental protection	Charity Organization and volunteer teams	Annually	0.5
2.	Donation to education	Schools located in adjacent four villages	Annually	0.5
3.	Donation to health care facilities	Local clinic located in adjacent four villages	Annually	0.5
4.	Donation to local area development activities and projects	Roads, bridge and access to water for adjacent four villages	Annually	0.5
Total				2%

### 8.4. Grievance Redress Mechanism

KSP company Ltd., had created a grievance redress mechanism so that stakeholders can raise questions or concerns with the proposed project and the concerns can be addressed in a prompt and respectful manner. Complaint/grievance will be received by a Public Relation Officer or similar person in charge. The grievance will be recorded and investigated and responded to in a timely manner. If the complainant don not accept the response, a review will be carried out to handle the grievance. Once resolved, the grievance will be closed out and recorded in the Grievance Register.

The Grievance Redress Mechanism (GRM) is a system to deal with any grievance or complain related to the Project comprehensively. A Grievance Redress Mechanism (GRM) will be established at project effectiveness as a part of M&E, Safeguard and Citizen Engagement mechanism. This will capture grievances made by the direct and indirect project beneficiaries as well as non-project beneficiaries who may be impacted by the project during implementation. KSP considers the GRM experiences and describes GRM at each project stage to initiate the Project to solve environmental and social related grievances during operation and closing phases. The following procedure is to reach out every complains by local people nearby project site.



**Figure 8.10 Procedure for GRM**

#### 1. Objective of the GRM

- To implement grievance management procedures that are easy to comprehend, culturally appropriate, and readily available and accessible to all stakeholders;

- To address grievances promptly and effectively, in a transparent manner resulting in the outcomes that are seen as fair, effective and lasting;
- To provide effective monitoring and reporting of grievances through a modern means of communication and information technology.

## 2. Application Stage

Operation and closing phases of the project

KSP Petrochemical company Ltd., commits to follow the grievance redress mechanism so that the concerns and worries of every stakeholder including local people living in the vicinity of the project can be heard and addressed well.

## 3. Executing Institute

Operational phase: KSP

Construction and closing phases: KSP and Contractor

## 4. Publicize the GRM to Stakeholders

All stakeholders will be informed about the availability of the GRM system so as to enable them to use the system whenever they need it. During community engagement processes, local stakeholders will be informed about the system including various means available to lodge grievance. Information about the GRM system, including contact details, will be distributed at Public Consultation Meetings through brochures/pamphlets in local languages to the extent possible, posted at project offices, the village tract and on village notice boards. The project will also make sure the availability of grievance forms as shown in below and pre-addressed envelopes available in factory offices. Phone numbers will be placed on project locations. The complaint can also be lodged through the KSP Petrochemical Company Ltd; follow by

Facebook Page -<https://www.facebook.com/KSPPetrochemicalMyanmar>

Email address < [info@elpcco.com](mailto:info@elpcco.com) >. and

Website address < <https://www.KSPpetrochemical.com.mm/> >.

Any stakeholder including customer, villagers, contractors, factory staff, authorities, and other involved parties may file a grievance if they consider that their right to information is interfered with; that inappropriate intervention by an outside party is found; that fraud or corruption has taken place; that the rights and entitlements granted in this EIA are violated; or that any of the project's principles and procedures have been violated.

## 5. Monitoring Plan

For monitoring process for nearby local community, the survey form is given for GRM is attached in Appendix 9.

## **9. PUBLIC CONSULTATION AND DISCLOSURE**

### **9.1. Methodology and Approach**

#### Overview

In order to acquire public opinion and to participate in the decision-making process for project design, development, and implementation of the proposed Project, Public consultation meeting (PCM) and public disclosure (PD) works were done firstly disclosing relevant project information in local community. It provides a platform for project-affected persons and different stakeholders to express their views on possible impacts of the proposed intervention on environmental and social parameters.

#### Objectives

The primary objective of the PCM and PD is to incorporate the opinion and suggestions of the public and all other stakeholders at the project planning stage to ensure wider acceptability of the project. The key objectives are as follows:

- To provide information on the economic, environmental, and social benefits as well as potential negative impacts from the Project;
- To ensure that the potential PAPs, stakeholders, and local communities are engaged in a meaningful dialogue and are well informed prior to the decision of the project proponent as to the nature and extent of social and environmental impacts attributable to the proposed project with respect to planning;
- To ensure that the concerns of, and issues raised by the PAPs, stakeholders, and local communities are incorporated and adequately addressed in the EIA study;
- To engage in a participative exercise with PAPs, stakeholders, and local communities and obtain expertise and local, traditional wisdom and knowledge from them in order to plan the mitigation measures; and
- To facilitate periodic opportunities to the principal stakeholders to offer their inputs on all key components of the Project.

#### **Stakeholder Engagement and Identification**

The process of identifying potentially affected stakeholders started with scoping which is conducted to identify relevant issues and select the townships and villages potentially impacted. The scoping exercise involved both desk-based and preliminary consultation with a number of stakeholders including government authorities. Stakeholder engagement is an ongoing process and as such new stakeholders may emerge as the project progresses. This will be captured and inform ongoing stakeholder engagement activity that will be undertaken for the project.

Stakeholder engagement was conducted across administrative levels, subject to permissions of responsible authorities.

The involvement of the following groups or organizations in the stakeholder engagement process will be considered to be particularly important:

- Relevant Government Departments at the National, Provincial and Local level;
- Directly affected communities in the project area;
- Representatives of the local industries;

- Environmental groups and Non-Governmental Organizations (NGO)s;
- Community Based Organizations;
- Academic/research Organizations;
- International donors/funders active in the project area;
- Local communities; and
- The media


The following communities, authorities and NGOs will be considered as key stakeholders who are directly or indirectly related to the proposed project according to the above consideration.

- Ministry of Natural Resources and Environmental Conservation (MONREC)
- Khat Shwe Pyi Co., Ltd.
- Yae Kyi Health Clinic
- Local People (around the proposed project area)
- Environmental Conservation Department (Dawei Township)
- Local Administrative Office (Dawei Township)
- Ethnic Rights Department (Dawei Township)
- Road Transport Administration Department (Dawei Township)
- Ministry of Transport and Communications
- Red Cross Society (Dawei District)
- Myanmar Federation of Chambers of Commerce and Industry (Dawei Region)
- Chambers of Commerce
- Fire Fighting Force
- Highways Department (Dawei District)
- Vehicle Supervision Committee
- Dawei City Development Committee
- Myanmar Police Force
- Local communities (Tha Byay Chaung, Pu lu Kone, Sin Seik Ward, Ein Shey Pyin Ward, Ka Nyone Ward, Maung Mei Shaung, Talaing Taung, Wae Kyun Ward, Talaing Htain, Kone Win Dae Ward, San Ne Ward)
- Local Bus gates owners (Len San Moe, Shwe Nagar, Shwe Wae Thu, Zwae Sett Zone, Khaing Khant Linn, Hein Wai, Shwe Pale Thi, Mandalar Min)
- Local Media, and NGOs and CBOs

## **9.2.Stakeholder Meeting**

The first time of stakeholder meeting was held on 5<sup>th</sup> May, 2023 with various relevant stakeholders at the City Hall of Dawei township. The consultation helped the project to gather information on potentially affected people, and on potential data gaps and how these can be closed out in the EIA report. Scoping consultation involved stakeholder meeting with a range of stakeholders in Dawei township including Township GADs, village administrators, and local communities and community representatives. The second time of public consultation meeting was held on 5<sup>th</sup> September, 2023. The meeting minutes and photos are provided in the following table.

**Table 9.1 RECORD OF STAKEHOLDER MEETINGS**

<b>E Guard Environmental Services Co., Ltd.</b>		
<b>Meeting Minutes</b>		
<b>Subject</b> – A briefing and gathering of public opinions regarding the environmental impact assessment (EIA) of Dawei bus terminal and commercial complex project at Plot No. (104), Tha Byay Chaung Village Tract, Dawei Township, Dawei District, Tanintharyi Region	<b>Date</b> - 05-09-2023 (Tuesday)	
<b>Place</b> – City Hall, Dawei Township, Dawei District, Tanintharyi Region	<b>Time</b> - 1:00 PM to 3:00 PM	
<b>Attendance lists of Public Consulting Meeting</b>		
Representative from Government Department	- 13 persons	
Private Sector	- 22 persons	
NGOs/INGOs	- 21 persons	
Local people	- 35 persons	
Total Attendees	- 91 persons	
Note Taker- Daw Yamone Tun (Project Assistant, E Guard Environmental Services Co., Ltd)		
Check by – Daw May Pwint Phoo (Associate Consultant, E Guard Environmental Services Co., Ltd)		

The public consultation of Environmental Impact Assessment for Dawei bus terminal and commercial complex project was held on 5<sup>th</sup> September, 2023 in the city hall, Dawei township, Tanintharyi region. Representatives of government departments, private sector, NGOs/INGOs, local people near project area and representatives of project proponent attended the event.

The Public Consultation Meeting was held as the following Agenda:

- 1) Opening Ceremony
- 2) Presenting the completion of project with video file
- 3) Opening Remarks by U Zaw Bo Khant (Chief, Khant Shwe Pyi Co., Ltd)
- 4) Opening speech by U Zaw Min Ohn (Director, Environmental Conservation Department, Tanintharyi Region)
- 5) Presentation of Project Summary addressed by U Aung Thu (Project Director, Khant Shwe Pyi Co., Ltd)
- 6) Presentation of Environmental Impact Assessment Plan for the project by U Soe Min (Director of E Guard Environmental Services)

- 7) Explanation of the bus gate sales by U Min Thein (General Manager, Khant Shwe Pyi Co., Ltd)
- 8) Questions, Recommendations and Suggestions by Attendees
- 9) Closing Ceremony

**1. Opening Ceremony**

**2. Presenting the completion of project with video file**

**3. Opening Remarks by U Zaw Bo Khant (Chief, Khant Shwe Pyi Co., Ltd)**

- First of all, he said opening remarks and thank you for attending this public consultation meeting.

**4. Opening Speech by U Zaw Min Ohn (Director, Environmental Conservation Department, Tanintharyi Region)**

- He said opening speech and this was second meeting for Dawei bus terminal project. Moreover, he explained the purpose and reason of holding public consultation meeting. He thanked to third party to assess environmental impacts on time. He encouraged to local people to ask questions and give suggestion to project proponent.

**5. Presentation of Project Summary addressed by U Aung Thu (Project Director, Khant Shwe Pyi Co., Ltd)**

- He explained the completion of project, project information, the construction of building, roads, and drainage system, and electrical system, water supply system, fire hydrant system, and CSR plan of the project.

**6. Presentation of Environmental Impact Assessment Plan for the project by U Soe Min (Director of E Guard Environmental Services)**

- He explained the necessary of environmental impact assessment plan, the objective of public consultation meeting, related rules and regulations to be followed, the facts that are observed in environmental impact assessment, current conditions of project site, the results of environmental quality that are measured in dry season, social survey results, environmental and social impacts that will caused by project, mitigation measures, the objectives of monitoring plans, and grievance redress mechanism for local people near project area and staffs.

**7. Explanation of the bus gate sales by U Min Thein (General Manager, Khant Shwe Pyi Co., Ltd)**

- He explained the current conditions of bus gate sales and discount for customers.



**Table 9.2 Questions, Recommendation and Suggestion by Attendees**

No.	Questioner	Subject of Inquiry/ Suggestion	Respondent	Answers and Explanation
1.	U Zaw Min Ohn Director, Environmental Conservation Department	He suggested that project proponents should consider for disabled people and elders in the public toilet system. Therefore, hafts are placed and entrances for wheelchairs are prepared in public toilets. Moreover, he also suggested that wastewater drainage system should be prepared systematically. Dumpsters should be designed according to the wastes that are disposed. Ambulance should have in hospital for emergency cases. The project information should be uploaded in Khant Shwe Pyi website or announced in ward administration because it is one of the procedures of EIA.	U Aung Thu Project Director, Khant Shwe Pyi Co., Ltd	He replied that he will follow the suggestions.
2.	U Kyaw Kyaw Oo Chairman, Red Cross Society (Dawei District)	He discussed whether isolated places are created for taxi gates or not because taxi drivers annoy travelers when the express cars arrive at the terminal. He also inquired about how to manage taxis.	U Zaw Bo Khant Chief, Khant Shwe Pyi Co., Ltd	He replied that SOP for the whole terminal will be prepared. There will be parking for motorcycles and taxis. The roads are wide so it will be convenient for express cars and taxis.
3.	U Kyi Shein Secretary, Dawei Township	He inquired if the city bypass road would be ready when the bus terminal opens. At that time, express buses pass through the city or city bypass road.	U Hla Myo Aung Assistant Director, Department of Highway	He replied that the city bypass road will be finished in 2026.

No.	Questioner	Subject of Inquiry/ Suggestion	Respondent	Answers and Explanation
4.	U Aung Naing Staff Officer, Road Transport Administration Department	He said that the livelihood, economic, and transportation of the Dawei township will be convenient due to the implementation of the project. Regulatory body should be in the project area so that taxi drivers and travelers' issues will be solved. Is there any workshop for dirty buses and defective machines to reduce environmental pollution? He would like to suggest that a place that is a little far away from the bus terminal will be prepared for a workshop. Platforms will be designed as accessible for all people. He also suggested that suggestion boxes should be placed in the project site to address minor problems. If CCTV, surveillance systems, and media systems are prepared, it will be more convenient. As last, he suggested that road signs should be placed in the terminal area by cooperating with the Road Transport Administration Department and their department will help to project proponent.	U Zaw Bo Khant Chief, Khant Shwe Pyi Co., Ltd	He replied that thanks for the suggestion because he forgot to prepare platforms that are accessible for all people. Therefore, slopes are prepared for platforms. Road signs will be designed and placed in the dry season. At that time, he will contact the road transport administration department.
5.	U Soe Tint Shwe Sin Sattkyar Bus Gate	He said that travelers go to the bus gate and people who pick up travelers also go to the bus gate because it is a habit of Myanmar.	U Zaw Bo Khant Chief, Khant Shwe Pyi Co., Ltd	He replied that the bus terminal is designed as a dual system because people are waiting for the bus at the bus gate and employers who work at the bus gate also

No.	Questioner	Subject of Inquiry/ Suggestion	Respondent	Answers and Explanation
		He inquired about other parking places for extra buses.		stay at the bus gate in our country. However, there is enough space for bus parking.
6.	U Thein Zaw Oo Assistant Director, Fire Services Department, Dawei District	He inquired whether the firefighting system would be ready for emergency cases without waiting for the fire services department or not. Is there enough fire hydrants and fire hoses for the whole area?	U Min Thein General Manager, Khanth Shwe Pyi Co., Ltd	He replied that the firefighting system in the project site is always ready and fire hydrants and fire hoses are enough for the whole area. Moreover, fire hoses will be used when the fire services department arrives.

## 5. Closing Ceremony



**Attendance Registration**



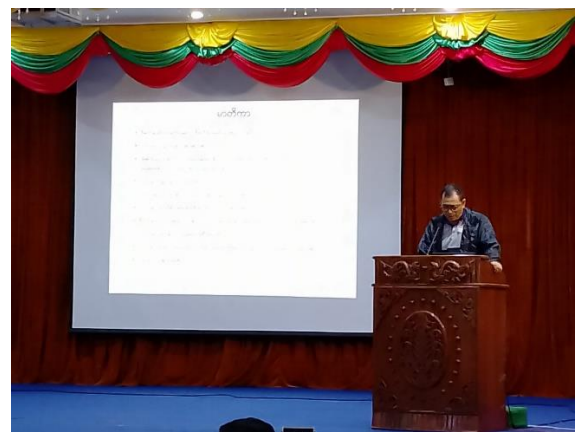
**Opening Remarks by U Zaw Bo Khant  
(Chief, Khant Shwe Pyi Co.,Ltd)**



**Opening Remarks by U Zaw Min Ohn  
(Director, Environmental Conservation  
Department)**



**Presentation of Project Summary by U  
Aung Thu (Project Director, Khant Shwe  
Pyi Co., Ltd)**



**Presentation of Environmental Impact  
Assessment (EIA) for the project by  
U Soe Min (Director of E Guard  
Environmental Services Co., Ltd)**



**Suggestion given by U Zaw Min Ohn  
(Director, Environmental Conservation  
Department)**



**Second Question raised by  
U Kyaw Kyaw Oo (Chairman, Red Cross  
Society (Dawei District))**



**Responded by U Zaw Bo Khant (Chief,  
Khant Shwe Pyi Co.,Ltd)**



**Third Question raised by U Kyi Shein  
(Secretary, Dawei Township)**



**Responded by U Hla Myo Aung  
(Assistant Director, Department of  
Highway)**



**Fourth Question raised by U Aung Naing  
(Staff Officer, Road Transport  
Administration Department)**



**Responded by U Zaw Bo Khant (Chief,  
Khant Shwe Pyi Co.,Ltd)**



**Fifth Question raised by U Soe Tint  
(Shwe Sin Sattkyar Bus Gate)**



**Responded by U Zaw Bo Khant (Chief,  
Khant Shwe Pyi Co.,Ltd)**



**Sixth Question raised by  
U Thein Zaw Oo  
(Assistant Director, Fire Services  
Department, Dawei District)**

**Figure 9.1 Photos Record from Public Consultation Meeting**

**9.3.Disclosure**

As per the requirements of Article 50 of the EIA Procedure, Khant Shwe Pyi Co., Ltd will disclose information on the project on hard copy handout and signboards will be posted at the site office and website page of <http://www.eguardservices.com/node/401>.

In compliance with potential lenders requirements to undertake meaningful consultations, information on the findings of the EIA, mitigation and beneficial measures in the EMP will be disclosed to the public and project affected people. Community meetings will be held in directly affected wards and villages to explain how the impacts and risks will be managed by the project.

## 10. CONCLUSIONS AND RECOMMENDATIONS

This Environmental Impact Assessment (EIA) has been prepared for the bus terminal and commercial complex from Khant Shwe Pyi Co., Ltd at field number (104) village tract, Dawei City, Dawei District, Tanintharyi Region, Myanmar. The main objective of this study is to identify the major environmental impacts due to the implementation of the project activities in all three phases (construction phase, operation phase, and decommissioning phase). The EIA report has been prepared for the proposed project under the Environmental Conservation Law and procedures under the Environmental Conservation Department (ECD). The project proponent has to implement the proposed project in compliance with National Laws and Regulations for environmental protection.

Baseline environmental data collection and site visit activities were conducted on 4<sup>th</sup> to 7<sup>th</sup> September, 2023. According to data interpretation from the survey results of analyzed parameters for environmental conditions, air quality, noise and vibration, water quality of the proposed project are within the acceptable and allowable standard limits of the guideline values (WHO guidelines and NEQG emission standard).

As the proposed project area is the agricultural land and vacant areas, there has no soil contamination. However, although solid waste from the operation phase can affect on soil pollution, that solid wastes are disposed systematically according to environmental management plan. Therefore, soil contamination is not reached to the alarming point. There is no reason to damage existing ecology that is harmonious with ecosystem, animals and plants of this project area because the proposed project area has no important species.

During the construction and operation phase, water usage would not affect to the surface water quality, and the proposed project will be monitoring surrounding water before and after project implementation. At the time of survey period eventhough locations for surface water sample points were determined, water samples were not collected in the dry season due to these locations were dried up during the site visit. According to the comparison of tested Ground Water from proposed project and Ground Water Quality Standard in Thailand, mercury content is high in ground water. This is because mercury is naturally occurring chemical element found in rock in the earth's crust and local mineral deposits may produce higher levels in groundwater. In the wet season, some locations of water sample points were changed due to the layout plan is changed by the project proponent. According to the WHO Water Quality Standards (2018) and National Environmental Quality (Emission) Guideline, iron content is high in surface water and ground water because the surrounding land may be iron-bearing soil and rock. Therefore, although water is used for construction, it should not be used as drinking water. Soil sample was collected near the boundary of phase I project site in the dry season. In the wet season, soil sample could not be collected due to the location of the project site is filled with water. From the traffic result, we can see that there are a lot motorcycles and tricycle(tuk-tuk) as now there is not city bus system fully run in and out of Dawei City. Currently, the numbers of highway are low, but from the calculation highway bus numbers can be risen due to bus terminal.

Regarding health and safety impacts, there are a number of risks such as vehicle accidents, fire, accidents, occupational health and electrical hazards during the construction, operation, and



decommissioning phase. There are a number of actions to be done to mitigate risks such as providing safety awareness training, first aid, free medicine, and personal protective equipment. On the other hand, employment opportunities are occurred for local people in the near residential areas and stimulate economic growth of local area.

In conclusion, the effective implementation of the proposed mitigation measures will ensure towards good environmental management within the proposed project area. Furthermore, the environmental monitoring plan also prepared to provide adequate opportunities to address any residual impacts during the operation phase.

### 11. APPENDIXES

#### Appendix 1: Certificates of Khant Shwe Pyi Company Ltd.



ကုမ္ပဏီမှတ်ပုံတင်လက်မှတ်  
Certificate of Incorporation

ခန့်ရွှေပြည် ကုမ္ပဏီလီမိတက်  
KHANT SHWE PYI COMPANY LIMITED  
Company Registration No. 102548493

မြန်မာနိုင်ငံကုမ္ပဏီများအက်ဥပဒေ ၁၉၁၄ ခုနှစ် အရ

ခန့်ရွှေပြည် ကုမ္ပဏီလီမိတက်

အား ၂၀၁၆ ခုနှစ် ဧပြီလ ၂၇ ရက်နေ့တွင်

အစုရှယ်ယာအားဖြင့် တာဝန်ကန့်သတ်ထား သည့် အများနှင့်မသက်ဆိုင်သောကုမ္ပဏီ  
အဖြစ် ဖွဲ့စည်းမှတ်ပုံတင်ခွင့် ပြုလိုက်သည်။

This is to certify that  
KHANT SHWE PYI COMPANY LIMITED  
was incorporated under the Myanmar Companies Act 1914 on 27 April  
2016 as a Private Company Limited by Shares.

ကုမ္ပဏီမှတ်ပုံတင်အရာရှိ  
Registrar of Companies

ရင်းနှီးမြုပ်နှံမှုနှင့်ကုမ္ပဏီများညွှန်ကြားမှုဦးစီးဌာန  
Directorate of Investment and Company Administration



Former Registration No. 210/2016-2017(YGN)



**Myanmar Companies Online Registry - Company Extract**

**Company Name (English)**  
KHANT SHWE PYI COMPANY LIMITED

**Company Name (Myanmar)**  
ခန့်ရွှေပြည် ကုမ္ပဏီလီမိတက်

**Company Information**

<b>Registration Number</b> 102548493	<b>Registration Date</b> 27/04/2016	<b>Status</b> Registered
<b>Company Type</b> Private Company Limited by Shares	<b>Foreign Company</b> No	<b>Small Company</b> No
<b>Principal Activity</b> 46 - Wholesale trade, except of motor vehicles and motorcycles 47 - Retail trade, except of motor vehicles and motorcycles	<b>Date of Last Annual Return</b> 18/05/2021	<b>Previous Registration Number</b> 210/2016-2017(YGN)

**Addresses**

<b>Registered Office In Union</b>	MA KYEE KYEE STREET, NO.5 SANCHAUNG TSP, YANGON REGION, MYANMAR Email Address: ksp001.gems@gmail.com Telephone Number: 01-525636
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**Officers**

<b>Name:</b> Date of Appointment: Nationality: Gender:	MOE PWINT PHYU AUNG N/A MYANMAR FEMALE	<b>Type:</b> Date of Birth: N.R.C./Passport: Business Occupation:	DIRECTOR 23/08/1987 10/MALAMA(N)208442 -
<b>Name:</b> Date of Appointment: Nationality: Gender:	POE EI KYAWE N/A MYANMAR FEMALE	<b>Type:</b> Date of Birth: N.R.C./Passport: Business Occupation:	DIRECTOR 18/04/1985 10/MALAMA(N)176212 -
<b>Name:</b> Date of Appointment: Nationality: Gender:	ZAR NI KYAW 14/12/2021 MYANMAR MALE	<b>Type:</b> Date of Birth: N.R.C./Passport: Business Occupation:	DIRECTOR 13/12/1988 8/KHAMANA(N)134769 -
<b>Name:</b> Date of Appointment: Nationality: Gender:	ZAW BO KHANT N/A MYANMAR MALE	<b>Type:</b> Date of Birth: N.R.C./Passport: Business Occupation:	DIRECTOR 21/02/1972 10/MALAMA(N)059474 -



**Myanmar Companies Online Registry - Company Extract**

**Company Name (English)**  
KHANT SHWE PYI COMPANY LIMITED

**Company Name (Myanmar)**  
ခန့်ရွှေပြည် ကုမ္ပဏီလီမိတက်

**Ultimate Holding Company**

Name of Ultimate Holding Company	Jurisdiction of Incorporation	Registration Number
-	-	-

**Share Capital Structure**

**Total Shares Issued by Company**  
10,000

**Currency of Share Capital**  
MMK

Class	Description	Total Number	Total Amount Paid	Total Amount Unpaid
ORD	Ordinary	10,000	1,000,000,000.00	0.00

**Members**

**Name:** MOE PWINT PHYU AUNG  
**Gender:** Female **Date of Birth:** 23/08/1987  
**Nationality:** Myanmar **N.R.C./Passport:** 10/MALAMA(N)208442

Class	Description	Total Number	Total Amount Paid	Total Amount Unpaid
.ORD	Ordinary	500	50,000,000.00	0.00

**Name:** ZAW BO KHANT  
**Gender:** Male **Date of Birth:** 21/02/1972  
**Nationality:** Myanmar **N.R.C./Passport:** 10/MALAMA(N)059474

Class	Description	Total Number	Total Amount Paid	Total Amount Unpaid
ORD	Ordinary	9,500	950,000,000.00	0.00

**Mortgages and Charges**

**Form / Filing Type** **Effective Date**  
 No records available

*Details about all mortgages and charges can be accessed from the Company Profile Filing History at no charge.*

**Filing History**

Form / Filing Type	Effective Date
D-1   Particulars of directors and secretary	14/12/2021
AR   Annual Return	18/05/2021
C-3   Change to share capital or register of members	02/02/2021
D-1   Particulars of directors and secretary	05/11/2020



**Myanmar Companies Online Registry - Company Extract**

**Company Name (English)**

KHANT SHWE PYI COMPANY LIMITED

**Company Name (Myanmar)**

ခန့်ရွှေပြည် ကုမ္ပဏီလီမိတက်

C-3   Change to share capital or register of members	02/11/2020
AR   Annual Return	14/05/2020
AR   Annual Return	30/04/2019
C-3   Change to share capital or register of members	28/02/2019
B-1   Application for re-registration of a private company limited by shares	31/08/2018

Appendix 2 ECD's Official Letter for EIA Report Preparation



ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန  
ညွှန်ကြားရေးမှူးရုံး  
တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်မြို့  
စာအမှတ်၊ ၂/ ၈ / ၇ (၀၁-၀၃) ( ၈၉၃ / ၂၀၂၂ )  
ရက်စွဲ ၊ ၂၀၂၂ ခုနှစ် ၊ ဇွန်လ ၉ ရက်

သို့

ဦးဇော်ဘိုခန့်

ဥက္ကဋ္ဌ

ခန့်ရွှေပြည်ကုမ္ပဏီလီမိတက်

အကြောင်းအရာ။ စီမံကိန်းအဆိုပြုလွှာတင်ပြလာခြင်းအပေါ် သဘောထားမှတ်ချက်ပြန်ကြားခြင်း  
ရည်ညွှန်းချက် ။ (၁) Khant Shwe Pyi Company Limited ၏ ၂၉-၃-၂၀၂၂ ရက်စွဲပါ တင်ပြစာ  
(၂) တနင်္သာရီတိုင်းဒေသကြီး၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၏  
(၁-၄-၂၀၂၂)ရက်စွဲပါ စာအမှတ်၊ ၂/ ၈ / ၇ (၀၁-၀၃) (၄၇၉/၂၀၂၂)  
(၃) ညွှန်ကြားရေးမှူးချုပ်ရုံး၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၏  
(၃၀-၅-၂၀၂၂)ရက်စွဲပါ စာအမှတ်၊ EIA-၁/ ၂/ အတည်ပြု(PP-N) (၈၇၈/  
၂၀၂၂)

၁။ အထက်အကြောင်းအရာပါကိစ္စနှင့်ပတ်သက်၍ Khant Shwe Pyi Company Limited မှ  
တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်ခရိုင်၊ ထားဝယ်မြို့နယ်၊ သပြေချောင်းကျေးရွာအုပ်စု၊  
ကွင်းအမှတ်(၁၀၄)၊ မြေဧရိယာ(၂၀.၁၅)ဧကပေါ်တွင် ထားဝယ်မြို့အဝေးပြေးယာဉ်ရပ်နားစခန်းနှင့်  
ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်းများ ဆောင်ရွက်ရန်အတွက် ရည်ညွှန်း(၁)ပါစာဖြင့် တင်ပြလာသော  
စီမံကိန်းအဆိုပြုလွှာ(Project Proposal)အား တနင်္သာရီတိုင်းဒေသကြီး၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး  
ဦးစီးဌာနမှ ရည်ညွှန်း(၂)ပါစာဖြင့် ဦးစီးရုံးချုပ်သို့ ဆက်လက်တင်ပြခဲ့ရာ စီမံကိန်းအဆိုပြုလွှာအရ  
ဆောင်ရွက်မည့် စီမံကိန်းလုပ်ငန်းသည် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံး  
လုပ်နည်း၊ နောက်ဆက်တွဲ(က)၊ အမှတ်စဉ်(၁၄၉)အရ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း(EIA)  
အစီရင်ခံစာ ရေးဆွဲတင်ပြရန်လိုအပ်ပါသဖြင့် အောက်ပါအတိုင်း ဆောင်ရွက်ရန် လိုအပ်ကြောင်း  
ရည်ညွှန်း(၃)ပါစာဖြင့် ပြန်လည်အကြောင်းကြားလာပါသည် -

(က) ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းကို ဆောင်ရွက်မည့် တတိယပုဂ္ဂိုလ် (သို့မဟုတ်)  
အဖွဲ့အစည်းကို ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း အပိုဒ်  
၄၅ နှင့်အညီ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနသို့ တင်ပြ၍ အတည်ပြုချက်ရယူရန်၊

၂

- (ခ) ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း အပိုဒ် ၄၈၊ ၄၉၊ ၅၀၊ ၅၁၊ ၅၂၊ ၅၃ တို့နှင့်အညီ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်းအစီရင်ခံစာ(Scoping Report)နှင့် ဆောင်ရွက်ရမည့် လုပ်ငန်းတာဝန်များ(TOR)ကို အတည်ပြုထားသည့် တတိယပုဂ္ဂိုလ် (သို့မဟုတ်) အဖွဲ့အစည်း ဖြင့် ရေးဆွဲ၍ တင်ပြအတည်ပြုချက်ရယူရန်၊
- (ဂ) အတည်ပြုထားသည့် နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်း အစီရင်ခံစာအပေါ် အခြေခံ၍ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်းပါ အပိုဒ် ၅၆၊ ၅၇၊ ၅၈၊ ၅၉၊ ၆၀၊ ၆၁၊ ၆၂၊ ၆၃၊ ၆၄၊ ၆၅ တို့နှင့်အညီ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း(EIA)အစီရင်ခံစာကို ပြုစုတင်ပြရန်။

၂။ သို့ဖြစ်ပါ၍ Khant Shwe Pyi Company Limited အနေဖြင့် အထက်အပိုဒ်- ၁(က)မှ (ဂ)ပါ အချက်များအတိုင်း လိုက်နာဆောင်ရွက်သွားရန်နှင့် လုပ်ငန်းများဆောင်ရွက်ရာတွင် တိုင်းဒေသကြီးရုံးသို့ မိတ္တူပေးပို့ရန် ဆက်လက်အကြောင်းကြားအပ်ပါသည်။

*Ohn*  
 9.6.2022  
 (ဇော်မင်းအုန်း)

ညွှန်ကြားရေးမှူး  
 ၈ ၇

မိတ္တူကို

ခရိုင်ဦးစီးမှူး၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၊ ထားဝယ်ခရိုင်  
 ရုံးလက်ခံ  
 မျှောစာတွဲ

Appendix 3 Approval Letter for Third Party Consultant Selection for Report Preparation



စာအမှတ်။ ။ ၂၀၂၃ ခုနှစ်၊ ဩဂုတ်လ ( ၈ ) ရက်  
 ရက်စွဲ။ ။ ၈/၂၀၂၃ အစရ/ KSP - D042

သို့


ညွှန်ကြားရေးမှူးချုပ်  
 ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန  
 သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန

အကြောင်းအရာ။ ။ Khant Shwe Pyi Co., Ltd မှ တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်ခရိုင်၊ ထားဝယ်မြို့နယ်၊ သပြေချောင်းကျေးရွာအုပ်စု၊ ကွင်းအမှတ် (၁၀၄)၊ မြေဧရိယာ (၂၀.၁၅) ဧကပေါ်တွင် အကောင်အထည်ဖော်ဆောင်ရွက်မည့် ထားဝယ်မြို့ အဝေးပြေယာဉ်ရပ်နားစခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်း စီမံကိန်းအတွက် ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်း (Environmental Impact Assessment - EIA) အစီရင်ခံစာကို ရေးဆွဲဆောင်ရွက်မည့် တတိယအဖွဲ့အစည်းတွင် Noise and Vibration, Socio-economy, Occupational/Community Health and Safety နှင့် Traffic Management တို့အတွက် ကြားကာလအကြံပေးလုပ်ကိုင်သူ မှတ်ပုံတင် ရရှိပြီးဖြစ်သည့် ကျွမ်းကျင်ပညာရှင်များအား ပြန်လည် ဖြည့်စွက်တင်ပြခြင်း ကိစ္စ။

- ရည်ညွှန်းချက်။ (၁) သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဝန်ကြီးဌာန၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာန၊ ညွှန်ကြားရေးမှူးချုပ်ရုံး၏ ၂၉-၅-၂၀၂၃ ရက်စွဲပါ စာအမှတ်၊ EIA-၁/၄/ သဘောထား (TP-N) (၂၀၄၀/၂၀၂၃)
- (၂) Khant Shwe Pyi Co.,Ltd ၏ ၁၅-၅-၂၀၂၃ ရက်စွဲပါ စာအမှတ်၊ ၅/၂၀၂၃ အစရ/KSP-D034

၁။ အထက်အကြောင်းအရာပါကိစ္စနှင့်ပတ်သက်၍ Khant Shwe Pyi Co., Ltd မှ တနင်္သာရီ တိုင်းဒေသကြီး၊ ထားဝယ်ခရိုင်၊ ထားဝယ်မြို့နယ်၊ သပြေချောင်းကျေးရွာအုပ်စု၊ ကွင်းအမှတ် (၁၀၄)၊ မြေဧရိယာ(၂၀.၁၅)ဧကပေါ်တွင် အကောင်အထည်ဖော်ဆောင်ရွက်မည့် ထားဝယ်မြို့ အဝေးပြေယာဉ်ရပ်နားစခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်း စီမံကိန်းအတွက် ပတ်ဝန်းကျင်





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 Tel : +95-1- 538089, 525636, Fax : +95-1- 539857  
 Postal Code : 11111, E-mail : khantshwepyi@gmail.com

ထိခိုက်မှုဆန်းစစ်ခြင်း (Environmental Impact Assessment - EIA) အစီရင်ခံစာ ရေးသား ပြုစုရန် E Guard Environmental Services Co., Ltd အား တတိယအဖွဲ့အစည်းအဖြစ် ငှားရမ်းအပ်နှံဆောင်ရွက်မည်ဖြစ်ကြောင်း ရည်ညွှန်း(၂)ပါစာဖြင့် ပေးပို့တင်ပြခဲ့ပါသည်။

၂။ အဆိုပါ ပေးပို့တင်ပြခဲ့မှုအပေါ် သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန၊ သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၊ ညွှန်ကြားရေးမှူးချုပ်ရုံးမှ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း ဆောင်ရွက်မည့်အဖွဲ့တွင် Noise and Vibration, Socio-economy, Occupational/ Community Health and Safety နှင့် Traffic Management တို့အတွက် ကြားကာလအကြံပေးလုပ်ကိုင်သူ မှတ်ပုံတင်အထောက်အထားလက်မှတ်များ ရရှိ (သက်တမ်းတိုး)ထားသည့် ကျွမ်းကျင်ပညာရှင်များဖြည့်စွက်၍ ဆောင်ရွက်ရန် လိုအပ်ကြောင်း ရည်ညွှန်း(၁)ပါစာဖြင့် အကြောင်းပြန်ကြားခဲ့ပါသည်။

၃။ သို့ဖြစ်ပါ၍ E Guard Environmental Services Co.,Ltd မှ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း အစီရင်ခံစာကို ရေးသားပြုစုနိုင်ရန်အတွက် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း ဆောင်ရွက်မည့်အဖွဲ့တွင် လိုအပ်သည့် ကျွမ်းကျင်ပညာရှင်များ ထပ်မံဖြည့်စွက်ရွေးချယ်တင်ပြပြီး စိစစ်ခွင့်ပြုပေးနိုင်ပါရန် လိုအပ်သော စာရွက်စာတမ်း အထောက်အထားများအား ပူးတွဲပေးပို့တင်ပြအပ်ပါသည်။

မှတ်ချက်-ထပ်မံဖြည့်စွက် ရွေးချယ်ထားသော ကျွမ်းကျင်ပညာရှင်များအနက် တချို့မှာ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း ဆောင်ရွက်သည့် တတိယပုဂ္ဂိုလ်/ အဖွဲ့အစည်းများ လုပ်ငန်းလိုင်စင်လျှောက်ထားဆဲဖြစ်ပါသည်။

ပူးတွဲပါ -

၁။ Submission Form of Selected Consultants for Environmental Impact Assessment

၂။ တတိယအဖွဲ့အစည်းနှင့် သက်ဆိုင်သော စာရွက်စာတမ်းအထောက်အထားများ (၁) စုံ

လေးစားစွာဖြင့်

မိတ္တူကို

- E Guard Environmental Services Co., Ltd။
- ရုံးလက်ခံ။

  
**ဇော်သိန်း**  
 ဥက္ကဋ္ဌ  
 ခန့်ရွှေပြည်ကုမ္ပဏီလီမိတက်



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ  
သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန  
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန  
ညွှန်ကြားရေးမှူးချုပ်ရုံး

စာအမှတ်၊ EIA- ၁/၄/သဘောထား (TP-N)(၂၀၄၀/၂၀၂၃)  
ရက်စွဲ ၊ ၂၀၂၃ ခုနှစ်၊ မေလ ၂၉ ရက်

ဥက္ကဋ္ဌ  
ခန့်ရွှေပြည်ကုမ္ပဏီလီမိတက်  
No.5, Ma Kye Kye St., Sanchaung Tsp.,Yangon  
Ph: +95-1-538089, 525636, Email: khantshwepyi@gmail.com

အကြောင်းအရာ။ Khant Shwe Pyi Co.,Ltd မှ အကောင်အထည်ဖော်ဆောင်ရွက်မည့် ထားဝယ်မြို့  
အဝေးပြေးယာဉ်ရပ်နားစခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်း စီမံကိန်းအတွက်  
ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (Environmental Impact Assessment-EIA)  
အစီရင်ခံစာရေးဆွဲမည့် တတိယအဖွဲ့အစည်းရွေးချယ်ခြင်းနှင့်ပတ်သက်၍ စိစစ်  
တင်ပြခြင်း

- ရည်ညွှန်းချက်။ (၁) Khant Shwe Pyi Co.,Ltd ၏ ၁၅-၅-၂၀၂၃ ရက်စွဲပါ စာအမှတ်၊ ၅/၂၀၂၃  
အစရ/ KSP-D034  
(၂) သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန၊ ပြည်ထောင်စု  
ဝန်ကြီးရုံး၏ ၂၂-၄-၂၀၂၁ ရက်စွဲပါစာအမှတ်၊ (သစ်တော) ၃(၂)/၀၃(EC)/  
(၁၀၉၄/၂၀၂၁)

၁။ အကြောင်းအရာပါကိစ္စနှင့်ပတ်သက်၍ Khant Shwe Pyi Co.,Ltd မှ တနင်္သာရီတိုင်းဒေသကြီး၊  
ထားဝယ်ခရိုင်၊ ထားဝယ်မြို့နယ်၊ သပြေချောင်းကျေးရွာအုပ်စု၊ ကွင်းအမှတ်(၁၀၄)၊ မြေဧရိယာ(၂၀.၁၅)  
ဧကပေါ်တွင် အကောင်အထည်ဖော်ဆောင်ရွက်မည့် ထားဝယ်မြို့ အဝေးပြေးယာဉ်ရပ်နားစခန်းနှင့်  
ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်း စီမံကိန်းအတွက် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (Environmental  
Impact Assessment-EIA) အစီရင်ခံစာ ရေးသားပြုစုရန် E Guard Environmental Services  
Company Limited အား တတိယအဖွဲ့အစည်းအဖြစ် ငှားရမ်းအပ်နှံဆောင်ရွက်ခြင်းနှင့်စပ်လျဉ်း၍  
သဘောထားပြန်ကြားပေးနိုင်ပါရန် ရည်ညွှန်း (၁)ပါစာဖြင့် ပေးပို့တင်ပြလာပါသည်။

၂။ Khant Shwe Pyi Co.,Ltd မှ အကောင်အထည်ဖော် ဆောင်ရွက်မည့် ထားဝယ်မြို့  
အဝေးပြေးယာဉ်ရပ်နားစခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်းစီမံကိန်း၏ ပတ်ဝန်းကျင်ထိခိုက်မှု  
ဆန်းစစ်ခြင်းကို တတိယအဖွဲ့အစည်းအဖြစ် ဆောင်ရွက်မည့် E Guard Environmental Services

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Company Limited သည် ကြားကာလအကြံပေးလုပ်ကိုင်သူ မှတ်ပုံတင်ခြင်း အထောက်အထား လက်မှတ်အမှတ် (၀၀၂၈) ရရှိထားပြီး သက်တမ်းတိုးဆောင်ရွက်ပြီးဖြစ်ကြောင်း၊ စီမံကိန်းအတွက် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆောင်ရွက်မည့်အဖွဲ့တွင် အဖွဲ့ဝင် (၁၄) ဦး ပါဝင်ပြီး ယင်းအဖွဲ့ဝင် (၁၄) ဦး အနက် အဖွဲ့ဝင်(၁၃)ဦးသည် တစ်ဦးချင်းသီးသန့် ကြားကာလအကြံပေးလုပ်ကိုင်သူ မှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ် (လူပုဂ္ဂိုလ်) ရရှိထားကြောင်း၊ EIA အစီရင်ခံစာရေးသား ပြုစုမည့် အဆိုပြုတတိယအဖွဲ့အစည်း၏ ကျွမ်းကျင်မှုနယ်ပယ်များမှာ Air pollution control Modeling for Water Quality၊ Water Pollution Control၊ Water Resources Engineering၊ Land Use Forestry၊ Infrastructure၊ Waste Management၊ Natural Resources management၊ Ecology and Biodiversity၊ Water Pollution Control၊ Facilitation of meeting Water Pollution Control၊ Environmental Management၊ Waste Management၊ Polymer Science/Chemistry၊ Geology and Soil၊ Legal Analysis နှင့် Risk Assessment and Hazard Management တို့ ဖြစ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။

၃။ သို့ရာတွင် Khant Shwe Pyi Co.,Ltd မှ အကောင်အထည်ဖော် ဆောင်ရွက်မည့် ထားဝယ်မြို့ အဝေးပြေးယာဉ်ရပ်နားစခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်းစီမံကိန်းတွင် အဝေးပြေးယာဉ်ရပ်နား စခန်း(၇.၈၈ ဧက)၊ ကုန်တင်ယာဉ်ရပ်နားကွင်း(၂.၂၅ ဧက)၊ စက်သုံးဆီအရောင်းဆိုင်နှင့် အများပြည်သူ အပန်းဖြေရန်နေရာ (၄.၅၈ ဧက)၊ ဒေသထွက်သစ်သီးဝလံများရောင်းချရန်နေရာ (၃.၁၆ ဧက) များ ပါဝင်ခြင်းကြောင့် Noise and Vibration, Socio-economy, Occupational / Community Health and Safety နှင့် Traffic Management တို့အတွက် ကြားကာလအကြံပေးလုပ်ကိုင်သူ မှတ်ပုံတင် အထောက်အထားလက်မှတ်များရရှိ (သက်တမ်းတိုး) ထားသည့် ကျွမ်းကျင်ပညာရှင်များဖြည့်စွက်၍ ဆောင်ရွက်ရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။

၄။ သို့ဖြစ်ပါ၍ Khant Shwe Pyi Co.,Ltd မှ အကောင်အထည်ဖော် ဆောင်ရွက်မည့် ထားဝယ်မြို့ အဝေးပြေးယာဉ်ရပ်နားစခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်းစီမံကိန်းအတွက် ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း (Environmental Impact Assessment-EIA) အစီရင်ခံစာကို ရေးဆွဲဆောင်ရွက်မည့် တတိယအဖွဲ့အစည်းတွင် Noise and Vibration, Socio-economy, Occupational / Community Health and Safety နှင့် Traffic Management တို့အတွက် ကြားကာလအကြံပေးလုပ်ကိုင်သူ မှတ်ပုံတင်ရရှိပြီးဖြစ်သည့် ကျွမ်းကျင်ပညာရှင်များ ဖြည့်စွက်ပါက ကန့်ကွက်ရန်မရှိပါကြောင်းနှင့် အောက်ပါအတိုင်း ဆက်လက်ဆောင်ရွက်ရန် လိုအပ်ကြောင်း အကြောင်းကြားပါသည်-

- (က) လုပ်ထုံးလုပ်နည်း အပိုဒ် ၄၉၊ ၅၀၊ ၅၁ နှင့် ၅၂ တို့နှင့် အညီ နယ်ပယ်အတိုင်းအတာ သတ်မှတ်ခြင်းအစီရင်ခံစာနှင့် ဆောင်ရွက်ရမည့် လုပ်ငန်းတာဝန်များကို ရေးဆွဲပြုစု၍ လုပ်ထုံးလုပ်နည်း အပိုဒ် ၅၃ အရ နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်း အစီရင်ခံစာကို

သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသို့ တင်ပြ၍ အတည်ပြု ချက်ရယူရန်၊

- (ခ) အတည်ပြုထားသည့် နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်း အစီရင်ခံစာကို အခြေခံ၍ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း အပိုဒ် ၅၆၊ ၅၇၊ ၅၈၊ ၅၉၊ ၆၀၊ ၆၁၊ ၆၂၊ ၆၃၊ ၆၄ နှင့် ၆၅ တို့နှင့်အညီ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း အစီရင်ခံစာကို ပြုစု၍ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသို့ တင်ပြ အတည်ပြုချက်ရယူရန်။



ညွှန်ကြားရေးမှူးချုပ်(ကိုယ်စား)  
 (ဒေါက်တာဆန်းဦးဒုတိယညွှန်ကြားရေးမှူးချုပ်)

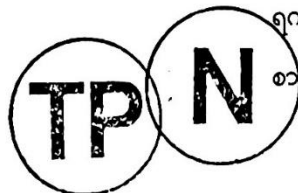
မိတ္တူကို

ညွှန်ကြားရေးမှူးချုပ်ရုံး၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန  
 ညွှန်ကြားရေးမှူး၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၊ ဟနသာရိတိုင်းဒေသကြီး  
 ရုံးလက်ခံ၊ မျှောစာတွဲ



### Khant Shwe Pyi Company Limited

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Postal Code : 11111, E-mail : khantshwepyi@gmail.com



ရက်စွဲ။ ။ ၂၀၂၃ ခုနှစ်၊ မေလ၊ (၁၅) ရက်

စာအမှတ် - ၅/၂၀၂၃ အစရ / KSP - D034

သို့

ညွှန်ကြားရေးမှူးချုပ်  
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန  
သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန

ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန
ဝင်စာမှတ်ပုံနှိပ်စာမှတ်၊ ၂၀၂၃/၂၃
စာအမှတ်၊ _____
စာလက်ခံရရှိသည့်ရက်စွဲ၊ ၁၅.၅.၂၃
စာမျှားတင်ပြသည့်ရက်စွဲ၊ ၁၅.၅.၂၃

အကြောင်းအရာ။ ။ Khant Shwe Pyi Co., Ltd မှ တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်ခရိုင်၊ ထားဝယ်မြို့နယ်၊ သပြေချောင်းကျေးရွာအုပ်စု၊ ကွင်းအမှတ် (၁၀၄)၊ မြေဧရိယာ (၂၀.၁၅) ဧကပေါ်တွင် အကောင်အထည်ဖော်ဆောင်ရွက်မည့် ထားဝယ်မြို့ အဝေးပြေယာဉ်ရပ်နားစခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်း စီမံကိန်းအတွက် ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်း (Environmental Impact Assessment - EIA) အစီရင်ခံစာအား ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာန၏ ရည်ညွှန်းပါစာအရ ရေးဆွဲဆောင်ရွက်ရန်အတွက် တတိယ အဖွဲ့အစည်း ရွေးချယ်တင်ပြခြင်းကိစ္စ။

ရည်ညွှန်းချက်။ ။ တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်မြို့၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာန၊ ညွှန်ကြားရေးမှူးရုံး၏ ၂၀၂၃ ခုနှစ်၊ ဖေဖော်ဝါရီလ (၉) ရက်နေ့ ရက်စွဲပါ စာအမှတ် ၂/၇/၆ (၀၁-၀၈) (၅၄/၂၀၂၃)

၁။ အထက်အကြောင်းအရာပါကိစ္စနှင့်ပတ်သက်၍ Khant Shwe Pyi Co., Ltd မှ တနင်္သာရီ တိုင်းဒေသကြီး၊ ထားဝယ်ခရိုင်၊ ထားဝယ်မြို့နယ်၊ သပြေချောင်းကျေးရွာအုပ်စု၊ ကွင်းအမှတ် (၁၀၄)၊ မြေဧရိယာ (၂၀.၁၅) ဧကပေါ်တွင် အကောင်အထည်ဖော်ဆောင်ရွက်မည့် ထားဝယ်မြို့ အဝေးပြေယာဉ်ရပ်နားစခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်း စီမံကိန်းအတွက် ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်း (Environmental Impact Assessment - EIA) အစီရင်ခံစာ ရေးဆွဲ ဆောင်ရွက်ရန် ရည်ညွှန်းချက်ပါစာဖြင့် အကြောင်းကြားခဲ့ပါသည်။

၂။ အဆိုပါ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း အစီရင်ခံစာကို ရေးဆွဲဆောင်ရွက်ရန်အတွက် လွတ်လပ်သော တတိယအဖွဲ့အစည်းဖြစ်သည့် E Guard Environmental Services Co., Ltd. အား Khant Shwe Pyi Co., Ltd မှ စိစစ်ရွေးချယ်ခဲ့ပါသည်။

၃။ အဆိုပါ တတိယအဖွဲ့အစည်း E Guard Environmental Services Co., Ltd. သည် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနတွင် ကြားကာလတတိယအဖွဲ့အစည်း မှတ်ပုံတင် ရရှိထားပြီး သက်တမ်းတိုးထားသည့် အဖွဲ့အစည်းဖြစ်ပါသည်။



**Khant Shwe Pyi Company Limited**

No.5, Ma Kyee Kyee St., Sanchaung Tsp., Yangon Region, Myanmar.  
Tel : +95-1-538089, 525636, Fax : +95-1-539857  
Postal Code : 11111, E-mail : khantshwepyi@gmail.com

သို့

ဝန်ကြီးချုပ်

တနင်္သာရီတိုင်းဒေသကြီးအစိုးရအဖွဲ့

ထားဝယ်မြို့။

ရက်စွဲ။ ။ ၂၀၂၃ခုနှစ်၊ ဇွန်လ၊ ( ၂၆ ) ရက်

စာအမှတ် - ၆ / ၂၀၂၃ အစရ / KSP - D038

အကြောင်းအရာ။ ။ စက်သုံးဆီဆိုင်အသစ် တည်ဆောက်ဖွင့်လှစ်ခွင့်ကို ယာယီရပ်နားခွင့်ပြုရန် တင်ပြခြင်း

ရည်ညွှန်းချက်။ ။ စွမ်းအင်ဝန်ကြီးဌာန၊ ရေနံထွက်ပစ္စည်းကြီးကြပ်စစ်ဆေးရေးဦးစီးဌာန၊ တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်မြို့ (၂၄.၁.၂၀၂၃) ရက်စွဲပါ စာအမှတ် PPRD-ကြီးကြပ်စစ်ဆေး/လိုင်စင်/၂၀၂၃(၀၈၁)။

အထက်အကြောင်းရာပါကိစ္စနှင့် ပတ်သက်၍ ကျွန်တော်များ ခန့်ရွှေ့ပြည်ကုမ္ပဏီလီမိတက်သည် တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်ခရိုင်၊ ထားဝယ်မြို့နယ်၊ သပြေချောင်းကျေးရွာ၊ ကွင်းအမှတ်နှင့် အမည် ၁၀၄/ကျောင်းရာမော်၊ ဦးပိုင်အမှတ် ၈/၂.ခ ရှိ မြေဧရိယာ (၁.၈၄)ဧကအနက်မှ (၁.၀၉)ဧကပေါ်တွင် “ခန့်ရွှေ့ပြည်” အမည်ဖြင့် စက်သုံးဆီဆိုင်အသစ် တည်ဆောက်၍ စက်သုံးဆီဖြန့်ဖြူး ရောင်းချခြင်း လုပ်ငန်းဆောင်ရွက်ရန်အတွက် တနင်္သာရီတိုင်းအစိုးရအဖွဲ့၏ ထောက်ခံပေးနိုင်ပါရန် တင်ပြထားရှိပါသည်။

သို့ရာတွင် ခန့်ရွှေ့ပြည်ကုမ္ပဏီလီမိတက်အနေဖြင့် ယခုတင်ပြထားသော စက်သုံးဆီဆိုင်မြေနေရာမှ အခြားမြေနေရာသို့ ပြောင်းရွှေ့တည်ဆောက်မှာဖြစ်ပါသဖြင့် လက်ရှိဆောင်ရွက်လျက်ရှိသော စက်သုံးဆီဆိုင် အသစ် တည်ဆောက်ဖွင့်လှစ်ခွင့်ကို ယာယီရပ်နားခွင့်ပြုပါရန် လေးစားစွာ လျှောက်ထားအပ်ပါသည်။

မိတ္တူကို

- ရုံးလက်ခံ

လေးစားစွာဖြင့်

**Capt.Min Thein**  
Director  
Khant Shwe Pyi Co.,Ltd.

ဦးမင်းသိမ်း  
ဒါရိုက်တာ  
ခန့်ရွှေ့ပြည်ကုမ္ပဏီလီမိတက်



-၂-

အဆက်

ဗဟိုလယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့၏ (၉ - ၄ - ၂၀၂၁) ရက်နေ့ အစည်းအဝေးအမှတ်စဉ် (၁/၂၀၂၁) ရုံးဖြတ်ချက်အပိုဒ် ၃၉(ဆ) အရ လက်မှတ်ရေးထိုးထုတ်ပေးခြင်းဖြစ်သည်။



စာအမှတ်၊ ၁၅ / လယ - ၃၀ ( ၀၀၃ / ၂၀၂၁ )  
ရက်စွဲ၊ ၂၀၂၁ ခုနှစ်၊ ဧပြီလ ( ၂၆ ) ရက်

၂၀၂၁  
( ၂၆ - ၄ - ၂၀၂၁ )  
အတွင်းရေးမှူး  
ဗဟိုလယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့  
နေပြည်တော်



**Appendix 5 Records of Waste Disposal**



**DAWEI BUS TERMINAL PROJECT**

ပုဂ္ဂလိကအမှိုက်သိမ်းဝန်ဆောင်မှုလုပ်ငန်းမှ နှစ်ပတ်တစ်ကြိမ် အမှိုက်သိမ်းဆည်းထားရှိမှု မှတ်တမ်း

စဉ်	ရက်စွဲ	Cubic Meter (M <sup>3</sup> )	မှတ်ချက်
၁	၁၄.၁.၂၀၂၃	1.5 M <sup>3</sup>	အဝေးပြေးကားဝင်းတည်ဆောက်ရေးစီမံကိန်း
၂	၃၀.၁.၂၀၂၃	2 M <sup>3</sup>	အဝေးပြေးကားဝင်းတည်ဆောက်ရေးစီမံကိန်း
၃	၁၄.၂.၂၀၂၃	1.5 M <sup>3</sup>	အဝေးပြေးကားဝင်းတည်ဆောက်ရေးစီမံကိန်း
၄	၂၈.၂.၂၀၂၃	3 M <sup>3</sup>	အဝေးပြေးကားဝင်းတည်ဆောက်ရေးစီမံကိန်း
၅	၁၄.၃.၂၀၂၃	2.5 M <sup>3</sup>	အဝေးပြေးကားဝင်းတည်ဆောက်ရေးစီမံကိန်း
၆	၃၁.၃.၂၀၂၃	2 M <sup>3</sup>	အဝေးပြေးကားဝင်းတည်ဆောက်ရေးစီမံကိန်း
၇	၁၄.၄.၂၀၂၃	2.5 M <sup>3</sup>	အဝေးပြေးကားဝင်းတည်ဆောက်ရေးစီမံကိန်း
၈	၃၀.၄.၂၀၂၃	2 M <sup>3</sup>	အဝေးပြေးကားဝင်းတည်ဆောက်ရေးစီမံကိန်း
၉	၁၄.၅.၂၀၂၃	3 M <sup>3</sup>	အဝေးပြေးကားဝင်းတည်ဆောက်ရေးစီမံကိန်း
၁၀	၃၁.၅.၂၀၂၃	2.5 M <sup>3</sup>	အဝေးပြေးကားဝင်းတည်ဆောက်ရေးစီမံကိန်း
စုစုပေါင်း		22.5 M <sup>3</sup>	



DAWEI BUS TERMINAL PROJECT

ပုဂ္ဂလိကအမှိုက်သိမ်းဝန်ဆောင်မှုလုပ်ငန်းမှ နှစ်ပတ်တစ်ကြိမ် အမှိုက်သိမ်းဆည်းထားရှိမှု မှတ်တမ်း

**အားမာန်သစ်**  
**ပုဂ္ဂလိကအမှိုက်သိမ်းဝန်ဆောင်မှုလုပ်ငန်း**  
**ငွေရပြေစာ**  
 Ph: 09 250769133 | 09 422190092  
 အမည် **စာရေးကြေးကားဝင်းအောင်** (အထူးအမှုဆောင်) (ထူးဝယ်)  
 လအမည် **၁၂/၀၁/၂၀၂၁** အိမ်အမှတ်  
 ကျသင့်ငွေ **၂.၅.၀၀ (၂၅၀၀၀/-) Kyats**  
 ယာဉ်အမှတ် **21- 9692**  
 ၉၄ ၂၃၇၀ ကောက်ခံသူလက်မှတ်

**အားမာန်သစ်**  
**ပုဂ္ဂလိကအမှိုက်သိမ်းဝန်ဆောင်မှုလုပ်ငန်း**  
**ငွေရပြေစာ**  
 Ph: 09 250769133 | 09 422190092  
 အမည် **အောင်စန်းကလေး** (အထူးအမှုဆောင်) (ထူးဝယ်)  
 လအမည် **၁၄/၀၁/၂၀၂၁** အိမ်အမှတ်  
 ကျသင့်ငွေ **၂.၀၀ (၂၀၀၀/-) Kyats**  
 ယာဉ်အမှတ် **21- 9692**  
 ၉၄ ၂၃၇၀ ကောက်ခံသူလက်မှတ်

**အားမာန်သစ်**  
**ပုဂ္ဂလိကအမှိုက်သိမ်းဝန်ဆောင်မှုလုပ်ငန်း**  
**ငွေရပြေစာ**  
 Ph: 09 250769133 | 09 422190092  
 အမည် **စာရေးကြေးကားဝင်းအောင်** (အထူးအမှုဆောင်) (ထူးဝယ်)  
 လအမည် **၁၄/၀၁/၂၀၂၁** အိမ်အမှတ်  
 ကျသင့်ငွေ **၂.၀၀ (၂၀၀၀/-) Kyats**  
 ယာဉ်အမှတ် **21- 9692**  
 ၉၄ ၂၃၇၀ ကောက်ခံသူလက်မှတ်

**အားမာန်သစ်**  
**ပုဂ္ဂလိကအမှိုက်သိမ်းဝန်ဆောင်မှုလုပ်ငန်း**  
**ငွေရပြေစာ**  
 Ph: 09 250769133 | 09 422190092  
 အမည် **စာရေးကြေးကားဝင်းအောင်** (အထူးအမှုဆောင်) (ထူးဝယ်)  
 လအမည် **၁၄/၀၁/၂၀၂၁** အိမ်အမှတ်  
 ကျသင့်ငွေ **၂.၀၀ (၂၀၀၀/-) Kyats**  
 ယာဉ်အမှတ် **21- 9692**  
 ၉၄ ၂၃၇၀ ကောက်ခံသူလက်မှတ်

**အားမာန်သစ်**  
**ပုဂ္ဂလိကအမှိုက်သိမ်းဝန်ဆောင်မှုလုပ်ငန်း**  
**ငွေရပြေစာ**  
 Ph: 09 250769133 | 09 422190092  
 အမည် **စာရေးကြေးကားဝင်းအောင်** (အထူးအမှုဆောင်) (ထူးဝယ်)  
 လအမည် **၁၄/၀၁/၂၀၂၁** အိမ်အမှတ်  
 ကျသင့်ငွေ **၂.၀၀ (၂၀၀၀/-) Kyats**  
 ယာဉ်အမှတ် **21- 9692**  
 ၉၄ ၂၃၇၀ ကောက်ခံသူလက်မှတ်

**အားမာန်သစ်**  
**ပုဂ္ဂလိကအမှိုက်သိမ်းဝန်ဆောင်မှုလုပ်ငန်း**  
**ငွေရပြေစာ**  
 Ph: 09 250769133 | 09 422190092  
 အမည် **စာရေးကြေးကားဝင်းအောင်** (အထူးအမှုဆောင်) (ထူးဝယ်)  
 လအမည် **၁၄/၀၁/၂၀၂၁** အိမ်အမှတ်  
 ကျသင့်ငွေ **၂.၀၀ (၂၀၀၀/-) Kyats**  
 ယာဉ်အမှတ် **21- 9692**  
 ၉၄ ၂၃၇၀ ကောက်ခံသူလက်မှတ်



DAWEI BUS TERMINAL PROJECT

ပုဂ္ဂလိကအမှိုက်သိမ်းဝန်ဆောင်မှုလုပ်ငန်းမှ နှစ်ပတ်တစ်ကြိမ် အမှိုက်သိမ်းဆည်းထားရှိမှု မှတ်တမ်း


**ဘေးမာန်သစ်**  
**ငွေ့လီတာအမှိုက်သိမ်းဝန်ဆောင်မှုလုပ်ငန်း**  
**ငွေ့ရေပြေစာ**  
 Ph: 09 250769133 | 09 422190092  
 နေ့စွဲ ၂၀၂၃-၀၅-၂၅  
 အမည် **စာပေဇော်** (ထာဝလ်)  
 လစာမည် **၁၀/၂/၂၀၂၃** တိုင်စာမှတ်  
 ကျသင့်ငွေ **၃.၀၀၀ (၂.၅၀၀၀/-)**  
 ယာဉ်အမှတ် **2I-9692**  
 ဇေ ၂၃၇၈ ကောက်ခံသူလက်မှတ်

**ဘေးမာန်သစ်**  
**ငွေ့လီတာအမှိုက်သိမ်းဝန်ဆောင်မှုလုပ်ငန်း**  
**ငွေ့ရေပြေစာ**  
 Ph: 09 250769133 | 09 422190092  
 နေ့စွဲ ၂၀၂၃-၀၅-၂၅  
 အမည် **စာပေဇော်** (ထာဝလ်)  
 လစာမည် **၁၀/၂/၂၀၂၃** တိုင်စာမှတ်  
 ကျသင့်ငွေ **၃.၀၀၀ (၂.၅၀၀၀/-)**  
 ယာဉ်အမှတ် **2I-9692**  
 ဇေ ၂၃၇၈ ကောက်ခံသူလက်မှတ်


**ဘေးမာန်သစ်**  
**ငွေ့လီတာအမှိုက်သိမ်းဝန်ဆောင်မှုလုပ်ငန်း**  
**ငွေ့ရေပြေစာ**  
 Ph: 09 250769133 | 09 422190092  
 နေ့စွဲ ၂၀၂၃-၀၅-၂၅  
 အမည် **စာပေဇော်** (ထာဝလ်)  
 လစာမည် **၁၀/၂/၂၀၂၃** တိုင်စာမှတ်  
 ကျသင့်ငွေ **၃.၀၀၀ (၂.၅၀၀၀/-)**  
 ယာဉ်အမှတ် **2I-9692**  
 ဇေ ၂၃၇၈ ကောက်ခံသူလက်မှတ်

**ဘေးမာန်သစ်**  
**ငွေ့လီတာအမှိုက်သိမ်းဝန်ဆောင်မှုလုပ်ငန်း**  
**ငွေ့ရေပြေစာ**  
 Ph: 09 250769133 | 09 422190092  
 နေ့စွဲ ၂၀၂၃-၀၅-၂၅  
 အမည် **စာပေဇော်** (ထာဝလ်)  
 လစာမည် **၁၀/၂/၂၀၂၃** တိုင်စာမှတ်  
 ကျသင့်ငွေ **၃.၀၀၀ (၂.၅၀၀၀/-)**  
 ယာဉ်အမှတ် **2I-9692**  
 ဇေ ၂၃၇၈ ကောက်ခံသူလက်မှတ်

Appendix 6 Environmental Quality Measurement Laboratory Results



**The Government of the Republic of the Union of Myanmar**  
**Ministry of Natural Resources and Environmental Conservation**  
**Department of Forest**  
**Forest Research Institute**  
**Water Quality Laboratory, Yezin**



Ref: WQL/0269/2023  
Date: 21-9-2023

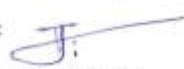
**ANALYTICAL TEST REPORT**


Customer Name: **Dawei Bus Terminal and Commercial Complex Project**  
 Customer Address :

Assignment number	WL/2023-85	Sampling Location	-
Sample number	1	Sampling Date	-
Sample type	Outlet Water	Sample received date	9-9-2023
Comments			

Parameter	Result	Unit	Method reference	Instruments
pH	6.78	-	ISO 10523:2008	ManTech Robot (PC-1300-475E)
Turbidity	11.15	FNU	ISO 7027:1999	ManTech Robot (MT-165-981)
Total Dissolved Solids	68	mg/L	Manual	PROZOR® TDS&EC Test Meter
Total Suspended Solids	4.4	mg/L	NS 4733:1983	Circulation and Filtration System
Ammonia	0.01	mg/L	ISO 10304-1: 2009	Ion Chromatography (Thermo Scientific, DIONEX AQUION)
Nitrate	0.33	mg/L	ISO 10304-1: 2009	Ion Chromatography (Thermo Scientific, DIONEX AQUION)
BOD	4.56	mg/L	Potentiometric	YSI ProDO Tester
COD	6	mg/L	Titrimetic	Titrator
Total Nitrogen	1.86	mg/L	Kjeldahl	Kjeldahl Digestion and Distillation Unit
Total Phosphorus	15.48	µg /L	NS 4725	SFA(SKALAR SAN plus Analyzer) SA 3000/5000,SA 1100
Arsenic	ND	µg /L	EPA 200.9	GFAAS (PG Instruments AA500)
Copper	ND	µg /L	EPA 200.9	GFAAS (PG Instruments AA500)
Zinc	0.95	µg /L	EPA 200.9	GFAAS (PG Instruments AA500)
Chromium	ND	µg /L	EPA 200.9	GFAAS (PG Instruments AA500)
Mercury	ND	µg /L	EPA 245.7	GFAAS (PG Instruments AA500)

Remark: This certificate is issued only for the receipt of the test sample.

Tested by  
Signature :   
Name : **Dr. Thida Cho**  
Assistant Research Officer

Approved by  
Signature :   
Name : **Dr. Thida Swe**  
Assistant Research Officer



Myanmar Innovation Group of Co., Ltd  
 Address : No. (9), Sabae Housing, Pyi Htaung Su Road,  
 (26) Ward, South Dagon Tsp, Yangon, Myanmar.  
 Tel : 09-893 767 424  
 E-mail : info@prolabmyanmar.com

**LABORATORY ANALYSIS REPORT**


- 1 Client Name : Dawei Bus Terminal and Commercial Complex Project
- 2 Location : Plot No(104), Thabyay Chaung Village Tract, Dawei Township
- 3 Type of Sample : WW (Outlet)
- 4 Sample No. : 00796/2023
- 5 Contact Person : Ko Wunna Zaw
- 6 Phone No. : 09-797005180
- 7 Date Received : 08.09.2023
- 8 Date of Test Performed : 08.09.2023
- 9 Date of Issued : 20.09.2023
- 10 Result :

No.	Parameter	Result	Unit	WHO STD 2018	Method
1	Total Coliform	9.3	MPN/ml	-	FDA-BAM: MPN Method

**Remark:**

This certificate is issued only for the receipt of the test sample.  
 Dispose treated waste water according to state and local regulations.

**Tested By**

Name : WYNE EI MON  
 Position : Laboratory Technician  
 Signature : 

**Approved By**

Name : KYAWT KYAWT YIN  
 Position : Technical Consultant Manager  
 Signature : 



LAB-FO-024-00



Laboratory Technical Consultant: U Saw Christopher Maung  
 B.Sc Engg (Civil), Dip S.E.(Deflt) Lecturer of YIT (Retd), Consultant (Y.C.D.C), LWSE 001.  
 Former Member (UNICEF, Water quality monitoring & Surveillance Myanmar)

**WTL-RE-001**  
 Issue Date - 01-12-2012  
 Effective Date - 01-12-2012  
 Issue No - 1.0/Page 2 of 2

**WW0923 070**

**WATER QUALITY TEST RESULTS FORM**

Client Dawei Bus Terminal And Commercial Complex Project  
 Nature of Water Wastewater (Outlet)  
 Location Plot No.(104), Thabyay Chaung Village, Dawei Township.  
 Date and Time of collection 7.9.2023  
 Date and Time of arrival at Laboratory 8.9.2023  
 Date and Time of commencing examination 9.9.2023  
 Date and Time of completing 11.9.2023

**Results of Water Analysis**

Temperature (°C)	°C	
Fluoride (F)	mg/l	
Lead (as Pb)	mg/l	
Arsenic (As)	mg/l	
Nitrate (N.NO <sub>3</sub> )	mg/l	
Chlorine (Residual)	Nil	mg/l
Ammonia Nitrogen (NH <sub>3</sub> )	mg/l	
Ammonium Nitrogen (NH <sub>4</sub> )	mg/l	
Dissolved Oxygen (DO)	mg/l	
Chemical Oxygen Demand (COD)	mg/l	
Biochemical Oxygen Demand (BOD) (5 days at 20 °C)	mg/l	
Cyanide (CN)	mg/l	
Zinc (Zn)	mg/l	
Nitrite (NO <sub>2</sub> )	mg/l	
Copper (Cu)	mg/l	
Silica (SiO <sub>2</sub> )	mg/l	

Remark: This certificate is issued only for the receipt of the test sample.

Tested by  
 Signature: Heinz  
 Name: Zaw Hein Oo  
B.Sc (Chemistry)  
Sr.Chemist  
ISO TECH Laboratory

Approved by  
 Signature: Soc Thit  
 Name: Soc Thit  
B.E (Civil) 1980  
Technical Officer  
ISO TECH Laboratory

(a division of WEG Co.,Ltd.)

No.18, Lanthit Road, Nanthargone Quarter, Insein Township, Yangon, Myanmar.  
 Ph: 01-640955, 09-880100172, 09-880100173, 01-644506, E-mail: isotechlaboratory@gmail.com, Website: weg-myanmar.com



Laboratory Technical Consultant: U Saw Christopher Maung  
 B.Sc Engg: (Civil), Dip S.E(Delft) Lecturer of YIT (Retd), Consultant (Y.C.D.C), LWSE 001.  
 Former Member (UNICEF, Water quality monitoring & Surveillance Myanmar)

WTL-RE-001

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 Issue No - 1.0/Page 1 of 2

WW0923 070

**WATER QUALITY TEST RESULTS FORM**

Client Dawei Bus Terminal And Commercial Complex Project  
 Nature of Water Wastewater (Outlet)  
 Location Plot No.(104), Thabyay Chaung Village, Dawei Township.  
 Date and Time of collection 7.9.2023  
 Date and Time of arrival at Laboratory 8.9.2023  
 Date and Time of commencing examination 9.9.2023  
 Date and Time of completing 11.9.2023

**Results of Water Analysis**

pH		
Colour (True)		TCU
Turbidity		NTU
Conductivity		micro S/cm
Total Hardness	36	mg/l as CaCO <sub>3</sub>
Calcium Hardness		mg/l as CaCO <sub>3</sub>
Magnesium Hardness		mg/l as CaCO <sub>3</sub>
Total Alkalinity		mg/l as CaCO <sub>3</sub>
Phenolphthalein Alkalinity		mg/l as CaCO <sub>3</sub>
Carbonate (CaCO <sub>3</sub> )		mg/l as CaCO <sub>3</sub>
Bicarbonate (HCO <sub>3</sub> )		mg/l as CaCO <sub>3</sub>
Iron	0.69	mg/l
Chloride (as CL)		mg/l
Sodium Chloride (as NaCL)		mg/l
Sulphate (as SO <sub>4</sub> )		mg/l
Total Solids		mg/l
Total Suspended Solids		mg/l
Total Dissolved Solids		mg/l
Manganese		mg/l
Phosphate		mg/l
Phenolphthalein Acidity		mg/l
Methyl Orange Acidity		mg/l
Salinity		ppt

Remark: This certificate is issued only for the receipt of the test sample.

Tested by *Heinz*  
 Signature: Zaw Hein Oo  
 Name: B.Sc (Chemistry)  
Sr.Chemist

Approved by *Soe Thit*  
 Signature: Soe Thit  
 Name: B.E (Civil) 1980  
Technical Officer  
**ISO TECH Laboratory**

(a division of WEG Co.,Ltd.) **ISO Tech Laboratory**

No.18, Lanthit Road, Nanthargone Quarter, Insein Township, Yangon, Myanmar.  
 Ph: 01-640955, 09-880100172, 09-880100173, 01-644506, E-mail: isotechlaboratory@gmail.com, Website: weg-myanmar.com



The Government of the Republic of the Union of Myanmar  
 Ministry of Natural Resources and Environmental Conservation  
 Department of Forest  
 Forest Research Institute  
 Water Quality Laboratory, Yezin



Ref : WQL/0270/2023  
 Date: 21-9-2023


**ANALYTICAL TEST REPORT**


Customer Name: **Dawei Bus Terminal and Commercial Complex Project**  
 Customer Address :

Assignment number	WL/2023-85	Sampling Location	-
Sample number	2	Sampling Date	-
Sample type	Ground Water	Sample received date	9-9-2023
Comments			

Parameter	Result	Unit	Method reference	Instruments
pH	7.31	-	ISO 10523:2008	ManTech Robot (PC-1300-475E)
Turbidity	32.31	FNU	ISO 7027:1999	ManTech Robot (MT-165-981)
Total Dissolved Solids	191	mg/L	Manual	PROZOR® TDS&EC Test Meter
Total Suspended Solids	4	mg/L	NS 4733:1983	Circulation and Filtration System
Ammonia	0.048	mg/L	ISO 10304-1: 2009	Ion Chromatography (Thermo Scientific, DIONEX AQUION)
Nitrate	0.041	mg/L	ISO 10304-1: 2009	Ion Chromatography (Thermo Scientific, DIONEX AQUION)
BOD	2.41	mg/L	Potentiometric	YSI ProDO Tester
COD	3.5	mg/L	Titrimetic	Titration
Total Nitrogen	2.69	mg/L	Kjeldahl	Kjeldahl Digestion and Distillation Unit
Total Phosphorus	7.92	µg /L	NS 4725	SFA(SKALAR SAN plus Analyzer) SA 3000/5000,SA 1100
Arsenic	ND	µg /L	EPA 200.9	GFAAS (PG Instruments AA500)
Copper	ND	µg /L	EPA 200.9	GFAAS (PG Instruments AA500)
Zinc	2.38	µg /L	EPA 200.9	GFAAS (PG Instruments AA500)
Chromium	ND	µg /L	EPA 200.9	GFAAS (PG Instruments AA500)
Mercury	ND	µg /L	EPA 245.7	GFAAS (PG Instruments AA500)

Remark: This certificate is issued only for the receipt of the test sample.

Tested by  
 Signature :   
 Name : Dr. Thida Cho  
 Assistant Research Officer

Approved by  
 Signature :   
 Name : Dr. Thida Swe  
 Assistant Research Officer





Myanmar Innovation Group of Co., Ltd  
 Address : No. (9), Sabae Housing, Pyi Htaung Su Road,  
 (26) Ward, South Dagon Tsp, Yangon, Myanmar.  
 Tel : 09-893 767 424  
 E-mail : info@prolabmyanmar.com

**LABORATORY ANALYSIS REPORT**

- 1 Client Name : Dawei Bus Terminal and Commercial Complex Project
- 2 Location : Plot No(104), Thabyay Chaung Village Tract, Dawei Township
- 3 Type of Sample : Ground Water
- 4 Sample No. : 00792/2023
- 5 Contact Person : Ko Wunna Zaw
- 6 Phone No. : 09-797005180
- 7 Date Received : 08.09.2023
- 8 Date of Test Performed : 08.09.2023
- 9 Date of Issued : 20.09.2023
- 10 Result :


No.	Parameter	Result	Unit	WHO STD 2018	Method
1	Total Coliform	4.3	MPN/ml	ND per 100 mL	FDA-BAM: MPN Method

**Remark:**

**This certificate is issued only for the receipt of the test sample.**

<sup>(a)</sup> American Public Health Association, Standard Methods for the Examination of Water and Wastewater.

**Tested By**


Name : WYNE EI MON  
 Position : Laboratory Technician  
 Signature : 

**Approved By**


Name : KYAWT KYAWT YIN  
 Position : Technical Consultant Manager  
 Signature : 




LAB-FO-024-00



**ISO  
TECH  
LABORATORY**





**WTL-RE-001**  
 Issue Date - 01-12-2012  
 Effective Date - 01-12-2012  
 Issue No - 1.0/Page 2 of 2

**W0923 215**

**WATER QUALITY TEST RESULTS FORM**


Client _____	Dawei Bus Terminal And Commercial Complex Project
Nature of Water _____	Ground Water
Location _____	Plot No.(104), Thabyay Chaung Village, Dawei Township.
Date and Time of collection _____	7.9.2023
Date and Time of arrival at Laboratory _____	8.9.2023
Date and Time of commencing examination _____	9.9.2023
Date and Time of completing _____	11.9.2023

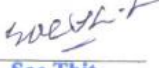
**Results of Water Analysis**

**WHO Drinking Water Guideline  
(Geneva - 1993)**


Temperature (°C)	°C	
Fluoride (F)	mg/l	1.5 mg/l
Lead (as Pb)	mg/l	0.01 mg/l
Arsenic (As)	mg/l	0.01 mg/l
Nitrate (N.NO <sub>3</sub> )	mg/l	50 mg/l
Chlorine (Residual)	Nil	mg/l
Ammonia Nitrogen (NH <sub>3</sub> )	mg/l	
Ammonium Nitrogen (NH <sub>4</sub> )	mg/l	
Dissolved Oxygen (DO)	mg/l	
Chemical Oxygen Demand (COD)	mg/l	
Biochemical Oxygen Demand (BOD) (5 days at 20 °C)	mg/l	
Cyanide (CN)	mg/l	0.07 mg/l
Zinc (Zn)	mg/l	3 mg/l
Copper (Cu)	mg/l	2 mg/l
Silica (SiO <sub>2</sub> )	mg/l	

**Remark: This certificate is issued only for the receipt of the test sample.**


**Tested by**  
 Signature:   
 Name: **Zaw Hein Oo**  
 B.Sc (Chemistry)  
 Sr.Chemist  
 ISO Tech Laboratory


**Approved by**  
 Signature:   
 Name: **Soe Thit**  
 B.E (Civil) 1980  
 Technical Officer  
 ISO TECH Laboratory

(a division of WEG Co.,Ltd.)  
 No.18, Lanthit Road, Nanthargone Quarter, Insein Township, Yangon, Myanmar.  
 Ph: 01-640955, 09-880100172, 09-880100173, 01-644506, E-mail: isotechlaboratory@gmail.com, Website: weg-myanmar.com



Laboratory Technical Consultant: U Saw Christopher Maung  
 B.Sc Engg: (Civil), Dip S.E.(Delft) Lecturer of YIT (Retd). Consultant (Y.C.D.C), LWSE 001.  
 Former Member (UNICEF, Water quality monitoring & Surveillance Myanmar)





ISO 9001:2015 Cert. No.688263

**WTL-RE-001**  
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**W0923 215**

### WATER QUALITY TEST RESULTS FORM

Client	Dawei Bus Terminal And Commercial Complex Project		
Nature of Water	Ground Water		
Location	Plot No.(104), Thabyay Chaung Village, Dawei Township.		
Date and Time of collection	7.9.2023		
Date and Time of arrival at Laboratory	8.9.2023		
Date and Time of commencing examination	9.9.2023		
Date and Time of completing	11.9.2023		

**Results of Water Analysis**

**WHO Drinking Water Guideline  
(Geneva - 1993)**

pH			6.5 - 8.5
Colour (True)	TCU		15 TCU
Turbidity	NTU		5 NTU
Conductivity	micro S/cm		
Total Hardness	76	mg/l as CaCO <sub>3</sub>	500 mg/l as CaCO <sub>3</sub>
Calcium Hardness		mg/l as CaCO <sub>3</sub>	
Magnesium Hardness		mg/l as CaCO <sub>3</sub>	
Total Alkalinity		mg/l as CaCO <sub>3</sub>	
Phenolphthalein Alkalinity		mg/l as CaCO <sub>3</sub>	
Carbonate (CaCO <sub>3</sub> )		mg/l as CaCO <sub>3</sub>	
Bicarbonate (HCO <sub>3</sub> )		mg/l as CaCO <sub>3</sub>	
Iron	0.58	mg/l	0.3 mg/l
Chloride (as CL)		mg/l	250 mg/l
Sodium Chloride (as NaCL)		mg/l	
Sulphate (as SO <sub>4</sub> )		mg/l	500 mg/l
Total Solids		mg/l	1500 mg/l
Total Suspended Solids		mg/l	
Total Dissolved Solids		mg/l	1000 mg/l
Manganese		mg/l	0.05 mg/l
Phosphate		mg/l	
Phenolphthalein Acidity		mg/l	
Methyl Orange Acidity		mg/l	
Salinity		ppt	

**Remark: This certificate is issued only for the receipt of the test sample.**

**Tested by**  
 Signature: Zaw Hein Oo  
 Name: B.Sc (Chemistry)  
Sr.Chemist

**Approved by**  
 Signature: Soc Thit  
 Name: B.E (Civil) 1980  
Technical Officer  
ISO TECH Laboratory

(a division of WEG Co.,Ltd.) **ISO Tech Laboratory**  
 No.18, Lanthit Road, Nanthargone Quarter, Insein Township, Yangon, Myanmar.  
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The Government of the Republic of the Union of Myanmar  
 Ministry of Natural Resources and Environmental Conservation  
 Department of Forest  
 Forest Research Institute  
 Water Quality Laboratory, Yezin



Ref : WQL/0271/2023  
 Date: 21-9-2023

**ANALYTICAL TEST REPORT**

Customer Name: **Dawei Bus Terminal and Commercial Complex Project**

Customer Address :

Assignment number	WL/2023-85	Sampling Location	-
Sample number	3	Sampling Date	-
Sample type	Surface Water	Sample received date	9-9-2023
Comments			

Parameter	Result	Unit	Method reference	Instruments
pH	7.00	-	ISO 10523:2008	ManTech Robot (PC-1300-475E)
Fluoride	0.131	mg/L	ISO 10304-1: 2009	Ion Chromatography (Thermo Scientific, DIONEX AQUION)
Nitrate	0.047	mg/L	ISO 10304-1: 2009	Ion Chromatography (Thermo Scientific, DIONEX AQUION)
Sulphate	1.33	mg/L	ISO 10304-1: 2009	Ion Chromatography (Thermo Scientific, DIONEX AQUION)
Ammonia	0.018	mg/L	ISO 10304-1: 2009	Ion Chromatography (Thermo Scientific, DIONEX AQUION)
Total Suspended Solids	8.25	mg/L	NS 4733:1983	Circulation and Filtration System
BOD	2.63	mg/L	Potentiometric	YSI ProDO Tester
COD	6	mg/L	Titrimetic	Titration
Total Nitrogen	1.47	mg/L	Kjeldahl	Kjeldahl Digestion and Distillation Unit
Total Phosphorus	14.01	µg /L	NS 4725	SFA(SKALAR SAN plus Analyzer) SA 3000/5000,SA 1100
Lead	0.54	µg /L	EPA 200.9	GFAAS (PG Instruments AA500)
Cadmium	0.02	µg /L	EPA 200.9	GFAAS (PG Instruments AA500)

Parameter	Result	Unit	Method reference	Instruments
Arsenic	ND	$\mu\text{g}/\text{L}$	EPA 200.9	GFAAS (PG Instruments AA500)
Copper	ND	$\mu\text{g}/\text{L}$	EPA 200.9	GFAAS (PG Instruments AA500)
Zinc	11.64	$\mu\text{g}/\text{L}$	EPA 200.9	GFAAS (PG Instruments AA500)
Nickel	2.38	$\mu\text{g}/\text{L}$	EPA 200.9	GFAAS (PG Instruments AA500)
Mercury	ND	$\mu\text{g}/\text{L}$	EPA 245.7	GFAAS (PG Instruments AA500)

Remark: This certificate is issued only for the receipt of the test sample.

Tested by

Signature :

Name : Dr. Thida Cho  
Assistant Research Officer

Approved by

Signature :

Name : Dr. Thida Swe  
Assistant Research Officer



Myanmar Innovation Group of Co., Ltd  
 Address : No. (9), Sabae Housing, Pyi Htaung Su Road,  
 (26) Ward, South Dagon Tsp, Yangon, Myanmar.  
 Tel : 09-893 767 424  
 E-mail : info@prolabmyanmar.com

**LABORATORY ANALYSIS REPORT**

- 1 Client Name : Dawei Bus Terminal and Commercial Complex Project
- 2 Location : Plot No(104), Thabyay Chaung Village Tract, Dawei Township
- 3 Type of Sample : SW 1
- 4 Sample No. : 00793/2023
- 5 Contact Person : Ko Wunna Zaw
- 6 Phone No. : 09-797005180
- 7 Date Received : 08.09.2023
- 8 Date of Test Performed : 08.09.2023
- 9 Date of Issued : 20.09.2023
- 10 Result :

No.	Parameter	Result	Unit	WHO STD 2018	Method
1	Chromium (Hexavalent)	0.014	mg/L	NA	USEPA 1, 5 - Diphenylcarbohydrazide Method
2	Chromium (Total)	< 0.01	mg/L	0.05 mg/L	Hach DR 3900 Spectrophotometer, Alkaline Hypobromite Oxidation Method
3	Free Chlorine	Nil	mg/L	5.0 mg/L	Hanna HI97104 - Free & Total Chlorine Photometer
4	Oil and Grease	12	mg/L	NA	<sup>(a)</sup> 5520D, Soxhlet Extraction Method
5	Phenols	Nil	mg/L	0.002 mg/L	<sup>(a)</sup> 5530D, Direct Photometric Method
6	Silver	< 0.02	mg/L	0.05 mg/L	Hach DR 3900 Spectrophotometer, Colorimetric Method
7	Sulfide	19	µg/L	NA	Hach DR 3900 Spectrophotometer, USEPA Methylene Blue Method
8	Selenium	< 0.1	mg/L	0.01 mg/L	Microwave plasma Atomic Emission Spectroscopy method
9	Total Cyanide	< 0.01	mg/L	-	LoviBond Spectro-Direct Method 157
10	Total Coliform	4.3	MPN/ml	ND per 100 mL	FDA-BAM: MPN Method

**Remark:**

**This certificate is issued only for the receipt of the test sample.**

<sup>(a)</sup> American Public Health Association, Standard Methods for the Examination of Water and Wastewater.

**Tested By**

Name : NAW EH THA KU  
 Position : Laboratory Technician  
 Signature :



**Approved By**

Name : KYAWT KYAWT YIN  
 Position : Technical Consultant Manager  
 Signature :



Laboratory Technical Consultant: U Saw Christopher Maung  
 B.Sc Engg. (Civil), Dip S.E.(Delft) Lecturer of YIT (Retd). Consultant (Y.C.D.C), LWSE 001.  
 Former Member (UNICEF, Water quality monitoring & Surveillance Myanmar)

**WTL-RE-001**  
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**W0923 212**

**WATER QUALITY TEST RESULTS FORM**

Client Dawei Bus Terminal And Commercial Complex Project  
 Nature of Water Surface Water (1)  
 Location Plot No.(104), Thabyay Chaung Village, Dawei Township.  
 Date and Time of collection 7.9.2023  
 Date and Time of arrival at Laboratory 8.9.2023  
 Date and Time of commencing examination 9.9.2023  
 Date and Time of completing 11.9.2023

**Results of Water Analysis**

**WHO Drinking Water Guideline  
(Geneva - 1993)**

Temperature (°C)	°C	
Fluoride (F)	mg/l	1.5 mg/l
Lead (as Pb)	mg/l	0.01 mg/l
Arsenic (As)	mg/l	0.01 mg/l
Nitrate (N.NO <sub>3</sub> )	mg/l	50 mg/l
Chlorine (Residual)	mg/l	
Ammonia Nitrogen (NH <sub>3</sub> )	mg/l	
Ammonium Nitrogen (NH <sub>4</sub> )	mg/l	
Dissolved Oxygen (DO)	mg/l	
Chemical Oxygen Demand (COD)	mg/l	
Biochemical Oxygen Demand (BOD) (5 days at 20 °C)	mg/l	
Cyanide (CN)	0.029 mg/l	0.07 mg/l
Zinc (Zn)	mg/l	3 mg/l
Copper (Cu)	mg/l	2 mg/l
Silica (SiO <sub>2</sub> )	mg/l	

Remark: This certificate is issued only for the receipt of the test sample.

**Tested by**


Signature: *Heinz*  
 Name: **Zaw Hein Oo**  
**B.Sc (Chemistry)**  
**Sr.Chemist**  
**ISO Tech Laboratory**

**Approved by**


Signature: *See Thit*  
 Name: **See Thit**  
**B.E (Civil) 1980**  
**Technical Officer**  
**ISO TECH Laboratory**


(a division of WEG Co.,Ltd.)

No.18, Lanthit Road, Nanthargone Quarter, Insein Township, Yangon, Myanmar.  
 Ph: 01-640955, 09-880100172, 09-880100173, 01-644506, E-mail: isotechlaboratory@gmail.com, Website: weg-myanmar.com



Laboratory Technical Consultant: U Saw Christopher Maung  
 B.Sc Engg: (Civil), Dip S.E.(Delft) Lecturer of YIT (Retd), Consultant (Y.C.D.C), LWSE 001.  
 Former Member (UNICEF, Water quality monitoring & Surveillance Myanmar)





ISO 9001:2015 Cert. No.688283

**WTL-RE-001**  
 Issue Date - 01-12-2012  
 Effective Date - 01-12-2012  
 Issue No - 1.0/Page 1 of 2

**W0923 212**

### WATER QUALITY TEST RESULTS FORM

Client	Dawei Bus Terminal And Commercial Complex Project		
Nature of Water	Surface Water (1)		
Location	Plot No.(104), Thabyay Chaung Village, Dawei Township.		
Date and Time of collection	7.9.2023		
Date and Time of arrival at Laboratory	8.9.2023		
Date and Time of commencing examination	9.9.2023		
Date and Time of completing	11.9.2023		

**Results of Water Analysis**

**WHO Drinking Water Guideline  
(Geneva - 1993)**

pH			6.5 - 8.5
Colour (True)	TCU		15 TCU
Turbidity	NTU		5 NTU
Conductivity	micro S/cm		
Total Hardness	mg/l as CaCO <sub>3</sub>		500 mg/l as CaCO <sub>3</sub>
Calcium Hardness	mg/l as CaCO <sub>3</sub>		
Magnesium Hardness	mg/l as CaCO <sub>3</sub>		
Total Alkalinity	mg/l as CaCO <sub>3</sub>		
Phenolphthalein Alkalinity	mg/l as CaCO <sub>3</sub>		
Carbonate (CaCO <sub>3</sub> )	mg/l as CaCO <sub>3</sub>		
Bicarbonate (HCO <sub>3</sub> )	mg/l as CaCO <sub>3</sub>		
Iron	0.78	mg/l	0.3 mg/l
Chloride (as CL)		mg/l	250 mg/l
Sodium Chloride (as NaCL)		mg/l	
Sulphate (as SO <sub>4</sub> )		mg/l	500 mg/l
Total Solids		mg/l	1500 mg/l
Total Suspended Solids		mg/l	
Total Dissolved Solids		mg/l	1000 mg/l
Manganese		mg/l	0.05 mg/l
Phosphate		mg/l	
Phenolphthalein Acidity		mg/l	
Methyl Orange Acidity		mg/l	
Salinity		ppt	

**Remark: This certificate is issued only for the receipt of the test sample.**

**Tested by**  
 Signature: Zaw Hein Oo  
 Name: B.Sc (Chemistry)  
Sr.Chemist

**Approved by**  
 Signature: Soe Thit  
 Name: B.E (Civil) 1980  
Technical Officer

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The Government of the Republic of the Union of Myanmar  
 Ministry of Natural Resources and Environmental Conservation



Department of Forest  
 Forest Research Institute  
 Water Quality Laboratory, Yezin

Ref : WQL/0286/2023

Date: 27-9-2023

**ANALYTICAL TEST REPORT**

Customer Name: **Dawei Bus Terminal and Commercial Complex Project**

Customer Address :

Assignment number	WL/2023-85	Sampling Location	-
Sample number	4	Sampling Date	-
Sample type	Surface Water	Sample received date	9-9-2023
Comments			

Parameter	Result	Unit	Method reference	Instruments
pH	7.04	-	ISO 10523:2008	ManTech Robot (PC-1300-475E)
Fluoride	0.135	mg/L	ISO 10304-1: 2009	Ion Chromatography (Thermo Scientific, DIONEX AQUION)
Nitrate	0.035	mg/L	ISO 10304-1: 2009	Ion Chromatography (Thermo Scientific, DIONEX AQUION)
Sulphate	1.37	mg/L	ISO 10304-1: 2009	Ion Chromatography (Thermo Scientific, DIONEX AQUION)
Ammonia	0.02	mg/L	ISO 10304-1: 2009	Ion Chromatography (Thermo Scientific, DIONEX AQUION)
Total Suspended Solids	8.52	mg/L	NS 4733:1983	Circulation and Filtration System
BOD	2.35	mg/L	Potentiometric	YSI ProDO Tester
COD	6.02	mg/L	Titrimetic	Titration
Total Nitrogen	2	mg/L	Kjeldahl	Kjeldahl Digestion and Distillation Unit
Total Phosphorus	15.45	µg /L	NS 4725	SFA(SKALAR SAN plus Analyzer) SA 3000/5000, SA 1100
Lead	0.57	µg /L	EPA 200.9	GFAAS (PG Instruments AA500)
Cadmium	0.07	µg /L	EPA 200.9	GFAAS (PG Instruments AA500)

Parameter	Result	Unit	Method reference	Instruments
Arsenic	ND	$\mu\text{g}/\text{L}$	EPA 200.9	GFAAS (PG Instruments AA500)
Copper	ND	$\mu\text{g}/\text{L}$	EPA 200.9	GFAAS (PG Instruments AA500)
Zinc	11.69	$\mu\text{g}/\text{L}$	EPA 200.9	GFAAS (PG Instruments AA500)
Nickel	2.45	$\mu\text{g}/\text{L}$	EPA 200.9	GFAAS (PG Instruments AA500)
Mercury	ND	$\mu\text{g}/\text{L}$	EPA 245.7	GFAAS (PG Instruments AA500)

Remark: This certificate is issued only for the receipt of the test sample.

Tested by

Signature :



Name : Dr. Thida Cho  
Assistant Research Officer

Approved by

Signature :



Name : Dr. Thida Swe  
Assistant Research Officer



Myanmar Innovation Group of Co., Ltd  
 Address : No. (9), Sabae Housing, Pyi Htaung Su Road,  
 (26) Ward, South Dagon Tsp, Yangon, Myanmar.  
 Tel : 09-893 767 424  
 E-mail : info@prolabmyanmar.com

**LABORATORY ANALYSIS REPORT**

- 1 Client Name : Dawei Bus Terminal and Commercial Complex Project
- 2 Location : Plot No(104), Thabyay Chaung Village Tract, Dawei Township
- 3 Type of Sample : SW 2
- 4 Sample No. : 00794/2023
- 5 Contact Person : Ko Wunna Zaw
- 6 Phone No. : 09-797005180
- 7 Date Received : 08.09.2023
- 8 Date of Test Performed : 08.09.2023
- 9 Date of Issued : 20.09.2023
- 10 Result :

No.	Parameter	Result	Unit	WHO STD 2018	Method
1	Chromium (Hexavalent)	0.014	mg/L	NA	USEPA 1, 5 - Diphenylcarbohydrazide Method
2	Chromium (Total)	< 0.01	mg/L	0.05 mg/L	Hach DR 3900 Spectrophotometer, Alkaline Hypobromite Oxidation Method
3	Free Chlorine	Nil	mg/L	5.0 mg/L	Hanna HI97104 - Free & Total Chlorine Photometer
4	Oil and Grease	13	mg/L	NA	<sup>(a)</sup> 5520D, Soxhlet Extraction Method
5	Phenols	Nil	mg/L	0.002 mg/L	<sup>(a)</sup> 5530D, Direct Photometric Method
6	Silver	< 0.02	mg/L	0.05 mg/L	Hach DR 3900 Spectrophotometer, Colorimetric Method
7	Sulfide	17	µg/L	NA	Hach DR 3900 Spectrophotometer, USEPA Methylene Blue Method
8	Selenium	< 0.1	mg/L	0.01 mg/L	Microwave plasma Atomic Emission Spectroscopy method
9	Total Cyanide	< 0.01	mg/L	-	LoviBond Spectro-Direct Method 157
10	Total Coliform	46	MPN/ml	ND per 100 mL	FDA-BAM: MPN Method

**Remark:**

**This certificate is issued only for the receipt of the test sample.**

<sup>(a)</sup> American Public Health Association, Standard Methods for the Examination of Water and Wastewater.

**Tested By**

Name : NAW EH THA KU  
 Position : Laboratory Technician  
 Signature :

**Approved By**

Name : KYAWT KYAWT YIN  
 Position : Technical Consultant Manager  
 Signature :





Laboratory Technical Consultant: U Saw Christopher Maung  
 B.Sc Engg: (Civil), Dip S.E.(Delft) Lecturer of YIT (Reid), Consultant (Y.C.D.C), LWSE 001.  
 Former Member (UNICEF, Water quality monitoring & Surveillance Myanmar)

**WTL-RE-001**  
 Issue Date - 01-12-2012  
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 Issue No - 1.0/Page 2 of 2

**W0923 213**

**WATER QUALITY TEST RESULTS FORM**

Client \_\_\_\_\_ Dawei Bus Terminal And Commercial Complex Project  
 Nature of Water \_\_\_\_\_ Surface Water (2)  
 Location \_\_\_\_\_ Plot No.(104), Thabyay Chaung Village, Dawei Township.  
 Date and Time of collection \_\_\_\_\_ 7.9.2023  
 Date and Time of arrival at Laboratory \_\_\_\_\_ 8.9.2023  
 Date and Time of commencing examination \_\_\_\_\_ 9.9.2023  
 Date and Time of completing \_\_\_\_\_ 11.9.2023

**Results of Water Analysis**

**WHO Drinking Water Guideline  
 (Geneva - 1993)**

Temperature (°C)	°C	
Fluoride (F)	mg/l	1.5 mg/l
Lead (as Pb)	mg/l	0.01 mg/l
Arsenic (As)	mg/l	0.01 mg/l
Nitrate (N.NO <sub>3</sub> )	mg/l	50 mg/l
Chlorine (Residual)	mg/l	
Ammonia Nitrogen (NH <sub>3</sub> )	mg/l	
Ammonium Nitrogen (NH <sub>4</sub> )	mg/l	
Dissolved Oxygen (DO)	mg/l	
Chemical Oxygen Demand (COD)	mg/l	
Biochemical Oxygen Demand (BOD) (5 days at 20 °C)	mg/l	
Cyanide (CN)	0.010 mg/l	0.07 mg/l
Zinc (Zn)	mg/l	3 mg/l
Copper (Cu)	mg/l	2 mg/l
Silica (SiO <sub>2</sub> )	mg/l	

Remark: This certificate is issued only for the receipt of the test sample.

**Tested by**


Signature: Hein  
 Name: Zaw Hein Oo  
B.Sc (Chemistry)  
Sr.Chemist  
ISO Tech Laboratory

**Approved by**


Signature: Soe Thit  
 Name: Soe Thit  
B.E (Civil) 1980  
Technical Officer  
ISO TECH Laboratory


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ISO  
TECH  
LABORATORY





ISO 9001:2015 Cert. No. 688283

Laboratory Technical Consultant: U Saw Christopher Maung  
B.Sc Engg: (Civil), Dip S.E.(Delft) Lecturer of YIT (Retd), Consultant (Y.C.D.C), LWSE 001.  
Former Member (UNICEF, Water quality monitoring & Surveillance Myanmar)

WTL-RE-001  
Issue Date - 01-12-2012  
Effective Date - 01-12-2012  
Issue No - 1.0/Page 1 of 2

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### WATER QUALITY TEST RESULTS FORM

Client	Dawei Bus Terminal And Commercial Complex Project		
Nature of Water	Surface Water (2)		
Location	Plot No.(104), Thabyay Chaung Village, Dawei Township.		
Date and Time of collection	7.9.2023		
Date and Time of arrival at Laboratory	8.9.2023		
Date and Time of commencing examination	9.9.2023		
Date and Time of completing	11.9.2023		

#### Results of Water Analysis

#### WHO Drinking Water Guideline (Geneva - 1993)

pH			6.5 - 8.5
Colour (True)	TCU		15 TCU
Turbidity	NTU		5 NTU
Conductivity	micro S/cm		
Total Hardness	mg/l as CaCO <sub>3</sub>		500 mg/l as CaCO <sub>3</sub>
Calcium Hardness	mg/l as CaCO <sub>3</sub>		
Magnesium Hardness	mg/l as CaCO <sub>3</sub>		
Total Alkalinity	mg/l as CaCO <sub>3</sub>		
Phenolphthalein Alkalinity	mg/l as CaCO <sub>3</sub>		
Carbonate (CaCO <sub>3</sub> )	mg/l as CaCO <sub>3</sub>		
Bicarbonate (HCO <sub>3</sub> )	mg/l as CaCO <sub>3</sub>		
Iron	0.71	mg/l	0.3 mg/l
Chloride (as CL)		mg/l	250 mg/l
Sodium Chloride (as NaCL)		mg/l	
Sulphate (as SO <sub>4</sub> )		mg/l	500 mg/l
Total Solids		mg/l	1500 mg/l
Total Suspended Solids		mg/l	
Total Dissolved Solids		mg/l	1000 mg/l
Manganese		mg/l	0.05 mg/l
Phosphate		mg/l	
Phenolphthalein Acidity		mg/l	
Methyl Orange Acidity		mg/l	
Salinity		ppt	

Remark: This certificate is issued only for the receipt of the test sample.

**Tested by**

Signature: Zaw Hein Oo

Name: B.Sc (Chemistry)  
Sr.Chemist

**Approved by**

Signature: See Thit

Name: B.E (Civil) 1980  
Technical Officer

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The Government of the Republic of the Union of Myanmar  
 Ministry of Natural Resources and Environmental Conservation



Department of Forest  
 Forest Research Institute  
 Water Quality Laboratory, Yezin

Ref : WQL/0287/2023

Date: 27-9-2023

**ANALYTICAL TEST REPORT**

Customer Name: **Dawei Bus Terminal and Commercial Complex Project**

Customer Address :

Assignment number	WL/2023-85	Sampling Location	-
Sample number	5	Sampling Date	-
Sample type	Surface Water	Sample received date	9-9-2023
Comments			

Parameter	Result	Unit	Method reference	Instruments
pH	7.05	-	ISO 10523:2008	ManTech Robot (PC-1300-475E)
Fluoride	0.11	mg/L	ISO 10304-1: 2009	Ion Chromatography (Thermo Scientific, DIONEX AQUION)
Nitrate	0.09	mg/L	ISO 10304-1: 2009	Ion Chromatography (Thermo Scientific, DIONEX AQUION)
Sulphate	1.65	mg/L	ISO 10304-1: 2009	Ion Chromatography (Thermo Scientific, DIONEX AQUION)
Ammonia	0.028	mg/L	ISO 10304-1: 2009	Ion Chromatography (Thermo Scientific, DIONEX AQUION)
Total Suspended Solids	8.32	mg/L	NS 4733:1983	Circulation and Filtration System
BOD	2.71	mg/L	Potentiometric	YSI ProDO Tester
COD	6.07	mg/L	Titrimetic	Titration
Total Nitrogen	1.52	mg/L	Kjeldahl	Kjeldahl Digestion and Distillation Unit
Total Phosphorus	14.07	µg /L	NS 4725	SFA(SKALAR SAN plus Analyzer) SA 3000/5000,SA 1100
Lead	0.51	µg /L	EPA 200.9	GFAAS (PG Instruments AA500)
Cadmium	0.13	µg /L	EPA 200.9	GFAAS (PG Instruments AA500)

Parameter	Result	Unit	Method reference	Instruments
Arsenic	ND	$\mu\text{g}/\text{L}$	EPA 200.9	GFAAS (PG Instruments AA500)
Copper	ND	$\mu\text{g}/\text{L}$	EPA 200.9	GFAAS (PG Instruments AA500)
Zinc	10.85	$\mu\text{g}/\text{L}$	EPA 200.9	GFAAS (PG Instruments AA500)
Nickel	2.08	$\mu\text{g}/\text{L}$	EPA 200.9	GFAAS (PG Instruments AA500)
Mercury	ND	$\mu\text{g}/\text{L}$	EPA 245.7	GFAAS (PG Instruments AA500)

Remark: This certificate is issued only for the receipt of the test sample.

Tested by

Signature :

Name : Dr. Thida Cho  
Assistant Research Officer

Approved by

Signature :

Name : Dr. Thida Swe  
Assistant Research Officer



Myanmar Innovation Group of Co., Ltd  
 Address : No. (9), Sabae Housing, Pyi Htaung Su Road,  
 (26) Ward, South Dagon Tsp, Yangon, Myanmar.  
 Tel : 09-893 767 424  
 E-mail : info@prolabmyanmar.com

**LABORATORY ANALYSIS REPORT**

- 1 Client Name : Dawei Bus Terminal and Commercial Complex Project
- 2 Location : Plot No(104), Thabyay Chaung Village Tract, Dawei Township
- 3 Type of Sample : SW 3
- 4 Sample No. : 00795/2023
- 5 Contact Person : Ko Wunna Zaw
- 6 Phone No. : 09-797005180
- 7 Date Received : 08.09.2023
- 8 Date of Test Performed : 08.09.2023
- 9 Date of Issued : 20.09.2023
- 10 Result :

No.	Parameter	Result	Unit	WHO STD 2018	Method
1	Chromium (Hexavalent)	0.012	mg/L	NA	USEPA 1, 5 - Diphenylcarbohydrazide Method
2	Chromium (Total)	< 0.01	mg/L	0.05 mg/L	Hach DR 3900 Spectrophotometer, Alkaline Hypobromite Oxidation Method
3	Free Chlorine	Nil	mg/L	5.0 mg/L	Hanna HI97104 - Free & Total Chlorine Photometer
4	Oil and Grease	8	mg/L	NA	<sup>(a)</sup> 5520D, Soxhlet Extraction Method
5	Phenols	Nil	mg/L	0.002 mg/L	<sup>(a)</sup> 5530D, Direct Photometric Method
6	Silver	< 0.02	mg/L	0.05 mg/L	Hach DR 3900 Spectrophotometer, Colorimetric Method
7	Sulfide	18	µg/L	NA	Hach DR 3900 Spectrophotometer, USEPA Methylene Blue Method
8	Selenium	< 0.1	mg/L	0.01 mg/L	Microwave plasma Atomic Emission Spectroscopy method
9	Total Cyanide	< 0.01	mg/L	-	LoviBond Spectro-Direct Method 157
10	Total Coliform	15	MPN/ml	ND per 100 mL	FDA-BAM: MPN Method

**Remark:**

**This certificate is issued only for the receipt of the test sample.**

<sup>(a)</sup> American Public Health Association, Standard Methods for the Examination of Water and Wastewater.

**Tested By**


Name : NAW EH THA KU  
 Position : Laboratory Technician  
 Signature :




**Approved By**


Name : KYAWT KYAWT YIN  
 Position : Technical Consultant Manager  
 Signature :





Laboratory Technical Consultant: U Saw Christopher Maung  
B.Sc Engg: (Civil), Dip S.E(Delft) Lecturer of YIT (Retd), Consultant (Y.C.D.C), LWSE 001.  
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**WTL-RE-001**  
Issue Date - 01-12-2012  
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Issue No - 1.0/Page 2 of 2

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### WATER QUALITY TEST RESULTS FORM

Client _____	Dawei Bus Terminal And Commercial Complex Project
Nature of Water _____	Surface Water (3)
Location _____	Plot No.(104), Thabyay Chaung Village, Dawei Township.
Date and Time of collection _____	7.9.2023
Date and Time of arrival at Laboratory _____	8.9.2023
Date and Time of commencing examination _____	9.9.2023
Date and Time of completing _____	11.9.2023


#### Results of Water Analysis

#### WHO Drinking Water Guideline (Geneva - 1993)

Parameter	Unit	Limit
Temperature (°C)	°C	
Fluoride (F)	mg/l	1.5 mg/l
Lead (as Pb)	mg/l	0.01 mg/l
Arsenic (As)	mg/l	0.01 mg/l
Nitrate (N.NO <sub>3</sub> )	mg/l	50 mg/l
Chlorine (Residual)	mg/l	
Ammonia Nitrogen (NH <sub>3</sub> )	mg/l	
Ammonium Nitrogen (NH <sub>4</sub> )	mg/l	
Dissolved Oxygen (DO)	mg/l	
Chemical Oxygen Demand (COD)	mg/l	
Biochemical Oxygen Demand (BOD) (5 days at 20 °C)	mg/l	
Cyanide (CN)	0.011 mg/l	0.07 mg/l
Zinc (Zn)	mg/l	3 mg/l
Copper (Cu)	mg/l	2 mg/l
Silica (SiO <sub>2</sub> )	mg/l	

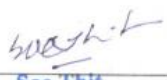
Remark: This certificate is issued only for the receipt of the test sample.

**Tested by**

Signature: 

Name: **Zaw Hen Oo**  
**B.Sc (Chemistry)**  
**Sr.Chemist**  
**ISO Tech Laboratory**

**Approved by**

Signature: 

Name: **Soe Thit**  
**B.E (Civil) 1980**  
**Technical Officer**  
**ISO TECH Laboratory**

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Ph: 01-640955, 09-880100172, 09-880100173, 01-644506, E-mail: isotechlaboratory@gmail.com, Website: weg-myanmar.com



**LABORATORY**



Laboratory Technical Consultant: U Saw Christopher Maung  
 B.Sc Engg. (Civil), Dip S.E(Delft) Lecturer of YIT (Retd), Consultant (Y.C.D.C), LWSE 001,  
 Former Member (UNICEF, Water quality monitoring & Surveillance Myanmar)

**WTL-RE-001**  
 Issue Date - 01-12-2012  
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 Issue No - 1.0/Page 1 of 2

**W0923 214**

**WATER QUALITY TEST RESULTS FORM**

Client Dawei Bus Terminal And Commercial Complex Project  
 Nature of Water Surface Water (3)  
 Location Plot No.(104), Thabyay Chaung Village, Dawei Township.  
 Date and Time of collection 7.9.2023  
 Date and Time of arrival at Laboratory 8.9.2023  
 Date and Time of commencing examination 9.9.2023  
 Date and Time of completing 11.9.2023

**Results of Water Analysis**

**WHO Drinking Water Guideline  
(Geneva - 1993)**

pH		6.5 - 8.5
Colour (True)	TCU	15 TCU
Turbidity	NTU	5 NTU
Conductivity	micro S/cm	
Total Hardness	mg/l as CaCO <sub>3</sub>	500 mg/l as CaCO <sub>3</sub>
Calcium Hardness	mg/l as CaCO <sub>3</sub>	
Magnesium Hardness	mg/l as CaCO <sub>3</sub>	
Total Alkalinity	mg/l as CaCO <sub>3</sub>	
Phenolphthalein Alkalinity	mg/l as CaCO <sub>3</sub>	
Carbonate (CaCO <sub>3</sub> )	mg/l as CaCO <sub>3</sub>	
Bicarbonate (HCO <sub>3</sub> )	mg/l as CaCO <sub>3</sub>	
Iron	0.61 mg/l	0.3 mg/l
Chloride (as CL)	mg/l	250 mg/l
Sodium Chloride (as NaCL)	mg/l	
Sulphate (as SO <sub>4</sub> )	mg/l	500 mg/l
Total Solids	mg/l	1500 mg/l
Total Suspended Solids	mg/l	
Total Dissolved Solids	mg/l	1000 mg/l
Manganese	mg/l	0.05 mg/l
Phosphate	mg/l	
Phenolphthalein Acidity	mg/l	
Methyl Orange Acidity	mg/l	
Salinity	ppt	

Remark: This certificate is issued only for the receipt of the test sample.

Tested by Hein  
 Signature: Zaw Hein Oo  
 Name: B.Sc (Chemistry) Sr.Chemist

Approved by Soe Thit  
 Signature: Soe Thit  
 Name: B.E (Civil) 1980 Technical Officer ISO TECH Laboratory

(a division of WEG Co.,Ltd.) **ISO Tech Laboratory**

No.18, Lanthit Road, Nanthargone Quarter, Insein Township, Yangon, Myanmar.  
 Ph: 01-640955, 09-880100172, 09-880100173, 01-644506, E-mail: isotechlaboratory@gmail.com, Website: weg-myanmar.com



Ministry of Natural Resources and Environmental Conservation



Department of Forest

Forest Research Institute

Forest Soil Laboratory, Yezin

Ref : SL154/09/2023

Date: 10-7-2023

**ANALYTICAL TEST REPORT**

Customer Name : Dawei Bus Terminal and Commercial Complex Project

Customer Address :

Assignment number	SL/2023-154	Sampling Location	
Sample number	1	Sampling Date	-
Sample type	Soil	Sample received date	8-5-2023
Comments			

Parameter	Result	Unit	Method reference	Instruments
pH	7.27		Soil/plant analysis 1981	pH meter
Total Phosphorous (TP)	0.00064	µg/L	EPA 200.9	GFAAS (PG Instruments AA500)
Exchangeable Potassium (Ex. K)	0.0126	µg/L	EPA 200.9	GFAAS (PG Instruments AA500)

Swe Swe Tun  
Assistant Research Officer  
Soil Lab, FRI, Yezin

*Appendix 7 Social Survey Records**Gender of the respondents*

Name of Ward/ Village	Gender of the respondents		Total
	Male	Female	
Dawei	1	0	1
Ein Shey Pyin Ward	3	6	9
Maung Ma Shaung Village	2	0	2
Myaung Pale Ward Ward	0	1	1
Oh Loat Ward	1	0	1
Pu Lu Kone Village	8	0	8
San Chi Ward	1	0	1
Shan Ma Lae Swal Ward	1	0	1
Shin Moke Tee Village	1	0	1
Sin Pu Ninn Ward	1	0	1
Sin Seik Ward	1	0	1
Tha Byay Chaung Village	10	4	14
We Gyun Ward	0	1	1
Za Har Village	7	2	9
Frequency	37	14	51
Percentage	72.5	27.5	100

*Age class of respondent*

Name of Ward/ Village	Age class of the respondents		Total
	18 to 64	65 and above	
Dawei	1	0	1
Ein Shey Pyin Ward	9	0	9
Maung Ma Shaung Village	1	1	2
Myaung Pale Ward	1	0	1
Oh Loat Ward	2	1	1
Pu Lu Kone Village	6	2	8

San Chi Ward	1	0	1
Shan Ma Lae Swal Ward	1	0	1
Shin Moke Tee Village	1	0	1
Sin Pu Ninn Ward	1	0	1
Sin Seik Ward	1	0	1
Tha Byay Chaung Village	11	2	14
We Gyun Ward	1	0	1
Za Har Village	9	0	9
Frequency	46	5	51
Percentage	90.2	9.8	100.0

*Religion of respondents*

Name of Ward/ Village	Religions of respondents		Total
	Buddhism	Christianity	
Dawei	1	0	1
Ein Shey Pyin Ward	8	1	9
Maung Ma Shaung Village	2	0	2
Myaung Pale Ward	1	0	1
Oh Loat Ward	1	0	1
Pu Lu Kone Village	8	0	8
San Chi Ward	1	0	1
Shan Ma Lae Swal Ward	1	0	1
Shin Moke Tee Village	1	0	1
Sin Pu Ninn Ward	1	0	1
Sin Seik Ward	1	0	1
Tha Byay Chaung Village	14	0	14
We Gyun Ward	1	0	1
Za Har Village	9	0	9
Frequency	50	1	51
Percentage	98.0	2.0	100

*Ethnicity of the respondents*

Name of Ward/ Village	Ethnicity of the respondents			Total
	Bamar	Other	Karen	
Dawei	1	0	0	1
Ein Shey Pyin Ward	8	0	1	9
Maung Ma Shaung Village	2	0	0	2
Myaung Pale Ward	1	0	0	1
Oh Loat Ward	1	0	0	1
Pu Lu Kone Village	8	0	0	8
San Chi Ward	0	1	0	1
Shan Ma Lae Swal Ward	1	0	0	1
Shin Moke Tee Village	1	0	0	1
Sin Pu Ninn Ward	1	0	0	1
Sin Seik Ward	0	1	0	1
Tha Byay Chaung Village	11	3	0	14
We Gyun Ward	0	1	0	1
Za Har Village	7	2	0	9
Frequency	42	8	1	51
Percentage	82.4	15.7	2.0	100

*Education level of respondents*

Name of Ward/ Village	Education Level of respondents						Total
	Primary Education	Secondary Education	High School	Univesity Education	Graduate	No Education	
Dawei	0	0	0	1	0	0	1
Ein Shey Pyin Ward	2	0	4	1	1	1	9
Maung Ma Shaung Village	0	2	0	0	0	0	2
Myaung Pale Ward	0	0	0	0	1	0	1

Oh Loat Ward	0	0	1	0	0	0	1
Pu Lu Kone Village	3	4	1	0	0	0	8
San Chi Ward	0	0	0	0	1	0	1
Shan Ma Lae Swal Ward	0	0	0	0	1	0	1
Shin Moke Tee Village	0	0	0	0	1	0	1
Sin Pu Ninn Ward	0	0	0	0	1	0	1
Sin Seik Ward	1	0	0	0	0	0	1
Tha Byay Chaung Village	5	2	7	0	0	0	14
We Gyun Ward	0	0	1	0	0	0	1
Za Har Village	3	3	3	0	0	0	9
Frequency	14	11	17	2	6	1	51
Percentage	27.5	21.6	33.3	3.9	11.8	2.0	100.0

### *Health condition of respondents*

Name of Ward/ Village	Health condition of respondents			Total
	Normal	Elderly (above 65)	Other	
Dawei	1	0	0	1
Ein Shey Pyin Ward	8	0	1	9
Maung Ma Shaung Village	1	1	0	2
Myaung Pale Ward	1	0	0	1
Oh Loat Ward	1	0	0	1
Pu Lu Kone Village	6	0	2	8
San Chi Ward	1	0	0	1
Shan Ma Lae Swal Ward	1	0	0	1
Shin Moke Tee Village	1	0	0	1
Sin Pu Ninn Ward	1	0	0	1
Sin Seik Ward	1	0	0	1

Name of Ward/ Village	Health condition of respondents			Total
	Normal	Elderly (above 65)	Other	
Tha Byay Chaung Village	11	0	3	14
We Gyun Ward	1	0	0	1
Za Har Village	9	0	0	9
Frequency	44	1	6	51
Percentage	86.3	2.0	11.8	100.0

*Gender of household heads*

Name of Ward/ Village	Gender of household heads		Total
	Male	Famale	
Dawei	1	0	1
Ein Shey Pyin Ward	9	0	9
Maung Ma Shaung Village	2	0	2
Myaung Pale Ward	1	0	1
Oh Loat Ward	1	0	1
Pu Lu Kone Village	8	0	8
San Chi Ward	1	0	1
Shan Ma Lae Swal Ward	1	0	1
Shin Moke Tee Village	1	0	1
Sin Pu Ninn Ward	1	0	1
Sin Seik Ward	1	0	1
Tha Byay Chaung Village	11	3	14
We Gyun Ward	1	0	1
Za Har Village	9	0	9
Frequency	48	3	51
Percentage	94.1	5.9	100



*Age class of household heads*

Name of Ward/ Village	Age classes of household heads		Total
	18 years to 64 years	65 years and above	
Dawei	1	0	1
Ein Shey Pyin Ward	7	2	9
Maung Ma Shaung Village	2	0	2
Myaung Pale Ward	1	0	1
Oh Loat Ward	1	0	1
Pu Lu Kone Village	6	2	8
San Chi Ward	1	0	1
Shan Ma Lae Swal Ward	1	0	1
Shin Moke Tee Village	1	0	1
Sin Pu Ninn Ward	1	0	1
Sin Seik Ward	1	0	1
Tha Byay Chaung Village	11	3	14
We Gyun Ward	1	0	1
Za Har Village	9	0	9
Frequency	44	7	51
Percentage	86.3	13.7	100

*Ethnicity of household heads*

Name of Ward/ Village	Ethnicity of household heads			Total
	Bamar	Other	Karen	
Dawei	1	0	0	1
Ein Shey Pyin Ward	8	0	1	9
Maung Ma Shaung Village	2	0	0	2
Myaung Pale Ward	1	0	0	1
Oh Loat Ward	1	0	0	1
Pu Lu Kone Village	8	0	0	8
San Chi Ward	0	1	0	1

Name of Ward/ Village	Ethnicity of household heads			Total
	Bamar	Other	Karen	
Shan Ma Lae Swal Ward	1	0	0	1
Shin Moke Tee Village	1	0	0	1
Sin Pu Ninn Ward	1	0	0	1
Sin Seik Ward	0	1	0	1
Tha Byay Chaung Village	12	2	0	14
We Gyun Ward	0	1	0	1
Za Har Village	7	2	0	9
Frequency	43	7	1	51
Percentage	84.4	13.7	2.0	100

*Education level of household heads*

Name of Ward/ Village	Education of Household Head							Total
	Primary Education	Secondary Education	High School	University Education	Graduate	No Education	No Answer	
Dawei	1	0	0	0	0	0	0	1
Ein Shey Pyin Ward	3	2	2	1	0	0	1	9
Maung Ma Shaung Village	0	2	0	0	0	0	0	2
Myaung Pale Ward	0	1	0	0	0	0	0	1
Oh Loat Ward	0	0	1	0	0	0	0	1
Pu Lu Kone Village	3	4	1	0	0	0	0	8
San Chi Ward	1	0	0	0	0	0	0	1
Shan Ma Lae Swal Ward	0	0	0	0	1	0	0	1
Shin Moke Tee Village	0	0	1	0	0	0	0	1
Sin Pu Ninn Ward	0	0	0	0	1	0	0	1
Sin Seik Ward	1	0	0	0	0	0	0	1
Tha Byay Chaung Village	5	4	4	0	1	0	0	14
We Gyun Ward	0	0	1	0	0	0	0	1
Za Har Village	3	3	2	0	0	1	0	9
Frequency	17	16	12	1	3	1	1	51

Percentage	33.3	31.4	23.5	2.0	5.9	2.0	2.0	100.0
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*Health condition of household heads*

Name of Ward/ Village	Health condition of household heads			Total
	Normal	Elderly	Can't walk	
Dawei	1	0	0	1
Ein Shey Pyin Ward	9	0	0	9
Maung Ma Shaung Village	1	1	0	2
Myaung Pale Ward	1	0	0	1
Oh Loat Ward	1	0	0	1
Pu Lu Kone Village	6	2	0	8
San Chi Ward	1	0	0	1
Shan Ma Lae Swal Ward	1	0	0	1
Shin Moke Tee Village	1	0	0	1
Sin Pu Ninn Ward	1	0	0	1
Sin Seik Ward	1	0	0	1
Tha Byay Chaung Village	10	3	1	14
We Gyun Ward	1	0	0	1
Za Har Village	9	0	0	9
Frequency	44	6	1	51
Percentage	86.3	11.7	2	100

*Number of family members*

Name of Ward/ Village	Number of family members								Total
	1	2	3	4	5	6	7	10	
Dawei	0	0	0	0	1	0	0	0	1
Ein Shey Pyin Ward	1	2	4	0	1	0	1	0	9
Maung Ma Shaung Village	0	0	0	2	0	0	0	0	2
Myaung Pale Ward	0	0	1	0	0	0	0	0	1
Oh Loat Ward	0	0	0	0	1	0	0	0	1

Pu Lu Kone Village	0	0	1	3	3	0	1	0	8
San Chi Ward	0	0	1	0	0	0	0	0	1
Shan Ma Lae Swal Ward	0	0	0	1	0	0	0	0	1
Shin Moke Tee Village	0	0	0	0	1	0	0	0	1
Sin Pu Ninn Ward	0	0	0	0	0	0	0	1	1
Sin Seik Ward	0	1	0	0	0	0	0	0	1
Tha Byay Chaung Village	0	5	2	5	0	1	1	0	14
We Gyun Ward	0	0	0	1	0	0	0	0	1
Za Har Village	0	0	5	1	3	0	0	0	9
Frequency	1	8	14	13	10	1	3	1	51
Percentage	2.0	15.7	27.5	25.5	19.6	2.0	5.9	2.0	100.0

*Type of households*

Name of Ward/ Village	Type of Household of the Respondent				Total
	Woman headed Household	Man-headed Household	Elderly-woman Headed Household	Elderly-man Headed Household	
Dawei	0	1	0	0	1
Ein Shey Pyin Ward	0	9	0	0	9
Maung Ma Shaung Village	0	1	0	1	2
Myaung Pale Ward	0	1	0	0	1
Oh Loat Ward	0	1	0	0	1
Pu Lu Kone Village	0	6	0	2	8
San Chi Ward	0	1	0	0	1
Shan Ma Lae Swal Ward	0	1	0	0	1
Shin Moke Tee Village	0	1	0	0	1
Sin Pu Ninn Ward	0	1	0	0	1
Sin Seik Ward	0	1	0	0	1
Tha Byay Chaung Village	1	9	2	2	14
We Gyun Ward	0	1	0	0	1
Za Har Village	0	9	0	0	9

Frequency	1	43	2	5	51
Percentage	2	84.3	3.9	9.8	100

*Monthly income of the households*

Name of ward/ Village	Monthly income of the households						Total
	Below 50,000	Between 50,001 to 100,000	Between 100,001 to 200,000	Between 200,001 to 300,000	Between 300,001 to 500,000	Above 500,000	
Dawei	0	0	0	0	0	1	1
Ein Shey Pyin Ward	0	0	0	2	3	4	9
Maung Ma Shaung Village	0	0	0	0	1	1	2
Myaung Pale Ward	0	0	0	0	0	1	1
Oh Loat Ward	0	0	0	1	0	0	1
Pu Lu Kone Village	0	0	0	0	5	3	8
San Chi Ward	0	0	0	0	0	1	1
Shan Ma Lae Swal Ward	0	0	0	0	0	1	1
Shin Moke Tee Village	0	0	0	0	0	1	1
Sin Pu Ninn Ward	0	0	0	0	0	1	1
Sin Seik Ward	0	1	0	0	0	0	1
Tha Byay Chaung Village	1	1	4	2	2	4	14
We Gyun Ward	0	0	0	0	0	1	1
Za Har Village	0	0	0	3	4	2	9
Frequency	1	2	4	8	15	21	51
Percentage	2.0	3.9	7.8	15.7	29.4	41.2	100.0

*Monthly expense of the households*

Name of Ward/ Village	Monthly Expense of Households (MMK)							Total
	Below 50,000	Between 50,001 to 100,000	Between 100,001 to 200,000	Between 200,001 to 300,000	Between 300,001 to 500,000	Above 500,000	No Answer	
Dawei	0	0	0	0	0	1	0	1
Ein Shey Pyin Ward	0	1	0	1	6	1	0	9

Maung Ma Shaung Village	0	0	0	0	2	0	0	2
Myaung Pale Ward	0	0	0	0	1	0	0	1
Oh Loat Ward	0	0	0	1	0	0	0	1
Pu Lu Kone Village	0	0	0	1	5	2	0	8
San Chi Ward	0	0	0	0	0	1	0	1
Shan Ma Lae Swal Ward	0	0	0	1	0	0	0	1
Shin Moke Tee Village	0	0	0	0	0	1	0	1
Sin Pu Ninn Ward	0	0	0	0	0	1	0	1
Sin Seik Ward	0	0	0	1	0	0	0	1
Tha Byay Chaung Village	1	1	4	2	4	1	1	14
We Gyun Ward	0	0	0	1	0	0	0	1
Za Har Village	0	0	1	3	3	1	1	9
Frequency	1	2	5	11	21	9	2	51
Percentage	2.0	3.9	9.8	21.6	41.2	17.6	3.9	100.0

*Income changes of the household within three years*

Name of Ward/ Village	Income changes of the household within three years		Total
	Yes	No	
Dawei	1	0	1
Ein Shey Pyin Ward	7	2	9
Maung Ma Shaung Village	0	2	2
Myaung Pale Ward	0	1	1
Oh Loat Ward	0	1	1
Pu Lu Kone Village	4	4	8
San Chi Ward	1	0	1
Shan Ma Lae Swal Ward	1	0	1
Shin Moke Tee Village	0	1	1
Sin Pu Ninn Ward	1	0	1
Sin Seik Ward	1	0	1

Tha Byay Chaung Village	12	2	14
We Gyun Ward	1	0	1
Za Har Village	6	3	9
Frequency	35	16	51
Percentage	68.6	31.4	100.0

*Type of income changes*

Name of Ward/ Village	Type of Income Changes of the Household				Total
	Decreased	Increased	Not Applicable	No Answer	
Dawei	0	1	0	0	1
Ein Shey Pyin Ward	3	4	2	0	9
Maung Ma Shaung Village	0	0	2	0	2
Myaung Pale Ward	0	0	1	0	1
Oh Loat Ward	0	0	1	0	1
Pu Lu Kone Village	3	0	4	1	8
San Chi Ward	0	1	0	0	1
Shan Ma Lae Swal Ward	0	1	0	0	1
Shin Moke Tee Village	0	0	1	0	1
Sin Pu Ninn Ward	1	0	0	0	1
Sin Seik Ward	1	0	0	0	1
Tha Byay Chaung Village	9	3	2	0	14
We Gyun Ward	1	0	0	0	1
Za Har Village	2	4	3	0	9
Frequency	20	14	16	1	51
Percentage	39.2	27.5	31.4	2.0	100.0

*Current income situation of the households*

Name of Ward/ Village	Current income situation of the households			Total
	Not enough money	Enough money but can't save money	Can save money	

Dawei	0	0	1	1
Ein Shey Pyin Ward	1	5	3	9
Maung Ma Shaung Village	0	2	0	2
Myaung Pale Ward	0	0	1	1
Oh Loat Ward	0	1	0	1
Pu Lu Kone Village	1	6	1	8
San Chi Ward	0	0	1	1
Shan Ma Lae Swal Ward	0	0	1	1
Shin Moke Tee Village	0	0	1	1
Sin Pu Ninn Ward	1	0	0	1
Sin Seik Ward	1	0	0	1
Tha Byay Chaung Village	3	10	1	14
We Gyun Ward	0	1	0	1
Za Har Village	1	8	0	9
Frequency	8	33	10	51
Percentage	15.7	64.7	19.6	100.0

*Access to grid electricity*

Name of Ward/ Village	Do you get government electricity?		Total
	Yes	No	
Dawei	1	0	1
Ein Shey Pyin Ward	6	3	9
Maung Ma Shaung Village	1	1	2
Myaung Pale Ward	1	0	1
Oh Loat Ward	1	0	1
Pu Lu Kone Village	6	2	8
San Chi Ward	1	0	1
Shan Ma Lae Swal Ward	1	0	1
Shin Moke Tee Village	1	0	1
Sin Pu Ninn Ward	1	0	1



Sin Seik Ward	1	0	1
Tha Byay Chaung Village	11	3	14
We Gyun Ward	1	0	1
Za Har Village	2	7	9
Frequency	35	16	51
Percentage	68.6	31.4	100.0

*Sources of electricity when government electricity is cut off*

Name of Ward/ Village	Sources of electricity when government electricity is cut off					Total
	Private Electricity	Candle	Battery	Candle, Solar	Not Applicable	
Dawei	0	0	0	0	1	1
Ein Shey Pyin Ward	3	1	1	0	4	9
Maung Ma Shaung Village	1	0	0	0	1	2
Myaung Pale Ward	1	0	0	0	0	1
Oh Loat Ward	0	0	0	0	1	1
Pu Lu Kone Village	1	1	0	1	5	8
San Chi Ward	0	0	0	0	1	1
Shan Ma Lae Swal Ward	0	0	0	0	1	1
Shin Moke Tee Village	0	0	0	0	1	1
Sin Pu Ninn Ward	1	0	0	0	0	1
Sin Seik Ward	0	0	0	0	1	1
Tha Byay Chaung Village	3	0	0	0	11	14
We Gyun Ward	0	0	0	0	1	1
Za Har Village	6	1	0	0	2	9
Frequency	16	3	1	1	30	51
Percentage	31.4	5.9	2.0	2.0	58.8	100.0

*Type of toilets*

Name of Ward/ Village	Type of toilets		Total
	Flush	Pest Controlled Toilet	
Dawei	1	0	1
Ein Shey Pyin Ward	6	3	9
Maung Ma Shaung Village	2	0	2
Myaung Pale Ward	1	0	1
Oh Loat Ward	1	0	1
Pu Lu Kone Village	7	1	8
San Chi Ward	1	0	1
Shan Ma Lae Swal Ward	1	0	1
Shin Moke Tee Village	1	0	1
Sin Pu Ninn Ward	1	0	1
Sin Seik Ward	0	1	1
Tha Byay Chaung Village	13	1	14
We Gyun Ward	1	0	1
Za Har Village	5	4	9
Frequency	41	10	51
Percentage	80.4	19.6	100.0

*Type of roofs*

Name of Ward/ Village	Types of roofs				Total
	Dani	Tin Plate	Brick	Others	
Dawei	0	1	0	0	1
Ein Shey Pyin Ward	0	9	0	0	9
Maung Ma Shaung Village	1	1	0	0	2
Myaung Pale Ward	0	1	0	0	1
Oh Loat Ward	0	1	0	0	1
Pu Lu Kone Village	0	7	1	0	8
San Chi Ward	0	1	0	0	1

Name of Ward/ Village	Types of roofs				Total
	Dani	Tin Plate	Brick	Others	
Shan Ma Lae Swal Ward	0	0	1	0	1
Shin Moke Tee Village	0	1	0	0	1
Sin Pu Ninn Ward	0	1	0	0	1
Sin Seik Ward	0	1	0	0	1
Tha Byay Chaung Village	1	12	1	0	14
We Gyun Ward	0	1	0	0	1
Za Har Village	3	5	0	1	9
Frequency	5	42	3	1	51
Percentage	9.8	82.4	5.9	2.0	100.0

*Type of walls*

Name of Ward/ Village	Types of walls					Total
	Dani	Wood	Brick	Others	Wood, Brick	
Dawei	0	0	1	0	0	1
Ein Shey Pyin Ward	0	0	9	0	0	9
Maung Ma Shaung Village	0	2	0	0	0	2
Myaung Pale Ward	0	0	0	0	1	1
Oh Loat Ward	0	0	1	0	0	1
Pu Lu Kone Village	0	3	4	0	1	8
San Chi Ward	0	0	1	0	0	1
Shan Ma Lae Swal Ward	0	0	1	0	0	1
Shin Moke Tee Village	0	0	1	0	0	1
Sin Pu Ninn Ward	0	0	1	0	0	1
Sin Seik Ward	0	0	1	0	0	1
Tha Byay Chaung Village	0	3	10	1	0	14
We Gyun Ward	0	0	1	0	0	1
Za Har Village	3	1	4	1	0	9
Frequency	3	9	35	2	2	51
Percentage	5.9	17.6	68.6	3.9	3.9	100.0

*Type of floors*

Name of Ward/ Village	Types of floors				Total
	Wood	Wood and brick	Brick	Others	
Dawei	0	1	0	0	1
Ein Shey Pyin Ward	2	0	7	0	9
Maung Ma Shaung Village	2	0	0	0	2
Myaung Pale Ward	1	0	0	0	1
Oh Loat Ward	0	0	1	0	1
Pu Lu Kone Village	3	0	5	0	8
San Chi Ward	0	0	1	0	1
Shan Ma Lae Swal Ward	0	0	1	0	1
Shin Moke Tee Village	1	0	0	0	1
Sin Pu Ninn Ward	1	0	0	0	1
Sin Seik Ward	1	0	0	0	1
Tha Byay Chaung Village	4	0	8	2	14
We Gyun Ward	1	0	0	0	1
Za Har Village	6	0	3	0	9
Frequency	22	1	26	2	51
Percentage	43.1	2.0	51.0	3.9	100.0

*Ownership of residential land*

Name of Ward/ Village	Ownership of residential land (acre)		Total
	Owner	Rent from others/Borrow	
Dawei	1	0	1
Ein Shey Pyin Ward	5	4	9
Maung Ma Shaung Village	2	0	2
Myaung Pale Ward	1	0	1
Oh Loat Ward	1	0	1
Pu Lu Kone Village	5	3	8
San Chi Ward	1	0	1

Name of Ward/ Village	Ownership of residential land (acre)		Total
	Owner	Rent from others/Borrow	
Shan Ma Lae Swal Ward	1	0	1
Shin Moke Tee Village	1	0	1
Sin Pu Ninn Ward	1	0	1
Sin Seik Ward	1	0	1
Tha Byay Chaung Village	10	4	14
We Gyun Ward	1	0	1
Za Har Village	4	5	9
Frequency	35	16	51
Percentage	68.6	31.4	100.0

*Ownership of agricultural land*

Name of Ward/ Village	Ownership of agricultural land			Total
	Owner	Rent from others/Borrow	Not Applicable	
Dawei	0	0	1	1
Ein Shey Pyin Ward	0	1	8	9
Maung Ma Shaung Village	1	0	1	2
Myaung Pale Ward	0	0	1	1
Oh Loat Ward	0	0	1	1
Pu Lu Kone Village	2	0	6	8
San Chi Ward	1	0	0	1
Shan Ma Lae Swal Ward	0	0	1	1
Shin Moke Tee Village	1	0	0	1
Sin Pu Ninn Ward	1	0	0	1
Sin Seik Ward	0	0	1	1
Tha Byay Chaung Village	6	0	8	14
We Gyun Ward	0	0	1	1
Za Har Village	3	0	6	9

Frequency	15	1	35	51
Percentage	29.4	2.0	68.6	100.0

*Ownership of big tractor*

Name of Ward/ Village	Ownership of big tractor			Total
	Owner	Rent from others	Not Applicable	
Dawei	0	0	1	1
Ein Shey Pyin Ward	0	0	9	9
Maung Ma Shaung Village	0	0	2	2
Myaung Pale Ward	0	0	1	1
Oh Loat Ward	0	0	1	1
Pu Lu Kone Village	0	0	8	8
San Chi Ward	1	0	0	1
Shan Ma Lae Swal Ward	0	0	1	1
Shin Moke Tee Village	0	0	1	1
Sin Pu Ninn Ward	0	0	1	1
Sin Seik Ward	0	0	1	1
Tha Byay Chaung Village	0	2	12	14
We Gyun Ward	0	0	1	1
Za Har Village	0	0	9	9
Frequency	1	2	48	51
Percentage	2.0	3.9	94.1	100.0

*Agriculture work*

Name of Ward/ Village	Agricultural work		Total
	Yes	No	
Dawei	0	1	1
Ein Shey Pyin Ward	2	7	9
Maung Ma Shaung Village	1	1	2
Myaung Pale Ward	0	1	1

Name of Ward/ Village	Agricultural work		Total
	Yes	No	
Oh Loat Ward	0	1	1
Pu Lu Kone Village	0	8	8
San Chi Ward	1	0	1
Shan Ma Lae Swal Ward	0	1	1
Shin Moke Tee Village	1	0	1
Sin Pu Ninn Ward	1	0	1
Sin Seik Ward	0	1	1
Tha Byay Chaung Village	5	9	14
We Gyun Ward	0	1	1
Za Har Village	3	6	9
Frequency	14	37	51
Percentage	27.5	72.5	100.0

*Sources of getting water for agricultural work*

Name of Ward/ Village	Sources of getting water for agriculture work									Total
	River	Well	Rainwater	Dam Water	Natural Water	Well, Lake	Others	Not Applicable	No Answer	
Dawei	0	0	0	0	0	0	0	1	0	1
Ein Shey Pyin Ward	0	1	1	0	0	0	0	7	0	9
Maung Ma Shaung Village	0	0	0	0	0	1	0	1	0	2
Myaung Pale Ward	0	0	0	0	0	0	0	1	0	1
Oh Loat Ward	0	0	0	0	0	0	0	1	0	1
Pu Lu Kone Village	0	0	0	0	0	0	0	8	0	8
San Chi Ward	0	0	0	0	0	0	1	0	0	1
Shan Ma Lae Swal Ward	0	0	0	0	0	0	0	1	0	1
Shin Moke Tee Village	1	0	0	0	0	0	0	0	0	1
Sin Pu Ninn Ward	0	0	0	0	0	0	0	1	0	1
Sin Seik Ward	0	0	0	0	0	0	0	1	0	1

Name of Ward/ Village	Sources of getting water for agriculture work									Total
	River	Well	Rainwater	Dam Water	Natural Water	Well, Lake	Others	Not Applicable	No Answer	
Tha Byay Chaung Village	1	1	1	1	0	0	0	9	1	14
We Gyun Ward	0	0	0	0	0	0	0	1	0	1
Za Har Village	0	1	0	0	1	0	0	7	0	9
Frequency	2	3	2	1	1	1	1	39	1	51
Percentage	3.9	5.9	3.9	2.0	2.0	2.0	2.0	76.5	2.0	100.0

*Sources of getting water for livestock*

Name of Ward/ Village	Sources of getting water for livestock			Total
	Well	Well, Rainwater	Not Applicable	
Dawei	0	0	1	1
Ein Shey Pyin Ward	0	0	9	9
Maung Ma Shaung Village	0	0	2	2
Myaung Pale Ward	0	0	1	1
Oh Loat Ward	0	0	1	1
Pu Lu Kone Village	1	0	7	8
San Chi Ward	0	0	1	1
Shan Ma Lae Swal Ward	0	0	1	1
Shin Moke Tee Village	0	0	1	1
Sin Pu Ninn Ward	0	0	1	1
Sin Seik Ward	0	0	1	1
Tha Byay Chaung Village	0	1	13	14
We Gyun Ward	0	0	1	1
Za Har Village	0	0	9	9
Frequency	1	1	49	51
Percentage	2.0	2.0	96.1	100.0



*Water shortage for agriculture and livestock*

Name of Ward/ Village	Is there any problem for getting water?			Total
	Yes	No	Not Applicable	
Dawei	0	0	1	1
Ein Shey Pyin Ward	1	5	3	9
Maung Ma Shaung Village	0	1	1	2
Myaung Pale Ward	0	0	1	1
Oh Loat Ward	0	1	0	1
Pu Lu Kone Village	0	4	4	8
San Chi Ward	0	1	0	1
Shan Ma Lae Swal Ward	0	0	1	1
Shin Moke Tee Village	0	1	0	1
Sin Pu Ninn Ward	0	1	0	1
Sin Seik Ward	0	1	0	1
Tha Byay Chaung Village	4	8	2	14
We Gyun Ward	0	0	1	1
Za Har Village	0	3	6	9
Frequency	5	26	20	51
Percentage	9.8	51.0	39.2	100.0

*Common disease*

Name of Ward/ Village	Common Diseases								Total
	Normal illness	Malaria	Seasonal Flu	Normal illness, Seasonal Flu	Diarrhea	Others	No illness	Not answering	
Dawei	1	0	0	0	0	0	0	0	1
Ein Shey Pyin Ward	3	0	0	2	1	2	1	0	9
Maung Ma Shaung Village	0	0	0	1	0	0	1	0	2

Name of Ward/ Village	Common Diseases								Total
	Normal illness	Malaria	Seasonal Flu	Normal illness, Seasonal Flu	Diarrhea	Others	No illness	Not answering	
Myaung Pale Ward	0	0	1	0	0	0	0	0	1
Oh Loat Ward	1	0	0	0	0	0	0	0	1
Pu Lu Kone Village	2	0	1	0	0	4	1	0	8
San Chi Ward	1	0	0	0	0	0	0	0	1
Shan Ma Lae Swal Ward	0	0	1	0	0	0	0	0	1
Shin Moke Tee Village	0	0	1	0	0	0	0	0	1
Sin Pu Ninn Ward	0	0	0	0	0	0	0	1	1
Sin Seik Ward	1	0	0	0	0	0	0	0	1
Tha Byay Chaung Village	4	1	1	1	0	6	1	0	14
We Gyun Ward	1	0	0	0	0	0	0	0	1
Za Har Village	2	0	1	1	0	3	1	1	9
Frequency	16	1	6	5	1	15	5	2	51
Percentage	31.4	2.0	11.8	9.8	2.0	29.4	9.8	3.9	100.0

*Health care centers*

Name of Ward/ Village	Health care centers						Total
	Village Clinic	Private Clinic	Township Hospital	Private Clinic, Township Hospital	Others	Not Applicable	
Dawei	0	0	1	0	0	0	1
Ein Shey Pyin Ward	0	6	2	1	0	0	9
Maung Ma Shaung Village	0	1	1	0	0	0	2

Name of Ward/ Village	Health care centers						Total
	Village Clinic	Private Clinic	Township Hospital	Private Clinic, Township Hospital	Others	Not Applicable	
Myaung Pale Ward	0	1	0	0	0	0	1
Oh Loat Ward	0	1	0	0	0	0	1
Pu Lu Kone Village	1	2	1	2	0	2	8
San Chi Ward	0	1	0	0	0	0	1
Shan Ma Lae Swal Ward	0	1	0	0	0	0	1
Shin Moke Tee Village	0	0	1	0	0	0	1
Sin Pu Ninn Ward	0	1	0	0	0	0	1
Sin Seik Ward	0	0	0	0	0	1	1
Tha Byay Chaung Village	3	4	2	1	4	0	14
We Gyun Ward	0	1	0	0	0	0	1
Za Har Village	3	2	3	0	1	0	9
Frequency	7	21	11	4	5	3	51
Percentage	13.7	41.2	21.6	7.8	9.8	5.9	100.0

### *Earthquake Experience*

Name of Ward/ Village	Earthquake experiences			Total
	Have experienced	Haven't experienced	No Answer	
Dawei	0	1	0	1
Ein Shey Pyin Ward	1	8	0	9
Maung Ma Shaung Village	0	2	0	2
Myaung Pale Ward	0	1	0	1
Oh Loat Ward	0	1	0	1

Name of Ward/ Village	Earthquake experiences			Total
	Have experienced	Haven't experienced	No Answer	
Pu Lu Kone Village	0	8	0	8
San Chi Ward	0	1	0	1
Shan Ma Lae Swal Ward	0	1	0	1
Shin Moke Tee Village	0	1	0	1
Sin Pu Ninn Ward	0	1	0	1
Sin Seik Ward	1	0	0	1
Tha Byay Chaung Village	2	12	0	14
We Gyun Ward	0	1	0	1
Za Har Village	1	7	1	9
Frequency	5	45	1	51
Percentage	9.8	88.2	2.0	100.0

### *Occurrence of flooding*

Name of Ward/ Village	Occurrence of flooding			Total
	Have experienced	Haven't experienced	No Answer	
Dawei	1	0	0	1
Ein Shey Pyin Ward	4	5	0	9
Maung Ma Shaung Village	1	1	0	2
Myaung Pale Ward	0	1	0	1
Oh Loat Ward	0	1	0	1
Pu Lu Kone Village	5	3	0	8
San Chi Ward	1	0	0	1
Shan Ma Lae Swal Ward	0	1	0	1
Shin Moke Tee Village	1	0	0	1
Sin Pu Ninn Ward	0	1	0	1
Sin Seik Ward	1	0	0	1
Tha Byay Chaung Village	8	6	0	14

Name of Ward/ Village	Occurrence of flooding			Total
	Have experienced	Haven't experienced	No Answer	
We Gyun Ward	1	0	0	1
Za Har Village	2	6	1	9
Frequency	25	25	1	51
Perentage	49.0	49.0	2.0	100.0

*Burning experience*

Name of Ward/ Village	Experience of burning			Total
	Have Experienced	Haven't experienced	No Answer	
Dawei	0	1	0	1
Ein Shey Pyin Ward	1	8	0	9
Maung Ma Shaung Village	0	2	0	2
Myaung Pale Ward	0	1	0	1
Oh Loat Ward	0	1	0	1
Pu Lu Kone Village	0	8	0	8
San Chi Ward	0	1	0	1
Shan Ma Lae Swal Ward	1	0	0	1
Shin Moke Tee Village	0	1	0	1
Sin Pu Ninn Ward	0	1	0	1
Sin Seik Ward	1	0	0	1
Tha Byay Chaung Village	5	9	0	14
We Gyun Ward	0	1	0	1
Za Har Village	0	8	1	9
Frequency	8	42	1	51
Percentage	15.7	82.4	2.0	100.0

*Occurrence of landslides*

Name of Ward/ Village	Occurrence of landslides		Total
	Have Experienced	Haven't Experienced	
Dawei	0	1	1
Ein Shey Pyin Ward	0	9	9
Maung Ma Shaung Village	0	2	2
Myaung Pale Ward	0	1	1
Oh Loat Ward	0	1	1
Pu Lu Kone Village	1	7	8
San Chi Ward	0	1	1
Shan Ma Lae Swal Ward	0	1	1
Shin Moke Tee Village	0	1	1
Sin Pu Ninn Ward	0	1	1
Sin Seik Ward	0	1	1
Tha Byay Chaung Village	0	14	14
We Gyun Ward	0	1	1
Za Har Village	1	8	9
Frequency	2	49	51
Percentage	3.9	96.1	100.0

*Type of vehicles*

Name of Ward/ Village	Type of vehicles that used for going to Dawei from village					Total
	Motorcycle	Small Vehicle	Big Vehicle	Motorcycle, Small Vehicle	Other	
Dawei	1	0	0	0	0	1
Ein Shey Pyin Ward	6	1	0	2	2	9
Maung Ma Shaung Village	1	1	0	0	0	2
Myaung Pale Ward	1	0	0	0	0	1
Oh Loat Ward	1	0	0	0	0	1
Pu Lu Kone Village	3	0	2	2	2	8

San Chi Ward	1	0	0	0	0	1
Shan Ma Lae Swal Ward	1	0	0	0	0	1
Shin Moke Tee Village	1	0	0	0	0	1
Sin Pu Ninn Ward	0	0	0	1	1	1
Sin Seik Ward	1	0	0	0	0	1
Tha Byay Chaung Village	8	2	0	4	4	14
We Gyun Ward	0	1	0	0	0	1
Za Har Village	7	1	0	1	1	9
Frequency	32	6	2	10	10	51
Percentage	62.7	11.8	3.9	19.6	2.0	100.0

### *Transportation Conditions*

Name of Ward/ Village	Transportation Conditions		Total
	Good	Not Good	
Dawei	1	0	1
Ein Shey Pyin Ward	8	1	9
Maung Ma Shaung Village	2	0	2
Myaung Pale Ward	1	0	1
Oh Loat Ward	1	0	1
Pu Lu Kone Village	8	0	8
San Chi Ward	1	0	1
Shan Ma Lae Swal Ward	1	0	1
Shin Moke Tee Village	0	1	1
Sin Pu Ninn Ward	1	0	1
Sin Seik Ward	1	0	1
Tha Byay Chaung Village	13	1	14
We Gyun Ward	0	1	1
Za Har Village	9	0	9
Frequency	47	4	51
Percentage	92.2	7.8	100.0

*Sources of awareness*

Name of Ward/ Village	Sources of awareness							Total
	Government Office	Administrator	Media	Family/ friends	Self	Others	Not Applicable	
Dawei	0	0	1	0	0	0	0	1
Ein Shey Pyin Ward	0	0	0	3	1	2	3	9
Maung Ma Shaung Village	0	0	0	1	0	1	0	2
Myaung Pale Ward	0	0	0	1	0	0	0	1
Oh Loat Ward	0	0	0	1	0	0	0	1
Pu Lu Kone Village	0	1	0	2	1	4	0	8
San Chi Ward	0	0	0	0	0	1	0	1
Shan Ma Lae Swal Ward	0	0	0	0	0	0	1	1
Shin Moke Tee Village	0	0	1	0	0	0	0	1
Sin Pu Ninn Ward	0	0	0	1	0	0	0	1
Sin Seik Ward	1	0	0	0	0	0	0	1
Tha Byay Chaung Village	2	1	0	6	0	4	1	14
We Gyun Ward	0	0	0	1	0	0	0	1
Za Har Village	0	0	1	4	2	0	2	9
Frequency	3	2	3	20	4	12	7	51
Percentage	5.9	3.9	5.9	39.2	7.8	23.5	13.7	100.0

*Other projects*

Name of Ward/ Village	Are there other projects working near to the village?			Total
	Yes	No	No Answer	
Dawei	0	1	0	1
Ein Shey Pyin Ward	1	7	1	9



Name of Ward/ Village	Are there other projects working near to the village?			Total
	Yes	No	No Answer	
Maung Ma Shaung Village	1	1	0	2
Myaung Pale Ward	0	1	0	1
Oh Loat Ward	0	1	0	1
Pu Lu Kone Village	1	7	0	8
San Chi Ward	0	1	0	1
Shan Ma Lae Swal Ward	0	1	0	1
Shin Moke Tee Village	0	1	0	1
Sin Pu Ninn Ward	0	1	0	1
Sin Seik Ward	0	1	0	1
Tha Byay Chaung Village	9	5	0	14
We Gyun Ward	0	1	0	1
Za Har Village	1	8	0	9
Frequency	13	37	1	51
Percentage	25.5	72.5	2.0	100.0

*Health impacts due to other projects*

Name of Ward/ Village	Have you experienced any health impacts due to nearby projects?			Total
	Have experienced	Haven't experienced	Not Applicable	
Dawei	0	0	1	1
Ein Shey Pyin Ward	0	1	8	9
Maung Ma Shaung Village	0	1	1	2
Myaung Pale Ward	0	0	1	1
Oh Loat Ward	0	0	1	1
Pu Lu Kone Village	1	0	7	8
San Chi Ward	0	0	1	1
Shan Ma Lae Swal Ward	0	0	1	1

Name of Ward/ Village	Have you experienced any health impacts due to nearby projects?			Total
	Have experienced	Haven't experienced	Not Applicable	
Shin Moke Tee Village	0	0	1	1
Sin Pu Ninn Ward	0	0	1	1
Sin Seik Ward	0	0	1	1
Tha Byay Chaung Village	5	4	5	14
We Gyun Ward	0	0	1	1
Za Har Village	1	0	8	9
Frequency	7	6	38	51
Percentage	13.7	11.8	74.5	100.0

*Address of the respondents*

Name of Ward/ Village	Address of Respondent													Total
	Ban Maw	Dawei	Ein Shey Pyin Ward	Maung Ma Shaung Village	Myaung Pale Ward	Oh Loat Ward	Pu Lu Kone Village	Shin Moke Tee Village	Sin Puu Ninn Village	Sin Seik Ward	Tha Byay Chaung Village	We Gyun Ward	Za Har Village	
Dawei	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Ein Shey Pyin Ward	0	0	9	0	0	0	0	0	0	0	0	0	0	9
Maung Ma Shaung Village	0	0	0	2	0	0	0	0	0	0	0	0	0	2
Myaung Pale	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Oh Loat Ward	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Pu Lu Kone Village	0	0	0	0	0	0	7	0	0	0	0	0	1	8
San Chi Ward	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Shan Ma Lae Swal Ward	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Shin Moke Tee Village	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Sin Pu Ninn Ward	0	0	0	0	0	0	0	0	1	0	0	0	0	1

Sin Seik Ward	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Tha Byay Chaung Village	1	0	0	0	0	0	0	0	0	0	0	13	0	0	14
We Gyun Ward	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Za Har Village	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
Frequency	1	2	9	2	1	1	7	1	1	1	1	14	1	10	51
Percentage	2.0	3.9	17.6	3.9	2.0	2.0	13.7	2.0	2.0	2.0	2.0	27.5	2.0	19.6	100.0

Source: E Guard Social Team (2023)

Native places of respondents

Name of Ward/ Village	Native places of respondents																		Total	
	Ayeyarwady	Bago	Ban Maw	Dawei	Eain Shae Pyin Ward	Kachin	Laung Lon	Maung Ma Shaung	Mawlamyaing	Pa Kar Gyi Village	Patheingyi	Pu Lu Kone Village	Ta Laing Taung	Taungtha	Tha Byay Chaung	Thai	Thayet Chaung	Yangon		Za Har Village
Dawei	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Ein Shey Pyin Ward	0	0	0	3	1	1	1	0	0	0	1	0	0	0	0	0	0	2	0	9
Maung Ma Shaung Village	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
Myaung Pale Ward	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

Oh Loat Ward	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Pu Lu Kone Village	0	0	0	2	0	0	0	0	1	0	1	2	0	0	1	0	0	1	0	8
San Chi Ward	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Shan Ma Lae Swal Ward	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Shin Moke Tee Village	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Sin Pu Ninn Ward	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Sin Seik Ward	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Tha Byay Chaung Village	1	1	1	4	0	0	0	0	1	0	0	0	0	1	3	0	0	2	0	14
We Gyun Ward	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Za Har Village	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	1	0	1	4	9
Frequency	2	1	1	17	1	1	1	1	3	1	2	2	1	1	4	1	1	6	4	51
Percentage	3.9	2.0	2.0	33.3	2.0	2.0	2.0	2.0	5.9	2.0	3.9	3.9	2.0	2.0	7.8	2.0	2.0	11.8	7.8	100.0

Source: E Guard Social Team (2023)

1) Occupation of respondents

The occupation of the highest percentage of the respondents is private company staff and that of second highest percentage of the respondents are carpenters. The details of data related to occupation of respondents are described in the following table.

Occupation of respondent

Name of Ward/ Village	Occupation of the respondents												Total
	Farmer	Home Business (store, restaurant, etc)	Carpenter	Dependent	Other	Gardening	Agribusiness	Government Staff	Private Company Staff	Daily Worker	Business Owner	Driver	
Dawei	0	0	0	0	0	0	0	0	1	0	0	0	1

Name of Ward/ Village	Occupation of the respondents												Total
	Farmer	Home Business (store, restaurant, etc)	Carpenter	Dependent	Other	Gardening	Agribusiness	Government Staff	Private Company Staff	Daily Worker	Business Owner	Driver	
Ein Shey Pyin Ward	0	0	0	5	0	1	0	0	3	0	0	0	9
Maung Ma Shaung Village	0	0	1	0	0	0	1	0	0	0	0	0	2
Myaung Pale Ward	0	0	0	0	0	0	0	0	1	0	0	0	1
Oh Loat Ward	0	0	0	0	1	0	0	0	0	0	0	0	1
Pu Lu Kone Village	1	1	1	0	0	1	0	0	2	2	0	0	8
San Chi Ward	0	0	0	0	0	0	0	0	1	0	0	0	1
Shan Ma Lae Swal Ward	0	0	0	0	0	0	0	0	1	0	0	0	1
Shin Moke Tee Village	0	0	0	0	0	0	0	0	1	0	0	0	1
Sin Pu Ninn Ward	0	0	0	0	0	0	0	0	0	0	1	0	1
Sin Seik Ward	0	0	0	0	0	0	0	1	0	0	0	0	1
Tha Byay Chaung Village	1	2	3	0	1	0	1	2	2	0	0	2	14
We Gyun Ward	0	0	0	0	0	0	0	1	0	0	0	0	1
Za Har Village	0	0	3	0	0	1	0	0	3	2	0	0	9
Frequency	2	3	8	5	2	3	2	4	15	4	1	2	51
Percentage	3.9	5.9	15.7	9.8	3.9	5.9	3.9	7.8	29.4	7.8	2.0	3.9	100.0

Source: E Guard Social Team (2023)

Native places of household heads

Name of Ward/ Village	Native places of household head																	Total
	Ayeyar wady	Bago	Ban Maw	Dawei	Eain Shae Pyin	Kachin	Mawla myaing	Pa Kar Gyi Village	Pathein	Pu Lu Kone Village	Ta Laing Taung	Taungoo	Tha Byay Chaung	Thayet Chaung	Yangon	Yebyu	Za Har Village	
Dawei	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Ein Shey Pyin Ward	0	0	0	3	2	1	0	0	1	0	0	0	0	0	2	0	0	9
Maung Ma Shaung Village	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2
Myaung Pale Ward	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Oh Loat Ward	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Pu Lu Kone Village	0	0	0	2	0	0	1	0	1	2	0	0	1	0	1	0	0	8
San Chi Ward	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Shan Ma Lae Swal Ward	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Shin Moke Tee Village	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Sin Pu Ninn Ward	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Sin Seik Ward	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1

Tha Byay Chaung Village	1	1	1	3	0	0	1	0	0	0	0	1	3	0	3	0	0	14
We Gyun Ward	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Za Har Village	0	0	0	1	0	0	0	1	0	0	1	0	0	0	2	0	4	9
Frequency	2	1	1	16	2	1	3	1	2	2	1	1	4	1	8	1	4	51
Percentage	3.9	2.0	2.0	31.4	2.0	2.0	5.9	2.0	3.9	3.9	2.0	2.0	7.8	2.0	15.7	2.0	7.8	100

Source: E Guard Social Team (2023)

*Main occupation within 12 months*

Occupation	Name of Ward/ Village															Frequency	Percentage
	Dawei	Ein Shey Pyin Ward	Maung Ma Shaung Village	Myaung Pale Ward	Oh Loat Ward	Pu Lu Kone Village	San Chi Ward	Shan Ma Lae Swal Ward	Shin Moke Tee Village	Sin Pu Ninn Ward	Sin Seik Ward	Tha Byay Chaung Village	We Gyun Ward	Za Har Village			
Home Business (Store, Restaurant)	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2	3.9	
Carpenter	0	0	0	0	0	1	0	0	0	0	0	2	0	2	5	9.8	
Student	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	
Other	0	0	0	0	1	0	0	0	0	0	0	2	0	0	3	5.9	
Gardening	0	1	0	0	0	1	0	0	0	0	0	0	0	1	3	5.9	
Agribusiness	0	0	1	0	0	0	0	0	0	0	0	1	0	0	2	3.9	



Occupation	Name of Ward/ Village														Frequency	Percentage
	Dawei	Ein Shey Pyin Ward	Maung Ma Shaung Village	Myaung Pale Ward	Oh Loat Ward	Pu Lu Kone Village	San Chi Ward	Shan Ma Lae Swal Ward	Shin Moke Tee Village	Sin Pu Ninn Ward	Sin Seik Ward	Tha Byay Chaung Village	We Gyun Ward	Za Har Village		
Government Staff	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	3.9
Private Company Staff	1	5	0	0	0	0	1	0	0	0	0	1	1	2	11	21.6
Daily Worker	0	0	0	0	0	2	0	0	0	0	0	0	0	2	4	7.8
Business Owner	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	3.9
Driver	0	2	0	0	0	1	0	0	0	0	0	1	0	1	5	9.8
Carpenter, Private Company Staff	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Farmer, Home Business	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
Gardening, Carpenter	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2
Gardening, Private Company Staff	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2
Government Staff, Driver	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2

Occupation	Name of Ward/ Village														Frequency	Percentage
	Dawei	Ein Shey Pyin Ward	Maung Ma Shaung Village	Myaung Pale Ward	Oh Loat Ward	Pu Lu Kone Village	San Chi Ward	Shan Ma Lae Swal Ward	Shin Moke Tee Village	Sin Pu Ninn Ward	Sin Seik Ward	Tha Byay Chaung Village	We Gyun Ward	Za Har Village		
Government Staff, Home Business	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
Private Company Staff, Daily Worker	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2
Private Company Staff, Home Business	0	1	0	1	0	1	0	1	0	0	0	0	0	0	4	7.8
<b>Total</b>	<b>1</b>	<b>9</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>8</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>14</b>	<b>1</b>	<b>9</b>	<b>51</b>	<b>100</b>

Source: E Guard Social Team (2023)

Areas of residential land (Acres)

Name of Ward/ Village	Acres of residential land																Total	
	0.02	0.03	0.036	0.04	0.043	0.045	0.05	0.055	0.06	0.07	0.08	0.09	0.11	0.25	0.35	1		No Answer
Dawei	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Ein Shey Pyin Ward	1	0	0	0	0	0	1	0	0	0	0	1	0	0	1	1	4	9
Maung Ma Shaung Village	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
Myaung Pale Ward	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1

Oh Loat Ward	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Pu Lu Kone Village	0	2	1	0	0	0	0	1	0	0	1	0	0	1	0	1	1	8
San Chi Ward	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Shan Ma Lae Swal Ward	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Shin Moke Tee Village	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Sin Pu Ninn Ward	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Sin Seik Ward	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Tha Byay Chaung Village	0	0	0	1	1	1	0	0	1	1	1	0	1	0	0	3	4	14
We Gyun Ward	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Za Har Village	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	1	5	9
Frequency	1	5	1	2	1	1	1	4	3	2	2	1	1	1	1	9	15	51
Percentage	2.0	9.8	2.0	3.9	2.0	2.0	2.0	7.8	5.9	3.9	3.9	2.0	2.0	2.0	2.0	17.6	29.4	100.0

Source: E Guard Social Team (2023)

*Areas agricultural land (Acres)*

Name of Ward/ Village	Acres of owing farmland													Total
	1	2	3	4	5	10	12	13	30	40	90	400	Not Assessed	
Dawei	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Ein Shey Pyin Ward	0	0	0	0	1	0	0	0	0	0	0	0	8	9
Maung Ma Shaung Village	0	0	0	1	0	0	0	0	0	0	0	0	1	2
Myaung Pale Ward	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Oh Loat Ward	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pu Lu Kone Village	0	0	1	0	0	1	0	0	0	0	0	0	6	8
San Chi Ward	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Shan Ma Lae Swal Ward	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Shin Moke Tee Village	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Sin Pu Ninn Ward	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Sin Seik Ward	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Tha Byay Chaung Village	0	2	0	0	1	0	1	0	0	1	1	0	8	14

We Gyun Ward	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Za Har Village	1	0	1	0	1	0	0	0	0	0	0	0	6	9
Frequency	1	2	2	1	3	1	1	1	1	1	1	1	35	51
Percentage	2.0	3.9	3.9	2.0	5.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	68.6	100.0

Source: E Guard Social Team (2023)

*Ownership of tractor*

Name of Ward/ Village	Ownership of tractor			Total
	Owner	Rent from others	Not Applicable	
Dawei	0	0	1	1
Ein Shey Pyin Ward	0	0	9	9
Maung Ma Shaung Village	0	0	2	2
Myaung Pale Ward	0	0	1	1
Oh Loat Ward	0	0	1	1
Pu Lu Kone Village	0	0	8	8
San Chi Ward	0	0	1	1
Shan Ma Lae Swal Ward	0	0	1	1
Shin Moke Tee Village	0	0	1	1
Sin Pu Ninn Ward	0	0	1	1
Sin Seik Ward	0	0	1	1
Tha Byay Chaung Village	1	2	11	14
We Gyun Ward	0	0	1	1
Za Har Village	0	0	9	9
Frequency	1	2	48	51
Percentage	2.0	3.9	94.1	100.0

Source: E Guard Social Team (2023)

*Ownership of water pump*

Name of Ward/ Village	Ownership of water pumping machine	Total
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	Owner	Not Applicable	
Dawei	0	1	1
Ein Shey Pyin Ward	0	9	9
Maung Ma Shaung Village	0	2	2
Myaung Pale Ward	0	1	1
Oh Loat Ward	0	1	1
Pu Lu Kone Village	1	7	8
San Chi Ward	1	0	1
Shan Ma Lae Swal Ward	0	1	1
Shin Moke Tee Village	1	0	1
Sin Pu Ninn Ward	0	1	1
Sin Seik Ward	1	0	1
Tha Byay Chaung Village	5	9	14
We Gyun Ward	0	1	1
Za Har Village	0	9	9
Frequency	9	42	51
Percentage	17.6	82.4	100.0

Source: E Guard Social Team (2023)

*Ownership of rice thresher machine*

Name of Ward/ Village	Ownership of rice thresh machine		Total
	Rent from others	Not Applicable	
Dawei	0	1	1
Ein Shey Pyin Ward	0	9	9
Maung Ma Shaung Village	0	2	2
Myaung Pale Ward	0	1	1
Oh Loat Ward	0	1	1
Pu Lu Kone Village	0	8	8
San Chi Ward	0	1	1
Shan Ma Lae Swal Ward	0	1	1
Shin Moke Tee Village	0	1	1

Name of Ward/ Village	Ownership of rice thresh machine		Total
	Rent from others	Not Applicable	
Sin Pu Ninn Ward	0	1	1
Sin Seik Ward	0	1	1
Tha Byay Chaung Village	2	12	14
We Gyun Ward	0	1	1
Za Har Village	0	9	9
Frequency	2	49	51
Percentage	3.9	96.1	100.0

Source: E Guard Social Team (2023)

#### *Ownership of rice harvester*

Name of Ward/ Village	Ownership of Rice Harvester		Total
	Rent from others	Not Applicable	
Dawei	0	1	1
Ein Shey Pyin Ward	0	9	9
Maung Ma Shaung Village	0	2	2
Myaung Pale Ward	0	1	1
Oh Loat Ward	0	1	1
Pu Lu Kone Village	0	8	8
San Chi Ward	0	1	1
Shan Ma Lae Swal Ward	0	1	1
Shin Moke Tee Village	0	1	1
Sin Pu Ninn Ward	0	1	1
Sin Seik Ward	0	1	1
Tha Byay Chaung Village	2	12	14
We Gyun Ward	0	1	1
Za Har Village	0	9	9
Frequency	2	49	51
Percentage	3.9	96.1	100.0

Source: E Guard Social Team (2023)

*Ownership of TV and refrigerators*

Name of Ward/ Village	Owing of TV/refrigerator		Total
	Owner	Not Applicable	
Dawei	1	0	1
Ein Shey Pyin Ward	2	7	9
Maung Ma Shaung Village	1	1	2
Myaung Pale Ward	1	0	1
Oh Loat Ward	1	0	1
Pu Lu Kone Village	6	2	8
San Chi Ward	1	0	1
Shan Ma Lae Swal Ward	1	0	1
Shin Moke Tee Village	1	0	1
Sin Pu Ninn Ward	1	0	1
Sin Seik Ward	0	1	1
Tha Byay Chaung Village	9	5	14
We Gyun Ward	1	0	1
Za Har Village	4	5	9
Frequency	30	21	51
Percentage	58.8	41.2	100.0

Source: E Guard Social Team (2023)

*Ownership of motorcycles*

Name of Ward/ Village	Owing of motorcycle		Total
	Owner	Not Applicable	
Dawei	1	0	1
Ein Shey Pyin Ward	7	2	9
Maung Ma Shaung Village	1	1	2
Myaung Pale Ward	1	0	1
Oh Loat Ward	1	0	1
Pu Lu Kone Village	4	4	8
San Chi Ward	1	0	1



Name of Ward/ Village	Owing of motorcycle		Total
	Owner	Not Applicable	
Shan Ma Lae Swal Ward	1	0	1
Shin Moke Tee Village	1	0	1
Sin Pu Ninn Ward	1	0	1
Sin Seik Ward	1	0	1
Tha Byay Chaung Village	9	5	14
We Gyun Ward	1	0	1
Za Har Village	6	3	9
Frequency	36	15	51
Percentage	70.6	29.4	100.0

Source: E Guard Social Team (2023)

#### *Ownership of small vehicle*

Name of Ward/ Village	Owing of small vehicle		Total
	Owner	Not Applicable	
Dawei	0	1	1
Ein Shey Pyin Ward	1	8	9
Maung Ma Shaung Village	0	2	2
Myaung Pale Ward	0	1	1
Oh Loat Ward	0	1	1
Pu Lu Kone Village	1	7	8
San Chi Ward	0	1	1
Shan Ma Lae Swal Ward	0	1	1
Shin Moke Tee Village	0	1	1
Sin Pu Ninn Ward	1	0	1
Sin Seik Ward	0	1	1
Tha Byay Chaung Village	2	12	14
We Gyun Ward	0	1	1
Za Har Village	0	9	9
Frequency	5	46	51

Percentage	9.8	90.2	100.0
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Source: E Guard Social Team (2023)

#### *Ownership of big vehicle*

Name of Ward/ Village	Owing of big vehicle		Total
	Owner	Not Applicable	
Dawei	0	1	1
Ein Shey Pyin Ward	0	9	9
Maung Ma Shaung Village	0	2	2
Myaung Pale Ward	0	1	1
Oh Loat Ward	0	1	1
Pu Lu Kone Village	0	8	8
San Chi Ward	0	1	1
Shan Ma Lae Swal Ward	0	1	1
Shin Moke Tee Village	0	1	1
Sin Pu Ninn Ward	0	1	1
Sin Seik Ward	0	1	1
Tha Byay Chaung Village	1	13	14
We Gyun Ward	0	1	1
Za Har Village	0	9	9
Frequency	1	50	51
Percentage	2.0	98.0	100.0

Source: E Guard Social Team (2023)

#### *Ownership of generator*

Name of Ward/ Village	Owing of Generator		Total
	Owner	Not Applicable	
Dawei	0	1	1
Ein Shey Pyin Ward	0	9	9
Maung Ma Shaung Village	1	1	2
Myaung Pale Ward	0	1	1
Oh Loat Ward	1	0	1

Name of Ward/ Village	Owing of Generator		Total
	Owner	Not Applicable	
Pu Lu Kone Village	2	6	8
San Chi Ward	1	0	1
Shan Ma Lae Swal Ward	0	1	1
Shin Moke Tee Village	0	1	1
Sin Pu Ninn Ward	0	1	1
Sin Seik Ward	0	1	1
Tha Byay Chaung Village	2	12	14
We Gyun Ward	0	1	1
Za Har Village	0	9	9
Frequency	7	44	51
Percentage	13.7	86.3	100.0

Source: E Guard Social Team (2023)

#### *Ownership of telephones*

Name of Ward/ Village	Owing of telephone		Total
	Owner	Not Applicable	
Dawei	1	0	1
Ein Shey Pyin Ward	8	1	9
Maung Ma Shaung Village	2	0	2
Myaung Pale Ward	1	0	1
Oh Loat Ward	1	0	1
Pu Lu Kone Village	8	0	8
San Chi Ward	0	1	1
Shan Ma Lae Swal Ward	1	0	1
Shin Moke Tee Village	1	0	1
Sin Pu Ninn Ward	1	0	1
Sin Seik Ward	1	0	1
Tha Byay Chaung Village	10	4	14
We Gyun Ward	1	0	1

Name of Ward/ Village	Owing of telephone		Total
	Owner	Not Applicable	
Za Har Village	8	1	9
Frequency	44	7	51
Percentage	86.3	13.7	100.0

Source: E Guard Social Team (2023)

*Years of beginning agriculture work*

Name of Ward/ Village	Years of beginning agriculture work											Total
	1975	1990	1994	2008	2010	2016	2019	2020	2021	No Answer	Not Applicable	
Dawei	0	0	0	0	0	0	0	0	0	0	1	1
Ein Shey Pyin Ward	0	1	0	0	0	0	0	1	0	0	7	9
Maung Ma Shaung Village	0	0	1	0	0	0	0	0	0	0	1	2
Myaung Pale Ward	0	0	0	0	0	0	0	0	0	0	1	1
Oh Loat Ward	0	0	0	0	0	0	0	0	0	0	1	1
Pu Lu Kone Village	0	0	0	0	0	0	0	0	0	0	8	8
San Chi Ward	0	0	0	0	0	0	0	0	1	0	0	1
Shan Ma Lae Swal Ward	0	0	0	0	0	0	0	0	0	0	1	1
Shin Moke Tee Village	0	0	0	0	0	0	0	0	0	1	0	1
Sin Pu Ninn Ward	0	0	0	1	0	0	0	0	0	0	0	1
Sin Seik Ward	0	0	0	0	0	0	0	0	0	0	1	1
Tha Byay Chaung Village	1	0	0	0	1	1	0	0	0	0	11	14
We Gyun Ward	0	0	0	0	0	0	0	0	0	0	1	1
Za Har Village	0	1	0	0	1	0	1	0	0	0	6	9
Frequency	1	2	1	1	2	1	1	1	1	1	39	51
Percentage	2.0	3.9	2.0	2.0	3.9	2.0	2.0	2.0	2.0	2.0	76.5	100.0

Source: E Guard Social Team (2023)

*Year of flooding occurrence*

Name of Ward/ Village	Year of occurrence flooding																		Total
	1979	1980	2008	2013	2017	2017, 2018	2018	2019	2020	2021	2022	2023	Every year	Once in four years	Once in three years	Rainy Season	No Answer	Not Applicable	
Dawei	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Ein Shey Pyin Ward	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	1	0	5	9
Maung Ma Shaung Village	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2
Myaung Pale Ward	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Oh Loat Ward	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pu Lu Kone Village	1	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	1	3	8
San Chi Ward	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Shan Ma Lae Swal Ward	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Shin Moke Tee Village	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Sin Pu Ninn Ward	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Sin Seik Ward	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Tha Byay Chaung Village	0	1	0	1	0	1	0	0	0	3	0	0	1	0	0	0	0	7	14
We Gyun Ward	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Za Har Village	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	6	9
Frequency	1	1	1	1	1	1	2	1	1	3	1	1	4	1	1	1	3	26	51
Percentage	2.0	2.0	2.0	2.0	2.0	2.0	3.9	2.0	2.0	5.9	2.0	2.0	7.8	2.0	2.0	2.0	5.9	51.0	100.0

Source: E Guard Social Team (2023)

Development by this project

Development by the project	Name of ward/ Village														Frequency	Percentage
	Dawei	Ein Shey Pyin Ward	Maung Ma Shaung Village	Myaung Pale Ward	Oh Loat Ward	Pu Lu Kone Village	San Chi Ward	Shan Ma Lae Swal Ward	Shin Moke Tee Village	Sin Pu Ninn Ward	Sin Seik Ward	Tha Byay Chaung Village	We Gyun Ward	Za Har Village		
Economy	0	1	0	0	0	2	0	0	0	0	0	2	0	1	6	11.8
Transportation	0	5	1	0	1	2	0	0	0	0	0	1	0	0	10	19.6
Livelihood	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	7.8
Health, Economy, Electricity, Livelihood	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2
Social, Transportation	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
Transportation, Electricity	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2
Transportation, Livelihood	0	0	0	0	0	1	0	0	0	0	0	2	0	1	4	7.9
Economy, Livelihood	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2	3.9
Economy, Transportation	0	1	0	1	0	1	1	1	0	0	0	2	1	1	9	17.7

Development by the project	Name of ward/ Village														Frequency	Percentage
	Dawei	Ein Shey Pyin Ward	Maung Ma Shaung Village	Myaung Pale Ward	Oh Loat Ward	Pu Lu Kone Village	San Chi Ward	Shan Ma Lae Swal Ward	Shin Moke Tee Village	Sin Pu Ninn Ward	Sin Seik Ward	Tha Byay Chaung Village	We Gyun Ward	Za Har Village		
Economy, Transportation, Livelihood	0	0	0	0	0	0	0	0	1	0	0	3	0	0	4	7.9
Education, Transport	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2
Health, Education, Economy, Transportation, Social	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
Health, Education, Economy, Transportation, Livelihood	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
Don't know	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Not Applicable	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2
Others	0	0	1	0	0	0	0	0	0	0	0	2	0	0	3	5.9
No Answer	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
Total	1	9	2	1	1	8	1	1	1	1	1	14	1	9	51	100

Source: E Guard Social Team (2023)

*Previous Survey Experience*

Name of Ward/ Village	Have you ever experienced a survey like this before?		Total
	Yes	No	
Dawei	1	0	1
Ein Shey Pyin Ward	0	9	9
Maung Ma Shaung Village	0	2	2
Myaung Pale Ward	1	0	1
Oh Loat Ward	0	1	1
Pu Lu Kone Village	1	7	8
San Chi Ward	1	0	1
Shan Ma Lae Swal Ward	0	1	1
Shin Moke Tee Village	1	0	1
Sin Pu Ninn Ward	1	0	1
Sin Seik Ward	0	1	1
Tha Byay Chaung Village	8	6	14
We Gyun Ward	0	1	1
Za Har Village	0	9	9
Frequency	14	37	51
Percentage	27.5	72.5	100.0

Source: E Guard Social Team (2023)

*Noise impact caused by other projects*

Name of Ward/ Village	Noise impact caused by other projects			Total
	Yes	No	Not Applicable	
Dawei	0	0	1	1
Ein Shey Pyin Ward	0	1	8	9
Maung Ma Shaung Village	0	1	1	2
Myaung Pale Ward	0	0	1	1
Oh Loat Ward	0	0	1	1
Pu Lu Kone Village	1	0	7	8
San Chi Ward	0	0	1	1



Shan Ma Lae Swal Ward	0	0	1	1
Shin Moke Tee Village	0	0	1	1
Sin Pu Ninn Ward	0	0	1	1
Sin Seik Ward	0	0	1	1
Tha Byay Chaung Village	1	8	5	14
We Gyun Ward	0	0	1	1
Za Har Village	0	0	9	9
Frequency	2	10	39	51
Percentage	3.9	19.6	76.5	100.0

Source: E Guard Social Team (2023)

*Bad odor caused by other projects*

Name of Ward/ Village	Bad odor caused by other projects			Total
	Yes	No	Not Applicable	
Dawei	0	0	1	1
Ein Shey Pyin Ward	0	1	8	9
Maung Ma Shaung Village	0	1	1	2
Myaung Pale Ward	0	0	1	1
Oh Loat Ward	0	0	1	1
Pu Lu Kone Village	1	0	7	8
San Chi Ward	0	0	1	1
Shan Ma Lae Swal Ward	0	0	1	1
Shin Moke Tee Village	0	0	1	1
Sin Pu Ninn Ward	0	0	1	1
Sin Seik Ward	0	0	1	1
Tha Byay Chaung Village	5	4	5	14
We Gyun Ward	0	0	1	1
Za Har Village	1	0	8	9
Frequency	7	6	38	51
Percentage	13.7	11.8	74.5	100.0

Source: E Guard Social Team (2023)

*Wastewater from other projects*

Name of Ward/ Village	Conditions of Wastewater that affect by nearby project			Total
	Yes	No	Not Applicable	
Dawei	0	0	1	1
Ein Shey Pyin Ward	0	1	8	9
Maung Ma Shaung Village	0	1	1	2
Myaung Pale Ward	0	0	1	1
Oh Loat Ward	0	0	1	1
Pu Lu Kone Village	1	0	7	8
San Chi Ward	0	0	1	1
Shan Ma Lae Swal Ward	0	0	1	1
Shin Moke Tee Village	0	0	1	1
Sin Pu Ninn Ward	0	0	1	1
Sin Seik Ward	0	0	1	1
Tha Byay Chaung Village	1	8	5	14
We Gyun Ward	0	0	1	1
Za Har Village	0	1	8	9
Frequency	2	11	38	51
Percentage	3.9	21.6	74.5	100.0

Source: E Guard Social Team (2023)

*Air pollution impacts by other projects*

Name of Ward/ Village	Conditions of air pollution by other projects			Total
	Yes	No	Not Applicable	
Dawei	0	0	1	1
Ein Shey Pyin Ward	0	1	8	9
Maung Ma Shaung Village	1	0	1	2
Myaung Pale Ward	0	0	1	1
Oh Loat Ward	0	0	1	1
Pu Lu Kone Village	1	0	7	8

Name of Ward/ Village	Conditions of air pollution by other projects			Total
	Yes	No	Not Applicable	
San Chi Ward	0	0	1	1
Shan Ma Lae Swal Ward	0	0	1	1
Shin Moke Tee Village	0	0	1	1
Sin Pu Ninn Ward	0	0	1	1
Sin Seik Ward	0	0	1	1
Tha Byay Chaung Village	4	5	5	14
We Gyun Ward	0	0	1	1
Za Har Village	1	0	8	9
Frequency	7	6	38	51
Percentage	13.7	11.8	74.5	100.0

Source: E Guard Social Team (2023)

*Plants and animals damage by other projects*

Name of Ward/ Village	Conditions of plants and animal damage that affected by nearby project			Total
	Yes	No	Not Applicable	
Dawei	0	0	1	1
Ein Shey Pyin Ward	0	1	8	9
Maung Ma Shaung Village	0	1	1	2
Myaung Pale Ward	0	0	1	1
Oh Loat Ward	0	0	1	1
Pu Lu Kone Village	0	1	7	8
San Chi Ward	0	0	1	1
Shan Ma Lae Swal Ward	0	0	1	1
Shin Moke Tee Village	0	0	1	1
Sin Pu Ninn Ward	0	0	1	1
Sin Seik Ward	0	0	1	1
Tha Byay Chaung Village	0	9	5	14
We Gyun Ward	0	0	1	1

Za Har Village	0	1	8	9
Frequency	0	13	38	51
Percentage	0	25.5	74.5	100.0

Source: E Guard Social Team (2023)

*Solid wastes by other projects*

Name of Ward/ Village	Solid by nearby project			Total
	Yes	No	Not Applicable	
Dawei	0	0	1	1
Ein Shey Pyin Ward	0	1	8	9
Maung Ma Shaung Village	0	1	1	2
Myaung Pale Ward	0	0	1	1
Oh Loat Ward	0	0	1	1
Pu Lu Kone Village	0	1	7	8
San Chi Ward	0	0	1	1
Shan Ma Lae Swal Ward	0	0	1	1
Shin Moke Tee Village	0	0	1	1
Sin Pu Ninn Ward	0	0	1	1
Sin Seik Ward	0	0	1	1
Tha Byay Chaung Village	1	8	5	14
We Gyun Ward	0	0	1	1
Za Har Village	1	0	8	9
Frequency	2	11	38	51
Percentage	3.9	21.6	74.5	100.0

Source: E Guard Social Team (2023)

*Other damage affected by other projects*

Name of Ward/ Village	Conditions of other Damage that affect by nearby project			Total
	Yes	No	Not Applicable	
Dawei	0	0	1	1

Name of Ward/ Village	Conditions of other Damage that affect by nearby project			Total
	Yes	No	Not Applicable	
Ein Shey Pyin Ward	0	1	8	9
Maung Ma Shaung Village	0	1	1	2
Myaung Pale Ward	0	0	1	1
Oh Loat Ward	0	0	1	1
Pu Lu Kone Village	0	1	7	8
San Chi Ward	0	0	1	1
Shan Ma Lae Swal Ward	0	0	1	1
Shin Moke Tee Village	0	0	1	1
Sin Pu Ninn Ward	0	0	1	1
Sin Seik Ward	0	0	1	1
Tha Byay Chaung Village	1	7	6	14
We Gyun Ward	0	0	1	1
Za Har Village	0	1	8	9
Frequency	1	11	39	51
Percentage	2.0	21.6	76.5	100.0

Source: E Guard Social Team (2023)

*Noise pollution by this project*

Name of Ward/ Village	Noise pollution by this project		Total
	Yes	No	
Dawei	1	0	1
Ein Shey Pyin Ward	2	7	9
Maung Ma Shaung Village	1	1	2
Myaung Pale Ward	0	1	1
Oh Loat Ward	0	1	1
Pu Lu Kone Village	1	7	8
San Chi Ward	1	0	1
Shan Ma Lae Swal Ward	0	1	1

Shin Moke Tee Village	1	0	1
Sin Pu Ninn Ward	0	1	1
Sin Seik Ward	0	1	1
Tha Byay Chaung Village	3	11	14
We Gyun Ward	0	1	1
Za Har Village	0	9	9
Frequency	10	41	51
Percentage	19.6	80.4	100.0

Source: E Guard Social Team (2023)

Sources of noise pollution

Name of Ward/ Village	Harmful reason affected by this project (Noise)								Total
	noise pollution.	noise from car and people.	car passing	Because of drunkard and car racing.	If operates this project, there are so many people and car.	There will have noise impacts because of car passing.	Not Applicable	No Answer	
Dawei	0	0	0	0	0	0	0	1	1
Ein Shey Pyin Ward	0	0	1	0	0	1	7	0	9
Maung Ma Shaung Village	0	0	1	0	0	0	1	0	2
Myaung Pale Ward	0	0	0	0	0	0	1	0	1
Oh Loat Ward	0	0	0	0	0	0	1	0	1
Pu Lu Kone Village	0	0	0	0	1	0	7	0	8
San Chi Ward	0	0	1	0	0	0	0	0	1
Shan Ma Lae Swal Ward	0	0	0	0	0	0	1	0	1
Shin Moke Tee Village	1	0	0	0	0	0	0	0	1
Sin Pu Ninn Ward	0	0	0	0	0	0	1	0	1
Sin Seik Ward	0	0	0	0	0	0	1	0	1
Tha Byay Chaung Village	0	1	1	1	0	0	11	0	14
We Gyun Ward	0	0	0	0	0	0	1	0	1
Za Har Village	0	0	0	0	0	0	9	0	9
Frequency	1	1	4	1	1	1	41	1	51
Percentage	2.0	2.0	7.9	2.0	2.0	2.0	80.4	2.0	100.0

Source: E Guard Social Team (2023)

*Bad odor by this project*

Name of Ward/ Village	Conditions of bad odor by this project		Total
	Yes	No	
Dawei	0	1	1
Ein Shey Pyin Ward	0	9	9
Maung Ma Shaung Village	0	2	2
Myaung Pale Ward	0	1	1
Oh Loat Ward	0	1	1
Pu Lu Kone Village	0	8	8
San Chi Ward	0	1	1
Shan Ma Lae Swal Ward	0	1	1
Shin Moke Tee Village	1	0	1
Sin Pu Ninn Ward	0	1	1
Sin Seik Ward	0	1	1
Tha Byay Chaung Village	3	11	14
We Gyun Ward	0	1	1
Za Har Village	0	9	9
Frequency	4	47	51
Percentage	7.8	92.2	100.0

Source: E Guard Social Team (2023)

*Sources of bad odor*

Name of Ward/ Village	Sources of bad odor					Total
	Because of trash and drain	It can have impacts on health.	Because of smell from oil.	Not Answer	Not Applicable	
Dawei	0	0	0	0	1	1
Ein Shey Pyin Ward	0	0	0	0	9	9
Maung Ma Shaung Village	0	0	0	0	2	2
Myaung Pale Ward	0	0	0	0	1	1

Name of Ward/ Village	Sources of bad odor					Total
	Because of trash and drain	It can have impacts on health.	Because of smell from oil.	Not Answer	Not Applicable	
Oh Loat Ward	0	0	0	0	1	1
Pu Lu Kone Village	0	0	0	0	8	8
San Chi Ward	0	0	0	1	0	1
Shan Ma Lae Swal Ward	0	0	0	0	1	1
Shin Moke Tee Village	0	1	0	0	0	1
Sin Pu Ninn Ward	0	0	0	0	1	1
Sin Seik Ward	0	0	0	0	1	1
Tha Byay Chaung Village	1	0	1	1	11	14
We Gyun Ward	0	0	0	0	1	1
Za Har Village	0	0	0	0	9	9
Frequency	1	1	1	2	46	51
Percentage	2.0	2.0	2.0	3.9	90.2	100.0

Source: E Guard Social Team (2023)

#### Wastewater emissions

Name of Ward/ Village	Conditions of wastewater affected by this project		Total
	Yes	No	
Dawei	0	1	1
Ein Shey Pyin Ward	2	7	9
Maung Ma Shaung Village	0	2	2
Myaung Pale Ward	0	1	1
Oh Loat Ward	0	1	1
Pu Lu Kone Village	0	8	8
San Chi Ward	1	0	1
Shan Ma Lae Swal Ward	0	1	1
Shin Moke Tee Village	0	1	1
Sin Pu Ninn Ward	0	1	1



Name of Ward/ Village	Conditions of wastewater affected by this project		Total
	Yes	No	
Sin Seik Ward	0	1	1
Tha Byay Chaung Village	3	11	14
We Gyun Ward	0	1	1
Za Har Village	0	9	9
Frequency	6	45	51
Percentage	11.8	88.2	100.0

Source: E Guard Social Team (2023)

#### Wastewater sources

Name of Ward/ Village	Harmful reason affected by this project (Wastewater)						Total
	Discharge of wastewater from bus terminal	Enter the wastewater because the river-level rise	Can cause water pollution because of wastewater	Can release mixing of oil lubricants and dusts.	Not Applicable	No Answer	
Dawei	0	0	0	0	1	0	1
Ein Shey Pyin Ward	0	0	1	0	7	1	9
Maung Ma Shaung Village	0	0	0	0	2	0	2
Myaung Pale Ward	0	0	0	0	1	0	1
Oh Loat Ward	0	0	0	0	1	0	1
Pu Lu Kone Village	0	0	0	0	8	0	8
San Chi Ward	0	0	0	1	0	0	1
Shan Ma Lae Swal Ward	0	0	0	0	1	0	1
Shin Moke Tee Village	0	0	0	0	1	0	1
Sin Pu Ninn Ward	0	0	0	0	1	0	1
Sin Seik Ward	0	0	0	0	1	0	1
Tha Byay Chaung Village	1	2	0	0	11	0	14
We Gyun Ward	0	0	0	0	1	0	1

Name of Ward/ Village	Harmful reason affected by this project (Wastewater)						Total
	Discharge of wastewater from bus terminal	Enter the wastewater because the river-level rise	Can cause water pollution because of wastewater	Can release mixing of oil lubricants and dusts.	Not Applicable	No Answer	
Za Har Village	0	0	0	0	9	0	9
Frequency	1	2	1	1	45	1	51
Percentage	2.0	3.9	2.0	2.0	88.2	2.0	100.0

Source: E Guard Social Team (2023)

*Air pollution by this project*

Name of Ward/ Village	Conditions of Air pollution by this project		Total
	Yes	No	
Dawei	1	0	1
Ein Shey Pyin Ward	2	7	9
Maung Ma Shaung Village	0	2	2
Myaung Pale Ward	1	0	1
Oh Loat Ward	0	1	1
Pu Lu Kone Village	0	8	8
San Chi Ward	1	0	1
Shan Ma Lae Swal Ward	0	1	1
Shin Moke Tee Village	1	0	1
Sin Pu Ninn Ward	0	1	1
Sin Seik Ward	0	1	1
Tha Byay Chaung Village	2	12	14
We Gyun Ward	0	1	1
Za Har Village	0	9	9
Frequency	8	43	51
Percentage	15.7	84.3	100.0

Source: E Guard Social Team (2023)

*Sources of air pollution by this project*

Name of Ward/ Village	Sources of air pollution						Total
	It can have impacts on health.	It is not serious case	Dust	It can have impact on air because of carbon dioxide that released from car.	No Answer	Not Applicable	
Dawei	0	0	0	1	0	0	1
Ein Shey Pyin Ward	0	0	0	0	2	7	9
Maung Ma Shaung Village	0	0	0	0	0	2	2
Myaung Pale Ward	0	0	1	0	0	0	1
Oh Loat Ward	0	0	0	0	0	1	1
Pu Lu Kone Village	0	0	0	0	0	8	8
San Chi Ward	0	0	0	1	0	0	1
Shan Ma Lae Swal Ward	0	0	0	0	0	1	1
Shin Moke Tee Village	1	0	0	0	0	0	1
Sin Pu Ninn Ward	0	0	0	0	0	1	1
Sin Seik Ward	0	0	0	0	0	1	1
Tha Byay Chaung Village	0	1	0	1	0	12	14
We Gyun Ward	0	0	0	0	0	1	1
Za Har Village	0	0	0	0	0	9	9
Frequency	1	1	1	3	2	43	51
Percentage	2.0	2.0	2.0	5.9	3.9	84.3	100.0

Source: E Guard Social Team (2023)

*Plants and animals affected by this project*

Name of Ward/ Village	Conditions of Plants and Animal Damage by this project		Total
	Yes	No	
Dawei	0	1	1
Ein Shey Pyin Ward	0	9	9
Maung Ma Shaung Village	0	2	2
Myaung Pale Ward	0	1	1
Oh Loat Ward	0	1	1
Pu Lu Kone Village	0	8	8
San Chi Ward	0	1	1
Shan Ma Lae Swal Ward	0	1	1
Shin Moke Tee Village	1	0	1
Sin Pu Ninn Ward	0	1	1
Sin Seik Ward	0	1	1
Tha Byay Chaung Village	0	14	14
We Gyun Ward	0	1	1
Za Har Village	0	9	9
Frequency	1	50	51
Percentage	2.0	98.0	100.0

Source: E Guard Social Team (2023)

*Harmful reasons that affect by this project (plants and animals damage)*

Name of Ward/ Village	Harmful reason affected by this project (Plants and animal Damage)		Total
	It will have a little damage of plants.	Not Applicable	
Dawei	0	1	1
Ein Shey Pyin Ward	0	9	9
Maung Ma Shaung Village	0	2	2
Myaung Pale Ward	0	1	1
Oh Loat Ward	0	1	1

Name of Ward/ Village	Harmful reason affected by this project (Plants and animal Damage)		Total
	It will have a little damage of plants.	Not Applicable	
Pu Lu Kone Village	0	8	8
San Chi Ward	0	1	1
Shan Ma Lae Swal Ward	0	1	1
Shin Moke Tee Village	1	0	1
Sin Pu Ninn Ward	0	1	1
Sin Seik Ward	0	1	1
Tha Byay Chaung Village	0	14	14
We Gyun Ward	0	1	1
Za Har Village	0	9	9
Frequency	1	50	51
Percentage	2.0	98.0	100.0

Source: E Guard Social Team (2023)

*Solid wastes emission by this project*

Name of Ward/ Village	Solid wastes emission that affects by this project		Total
	Yes	No	
Dawei	0	1	1
Ein Shey Pyin Ward	0	9	9
Maung Ma Shaung Village	0	2	2
Myaung Pale Ward	0	1	1
Oh Loat Ward	0	1	1
Pu Lu Kone Village	0	8	8
San Chi Ward	0	1	1
Shan Ma Lae Swal Ward	0	1	1
Shin Moke Tee Village	0	1	1
Sin Pu Ninn Ward	0	1	1
Sin Seik Ward	0	1	1
Tha Byay Chaung Village	3	11	14

We Gyun Ward	0	1	1
Za Har Village	0	9	9
Frequency	3	48	51
Percentage	5.9	94.1	100.0

Source: E Guard Social Team (2023)

*Sources of solid wastes emission*

Name of Ward/ Village	Sources of solid wastes emission				Total
	Gate	We worry about waste from passengers.	No Answer	Not Applicable	
Dawei	0	0	0	1	1
Ein Shey Pyin Ward	0	0	0	9	9
Maung Ma Shaung Village	0	0	0	2	2
Myaung Pale Ward	0	0	0	1	1
Oh Loat Ward	0	0	0	1	1
Pu Lu Kone Village	0	0	0	8	8
San Chi Ward	0	0	0	1	1
Shan Ma Lae Swal Ward	0	0	0	1	1
Shin Moke Tee Village	0	0	0	1	1
Sin Pu Ninn Ward	0	0	0	1	1
Sin Seik Ward	0	0	0	1	1
Tha Byay Chaung Village	1	1	1	11	14
We Gyun Ward	0	0	0	1	1
Za Har Village	0	0	0	9	9
Frequency	1	1	1	48	51
Percentage	2.0	2.0	2.0	94.1	100.0

Source: E Guard Social Team (2023)

*Other damage by this project*

Name of Ward/ Village	Conditions of Other Damage that affect by this project		Total
	Yes	No	
Dawei	0	1	1

Name of Ward/ Village	Conditions of Other Damage that affect by this project		Total
	Yes	No	
Ein Shey Pyin Ward	0	9	9
Maung Ma Shaung Village	0	2	2
Myaung Pale Ward	0	1	1
Oh Loat Ward	0	1	1
Pu Lu Kone Village	0	8	8
San Chi Ward	0	1	1
Shan Ma Lae Swal Ward	0	1	1
Shin Moke Tee Village	0	1	1
Sin Pu Ninn Ward	0	1	1
Sin Seik Ward	0	1	1
Tha Byay Chaung Village	1	13	14
We Gyun Ward	0	1	1
Za Har Village	0	9	9
Frequency	1	50	51
Percentage	2	98	100.0

Source: E Guard Social Team (2023)

*Sources of other damage by this project*

Name of Ward/ Village	Harmful reason that affects by this project (Other Damage)		Total
	Vibrating	Not Applicable	
Dawei	0	1	1
Ein Shey Pyin Ward	0	9	9
Maung Ma Shaung Village	0	2	2
Myaung Pale	0	1	1
Oh Loat Ward	0	1	1
Pu Lu Kone Village	0	8	8
San Chi Ward	0	1	1
Shan Ma Lae Swal Ward	0	1	1

Name of Ward/ Village	Harmful reason that affects by this project (Other Damage)		Total
	Vibrating	Not Applicable	
Shin Moke Tee Village	0	1	1
Sin Pu Ninn Ward	0	1	1
Sin Seik Ward	0	1	1
Tha Byay Chaung Village	1	13	14
We Gyun Ward	0	1	1
Za Har Village	0	9	9
Frequency	1	50	51
Percentage	2.0	98.0	100.0

Source: E Guard Social Team (2023)

*Other damage type by this project*

Name of Ward/ Village	Form of damage caused by this project (Other Damage)		Total
	Because of car passing	Not Applicable	
Dawei	0	1	1
Ein Shey Pyin Ward	0	9	9
Maung Ma Shaung Village	0	2	2
Myaung Pale Ward	0	1	1
Oh Loat Ward	0	1	1
Pu Lu Kone Village	0	8	8
San Chi Ward	0	1	1
Shan Ma Lae Swal Ward	0	1	1
Shin Moke Tee Village	0	1	1
Sin Pu Ninn Ward	0	1	1
Sin Seik Ward	0	1	1
Tha Byay Chaung Village	1	13	14
We Gyun Ward	0	1	1
Za Har Village	0	9	9
Frequency	1	50	51



Name of Ward/ Village	Form of damage caused by this project (Other Damage)		Total
	Because of car passing	Not Applicable	
Percentage	2.0	98.0	100.0

Source: E Guard Social Team (2023)

**Appendix 8 Traffic Record Form**

No.	Time	Express Travel Bus (Large/Small)	Car	Motorcycle/Tri- Motorcycle	Truck (Large)	Truck (Small)	Others	
							Quantity	Category
1	06:00 AM - 07:00 AM							
2	07:00 AM - 08:00 AM							
3	08:00 AM - 09:00 AM							
4	09:00 AM - 10:00 AM							
5	10:00 AM - 11:00 AM							
6	11:00 AM - 12:00 PM							
7	12:00 PM - 01:00 PM							
8	01:00 PM - 02:00 PM							
9	02:00 PM - 03:00 PM							
10	03:00 PM - 04:00 PM							
11	04:00 PM - 05:00 PM							
12	05:00 PM - 06:00 PM							

**Appendix 9 Grievance Form by KSP for internal and external  
Grievance Form**

Grievance Registration No.  
Date of Registration

**Details of Complainant**

**Anonymity** (Yes/No)

**Name:** (information is optional and always treated as confidential)

**Gender:**

**Address:**

**Contact Details:**

Primary Mobile No.

Email:

**Nature of the project impact on complainant:**

Physical displaced                       Economically displaced                       Others

**Brief of description of grievance:** (Provide as much detail and facts as possible)

Mode of submission of grievance

Phone                       Written                       Complaint Box                       Verbal  
 Email                       Facebook Page                       In Person                       Other

\_\_\_\_\_

\_\_\_\_\_  
**Signature of Complainant**

**Signature of Officer**

**Grievance Registry**

No.	Date of receiving incoming letter /form	Grievance Reference Number	Name of grievance originator	Type and detail of Grievance	Medium of communication	Name of staff responsible for managing the grievance	Date of grievance acknowledgement	Date of feedback provision/reference number	Present status	Remark


**Complaint Procedure**

<b>Khant Shwe Pyi Co., Ltd</b>		
		<b>Dawei Bus Terminal</b>
<p>အဆင့် (၁)      ဝန်ထမ်းအချင်းချင်း သဘောထားကွဲလွဲမှုများပေါ်ပေါက်ခဲ့ပါက လူ့စွမ်းအားအရင်းအမြစ် စီမံခန့်ခွဲရေးဌာနသို့ တိုင်ကြားနိုင်သည်။</p> <p style="text-align: center;"><b>လူ့စွမ်းအားအရင်းအမြစ်စီမံခန့်ခွဲရေးဌာန</b></p>		
<b>အမည်</b>	<b>ရာထူး</b>	<b>ဖုန်းနံပါတ်</b>
ဒေါ်ဇင်မာလွင်	HR (Head)	09 882273133 09 753489386
<p>အဆင့် (၂)</p> <p style="text-align: center;"><b>စီမံခန့်ခွဲရေးကော်မတီ</b></p>		
<b>အမည်</b>	<b>ရာထူး</b>	<b>ဖုန်းနံပါတ်</b>
ဦးဇော်ဘိုခန့်	ဥက္ကဋ္ဌ	09 5527999
ဦးအောင်သူ	ဒါရိုက်တာ	09 790385814
ဦးမင်းသိမ်း	အထွေထွေမန်နေဂျာ	09 5116218

ဝန်ထမ်းများ မကျေနပ်ချက်ကိုတိုင်ကြားနိုင်မှုပုံစံ (Internal Complaint Form)

တိုင်ကြားသူအမည် -  
\_\_\_\_\_

ရာထူး -  
\_\_\_\_\_

ဖုန်းနံပါတ် -  
\_\_\_\_\_

တိုင်ကြားလိုသည့်အကြောင်းအရာ

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

တိုင်ကြားသူ

လက်မှတ်

Appendix 10 Presentation slides of Third party and Khant Shwe Pyi Company Ltd in SHM



**ထားဝယ်အဆင့်မြင့်ယာဉ်ရုပ်နားစခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်းစီမံကိန်း**

**ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (EIA) လုပ်ငန်းစဉ်နှင့် ပတ်သက်၍ အများပြည်သူနှင့် ဆွေးနွေးညှိနှိုင်းသဘောထားရယူခြင်း အခမ်းအနား (Public Consultation)**

၂၀၂၃ ခုနှစ်၊ စက်တင်ဘာလ၊ ၅ ရက် အင်္ဂါနေ့

**မာတိကာ**

- စီမံကိန်းဆိုင်ရာဖော်ပြချက် (စီမံကိန်းအဆိုပြုသူမှ တင်ပြပြီး)
- EIA ဆောင်ရွက်ရန်လိုအပ်ချက်များ
- အများပြည်သူနှင့်တိုင်ပင်ဆွေးနွေးခြင်းနှင့်သတင်းအချက်အလက်များထုတ်ဖော်တင်ပြခြင်း အခမ်းအနားကျင်းပခြင်း၏ ရည်ရွယ်ချက်များ
- EIA ဆောင်ရွက်ခဲ့သည့်အဖွဲ့အစည်း
- ဥပဒေ၊ နည်းဥပဒေဆိုင်ရာ မူဘောင်နှင့်ကန့်သတ်ချက်များ
- ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းစဉ်များ
- စီမံကိန်းကြောင့်ဖြစ်ပေါ်လာနိုင်သည့်ပတ်ဝန်းကျင်နှင့်လူမှုရေးဆိုင်ရာသက်ရောက်မှုဆန်းစစ်မှုများ၏
- တွေ့ရှိချက်များနှင့် လျော့ချရေးအစီအစဉ်များ
- ပတ်ဝန်းကျင်နှင့်လူမှုရေးဆိုင်ရာထိခိုက်မှုဆန်းစစ်ခြင်းတွင် လေ့လာသည့်အကြောင်းအရာများ
- EIA လေ့လာမှုအချိန်ဇယား

3

**ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း**

**Environmental Impact Assessment**

E Guard Environmental Services



5

**အခမ်းအနားအစီအစဉ်**

- အခမ်းအနားဖွင့်လှစ်ကြောင်းကြေငြာခြင်း
- Khant Shwe Pyi Co., Ltd. ၏ တာဝန်ရှိသူမှ စီမံကိန်း နှင့်ပတ်သက်၍ ရှင်းလင်းတင်ပြခြင်း
- E Guard Environmental Services ၏ ဒါရိုက်တာ ဦးဖိုးမင်းမှ စီမံကိန်း နှင့်ပတ်သက်၍ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (Environmental Impact Assessment - EIA) လုပ်ငန်းစဉ်အား ရှင်းလင်းတင်ပြခြင်း
- တတ်ရောက်လာသူများမှ သိရှိလိုသည်များအား မေးမြန်းခြင်းနှင့် အကြံပြု ဆွေးနွေးခြင်း
- Khant Shwe Pyi Co., Ltd. ၏ တာဝန်ရှိသူမှ နိဂုံးချုပ် ကျေးဇူးတင်စကား ပြောကြားခြင်း
- အခမ်းအနားပြီးမြောက်ကြောင်းကြေညာခြင်း

2



**E Guard Environmental Services ၏ တာဝန်ရှိသူမှ စီမံကိန်းနှင့် ပတ်သက်၍ ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း (Environmental Impact Assessments-EIA) လုပ်ငန်းစဉ်များအား ဆက်လက်ရှင်းလင်း တင်ပြသွားပါမည်။**



4

**ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း ဆောင်ရွက်ရန် လိုအပ်ချက်များ**

ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ ဥပဒေ၊ နည်းဥပဒေနှင့် လုပ်ထုံးလုပ်နည်းများ

- ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ ဥပဒေ (၂၀၁၂ ခုနှစ်) နှင့် ပတ်ဝန်းကျင် ထိန်းသိမ်းရေး နည်းဥပဒေများ (၂၀၁၄ ခုနှစ်) အရ စီမံကိန်းများကို စိစစ်ရာတွင် စီမံကိန်းကြောင့် ဖြစ်ပေါ်လာနိုင်မည့် ပတ်ဝန်းကျင်နှင့် လူမှုရေးဆိုင်ရာ မလိုလားအပ်သည့် ထိခိုက်မှုများရှိ/မရှိနှင့် ထိခိုက်မှုများရှိပါကလည်း သိသာထင်ရှားမှုရှိ/မရှိ (သို့) ပြင်းထန်သော ထိခိုက်မှု ရှိ/မရှိ စသည်ဖြင့် စနစ်တကျ ဆန်းစစ်နိုင်ရန် ရည်ရွယ်၍ ပြုလုပ်ရခြင်းဖြစ်ပါသည်။
- ၂၀၁၅ ခုနှစ် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၏ အပိုဒ် (၁၇) အရ အဆိုပြုစီမံကိန်းသည် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (EIA) ဆောင်ရွက်ရန်ဖြစ်ပြီး ပတ်ဝန်းကျင်နှင့်လူမှုရေးဆိုင်ရာထိခိုက်မှုဆန်းစစ်ခြင်းကို ဆောင်ရွက်သွားမည် ဖြစ်ပါသည်။



6



ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း ဆောင်ရွက်မည့် တတိယအဖွဲ့အစည်းနှင့် စိစစ်ခွင့်ပြုသည့် အစိုးရအဖွဲ့အစည်း

စိစစ်ခွင့်ပြုသည့် အစိုးရအဖွဲ့အစည်း  
ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဦးစီးဌာန၊ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ရေး ဝန်ကြီးဌာန (MONREC)



ဆောင်ရွက်သည့် တတိယအဖွဲ့အစည်း  
E Guard Environmental Services  
ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်း အထောက်အထားလက်မှတ်အမှတ် - ၀၀၅၉



ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း ဆောင်ရွက်မည့် တတိယအဖွဲ့အစည်းနှင့် စိစစ်ခွင့်ပြုသည့် အစိုးရအဖွဲ့အစည်း



ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း ဆောင်ရွက်မည့် တတိယအဖွဲ့အစည်း၏ ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်း အထောက်အထားလက်မှတ်



အများပြည်သူနှင့် တိုင်ပင်ဆွေးနွေးခြင်းနှင့် အများပြည်သူပူးပေါင်းပါဝင်ခြင်းဆိုင်ရာ ဆွေးနွေးပွဲကျင်းပရခြင်း၏ ရည်ရွယ်ချက်

ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းစဉ် (၂၀၁၅) ၊ အပိုဒ် ၆၃ (ရ)

နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်း (Scoping) နှင့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းအတွက် စုံစမ်းစစ်ဆေးခြင်း (EIA Investigation) များ ဆောင်ရွက်ရာတွင် -

- ✓ အများပြည်သူနှင့် တိုင်ပင်ဆွေးနွေးခြင်း၊ စီမံကိန်းနှင့် ပတ်သက်သော သတင်းအချက်အလက်များ ထုတ်ဖော်တင်ပြခြင်း၊ အများပြည်သူနှင့် ပူးပေါင်းပါဝင်မှုလုပ်ငန်းစဉ်များ ဆောင်ရွက်ပြီးမှသာ အစီရင်ခံစာများ တင်ပြရန်ဖြစ်ပါသည်။

- ရည်ရွယ်ချက်၊ အစီအစဉ်၊ ထိခိုက်သက်ရောက်မှု အခြေအနေများ ဆက်ရောက်မှုများအား လေ့လာနိုင်စွမ်းရှိသည့် လမ်းညွှန်ဆောင်ရွက်မှု အချိန်ဇယား စသည်တို့အား အသိပေးရန်။
- စီမံကိန်းလုပ်ငန်းစဉ်များ အကောင်အထည်ဖော်ခြင်းအတွင်း စီမံကိန်းနှင့် ဆက်ဆံသည့်အခါ သဘောထားမှတ်ချက်နှင့် အကြံပြုချက်များ ရယူရန်။
- အကြံပြုချက်များနှင့် သဘောထားမှတ်ချက်များအား စီမံကိန်းအကောင်အထည်ဖော်ရာတွင် ထည့်သွင်း စဉ်းစားရန်။
- စီမံကိန်းကြောင့် သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုပတ်ဝန်းကျင်အပေါ် ဖြစ်ပေါ်လာနိုင်သော သက်ရောက်မှုများအား လူမှုအား အသိပေးရန်။



ဥပဒေ၊ နည်းဥပဒေဆိုင်ရာ မူဘောင်နှင့် လမ်းညွှန်ချက်များ

- ပို့ဆောင်ဆက်သွယ်ရေးလုပ်ငန်းဆိုင်ရာ ဥပဒေများနှင့် နည်းဥပဒေများ
- ❖ ပို့ဆောင်ရေးစီမံကိန်းဦးစီးဌာန၏ ဥပဒေစည်းမျဉ်းများ (၂၀၁၈)
  - ❖ ကုန်းလမ်းသယ်ယူပို့ဆောင်ရေးလုပ်ငန်းများဥပဒေ (၂၀၁၆)
  - ❖ ကုန်းလမ်းသယ်ယူပို့ဆောင်ရေးလုပ်ငန်းများဆိုင်ရာနည်းဥပဒေ (၂၀၁၈)
  - ❖ ဘက်စုံပို့ဆောင်ရေးဥပဒေ(၂၀၁၄)
  - ❖ ဘက်စုံပို့ဆောင်ရေးနည်းဥပဒေ (၂၀၁၄)

မှတ်ချက် - အခြားသက်ဆိုင်သော ဥပဒေ၊ နည်းဥပဒေများကိုလည်း ထပ်မံဖြည့်စွက်လေ့လာသွားမည်။



ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းစဉ်များနှင့် လက်ရှိအခြေအနေ



### စီမံကိန်းတည်နေရာပြမြေပုံ

စီမံကိန်းဧရိယာအကျယ်အဝန်း ၂၀ ဧက အဆင့်မြင့်ယာဉ်ရပ်နားစခန်း = ၇.၈၈ ဧက ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်း = ၇ ဧက ဓာတ်ဆီဆိုင် ဧရိယာ = ၁.၅ ဧက Cargo gate area = ၂၂၅ ဧက လမ်းဧရိယာ = ၂၀၄ ဧက မြောက်လတ္တီကျု - ၁၄ ဒီဂရီ ၆ မိနစ် ၅၇.၉၈ စက္ကန့် အရှေ့လောင်ဂျီကျု - ၉၈ ဒီဂရီ ၁၂ မိနစ် ၁၂.၄၄ စက္ကန့်

ကွင်းအမှတ် - ၁၀၄၊ သပြေချောင်းကျေးရွာအနီး၊ ထားဝယ်မြို့နယ်၊ ထားဝယ်ခရိုင်၊ တောင်ကြီး

### ပတ်ဝန်းကျင်နှင့်လူမှုရေးဆိုင်ရာ ထိခိုက်မှုဆန်းစစ်ခြင်း (EIA) တွင် လေ့လာမည့် အကြောင်းအရာများ

သတင်းအချက်အလက်များ ရယူခြင်း

လက်တွေ့ကွင်းဆင်း လေ့လာခြင်း

သုတေသနဓာတ်မိများနှင့် အစီရင်ခံစာများအား မြှင့်မံခြင်း

လေ့လာမည့်နယ်မြေအကျယ်အဝန်း

- ၃ ကီလိုမီတာအတွင်းရှိ သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုပတ်ဝန်းကျင်အပေါ် ထိခိုက်နိုင်မှု အခြေအနေများကို လေ့လာခြင်း (အသေးစိတ်လေ့လာမည့် အကြောင်းအရာများ - သဘာဝပတ်ဝန်းကျင်အခြေအနေ၊ လူမှုစီးပွားအခြေအနေ (ကျန်းမာရေး၊ ပညာရေး၊ စီးပွားရေး၊ လမ်းပန်းဆက်သွယ်ရေး၊ လူမှုရေး))
- ၁ ကီလိုမီတာ အဝန်းအပိုင်းအတွင်းရှိ (လေထုအရည်အသွေး၊ ရေအရည်အသွေး၊ စသည်တို့အား ဆန်းစစ်ခြင်းနှင့် ဆူညံတုန်ခါမှုဆိုင်ရာများကို လေ့လာခြင်း)

### စီမံကိန်းပတ်ဝန်းကျင်လက်ရှိအနေအထား

စီမံကိန်းအတွင်း တွင် လေထုအရည်အသွေးတိုင်းတာနေပုံ

စီမံကိန်းအတွင်း တွင် ဆူညံတုန်ခါမှုပမာဏတိုင်းတာနေပုံ

### စီမံကိန်းပတ်ဝန်းကျင်လက်ရှိအနေအထား

စီမံကိန်း တွင် အနံ့အသက်တိုင်းတာနေပုံ

စီမံကိန်းအတွင်း တွင် ရေအရည်အသွေးတိုင်းတာနေပုံ

### လေ၊ ဆူညံသံနှင့်တုန်ခါမှုအရည်အသွေး တိုင်းတာခံသည့်နေရာများ

**Measured Parameters**

- လေအရည်အသွေးများ
  - CO, CO<sub>2</sub>, SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>
- ဆူညံသံအဆင့်
  - dBA
- တုန်ခါမှုအဆင့်
  - dB

GPS Coordinates      Locations

Lat: 14° 6' 57.98"N      In the project site  
Long: 98° 12' 43.99"E

Nga Gyin Inn Monastery (At Thapay Changu Village)  
Lat: 14° 6' 48.87"N  
Long: 98° 13' 24.95"E

### လေအရည်အသွေး တိုင်းတာခြင်း

Parameter	Observed Value		Guideline Value	Guideline	Unit	Averaging Period
	Point 1	Point 2				
SO <sub>2</sub>	0.27	0.19	20	NEQG	µg/m <sup>3</sup>	24 hours
NO <sub>2</sub>	2.70	2.43	200	NEQG	µg/m <sup>3</sup>	1 hour
CO	0.02	0.01	9	NAAQS	Ppm	8 hours
CO <sub>2</sub>	423.51	425.93	5000	ACGIH	ppm	8 hours
PM <sub>10</sub>	25.70	21.65	50	NEQG	µg/m <sup>3</sup>	24 hours
PM <sub>2.5</sub>	12.86	12.34	25	NEQG	µg/m <sup>3</sup>	24 hours
Ozone	22.44	22.35	100	NEQG	µg/m <sup>3</sup>	8 hours

ဆူညံသံအဆင့်တိုင်းတာခြင်း 

Location	Measured Values (dB (A))	
	Day Time (07:00-22:00)	Night Time (22:00-7:00)
Point 1	57.53	46.80
Point 2	42.92	31.98

Noise Level Standards from National Environmental Quality (Emission) Guideline		
Standard Value (NEQG) for industrial, commercial	70	70
Standard Value (NEQG) for residential	55	45



တုန်ခါမှုအဆင့်တိုင်းတာခြင်း 

Location	X-Axe		Y-Axe		Z-Axe	
	Daytime (7:00-22:00)	Night Time (22:00-7:00)	Daytime (7:00-22:00)	Night Time (22:00-7:00)	Daytime (7:00-22:00)	Night Time (22:00-7:00)
Point 1	54.64	35.13	40.59	32.04	51.6	36.44
Point 2	42.67	36.14	33.95	32.49	41.81	32.51

Regulatory Standards for Vibration Emitted from Ministry of the Environment Government of Japan			
Time Area	Day Time	Night Time	Applicable Areas
I	60-65 dB	55-60 dB	Areas where maintenance of quiet is particularly needed to preserve a good living environment and where quiet is needed for as they are used for residential purposes.
II	65-70 dB	60-65 dB	Areas used for commercial and industrial as well as residential purposes where there is a need to preserve the living environment of local residents and areas mainly serving industrial purposes which are in need of measures to prevent the living environment of local residents from deteriorating.




အနံ့အသက်တိုင်းတာခြင်း 




Impact Items	Site Survey	Measurement
Odor	1) Site Measurement: 4 points 2) Frequency: Two Seasons (Wet and Dry)	




အနံ့အသက်တိုင်းတာသည့် နေရာများနှင့် မှတ်တမ်းဓာတ်ပုံများ 

No.	Point	National Environmental Quality (Emission) Guideline	Result
1.	Odor Measuring Point 1	10 µg/m <sup>3</sup>	0 µg/m <sup>3</sup>
2.	Odor Measuring Point 2	10 µg/m <sup>3</sup>	0 µg/m <sup>3</sup>
3.	Odor Measuring Point 3	10 µg/m <sup>3</sup>	0 µg/m <sup>3</sup>
4.	Odor Measuring Point 4	10 µg/m <sup>3</sup>	0 µg/m <sup>3</sup>


ရေအရည်အသွေး တိုင်းတာခဲ့သည့် နေရာများ 



Impact Items	Site Measurement Survey
Water Quality	1) Site Measurement: 5 Points (Surface water 1 point, Ground water 1 point, Outlet water 3 points) 2) Items: Chlorine (residual), Turbidity, Total Dissolved Solids (TDS), pH, Iron, Total Hardness, Total Nitrogen, Total Phosphorus, BOD, COD, Arsenic, Mercury, Copper, Chromium, Zinc, Ammonia, Nitrate, Total Coliform



ရေအရည်အသွေး တိုင်းတာခြင်း 

Item	Unit	Ground Water (Well Water) Quality
Iron	mg/L	1.75
Total Hardness	mg/L	80
Total Suspended Solids	mg/L	40
Total Coliform Bacteria	MPN/ml	9.3
pH	-	9.11
Turbidity	FNU	38.19
Total Dissolved Solids	mg/L	224
Ammonia	mg/L	0.58
Nitrate	mg/L	1.67
Biological Oxygen Demand	mg/L	0.94
Chemical Oxygen Demand	mg/L	5
Total Nitrogen	mg/L	1.22
Total Phosphorus	µg/L	40.48
Arsenic	µg/L	0.72
Copper	µg/L	11.01
Zinc	µg/L	2.76
Chromium	µg/L	9.6
Mercury	µg/L	1.35
Chlorine (Residual)	mg/L	Nil



ပတ်ဝန်းကျင်အရည်အသွေး(မြေအရည်အသွေး) တိုင်းတာသည့် parameter များနှင့် Dry season အတွင်း နမူနာကောက်ယူသည့် မှတ်တမ်းဇယား

Impact Items	Site Measurement Survey
Soil	1) Site Measurement: 1 point 2) Item: pH, Phosphorus, Potassium, Calcium, Magnesium 3) Frequency: Two Seasons (Wet and Dry) 4) The results are still analyzing in Lab



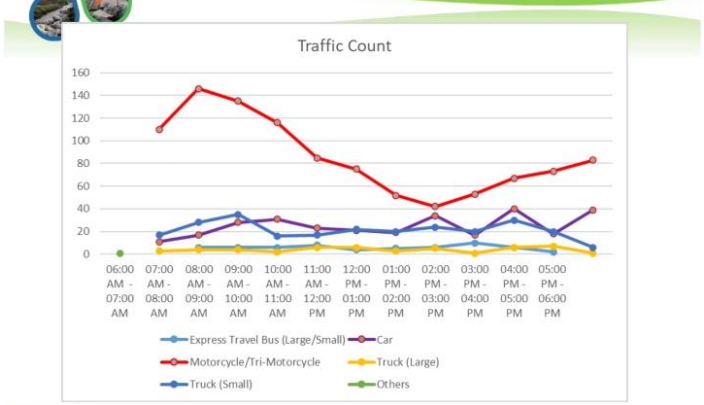
ယာဉ်အသွားအလာ ကောက်ယူသည့် နမူနာပုံစံ

စဉ်	အချိန်	ခရီးသည်တင် ဘတ်စ်ကား (ကြီး/သေး)	အိမ်စီးကား	ဆိုင်ကယ်/သုံး တီးမော်တော် ယာဉ်	ကုန်တင် ယာဉ် (ကြီး)	ကုန်တင်ယာဉ် (သေး)	အခြား	
							အရေအတွက်	အမျိုးအစား
၁	06:00 AM - 07:00 AM							
၂	07:00 AM - 08:00 AM							
၃	08:00 AM - 09:00 AM							
၄	09:00 AM - 10:00 AM							
၅	10:00 AM - 11:00 AM							
၆	11:00 AM - 12:00 PM							
၇	12:00 PM - 01:00 PM							
၈	01:00 PM - 02:00 PM							
၉	02:00 PM - 03:00 PM							
၁၀	03:00 PM - 04:00 PM							
၁၁	04:00 PM - 05:00 PM							
၁၂	05:00 PM - 06:00 PM							

ခရီးသည်တင် ဘတ်စ်ကား (ကြီး/သေး) အိမ်စီးကား ဆိုင်ကယ်/သုံးတီးမော်တော်ယာဉ် ကုန်တင်ယာဉ် (ကြီး) ကုန်တင်ယာဉ် (သေး) အခြား

အဝေးပြေးခရီးသည်တင် ယာဉ်အမျိုးမျိုး (ဥပမာ- Express ကားကြီး၊ ဝက်မြိုသော ခရီးသည်တင် ယာဉ်အမျိုးမျိုး၊ စသည်ဖြင့်) အိမ်စီးကား အမျိုးမျိုး (ဥပမာ- အလွန်၊ အစာတုံး စသည်ဖြင့်) ဆိုင်ကယ်/သုံးတီးမော်တော်ယာဉ် ဆိုင်ကယ်/သုံးတီးမော်တော်ယာဉ် ၁၂ တီးကား/ တွဲကား၊ ဆီကား (လောင်စာတင်ယာဉ်) မုတပ်၊ အခြား ကုန်တင်ယာဉ်အမျိုးမျိုး (ဥပမာ- မြေသယ်ကား၊ ဆောက်လုပ်ရေးလုပ်ငန်းသုံးကား၊ Light Truck, Hi-Jet, စသည်ဖြင့်) မီးသတ်ကား၊ ရိုကား၊ စစ်ကား၊ နမူနာယာဉ်၊ ထွန်စက်၊ လမ်းကြိုတံစက်၊ စသည်ဖြင့်

ယာဉ်အသွားအလာ ကောက်ယူသည့် ရလဒ်



စီမံကိန်းအနီးဝန်းကျင်ရှိ ကျေးရွာများ၏ လူမှုစီးပွားအခြေအနေများအား စစ်တမ်းကောက်ယူခြင်း

လူမှုစီးပွား စစ်တမ်းကောက်ယူခဲ့သော အခြေအနေ

ဖြန့်ဖြူး	ကျေးရွာ/ရပ်ကွက် အမည်	မြေဆိုသူလူဦးရေ
ထားဝယ်	အိမ်ရှေ့ပြင်ရပ်ကွက်	1
	ဆင်အိမ်ရပ်ကွက်	1
	သပြေချောင်းကျေးရွာ	6
	ပုလဲကုန်းကျေးရွာ	1
စုစုပေါင်း		9

- လူမှုစီးပွား စစ်တမ်းကောက်ယူခြင်းကို ၂၀၂၃ခုနှစ်၊ မေလ (၅) ရက်နေ့တွင် ထားဝယ်မြို့နယ်၊ မြို့တော်ခန်းမ၌ အများပြည်သူ နှင်တိုင်ပင်ဆွေးနွေးခြင်း အခမ်းအနား ကျင်းပပြီးနောက် ပြုလုပ်ခဲ့ပါသည်။
- အဆိုပါ တက်ရောက်လာသူများ၏ လူမှု-စီးပွားရေး အခြေအနေ များနှင့် စီမံကိန်းအပေါ် ဒေသခံများ၏ ကနဦး သဘောထား မှတ်ချက်များကို ဆွေးနွေးခဲ့ပါသည်။

လူမှုစီးပွားစစ်တမ်းကောက်ယူရရှိမှုမှတ်တမ်းဇယား



**လူမှုစီးပွား စစ်တမ်းကောက်ယူမှု ရလဒ်များ**

- ဖြေဆိုသူအများစုမှာအမျိုးသားများ ဖြစ်ပြီး အများစုမှာလည်း အမျိုးသားဦးစီးသော အိမ်ထောင်စုများ ဖြစ်ကြောင်း တွေ့ရသည်။
- ဖြေဆိုသူအများစုမှာ အသက် ၄၄ နှစ်မှ ၆၄ နှစ်ကြားရှိသူများ ဖြစ်သည်။
- ဖြေဆိုသူအများစုမှာ အထက်တန်းပညာ ပြီးမြောက်ကြောင်း တွေ့ရှိရသည်။
- ဗမာလူမျိုးများအများဆုံးနေထိုင်ကြပြီး တိုင်းရင်းသားလူမျိုးများလည်း အနည်းငယ် နေထိုင်ကြသည်။
- ဖြေဆိုသူအားမှာလုံး မုဒ္ဒဘာသာဝင်များ ဖြစ်ကြသည်။
- ဖြေဆိုသူများမှ ၃ ဦးမှာ အစိုးရဝန်ထမ်းများ ဖြစ်ပြီး စိုက်ပျိုးရေးလုပ်ငန်းလုပ်ကိုင်သူ၊ ကိုယ်ပိုင်စီးပွားရေး လုပ်ကိုင်သူ၊ လက်သမား၊ ဥယျာဉ်ဖြိုလုပ်ကိုင်သူနှင့် အခြားလုပ်ကိုင်သူများလည်း ရှိကြောင်း တွေ့ရသည်။
- အိမ်ထောင်စုများ၏ဝင်ငွေအားဖြင့် တလလျှင် ၃၀၀,၀၀၀ မှ ၅၀၀,၀၀၀ ကြားရှိပြီး အသုံးစရိတ်မှာ တလလျှင် ၃၀၀,၀၀၀ မှ ၅၀၀,၀၀၀ ကြားတွင် ရှိသည်။



**လူမှုစီးပွား စစ်တမ်းကောက်ယူမှု ရလဒ်များ**

- အိမ်ထောင်စုများ၏ နေထိုင်သောကံသုံးရေအတွက် ရေသန့်ကို အဓိက အသုံးပြုကြပြီး သုံးရေအတွက် ရေတွင်းများမှ စပ်ယူအသုံးပြုကြသည်။
- လမ်းပန်းဆက်သွယ်ရေးမှာ ကားလမ်းကို အဓိကအသုံးပြုကြပြီး လမ်းပန်းဆက်သွယ်ရေးမှာလည်း ကောင်းမွန်သော အခြေအနေရှိကြောင်း တွေ့ရသည်။
- အများစုသော စစ်တမ်းဖြေဆိုသူဒေသခံများသည် အဆိုပြုစီမံကိန်းလုပ်ဆောင်မည်ကို သိရှိကြပြီး ကောင်းမွန်စွာ လက်ခံကြုံဆိုကြသည် အပြင် အမြန်ဆုံး အကောင်အထည်ဖော်စေလိုပါသည်။
- စစ်တမ်းဖြေဆိုသူဒေသခံအများစုသည် အဆိုပြုစီမံကိန်းကြောင့် ၎င်းတို့၏ စီးပွားရေး၊ စားဝတ်နေရေး၊ လမ်းပန်း ဆက်သွယ်ရေးများ ပို၍ ကောင်းမွန်လာစေရန် မျှော်လင့်ထားကြသည်။
- စစ်တမ်းဖြေဆိုသူဒေသခံအချို့မှာ လေထုညစ်ညမ်းမှု၊ စွန့်ပစ်ပစ္စည်း စသည့် ပတ်ဝန်းကျင်ထိခိုက်မှုနှင့် ပတ်သက်၍ စိုးရိမ်မှု အနည်းငယ်ရှိကြောင်းတွေ့ရသည်။



**စီမံကိန်းအပေါ်အကြံပြုချက်များ**

- စစ်တမ်းဖြေဆိုသူဒေသခံများမှ အောက်ပါအချက်များကို အကြံပြုဆွေးနွေးထားပါသည်။
- ရေစီးရေလာ မကောင်းမွန်ပါက စွန့်ပစ်ရေများသည် မြစ်ချောင်းများပေါ်တွင် ထိခိုက်နိုင်ပါသဖြင့် ကောင်းမွန်စွာ လုပ်ဆောင်သင့်ကြောင်း။
- သစ်ပင်များစိုက်ပျိုးပျံ့နှံ့စေရန် ကောင်းမွန်ကြောင်း။
- စွန့်ပစ်အမှိုက်များကို စနစ်တကျ စည်းကမ်းရှိစွာ စွန့်ပစ်သင့်ကြောင်း။
- စီးပွားရေးအခွင့်အလမ်းနှင့် အလုပ်အကိုင်အခွင့်အလမ်းများ ဖန်တီးပေးနိုင်ပါက ပိုမိုကောင်းမွန်ကြောင်း။
- စီမံကိန်းနှင့်ပတ်သက်၍ တစ်စုံတစ်ရာပြောလေ့ရှိပါက စီမံကိန်းအဆိုပြုသူမှ ရပ်ကွက်အုပ်ချုပ်ရေးမှူးထံ အကြောင်းကြားသင့်ကြောင်း။



**အများပြည်သူနှင့် တိုင်ပင်ဆွေးနွေးပွဲ**

- နယ်ပယ်တိုင်းတာသတ်မှတ်ခြင်း လုပ်ငန်းစဉ်အတွက် အများပြည်သူနှင့် တိုင်ပင်ဆွေးနွေးပွဲကို ၂၀၂၃ ခုနှစ်၊ မေလ (၅) ရက်နေ့တွင် ထားဝယ်မြို့၊ မြို့တော်ခန်းမတွင် ကျင်းပခဲ့ပါသည်။
- အဆိုပါဆွေးနွေးပွဲသို့ ဌာနဆိုင်ရာတာဝန်ရှိသူများ၊ ကုမ္ပဏီအဖွဲ့အစည်းများနှင့် ဒေသခံပြည်သူများ တက်ရောက် ဆွေးနွေးခဲ့ပါသည်။
- ဒေသခံများအနေဖြင့် သိလိုသောအချက်များကိုလည်း မေးမြန်းခဲ့ကြပြီး စီမံကိန်းအဆိုပြုသူနှင့် တတိယအဖွဲ့အစည်းမှ ပုဂ္ဂိုလ်များက ပြန်လည်ဖြေဆိုခဲ့ကြသည်။
- မေးမြန်းအများစုမှာ စီမံကိန်းတည်နေရာသည် ထားဝယ်မြစ်နှင့် နီးသည့်အတွက် စွန့်ပစ်ပစ္စည်း၊ စွန့်ပစ်ရေနှင့် ပတ်သက်၍ မည်ကဲ့သို့ စီမံဆောင်ရွက်မည်ကို အဓိက မေးမြန်းခဲ့ကြသည်။



**အများပြည်သူနှင့် တိုင်ပင်ဆွေးနွေးပွဲ မှတ်တမ်းဓာတ်ပုံများ**



**စီမံကိန်းကြောင့် ဖြစ်ပေါ်လာနိုင်သည့် ပတ်ဝန်းကျင်နှင့် လူမှုရေးဆိုင်ရာ သက်ရောက်မှုခံစားမှုများ**

စီမံကိန်းရေယာနှင့် အနီးပတ်ဝန်းကျင်အား ထိခိုက်မှုများ	မျှော်မှန်းသက်ရောက်မှုအဆင့် (ကောင်းကျိုး/ ဆိုးကျိုး)		
	စီမံကိန်းတည်ဆောက် ရေး ကာလ	စီမံကိန်းလည်ပတ် ရေး ကာလ	စီမံကိန်းပိတ်သိမ်း ရေး ကာလ
<b>သဘာဝပတ်ဝန်းကျင်</b>			
လေအရည်အသွေး ညစ်ညမ်းခြင်း	Minor	Major	Moderate
ရေအရည်အသွေး ညစ်ညမ်းခြင်း	Minor	Moderate	Minor
စွန့်ပစ်ပစ္စည်း	Moderate	Moderate	Moderate
မြေဆီလွှာ/မြေဖွဲ့စည်းတည်ဆောက်ပုံ	Major	Minor	Moderate
ဆူညံသံနှင့် တုန်ခါမှု	Minor	Major	Moderate
မြေအသုံးချမှု	Moderate	-	-
အနံ့အသက်	-	Minor	-
<b>ဇီဝပတ်ဝန်းကျင်</b>	Not Consider		



**၉။ စီမံကိန်းကြောင့် ဖြစ်ပေါ်လာနိုင်သည့် ပတ်ဝန်းကျင်နှင့် လူမှုရေးဆိုင်ရာ မျှော်မှန်းသက်ရောက်မှုခိုင်မှုများ**

စီမံကိန်းဧရိယာနှင့် အနီးပတ်ဝန်းကျင်အား ထိခိုက်မှုများ	မျှော်မှန်းသက်ရောက်မှုအဆင့် (ကောင်းကျိုး/ ဆိုးကျိုး)		
	စီမံကိန်းတည်ဆောက်ရေးကာလ	စီမံကိန်းလည်ပတ်ရေးကာလ	စီမံကိန်းပိတ်သိမ်းရေးကာလ
<b>လူမှုပတ်ဝန်းကျင်</b>			
လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်	Moderate	Minor	Moderate
ဘာသာရေးအဆောက်အအုံများ	Minor	Minor	Minor
ကိုဗစ် ၁၉၊ အခြားကူးစက်တတ်သော ရောဂါ	Moderate	Moderate	Moderate
ဒေသတွင်း ယဉ်ကျေးမှုအလှအပများလာခြင်း	Moderate	Major	Minor
အလုပ်အကိုင်နှင့် အသက်မွေးဝမ်းကြောင်း	Positive	Positive	Positive
ပို့ဆောင်ဆက်သွယ်ရေး	-	Positive	-
စီးပွားရေးဆိုင်ရာဖွံ့ဖြိုးမှု	-	Positive	-
သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းစောင့်ရှောက်ခြင်း နှင့် ပညာရေး	-	Positive	-
ယဉ်ကျေးမှုနှင့်လေထုတစ်ဆင့်	-	Positive	-
<b>အခြား</b>			
မီးဘေးအန္တရာယ်	Minor	Moderate	Moderate

**စီမံကိန်းကြောင့် ထိခိုက်မှု အနည်းဆုံးဖြစ်စေရန် ဆောင်ရွက်ပေးမည့် လျော့ချရေး အစီအမံများ**

စဉ်	သက်ရောက်မှုများ	မျှော်မှန်းလျော့ချရေးအစီအမံများ
၁	လေအရည်အသွေး ညစ်ညမ်းခြင်း	လေအရည်အသွေးထုတ်လွှတ်ခြင်းမှာ အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် များထက် ကျော်လွန်ခြင်းမရှိစေရန်အတွက် အမှိုက်စုမ်းမုန့်ခြင်းအား တားမြစ်ခြင်း၊ ကျွန်ုပ်တို့အဖွဲ့အစည်းများနှင့် ယာဉ်ယန္တရား များအား စွမ်းအင်ကုထိရောက်စွာ အသုံးပြုနိုင်ရန် ပုံမှန်ပြုပြင် ထိန်းသိမ်းခြင်းများ ပြုလုပ်ရမည်။
၂	ရေအရည်အသွေး ညစ်ညမ်းခြင်း	အမှိုက်ကျင်းရှိ ရေအရင်းအမြစ်များအသုံးပြုရန်အတွက် ကာကွယ်ရန်နှင့် ရေသစ်သွင်းမှုမရှိစေရန်အတွက် စီမံကိန်းမှ ထွက်ရှိလာသော ရေဆိုးများအား ကောင်းမွန်သောရေဆိုးသန့်စင်စနစ်ကို အသုံးပြုမည်ဖြစ်သည်။
၃	စွန့်ပစ်ပစ္စည်း	အမှိုက်များကို အမှိုက်ပုံသို့ စုစည်းပစ် အမျိုးအစားလိုက်ခွဲခြားစွန့်ပစ်ခြင်းနှင့်လမ်းကို အသုံးပြုရမည်။ အမှိုက်ပမာဏ လျော့ချရန် ပြန်လည်ပြုပြင်၍ အသုံးပြုနိုင်သော စွန့်ပစ်ပစ္စည်းများကို ပြန်လည်အသုံးပြုခြင်း နည်းလမ်းများကို ကျင့်သုံးသင့် ပါသည်။ စွန့်ပစ်ပစ္စည်း သိမ်းဆည်းခြင်းကို ကာကွယ်ရန်အတွက် နေထိုင် လုပ်ကိုင်လုပ်ကိုင်သူ လုပ်ငန်းရှင်များအား ပူးပေါင်းဆောင်ရွက်ခြင်း တာဝန်ယူခြင်း ဝန်ဆောင်စေရန် ထိန်းသိမ်းစေရန် များဆောင်ရွက်ခြင်း
၄	မြေညီလာ/မြေပျံ့စွဲခြင်း တည်ဆောက်မှု	စီမံကိန်း ဧရိယာအတွင်း စိုက်ပျိုးရန်သော မြေများကို မော်ဆောင်ခြင်း ထိန်းသိမ်းထားခြင်း တို့ကို ဆောင်ရွက်ထားရမည်။ မြေကာစီအား ကောင်းမွန် လုံခြုံသောစီမံပုံစံများဖြင့် ဆောက်လုပ်ခြင်း၊ မဆောင်မိမြေညီလာစွန့်ပစ်ခြင်းမရှိစေရန် ဆောင်ရွက်ရမည်။
၅	ဆူညံသံနှင့် တုန်ခါမှု	ဆူညံသံဖြစ်ပေါ်စေသော ဆောက်လုပ်ရေး လုပ်ငန်းများအား ပုံမှန်အလုပ်ချိန်အတွင်းသာ လုပ်ဆောင်စေခြင်း၊ ဆူညံသံ ၈၀ dBA အထက်ဖြစ်ပေါ်စေသောကိရိယာများကို အသုံးပြုသောအလုပ်သမားများ အနေဖြင့် နာခံရဆဲထက် အသုံးပြုပါက ear muffs ကို ဝတ်ဆင်ခြင်း တို့ပြုလုပ်ရမည်။
၆	မြေအသုံးချမှု	ယဉ်ကျေးမှုစိုက်ပျိုးရေး နှင့် ၂၀ ဧက ရှိသည့်အနီး မြေများအသုံးပြုခြင်း သဘာဝပတ်ဝန်းကျင်နှင့် ယဉ်ကျေးမှု လက္ခဏာများအား ထိန်းသိမ်းရန် ကျန်ရှိသည့် မြေနေရာ/ဧရိယာများကို ဖွံ့ဖြိုးတိုးတက်မှုနှင့် စီမံကိန်းဆိုင်ရာ မှုအတွက် ပြုပြင်ထိန်းသိမ်းဆောင်ရွက်ရမည်။

**စီမံကိန်းကြောင့် ထိခိုက်မှု အနည်းဆုံးဖြစ်စေရန် ဆောင်ရွက်ပေးမည့် လျော့ချရေး အစီအမံများ**

စဉ်	သက်ရောက်မှုများ	မျှော်မှန်းလျော့ချရေးအစီအမံများ
၂	အနံ့အသက်	စီမံကိန်းတည်ဆောက်စဉ်ကာလ/လည်ပတ်သည့်ကာလ/ဖျက်သိမ်းသည့်ကာလအတွင်း စွန့်ပစ်ပစ္စည်းနှင့်အမှိုက်များအလွယ်တကူစွန့်ပစ် ခဲ့ခြင်းမရှိရန် နေထိုင်သူ စွန့်ပစ်သွားမည့်ဖြစ်သည်။
၈	ဒေသတွင်းယဉ်ကျေးမှုအလှအပများလာခြင်း	စီမံကိန်းတည်ဆောက်စဉ်/ဖျက်သိမ်းစဉ်ကာလအတွင်း ဒေသတွင်း ယဉ်ကျေးမှုအလှအပ သယ်ယူပို့ဆောင်ရေးများ ဆိုင်ရာအစီအမံများ ဆောင်ရွက်ရမည်။ ယဉ်ကျေးမှုထိန်းသိမ်းရေး အစီအမံ လိုအပ်လျှင် လမ်းကြောင်းခွဲဝေ သုံးစွဲစေရန် ဆောင်ရွက်ပေးရမည်။
၉	လုပ်ငန်းနှင့်ကျန်းမာရေးနှင့်ဘေးအန္တရာယ်	စီမံကိန်းနှင့် ပတ်သက်၍ ဒေသခံများအနေဖြင့် သိလိုသည့်များ၊ ပြောကြားလိုသည့်များ အချိန်မီ သိရှိနိုင်ရန် ဆက်သွယ်မှုဖြစ်သည့် Grievance Redress Mechanism (ထိခိုက်မှုများများကို ဖြေရှင်းရေးအစီအမံ) ကို စီမံထားရမည်အပြင် ဝန်ထမ်းများအတွက်ပါ လုပ်ငန်း ဆောင်ရွက်နေစဉ် အတွင်း အန္တရာယ်ဖြစ်စေသော အကြောင်းအရာများကို မှတ်တမ်းတင် စီစဉ်ရန် ထားရှိရမည်။
၁၀	ဘာသာရေးအဆောက်အအုံများ	အသေးစိတ်လျော့ချရေးအစီအမံများအား လူမှုရေးဆိုင်ရာစံတမ်းကောက်ယူခြင်းမှ ရရှိလာသော ရလဒ် များအပေါ်အခြေခံ၍ လေ့လာစေထုတ်သွားမည်ဖြစ်သည်။
၁၁	ကိုဗစ် ၁၉၊ အခြားကူးစက်တတ်သော ရောဂါများ	ဝန်ထမ်းများအတွက် စောင့်ကြည့်လေ့လာ စစ်ဆေးခြင်းများနှင့် ကာကွယ်မှုများ ထောက်ပံ့ပေးခြင်း၊ ကာကွယ်သော ရောဂါများ နှိမ်နင်းသည့် နည်းလမ်းများကို ဆောင်ရွက်ထားခြင်းနှင့် ဝန်ထမ်းများနှင့် ဒေသခံများအတွက် ကျန်းမာရေးစောင့်ရှောက်ရေးအထောက်အပံ့များနှင့် ကျန်းမာရေးအသိပညာ ပေးခြင်းများ ဆောင်ရွက်ရမည်။

**စီမံကိန်းကြောင့် ထိခိုက်မှု အနည်းဆုံးဖြစ်စေရန် ဆောင်ရွက်ပေးမည့် လျော့ချရေး အစီအမံများ**

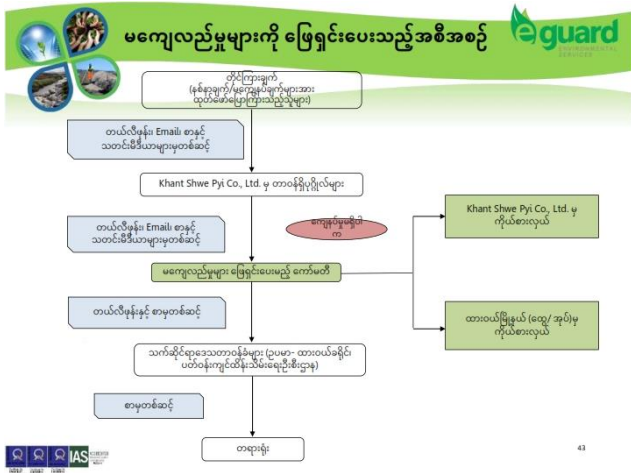
စဉ်	သက်ရောက်မှုများ	မျှော်မှန်းလျော့ချရေးအစီအမံများ
၁၂	အလုပ်အကိုင်နှင့် အသက်မွေးဝမ်းကြောင်း	စီမံကိန်းတည်ဆောက်ရေးနှင့် လည်ပတ်စဉ်ကာလများတွင် နယ်မြေဒေသများအနေဖြင့် အလုပ်အကိုင် အခွင့်အလမ်းများ ရရှိနိုင်၍ ကောင်းကျိုးသက်ရောက်မှုရှိပါသည်။
၁၃	ပို့ဆောင်ဆက်သွယ်ရေး	စီမံကိန်းအောင်မြင်စွာ ပြီးစီးပါက ထားဝယ်သို့ ခရီးသည် အရေအတွက် တိုးမြှင့်လာကာ ထားဝယ်မြို့၏ အချမ်းသာသော သဘာဝစွမ်းအင်နှင့် ရှမ်းများကို နိုင်ငံအများအပြားတွင် မီးမောင်းထိုးပြနိုင်မည်ဖြစ်သည်။
၁၄	စီးပွားရေးဆိုင်ရာဖွံ့ဖြိုးမှု	အဆိုပြုထားသော စီမံကိန်း၏ လည်ပတ်ဆောင်ရွက်မှုသည် သက်ဆိုင်ရာအဖွဲ့အစည်းများနှင့် အစိုးရအဖွဲ့ အစည်းများထံ သက်ဆိုင်ရာအဖွဲ့အစည်းများ နှစ်ထပ်များနှင့် အကြံပြုမှုများ ပေးဆောင်ခြင်းအားဖြင့် နိုင်ငံတော်အတွက် ကောင်းကျိုးများစွာရရှိမည်ဖြစ်သည်။

**၁၀။ စီမံကိန်းကြောင့် ထိခိုက်မှု အနည်းဆုံးဖြစ်စေရန် ဆောင်ရွက်ပေးမည့် လျော့ချရေး အစီအမံများ**

စဉ်	သက်ရောက်မှုများ	မျှော်မှန်းလျော့ချရေးအစီအမံများ
၁၅	သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းစောင့်ရှောက်ခြင်း နှင့် ပညာရေး	ပို့ဆောင်ဆက်သွယ်ရေးတိုးတက်လာသည့်အခါအမျိုးသားလူမှုရေးနှင့် ပတ်သက် ဆက်နွယ်မှုများကို ပြန်လည်နိမ့်ထလာစေခြင်းဖြင့် လူသားများသည် ပညာရေးစီးပွားရေးတိုးတက်စေပြီး ဒေသတွင်း သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းစောင့်ရှောက်ခြင်းအားပေးရန်ဖြစ်သည်အတွက် ကောင်းကျိုးသက်ရောက် ရှိပါသည်။
၁၆	ယဉ်ကျေးမှုဆိုင်ရာစေလွှတ်မှုများ	ဤစီမံကိန်းသည် ခရီးသွားလာရေးနှင့် အလုပ်အကိုင်အခွင့်အလမ်းများ တိုးမြှင့်လာစေရန်သာမက ခရီးသွားများဒေသတွင်းသမိုင်း၊ ရိုးရာဓလေ့နှင့် ယဉ်ကျေးမှုအားလေ့လာစေနိုင် ခြင်းကြောင့် ကောင်းကျိုးသက်ရောက်မှုများ ရှိပါသည်။
၁၇	မီးဘေးအန္တရာယ်	မီးဘေးအန္တရာယ်ကာကွယ်ရန် မီးသတ်ဆေးသားများနှင့် မီးသတ်ရေပိုက်များအသုံးပြုထားပြီးဖြစ်ပြီး မီးသတ် ရေကန်များ သီးသန့်ထားခြင်းနှင့် တောင်မီးလောင်ခြင်းမှကာကွယ်ရန် မီးထားလမ်းများ တည်ဆောက်ခြင်းများ ပြုလုပ်ရမည်။ ထို့အပြင် မီးဘေးအန္တရာယ် ကာကွယ်ရေးအစီအမံများ ဆောင်ရွက်ထားရမည်။

**ပတ်ဝန်းကျင်ဆိုင်ရာ စောင့်ကြပ်ကြည့်ရှုမည့်အစီအစဉ်**

- ရည်ရွယ်ချက်**
- လျော့ချခြင်းနည်းလမ်းများအား အကောင်အထည်ဖော်ဆောင်ရွက်ခြင်းအတွက် ပိုမိုထိရောက်မှု ရှိစေရန်
  - ပတ်ဝန်းကျင်ဆိုင်ရာ စောင့်ကြပ်ကြည့်ရှုမည့်အချက်အလက်များရယူခြင်းနှင့် အနာဂတ်တွင် ကောက်ယူရရှိထားသော အချက်အလက်များအပေါ်အခြေခံ၍ လေ့လာဆန်းစစ်မှုများ ပြုလုပ်ရာတွင် ပြန်လည်အသုံးပြုနိုင်ရန်
- စောင့်ကြပ်ကြည့်ရှုမည့်အရာများ**
- သဘာဝပတ်ဝန်းကျင်နှင့် ညစ်ညမ်းမှုများ (လေ/ ရေအရည်အသွေး၊ စွန့်ပစ်ရေအရည်အသွေး၊ စွန့်ပစ်ပစ္စည်းပမာဏနှင့် အမျိုးအစား၊ မြေထဲညစ်ညမ်းမှု၊ ဆူညံသံနှင့် တုန်ခါမှု၊ အနံ့အသက်၊ လေဗေဒ)
  - လူမှုပတ်ဝန်းကျင်နှင့်အခြား (လူမှုစီးပွားအခြေအနေ၊ ဒေသဆိုင်ရာပဋိပက္ခများ၊ လုပ်ငန်းခွင် ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး၊ ကျန်းမာရေးဆိုင်ရာ အချက်အလက်များ စသည်)



# ကျေးဇူးတင်ပါသည်။





KSP Khant Shwe Pyi Co., Ltd

5/5/2023

SJ SURBANA JURONG

ဗဟိုလယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့၏ (၉-၄-၂၀၂၁) ရက်နေ့ အစည်းအဝေးမှတ်စု (၁/၂၀၂၁) ဆုံးဖြတ်ချက်အပိုင်း ၃၀(ဆ)အရ ၂၀၂၁ခုနှစ် မြေလ ၂၆ရက်နေ့တွင် ခန့်ရွှေပြည်ကုမ္ပဏီအား လယ်ယာမြေဥပဒေပုဒ်မ ၂၅၉နှင့် ၃၀အရ လယ်မြေကို သတ်မှတ်ထားသည့် စည်းကမ်းချက်များနှင့်အညီ အခြားနည်းဖြင့် အသုံးပြုခွင့်ရရှိခဲ့ပါသည်။

KSP Khant Shwe Pyi Co., Ltd

5/5/2023

SJ SURBANA JURONG

Table with Burmese text and a grid of data, likely a site plan or survey data.



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တနင်္သာရီတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီမှ စီမံကိန်းဆောင်ရွက်ခွင့် (MIC-Permit) အတည်ပြုမိန့်အား ၂၀၂၂ ခုနှစ် မြေလ (၈) ရက်နေ့တွင် ရရှိခဲ့ပါသည်။

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Dawei Bus Terminal and Commercial Complex



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Dawei Bus Terminal and Commercial Complex



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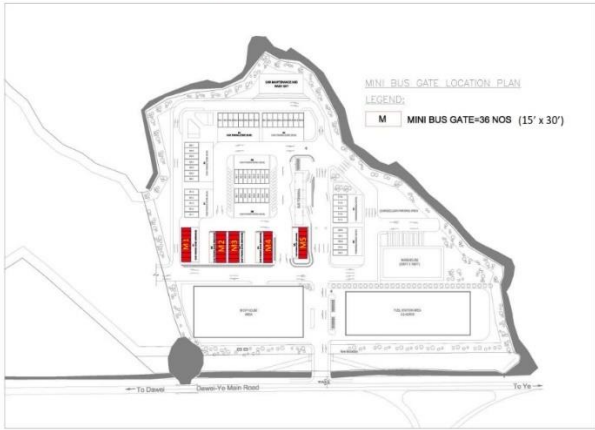
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Dawei Bus Terminal and Commercial Complex

**MINI BUS GATE LOCATION PLAN**



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Dawei Bus Terminal and Commercial Complex

**Mini Bus Gates**

MINI BUS GATE ONE STOREYED R.C.C BUILDING  
(၈ ခန်းတွဲ တစ်ထပ် တစ်ဆောင် နှင့် ၇ ခန်းတွဲ တစ်ထပ် လေးဆောင်) စုစုပေါင်း= ၃၆ ခန်း



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Dawei Bus Terminal and Commercial Complex

**Mini Bus Gates**

MINI BUS GATE ONE STOREYED R.C.C BUILDING  
(၈ ခန်းတွဲ တစ်ထပ် တစ်ဆောင် နှင့် ၇ ခန်းတွဲ တစ်ထပ် လေးဆောင်) စုစုပေါင်း= ၃၆ ခန်း



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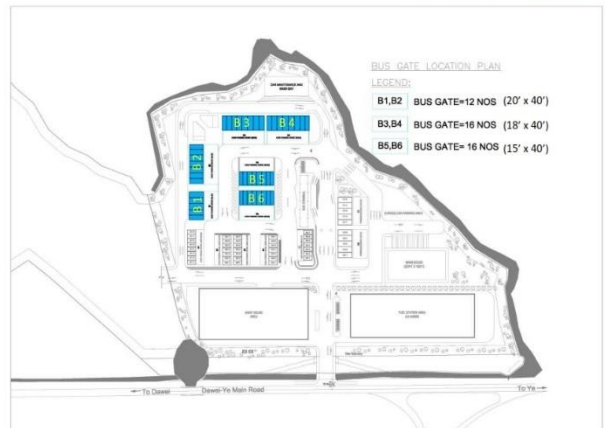
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**BUS GATE LOCATION PLAN**



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PASSENGER BUS GATE TWO STOREYED R.C.C BUILDING  
 (၅ ခန်းတွဲ နှစ်ထပ် တစ်ဆောင်၊ ၇ ခန်းတွဲ နှစ်ထပ် တစ်ဆောင်နှင့် ၈ ခန်းတွဲ နှစ်ထပ် လေးဆောင်) စုစုပေါင်း = ၄၄ ခန်း

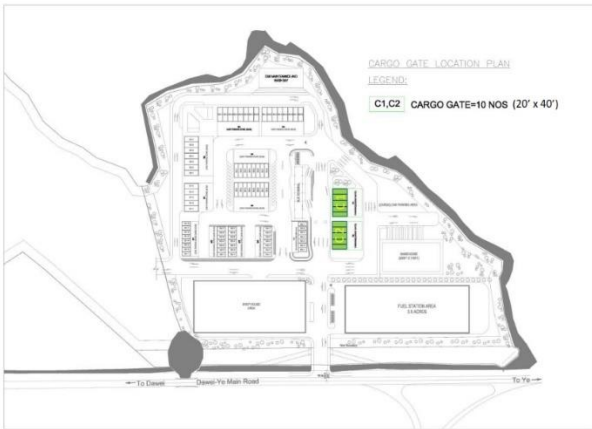


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PASSENGER BUS GATE TWO STOREYED R.C.C BUILDING  
 (၅ ခန်းတွဲ နှစ်ထပ် တစ်ဆောင်၊ ၇ ခန်းတွဲ နှစ်ထပ် တစ်ဆောင်နှင့် ၈ ခန်းတွဲ နှစ်ထပ် လေးဆောင်) စုစုပေါင်း = ၄၄ ခန်း



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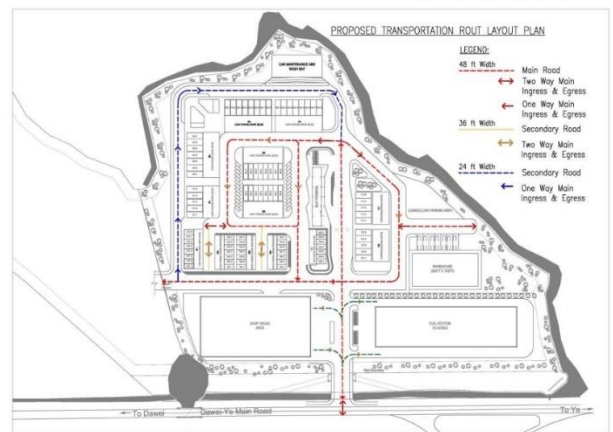
CARGO GATE TWO STOREYED R.C.C BUILDING (၅ ခန်းတွဲ နှစ်ထပ် နှစ်ဆောင် စုစုပေါင်း= ၁၀ခန်း)



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FOUR LANE CONCRETE ROAD (၄၈ ပေ လေးလမ်းသွား ကွန်ကရစ်လမ်းမကြီးများ)



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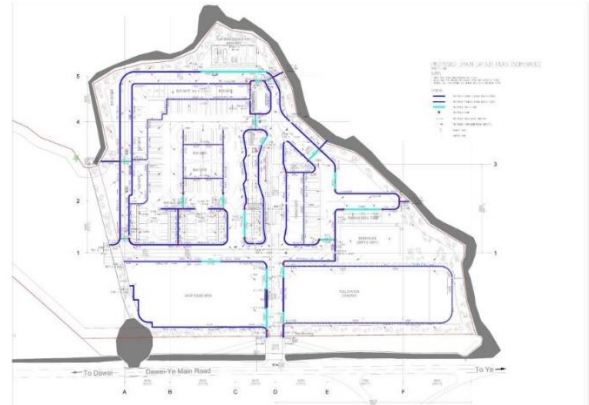
TWO LANE CONCRETE ROAD (၂၄ ပေ နှစ်လမ်းသွား ကွန်ကရစ်လမ်းမကြီးများ)



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ရေစီးရေလာကောင်းမွန်စေရန် အတွက် DRAINAGE SYSTEM ၊ BOX CULVERT

ရေစီးရေလာကောင်းမွန်စေရန် အတွက် DRAINAGE SYSTEM



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(56'x15') MAIN BRIDGES R.C.C



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(52'x10') MAIN BRIDGES R.C.C



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BOX CULVERT

BOX CULVERT တည်ဆောက်ခြင်းလုပ်ငန်း



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BUS TERMINAL

BUS TERMINAL (206'-0" x 66'-0") 2 STOREYED R.C.C BUILDING



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Dawei Bus Terminal and Commercial Complex 3  
3



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Dawei Bus Terminal and Commercial Complex 34

PLATFORM

လူသွားလမ်း ပလက်ဖောင်း (Platform) တည်ဆောက်မှုလုပ်ငန်းများ



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Dawei Bus Terminal and Commercial Complex 3  
5



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Design Proposal: Ware House

WARE HOUSE ONE STOREYED STEEL STRUCTURE BUILDING (200' X 100' )



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Dawei Bus Terminal and Commercial Complex 3  
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PROPOSED RESTURANT AND PUBLIC TOILET

RESTURANT AND PUBLIC TOILET BUILDING



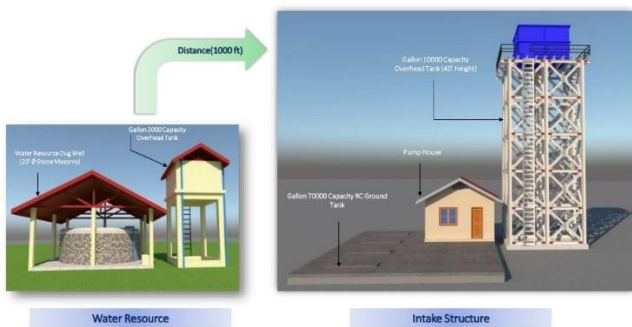
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RESTURANT AND PUBLIC TOILET



မြေအောက်ရေ သွယ်တန်းခြင်းနှင့် ဖြန့်ဝေခြင်းလုပ်ငန်းများ

၂၀ပေ ပတ်လည်ရှိသော ရေတွင်းတည်ဆောက်မှုလုပ်ငန်း



ဂါလံ (၇၀,၀၀၀) ဆွဲမြေအောက်ရေလှောင်ကန် (Ground Tank)

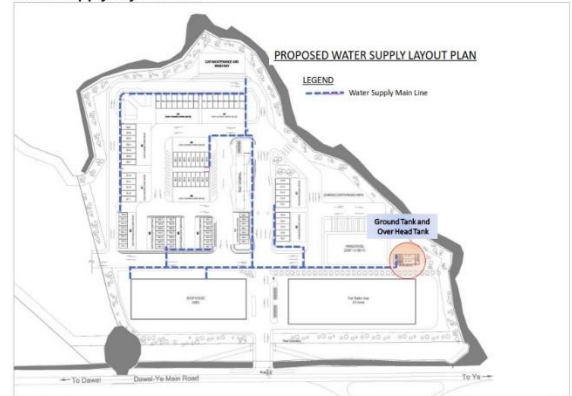


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Water Supply Layout Plan



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မြေအောက်ရေ သွယ်တန်းခြင်းနှင့် ဖြန့်ဝေခြင်းလုပ်ငန်းများ



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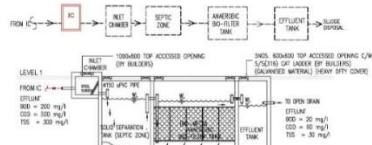


KSP Khant Shwe Pyi Co., Ltd

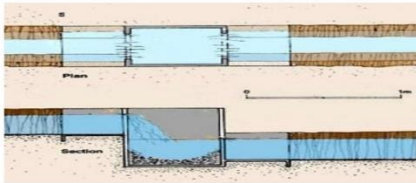
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ရေဆိုးသန့်စင်ခြင်းစနစ် (Waste Water Treatment System)



TYPICAL WASTE WATER TREATMENT BY ANAEROBIC BIO-FILTER (SEPTIC TANK) -OPTION 1

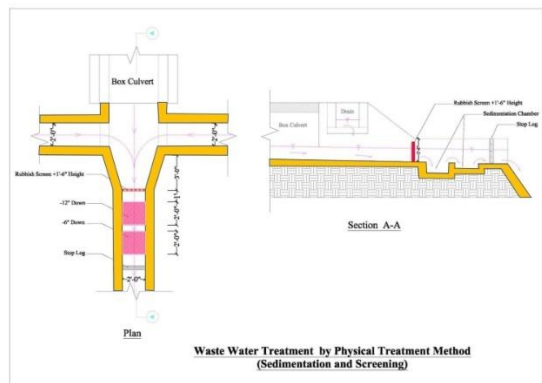


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ရေဆိုးသန့်စင်ခြင်းစနစ် (Waste Water Treatment System)



Waste Water Treatment by Physical Treatment Method (Sedimentation and Screening)

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ရေဆိုးသန့်စင်ခြင်းစနစ် (Waste Water Treatment System)

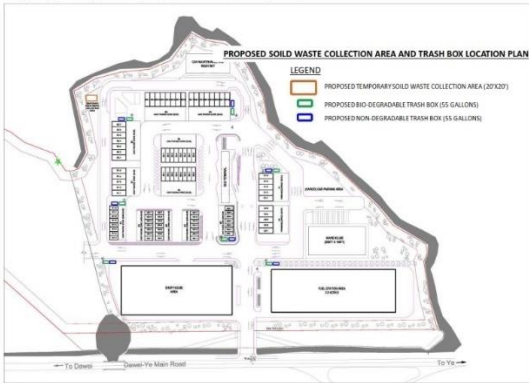


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အမှိုက်နှင့် အမှိုက်ကန်တည်ဆောက်ခြင်းလုပ်ငန်း



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KSP Khant Shwe Pyi Co., Ltd 5/9/2023 SJ SURBANA JURONG

Fire Hydrant System



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မီးသတ်စနစ် တည်ဆောက်ခြင်း (Fire Hydrant System)



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FIRE HYDRANT SYSTEM

မီးသတ်စနစ်အတွက် Pump House တည်ဆောက်ခြင်း



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(၅) လျှပ်စစ်သွယ်တန်း တည်ဆောက်ခြင်းလုပ်ငန်း



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ELECTRICAL SYSTEM

လျှပ်စစ်မီး သွယ်တန်း တည်ဆောက်ခြင်းလုပ်ငန်း (Electrical System)



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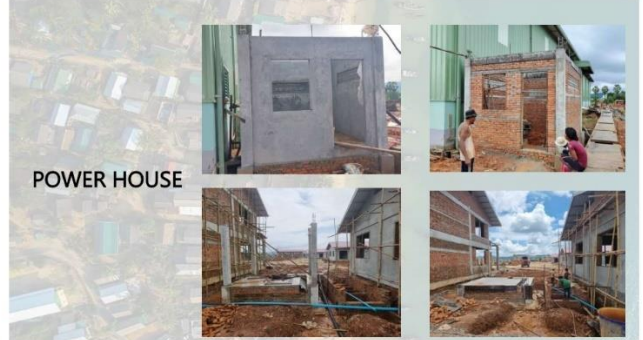
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ELECTRICAL SYSTEM

POWER HOUSE တည်ဆောက်ခြင်းလုပ်ငန်း



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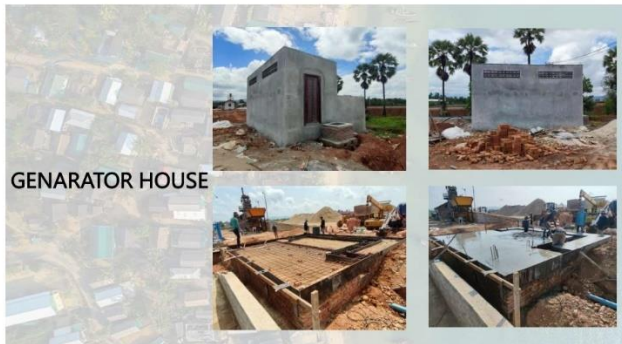
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ELECTRICAL SYSTEM

GENERATOR HOUSE တည်ဆောက်ခြင်းလုပ်ငန်း



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Site Overview: Photos



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Appendix 11 Consulting Organization License and Individual Registration License



E Guard Environmental Services Co.,Ltd

လိုင်စင်နံပါတ် License Number : EIA-CO(A)001/2023

အဖွဲ့အစည်းက လေ့လာဆန်းစစ်ခွင့်ရှိသော စီမံကိန်းလုပ်ငန်းအုပ်စုများ

စဉ်	လုပ်ငန်းလိုင်စင်ဆိုင်ရာလုပ်ထုံးလုပ်နည်း ပုံစံ (ခ) ပါ စီမံကိန်းလုပ်ငန်းအုပ်စုများ	ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း နောက်ဆက်တွဲ (က) ပါ စီမံကိန်းနံပါတ်များ
၁။	ကုန်းတွင်းရေနှင့် သဘာဝဓာတ်ငွေ့စီမံကိန်းလုပ်ငန်း	(၁၂) မှ (၁၄)
၂။	ကမ်းလွန်ရေနှင့် သဘာဝဓာတ်ငွေ့စီမံကိန်းလုပ်ငန်း	(၁၅) မှ (၁၇)
၃။	ရေနှင့် သဘာဝဓာတ်ငွေ့ ပြုပြင်သန့်စင်ထုတ်လုပ်ခြင်းစီမံကိန်းလုပ်ငန်း	(၁၈) မှ (၂၀) နှင့် (၂၅)
၄။	ရေနှင့် သဘာဝဓာတ်ငွေ့ သယ်ယူပို့ဆောင်ခြင်း၊ သိုလှောင်ခြင်းနှင့် ဖြန့်ဖြူးခြင်းလုပ်ငန်း	(၂၁) မှ (၂၃)
၅။	ဓာတ်ငွေ့ရည် (LPG)၊ သဘာဝဓာတ်ငွေ့ (CNG) နှင့် စက်သုံးဆီအရောင်းဆိုင် လုပ်ငန်း	(၂၄)
၆။	ကျောက်မီးသွေးသုံးလျှပ်စစ်ဓာတ်အား ထုတ်လုပ်ခြင်းလုပ်ငန်း	(၅)
၇။	ရေအားလျှပ်စစ်စီမံကိန်းလုပ်ငန်း	(၂)
၈။	အခြားပြန်ပြည့်မြဲစွမ်းအင် စီမံကိန်းလုပ်ငန်း	(၇)၊ (၁၀) နှင့် (၁၁)
၉။	သဘာဝဓာတ်ငွေ့သုံး သို့မဟုတ် ဇီဝဓာတ်ငွေ့သုံး လျှပ်စစ်ဓာတ်အား ထုတ်လုပ်ခြင်းလုပ်ငန်း	(၄)
၁၀။	ဓာတ်ငွေ့၊ အပူစွမ်းအင်နှင့် အပူငွေ့သုံး လျှပ်စစ်ဓာတ်အား ထုတ်လုပ်ခြင်း လုပ်ငန်း	(၈) နှင့် (၉)
၁၁။	စွန့်ပစ်ပစ္စည်းမှ လျှပ်စစ်ဓာတ်အား ထုတ်လုပ်ခြင်းလုပ်ငန်း	(၆)
၁၂။	လျှပ်စစ်ဓာတ်အားဖြန့်ဖြူးခြင်းလုပ်ငန်း	(၂၆) မှ (၂၈)
၁၃။	မွေးမြူရေးဆိုင်ရာလုပ်ငန်း	(၃၁) မှ (၃၃)၊ (၃၇)နှင့် (၃၈)
၁၄။	ရေလုပ်ငန်းဆိုင်ရာလုပ်ငန်း	(၃၄) မှ (၃၆)
၁၅။	အစားအစာ ပြုပြင်မွမ်းမံထုတ်လုပ်ခြင်းလုပ်ငန်း	(၄၂) မှ (၅၂) နှင့် (၅၇)
၁၆။	အဖျော်ယမကာ ပြုပြင်မွမ်းမံထုတ်လုပ်ခြင်းလုပ်ငန်း	(၅၃) မှ (၅၆)
၁၇။	အဝတ်အထည်၊ ချည်ထည် ထုတ်လုပ်ခြင်းနှင့် ဆေးဆိုးခြင်းလုပ်ငန်း	(၅၈) နှင့် (၅၉)
၁၈။	သားရေထည်ပစ္စည်း ထုတ်လုပ်ခြင်းလုပ်ငန်း	(၆၀) နှင့် (၆၁)
၁၉။	သစ်စက်၊ သစ်အချောထည်ပစ္စည်း၊ သစ်သားပြားနှင့် သစ်အပိုင်းအစ ထုတ်လုပ်ခြင်းလုပ်ငန်း	(၆၂) နှင့် (၆၃)
၂၀။	ပျော့ဖတ်နှင့် စက္ကူထုတ်လုပ်ခြင်းလုပ်ငန်း	(၆၄)

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**Eligible Categories of Projects to be conducted by the Organization**

Sr. No.	Categories of Projects as per Form B of Licensing Procedure	Project No as per Annex A of EIA Proedure
1.	Onshore oil and gas development projects	( 12, 13 and 14)
2.	Offshore oil and gas development projects	(15, 16 and 17)
3.	Oil and gas refinery/processing plants	(18, 19, 20 and 25)
4.	Construction of oil and gas transmission terminals, depots and distribution systems	(21, 22 and 23)
5.	Filling stations including liquified petroleumgas and compressed natural gas	(24)
6.	Coal-fired power plants	(5)
7.	Hydropower plants	(2)
8.	Other renewable energy power plants	(7, 10 and 11)
9.	Natural gas or biogas power plants	(4)
10.	Gas and thermal power plants	(8 and 9)
11.	Power plants from waste product	(6)
12.	Power distribution/transmission	(26, 27 and 28)
13.	Livestock farms	(31, 32, 33, 37 and 38)
14.	Fishery farms	(34, 35 and 36)
15.	Food processing and manufacturing	(42 to 52 and 57)
16.	Beverage processing and manufacturing	(53 to 56)
17.	Garment/textile manufacturing and dying	(58 and 59)
18.	Leather product manufacturing	(60 and 61)
19.	Sawmilling, fininshed wood, board and particle-based product manufacturing	(62 and 63)
20.	Pulp and paper manufacturing	(64)

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**အဖွဲ့အစည်းက လေ့လာဆန်းစစ်ခွင့်ရှိသော စီမံကိန်းလုပ်ငန်းအုပ်စုများ**

စဉ်	လုပ်ငန်းလိုင်စင်ဆိုင်ရာလုပ်ထုံးလုပ်နည်း ပုံစံ (ခ) ပါ စီမံကိန်းလုပ်ငန်းအုပ်စုများ	ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း နောက်ဆက်တွဲ (က) ပါ စီမံကိန်းနံပါတ်များ
၂၁။	ဓာတုပစ္စည်းထုတ်လုပ်ခြင်းလုပ်ငန်း	(၆၆) မှ (၇၅)
၂၂။	ပေါက်ကွဲစေတတ်သော ပစ္စည်းများထုတ်လုပ်ခြင်းလုပ်ငန်း	(၇၆) မှ (၇၈)
၂၃။	ဖန်ထည်/မှန်ထည်နှင့် ကြွေထည်ပစ္စည်းထုတ်လုပ်ခြင်းလုပ်ငန်း	(၇၉) နှင့် (၈၀)
၂၄။	ဘိလပ်မြေ၊ အခြားဆောက်လုပ်ရေးကုန်ကြမ်းပစ္စည်းများနှင့် နိုင်လွန်ကတ္တရာ ထုတ်လုပ်ခြင်းလုပ်ငန်း	(၈၁) မှ (၈၄)
၂၅။	သတ္တုပစ္စည်းထုတ်လုပ်သန့်စင်ခြင်းလုပ်ငန်း	(၈၅) မှ (၈၈)
၂၆။	သင်္ဘောကျင်း၊ သင်္ဘောနှင့် ရထားတည်ဆောက်ပြုပြင်တပ်ဆင်ခြင်းလုပ်ငန်း	(၈၉) နှင့် (၉၀)
၂၇။	ရာဘာ နှင့် စက်မှုလုပ်ငန်းသုံးကုန်ကြမ်းပစ္စည်းများ ထုတ်လုပ်ခြင်းလုပ်ငန်း	(၉၁) မှ (၉၃)
၂၈။	လျှပ်စစ်ပစ္စည်းနှင့် အီလက်ထရောနစ်ပစ္စည်းများ ထုတ်လုပ်ခြင်းလုပ်ငန်း	(၉၄) မှ (၉၆)
၂၉။	စက်ပစ္စည်း၊ ယာဉ်နှင့် စက်ကိရိယာပစ္စည်းများ ထုတ်လုပ်ပြုပြင်တပ်ဆင်ခြင်း လုပ်ငန်း	(၉၇) မှ (၁၀၁)
၃၀။	စွန့်ပစ်ရေနှင့် ရေဆိုးများ ပြုပြင်သန့်စင်တည်ဆောက်ခြင်းလုပ်ငန်း	(၁၀၈) နှင့် (၁၀၉)
၃၁။	စက်မှုဇုန်တည်ဆောက်ရေးနှင့် ဖွံ့ဖြိုးရေးလုပ်ငန်း	(၁၁၈)
၃၂။	ဆေးရုံတည်ဆောက်ခြင်းလုပ်ငန်း	(၁၁၉)
၃၃။	သုသာန်၊ သင်္ချိုင်း တည်ဆောက်ခြင်းလုပ်ငန်း	(၁၂၀)
၃၄။	ဟိုတယ်နှင့် ခရီးသွားဖွံ့ဖြိုးရေးလုပ်ငန်း	(၁၂၁)
၃၅။	ဂေါက်ကွင်းတည်ဆောက်ခြင်းလုပ်ငန်း	(၁၂၂)
၃၆။	လူနေအိမ်ရာဖွံ့ဖြိုးရေး၊ ပြန်လည်နေရာချထားရေးဆိုင်ရာ မြို့ပြဖွံ့ဖြိုးရေးနှင့် မြို့သစ်တည်ဆောက်ရေး စီမံကိန်း လုပ်ငန်း	(၁၄၂)
၃၇။	အိပ်ဆောင်များ၊ ကွန်ဒိုမီနီယံအဆောက်အဦ တည်ဆောက်ခြင်းလုပ်ငန်း	(၁၄၃)
၃၈။	ဘက်စုံအားကစားကွင်း တည်ဆောက်ခြင်းလုပ်ငန်း	(၁၄၄)
၃၉။	အထူးစီးပွားရေးဇုန်တည်ဆောက်ရေးနှင့် ဖွံ့ဖြိုးရေးစီမံကိန်းလုပ်ငန်း	(၁၄၅)
၄၀။	ကုန်တိုက်ကြီးများ၊ ကုန်သွယ်ရေးဌာန၊ အဆင့်မြင့်ဈေးများ တည်ဆောက်ခြင်း လုပ်ငန်း	(၁၄၆)
၄၁။	မြေအောက်ထပ် တည်ဆောက်ခြင်းလုပ်ငန်း	(၁၄၇)
၄၂။	အခြေခံအဆောက်အအုံလုပ်ငန်း	(၁၄၈)
၄၃။	စားသောက်ဆိုင်လုပ်ငန်း	(၁၅၀)
၄၄။	မီးရထားနှင့် လျှပ်စစ်ရထား ပို့ဆောင်ရေးလုပ်ငန်း	(၁၂၃)

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**Eligible Categories of Projects to be conducted by the Organization**

Sr. No.	Categories of Projects as per Form B of Licensing Procedure	Project No as per Annex A of EIA Proedure
21.	Chemical products manufacturing	(66 and 75)
22.	Explosives manufacturing	(76, 77 and 78)
23.	Glass and ceramics products manufacturing	(79 and 80)
24.	Cement, other construction materials and asphalt manufacturing	( 81 and 84)
25.	Metal production and refinery	(85 to 88)
26.	Shipyards, ship and locomotives building, assembling and repair	(89 and 90)
27.	Rubber and industrial raw materials manufacturing	(91, 92 and 93)
28.	Electronics and electric equipment manufacturing	(94, 95 and 96)
29.	Machinery, vehicles and equipment manufacturing , assembling and repair	(97 to 101)
30.	Wastewater and sewage treatment	(108 and 109)
31.	Construction and development of industrial zone	(118)
32.	Construction of hospitals	(119)
33.	Construction of cemeteries	(120)
34.	Hotel and tourism development	(121)
35.	Construction of golf courses	(122)
36.	Development projects for habitat, resettlement, urban and new cities	(142)
37.	Construction of dormitories and condominiums	(143)
38.	Construction of all round sport stadiums	(144)
39.	Development of special economic zone	(145)
40.	Construction of department stores, trade centers and super markets	(146)
41.	Construction of underground basements	(147)
42.	Infrastructure projects	(148)
43.	Restaurants	(150)
44.	Railways and tramways projects	(123)

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စဉ်	လုပ်ငန်းလိုင်စင်ဆိုင်ရာလုပ်ထုံးလုပ်နည်း ပုံစံ (ခ) ပါ စီမံကိန်းလုပ်ငန်းအုပ်စုများ	ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း နောက်ဆက်တွဲ (က) ပါ စီမံကိန်းနံပါတ်များ
၄၅။	ကြိုးတပ်ကား တပ်ဆင်ပြေးဆွဲခြင်းလုပ်ငန်း	(၁၂၄)
၄၆။	လေဆိပ်နှင့် လေယာဉ်ပြေးလမ်း တည်ဆောက်ခြင်းလုပ်ငန်း	(၁၂၅)
၄၇။	တံတား၊ မြစ်ကူးတံတား၊ ဂုံးကျော်တံတား တည်ဆောက်ခြင်းနှင့် အဆင့်မြှင့်တင်ခြင်းလုပ်ငန်း	(၁၂၆) နှင့် (၁၂၇)
၄၈။	ဥမင်လိုဏ်ခေါင်းဖောက်လုပ်ခြင်းလုပ်ငန်း	(၁၂၈)
၄၉။	အဝေးပြေးလမ်းမအသစ် ဖောက်လုပ်ခြင်းလုပ်ငန်း	(၁၂၉)
၅၀။	လမ်းတည်ဆောက်ခြင်းနှင့် အဆင့်မြှင့်တင်ခြင်းလုပ်ငန်း	(၁၃၀) နှင့် (၁၃၁)
၅၁။	သင်္ဘောသွားလာရေးလုပ်ငန်း	(၁၃၆)
၅၂။	ဆိပ်ကမ်းတည်ဆောက်ခြင်းလုပ်ငန်း	(၁၃၇)
၅၃။	အဝေးပြေးကားဂိတ်ကြီးများ တည်ဆောက်ခြင်းလုပ်ငန်း	(၁၄၉)
၅၄။	ကျောက်၊ သဲထုတ်လုပ်ခြင်း၊ ဆောက်လုပ်ရေးလုပ်ငန်းသုံးနှင့် ကြွေထည် မြေထည်လုပ်ငန်းသုံး ကုန်ကြမ်းပစ္စည်းများ ထုတ်လုပ်ခြင်းလုပ်ငန်း	(၁၃၂) နှင့် (၁၃၃)
၅၅။	စက်မှုတွင်းထွက်ကုန်ကြမ်း တူးဖော်ထုတ်လုပ်ခြင်းနှင့် သန့်စင်ခြင်းလုပ်ငန်း	(၁၃၄)
၅၆။	မြေပေါ်နှင့် မြေအောက် သတ္တုတူးဖော်ထုတ်လုပ် ပြုပြင်သန့်စင်ခြင်းလုပ်ငန်း	(၁၃၅) မှ (၁၄၁)
၅၇။	ဆက်သွယ်ရေးကွန်ရက်ဖွံ့ဖြိုးရေးလုပ်ငန်း	(၁၅၆) နှင့် (၁၅၇)



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**Eligible Categories of Projects to be conducted by the Organization**

Sr. No.	Categories of Projects as per Form B of Licensing Procedure	Project No as per Annex A of EIA Proedure
45.	Cable car projects	(124)
46.	Airports and runway construction	(125)
47.	Construction and upgrading of bridges, river bridges and flyovers	(126 and 127)
48.	Tunnels construction	(128)
49.	Construction of new highways	(129)
50.	Construction and upgrading of roads	(130 and 131)
51.	Ship navigation	(116)
52.	Construction of ports and harbours	(117)
53.	Construction of highway terminals	(149)
54.	Extraction of rock/gravel/sand and raw minerals for construction and ceramics	(132 and 133)
55.	Extraction and refining of industrial raw minerals	(134)
56.	Mining, extraction and refining of surface and underground metals	(135 to 141)
57.	Telecommunication projects	(156 and 157)

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(က) အဓိကအကြံပေးပုဂ္ဂိုလ်များ

စဉ်	အမည်	လုပ်ငန်းလိုင်စင်အမှတ်	မှတ်ချက်
၁	၂	၃	၄
<b>(က) အကြံပေးပုဂ္ဂိုလ်</b>			
၁	ဦးအေးသီဟ	EIA-C 005/2023	
၂	ဒေါ်သိမ်မွေ့ခင်	EIA-C 006/2023	
၃	ဦးသော်တာထွန်း	EIA-C 007/2023	
၄	ဦးအောင်မြင့်မြတ်	EIA-C 008/2023	
၅	ဒေါ်ယုဝေယံသိန်းတန်	EIA-C 009/2023	
၆	ဦးစိုးမင်း	EIA-C 031/2023	
၇	ဦးသန်းစိုးဦး	EIA-C 017/2023	
<b>(ခ) တွဲဖက်အကြံပေးပုဂ္ဂိုလ်</b>			
၁	ဒေါ်ထက်ရွှေစင်အောင်	EIA-AC 002/2023	
၂	ဒေါ်မေသူဝင်း	EIA-AC 003/2023	
၃	ဦးငြိမ်းချမ်းအောင်	EIA-AC 004/2023	
၄	ဒေါ်ဟေမာန်နင်း	EIA-AC 005/2023	
၅	ဦးအောင်စည်သူသိန်း	EIA-AC 006/2023	
၆	ဒေါ်မေပွင့်ဖူး	EIA-AC 007/2023	
၇	ဦးအောင်ဇေယျာဝင့်	EIA-AC 008/2023	
၈	ဒေါ်ရွှေယမင်းဘို	EIA-AC 009/2023	
၉	ဦးအောင်မိုးဦး	EIA-AC 010/2023	
၁၀	ဦးမြင့်အောင်	EIA-AC 011/2023	

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(ခ) အဓိကမဟုတ်သော အကြံပေးပုဂ္ဂိုလ်များ

စဉ်	အမည်	လုပ်ငန်းလိုင်စင်အမှတ်	မှတ်ချက်
၁	၂	၃	၄
<b>(က) အကြံပေးပုဂ္ဂိုလ်</b>			
၁	မရှိပါ		
<b>(ခ) တွဲဖက်အကြံပေးပုဂ္ဂိုလ်</b>			
၁	ဒေါက်တာသန်းခင်	EIA-AC 012/2023	



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ  
The Government of the Republic of the Union of Myanmar  
သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန  
Ministry of Natural Resources and Environmental Conservation



ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန  
Environmental Conservation Department  
ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)

**Environmental Impact Assessment License (Individual)**

ဦးစိုးမင်း၊ ၇/ပမန(နိုင်)၀၀၆၁၀၃ အား အကြံပေးပုဂ္ဂိုလ် အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာ လုပ်ထုံးလုပ်နည်းနှင့်အညီ ဤဝန်ကြီး ဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။

It is hereby issued that U Soe Min, 7/PaMaNa(N)006103 has fulfilled the requirements for obtaining an Environmental Impact Assessment License to conduct as an Consultant under the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources and Environmental Conservation.

လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-

The areas of expertise, eligible to be conducted, are as follows:

1. စလဗေဒ၊ မြေပေါ်ရေနှင့် မြေအောက်ရေထိန်းသိမ်းခြင်း (Hydrology, Surface Water and Ground Water Conservation)
2. ရေထုညစ်ညမ်းမှု ကြိုတင်ကာကွယ်ခြင်း၊ ထိန်းချုပ်ခြင်း၊ စောင့်ကြပ်ကြည့်ရှုခြင်းနှင့် ထိခိုက်မှုကြိုတင် ခန့်မှန်းခြင်း (Water Pollution Prevention, Control, Monitoring and Prediction of Impacts)
3. လေထုညစ်ညမ်းမှု ကြိုတင်ကာကွယ်ခြင်းနှင့် ထိန်းချုပ်ခြင်း (Air Pollution Prevention and Control)
- 4.
- 5.

လိုင်စင်နံပါတ် License Number	: EIA-C 031/2023
ထုတ်ပေးသည့် ရက်စွဲ Date of Issue	: 1-12-2023
ကုန်ဆုံးသည့် ရက်စွဲ Date of Expiry	: 30-11-2026



(သိန်းတိုး)  
ညွှန်ကြားရေးမှူးချုပ်



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ  
 The Government of the Republic of the Union of Myanmar  
 သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန  
 Ministry of Natural Resources and Environmental Conservation  
 ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန  
 Environmental Conservation Department

ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)  
**Environmental Impact Assessment License (Individual)**

ဒေါ်မေပွင့်ဖူး၊ ၁၂/ကမတ(နိုင်)၀၇၂၀၈၃ အား တွဲဖက်အကြံပေးပုဂ္ဂိုလ် အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာလုပ်ထုံးလုပ်နည်းနှင့် အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။

It is hereby issued that Daw May Pwint Phoo, 12/KaMaTa(N)072083 has fulfilled the requirements for obtaining an Environmental Impact Assessment License to conduct as an Associate Consultant under the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources and Environmental Conservation.

လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-

The areas of expertise, eligible to be conducted, are as follows:

1. အထွေထွေပတ်ဝန်းကျင်စီမံခန့်ခွဲခြင်း (General Environmental Management)
2. ဘေးအန္တရာယ်ရှိမှု ဆန်းစစ်ခြင်းနှင့် ဘေးအန္တရာယ် စီမံခန့်ခွဲခြင်း (Risk Assessment and Hazard Management)
- 3.
- 4.
- 5.

လိုင်စင်နံပါတ် License Number	: EIA-AC 007/2023
ထုတ်ပေးသည့် ရက်စွဲ Date of Issue	: 1-12-2023
ကုန်ဆုံးသည့် ရက်စွဲ Date of Expiry	: 30-11-2026



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 (သိန်းတိုး)  
 ညွှန်ကြားရေးမှူးချုပ်



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ  
 The Government of the Republic of the Union of Myanmar  
 သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန  
 Ministry of Natural Resources and Environmental Conservation



ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန  
 Environmental Conservation Department  
 ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)  
**Environmental Impact Assessment License (Individual)**

ဒေါ်သိမ်မွေခင်၊ ၈/အလန(နိုင်)၁၄၀၂၁၁ အား အကြံပေးပုဂ္ဂိုလ် အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာ လုပ်ထုံးလုပ်နည်းနှင့် အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။

It is hereby issued that **Daw Thein Mwe Khin , 8/AhLANa(N)140211** has fulfilled the requirements for obtaining an Environmental Impact Assessment License to conduct as an **Consultant** under the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources and Environmental Conservation.

လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-  
 The areas of expertise, eligible to be conducted, are as follows:

1. ဂေဟစနစ်နှင့် ဇီဝမျိုးစုံမျိုးကွဲ (Ecology and Biodiversity)
2. လူမှုရေးဆိုင်ရာလေ့လာခြင်းနှင့် သရုပ်ခွဲဆန်းစစ်ခြင်း (Social Study and Analysis)
- 3.
- 4.
- 5.

လိုင်စင်နံပါတ် License Number	: EIA-C 006/2023
ထုတ်ပေးသည့် ရက်စွဲ Date of Issue	: 1-12-2023
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 (သိန်းတိုး)  
 ညွှန်ကြားရေးမှူးချုပ်



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ  
 The Government of the Republic of the Union of Myanmar  
 သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန  
 Ministry of Natural Resources and Environmental Conservation  
 ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန  
 Environmental Conservation Department

ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)  
**Environmental Impact Assessment License (Individual)**

ဒေါ်သက်မျိုးခင်၊ ၁၂/မဂတ(နိုင်)၀၉၄၈၇၆ အား အကြံပေးပုဂ္ဂိုလ်အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာ လုပ်ထုံးလုပ်နည်းနှင့်အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။

It is hereby issued that **Daw Thet Mhwe Khin, 12/MaGaTa(N)094876** has fulfilled the requirements for obtaining an Environmental Impact Assessment License to conduct as an **Consultant** under the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources and Environmental Conservation.

လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-  
 The areas of expertise, eligible to be conducted, are as follows:

1. **စွန့်ပစ်အစိုင်အခဲနှင့် ဘေးအန္တရာယ်ရှိ စွန့်ပစ်ပစ္စည်းစီမံခန့်ခွဲခြင်း (Solid Waste and Hazardous Waste Management)**
- 2.
- 3.
- 4.
- 5.

လိုင်စင်နံပါတ် License Number : EIA-C 054/2024  
 ထုတ်ပေးသည့် ရက်စွဲ Date of Issue : 29-2-2024  
 ကုန်ဆုံးသည့် ရက်စွဲ Date of Expiry : 28-2-2027



*(Signature)*  
 (သိန်းတိုး)  
 ညွှန်ကြားရေးမှူးချုပ်



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ  
 The Government of the Republic of the Union of Myanmar  
 သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန  
 Ministry of Natural Resources and Environmental Conservation  
 ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန  
 Environmental Conservation Department  
 ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)  
**Environmental Impact Assessment License (Individual)**



ဦးအောင်စည်သူသိန်း၊ ၁၂/အစန(နိုင်)၁၉၉၁၀၁ အား တွဲဖက်အကြံပေးပုဂ္ဂိုလ် အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာလုပ်ထုံးလုပ်နည်းနှင့်အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။

It is hereby issued that U Aung Si Thu Thein, 14/AhSaNa(N)199101 has fulfilled the requirements for obtaining an Environmental Impact Assessment License to conduct as an Associate Consultant under the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources and Environmental Conservation.

လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-

The areas of expertise, eligible to be conducted, are as follows:



1. သဘာဝသယံဇာတစီမံအုပ်ချုပ်ခြင်း (သစ်တော) (Natural Resources Management (Forestry))
2. ဂေဟစနစ်နှင့် ဇီဝမျိုးစုံမျိုးကွဲ (Ecology and Biodiversity)
3. မြေအသုံးချမှု (Land Use)
- 4.
- 5.

လိုင်စင်နံပါတ် License Number	: EIA-AC 006/2023
ထုတ်ပေးသည့် ရက်စွဲ Date of Issue	: 1-12-2023
ကုန်ဆုံးသည့် ရက်စွဲ Date of Expiry	: 30-11-2026




  
 (သိန်းတိုး)  
 ညွှန်ကြားရေးမှူးချုပ်




**ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ**  
 The Government of the Republic of the Union of Myanmar  
 သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန  
 Ministry of Natural Resources and Environmental Conservation  


**ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန**  
 Environmental Conservation Department  
**ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)**  
**Environmental Impact Assessment License (Individual)**



**ဦးထော်ထာထွန်း၊ ဇ/စခေ (နိုင်) ၁၃၅၇၀၀၆** အား အကြံပေးပုဂ္ဂိုလ် အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတ်ပညာပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာ လုပ်ထုံးလုပ်နည်းနှင့်အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။

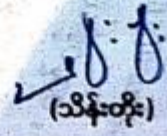
It is hereby issued that **U Thaw Tar Htun, 7/PhaMaNa(N)135716** has fulfilled the requirements for obtaining an Environmental Impact Assessment License to conduct as an **Consultant** under the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources and Environmental Conservation.

လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-  
 The areas of expertise, eligible to be conducted, are as follows:

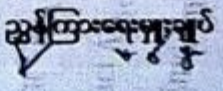
1. လေထုညစ်ညမ်းမှုကြိုတင်ကာကွယ်ခြင်းနှင့်ထိန်းချုပ်ခြင်း (Air Pollution Prevention and Control)
2. ရေထုညစ်ညမ်းမှု ကြိုတင်ကာကွယ်ခြင်း၊ ထိန်းချုပ်ခြင်း၊ စောင့်ကြပ်ကြည့်ရှုခြင်းနှင့် ထိခိုက်မှုကြိုတင်ခန့်မှန်းခြင်း (Water Pollution Prevention, Control, Monitoring and Prediction of Impacts)
3. မိုးလေဝသနှင့် လေအရည်အသွေးဆန်းစစ်ခြင်းနှင့် ကြိုတင်ခန့်မှန်းခြင်း (Meteorology, Air Quality Assessment and Forecast)
- 4.
- 5.

လိုင်စင်နံပါတ် License Number	: EIA-C 007/2023
ထုတ်ပေးသည့် ရက်စွဲ Date of Issue	: 1-12-2023
ကုန်ဆုံးသည့် ရက်စွဲ Date of Expiry	: 30-11-2026



(သိန်းတိုး)





ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ  
 The Government of the Republic of the Union of Myanmar  
 သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန  
 Ministry of Natural Resources and Environmental Conservation  
 ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန  
 Environmental Conservation Department

ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)  
**Environmental Impact Assessment License (Individual)**

ဦးစည်သူအောင် ၊ ၁၂/၁၈၈(နိုင်)၀၁၆၉၉၆ အား တွဲဖက်အကြံပေးပုဂ္ဂိုလ် အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာ လုပ်ထုံးလုပ်နည်းနှင့်အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။

It is hereby issued that **U Si Thu Aung, 12/DaGaMa(N)016996** has fulfilled the requirements for obtaining an Environmental Impact Assessment License to conduct as an **Associate Consultant** under the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources and Environmental Conservation.

လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-

The areas of expertise, eligible to be conducted, are as follows:

1. ဇလဗေဒ၊ မြေပေါ်ရေနှင့် မြေအောက်ရေ ထိန်းသိမ်းခြင်း (Hydrology, Surface Water and Ground Water Conservation)
2. ရေထုညစ်ညမ်းမှု ကြိုတင်ကာကွယ်ခြင်း၊ ထိန်းချုပ်ခြင်း၊ စောင့်ကြပ်ကြည့်ရှုခြင်းနှင့် ထိခိုက်မှုကြိုတင် ခန့်မှန်းခြင်း(Water Pollution Prevention, Control, Monitoring and Prediction of Impact)
- 3.
- 4.
- 5.

လိုင်စင်နံပါတ် License Number : EIA-AC 094/2024  
 ထုတ်ပေးသည့် ရက်စွဲ Date of Issue : 31-5-2024  
 ကုန်ဆုံးသည့် ရက်စွဲ Date of Expiry : 30-5-2027



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 (သိန်းတိုး)  
 ညွှန်ကြားရေးမှူးချုပ်



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ  
 The Government of the Republic of the Union of Myanmar  
 သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန  
 Ministry of Natural Resources and Environmental Conservation  
 ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန  
 Environmental Conservation Department

ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)  
**Environmental Impact Assessment License (Individual)**

ဦးထက်အောင်၊ ၁၂/မရက(နိုင်)၁၄၄၆၂၁ အား တွဲဖက်အကြံပေးပုဂ္ဂိုလ် အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာ လုပ်ထုံးလုပ်နည်းနှင့်အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။

It is hereby issued that **U Htet Aung, 12/MaYaKa(N)144621** has fulfilled the requirements for obtaining an Environmental Impact Assessment License to conduct as an **Associate Consultant** under the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources and Environmental Conservation.

လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-

The areas of expertise, eligible to be conducted, are as follows:

1. ဘူမိဆိုင်ရာဆန်းစစ်လေ့လာခြင်း (Geological Assessment)
- 2.
- 3.
- 4.
- 5.

လိုင်စင်နံပါတ် License Number	: EIA-AC 095/2024
ထုတ်ပေးသည့် ရက်စွဲ Date of Issue	: 31-5-2024
ကုန်ဆုံးသည့် ရက်စွဲ Date of Expiry	: 30-5-2027



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 (သိန်းတိုး)  
 ညွှန်ကြားရေးမှူးချုပ်



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ  
 The Government of the Republic of the Union of Myanmar  
 သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန  
 Ministry of Natural Resources and Environmental Conservation  
 ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန  
 Environmental Conservation Department  
 ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)  
**Environmental Impact Assessment License (Individual)**

ဒေါ်မေသူဝင်း၊ ၁၂/သကတ(နိုင်)၁၈၆၁၂၄ အား တွဲဖက်အကြံပေးပုဂ္ဂိုလ် အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာလုပ်ထုံးလုပ်နည်းနှင့် အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။

It is hereby issued that Daw May Thu Win, 12/ThaKaTa(N)186124 has fulfilled the requirements for obtaining an Environmental Impact Assessment License to conduct as an Associate Consultant under the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources and Environmental Conservation.

လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-

The areas of expertise, eligible to be conducted, are as follows:

1. ဥပဒေရေးရာလေ့လာမှုနှင့် သရုပ်ခွဲဆန်းစစ်ခြင်း (Legal Study and Analysis)
- 2.
- 3.
- 4.
- 5.

လိုင်စင်နံပါတ် License Number	: EIA-AC 003/2023
ထုတ်ပေးသည့် ရက်စွဲ Date of Issue	: 1-12-2023
ကုန်ဆုံးသည့် ရက်စွဲ Date of Expiry	: 30-11-2026



  
 (သိန်းတိုး)  
 ညွှန်ကြားရေးမှူးချုပ်



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ  
 The Government of the Republic of the Union of Myanmar  
 သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန  
 Ministry of Natural Resources and Environmental Conservation  
 ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန  
 Environmental Conservation Department

ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)  
**Environmental Impact Assessment License (Individual)**

ဦးအောင်မိုးဦး၊ ၇/ဒဂုံန(နိုင်)၁၇၇၈၅၂ အား တွဲဖက်အကြံပေးပုဂ္ဂိုလ် အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာ လုပ်ထုံးလုပ်နည်းနှင့် အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။

It is hereby issued that U Aung Moe Oo, 7/DaOuNa(N)177852 has fulfilled the requirements for obtaining an Environmental Impact Assessment License to conduct as an Associate Consultant under the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources and Environmental Conservation.

လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-

The areas of expertise, eligible to be conducted, are as follows:

1. လေထုညစ်ညမ်းမှုစောင့်ကြပ်ကြည့်ရှုခြင်း (Air Pollution Monitoring)
2. စွန့်ပစ်အစိုင်အခဲနှင့် ဘေးအန္တရာယ်ရှိ စွန့်ပစ်ပစ္စည်း စီမံခန့်ခွဲခြင်း (Solid Waste and Hazardous Waste Management )
- 3.
- 4.
- 5.

လိုင်စင်နံပါတ် License Number	: EIA-AC 010/2023
ထုတ်ပေးသည့် ရက်စွဲ Date of Issue	: 1-12-2023
ကုန်ဆုံးသည့် ရက်စွဲ Date of Expiry	: 30-11-2026



*(Handwritten signature)*  
 (သိန်းတိုး)  
 ညွှန်ကြားရေးမှူးချုပ်  
 ၄ ၆ ၈



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ  
 The Government of the Republic of the Union of Myanmar  
 သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန  
 Ministry of Natural Resources and Environmental Conservation  
 ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန  
 Environmental Conservation Department  
 ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)  
**Environmental Impact Assessment License (Individual)**

ဦးငြိမ်းချမ်းအောင်၊ ၅/ကလန(နိုင်)၀၅၉၇၉၉ အား တွဲဖက်အကြံပေးပုဂ္ဂိုလ် အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာလုပ်ထုံးလုပ်နည်းနှင့် အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။

It is hereby issued that U Nyein Chan Aung, 5/KaLaNa(N)059799 has fulfilled the requirements for obtaining an Environmental Impact Assessment License to conduct as an Associate Consultant under the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources and Environmental Conservation.

လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-

The areas of expertise, eligible to be conducted, are as follows:

1. အထွေထွေပတ်ဝန်းကျင်စီမံခန့်ခွဲခြင်း (General Environmental Management)
- 2.
- 3.
- 4.
- 5.

လိုင်စင်နံပါတ် License Number	: EIA-AC 004/2023
ထုတ်ပေးသည့် ရက်စွဲ Date of Issue	: 1-12-2023
ကုန်ဆုံးသည့် ရက်စွဲ Date of Expiry	: 30-11-2026



(သိန်းတိုး)  
 ညွှန်ကြားရေးမှူးချုပ်



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ  
 The Government of the Republic of the Union of Myanmar  
 သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန  
 Ministry of Natural Resources and Environmental Conservation  
 ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန  
 Environmental Conservation Department

ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းလိုင်စင် (ပုဂ္ဂိုလ်)  
**Environmental Impact Assessment License (Individual)**

ဦးအောင်ဇေယျာဝင်း၊ ၁၂/မရက(နိုင်)၁၅၄၃၈၀ အား တွဲဖက်အကြံပေးပုဂ္ဂိုလ် အဖြစ် လုပ်ကိုင်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းလိုင်စင်ကို ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း ပြုလုပ်သည့် တတိယပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်း လုပ်ငန်းလိုင်စင်ဆိုင်ရာ လုပ်ထုံးလုပ်နည်းနှင့်အညီ ဤဝန်ကြီးဌာန၏ အတည်ပြုချက်ဖြင့် ထုတ်ပေးလိုက်သည်။

It is hereby issued that U Aung Zayar Wint, 12/MaRaKa(N)154380 has fulfilled the requirements for obtaining an Environmental Impact Assessment License to conduct as an Associate Consultant under the Licensing Procedure for the Third Persons or Organizations Undertaking Initial Environmental Examination and Environmental Impact Assessment, approved by the Ministry of Natural Resources and Environmental Conservation.

လေ့လာဆန်းစစ်ခွင့်ရှိသည့် ကျွမ်းကျင်မှုနယ်ပယ်များမှာ အောက်ပါအတိုင်းဖြစ်သည်-

The areas of expertise, eligible to be conducted, are as follows:

1. ဂေဟစနစ်နှင့် ဇီဝမျိုးစုံမျိုးကွဲ (Ecology and Biodiversity)
2. လေထုညစ်ညမ်းမှု ကြိုတင်ကာကွယ်ခြင်းနှင့် ထိန်းချုပ်ခြင်း (Air Pollution Prevention and Control)
- 3.
- 4.
- 5.

လိုင်စင်နံပါတ် License Number	: EIA-AC 008/2023
ထုတ်ပေးသည့် ရက်စွဲ Date of Issue	: 1-12-2023
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(သိန်းတိုး)  
 ဆန်ကြားရေးမှူးချုပ်

Appendix 12 Attendance Record of Public Consultation Meeting

တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်ခရိုင်၊ ထားဝယ်မြို့နယ်၊ သပြေချောင်းကျေးရွာအနီးရှိ ကွင်းအမှတ် (၁၀၄)၊ မြေဧရိယာ (၂၀ ဧက) အတွင်းတွင် တည်ဆောက်မည့် ထားဝယ်မြို့ အဝေးပြေးယာဉ်ရပ်နားစခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်းစီမံကိန်း၏ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ငန်းနှင့် ပတ်သက်၍ စီမံကိန်းအကြောင်းအရာများအား ရှင်းလင်းတင်ပြခြင်းနှင့် အများပြည်သူနှင့် ဆွေးနွေးညှိနှိုင်းသဘောထားရယူခြင်း (Public Consultation) အခမ်းအနားသို့ တက်ရောက်သူများစာရင်း

အစိုးရဌာနဆိုင်ရာအဖွဲ့အစည်းများ ရက်စွဲ# ၂၀၂၃ ခုနှစ်၊ ဇူလိုင်လ (၅) ရက်

စဉ်	အမည်	ရာထူး	ဌာန/အဖွဲ့အစည်း	ဆက်သွယ်ရန်ဖုန်း	လက်မှတ်
၁	ဦးကျော်စွာ	ဦးဦးစွာ	မ.ဗ.၇		
၂	ဦးကျော်စွာ	ဦးဦးစွာ	ECD		
၃	ဦးကျော်စွာ	ဦးဦးစွာ	ECD		
၄	ဦးကျော်စွာ	ဦးဦးစွာ	ECD		
၅	ဦးကျော်စွာ	ဦးဦးစွာ	ECD		
၆	ဦးကျော်စွာ	ဦးဦးစွာ	ECD		
၇	ဦးကျော်စွာ	ဦးဦးစွာ	ရ.အေးချမ်းသာယာ		
၈	ဦးကျော်စွာ	ဦးဦးစွာ	ရ.အေးချမ်းသာယာ		
၉	ဦးကျော်စွာ	ဦးဦးစွာ	ရ.အေးချမ်းသာယာ		
၁၀	ဦးကျော်စွာ	ဦးဦးစွာ	ရ.အေးချမ်းသာယာ		

တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်ခရိုင်၊ ထားဝယ်မြို့နယ်၊ သပြေချောင်းကျေးရွာအနီးရှိ ကွင်းအမှတ် (၁၀၄)၊ မြေဧရိယာ (၂၀ ဧက) အတွင်းတွင် တည်ဆောက်မည့် ထားဝယ်မြို့ အဝေးပြေးယာဉ်ရပ်နားစခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်းစီမံကိန်း၏ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ငန်းနှင့် ပတ်သက်၍ စီမံကိန်းအကြောင်းအရာများအား ရှင်းလင်းတင်ပြခြင်းနှင့် အများပြည်သူနှင့် ဆွေးနွေးညှိနှိုင်းသဘောထားရယူခြင်း (Public Consultation) အခမ်းအနားသို့ တက်ရောက်သူများစာရင်း

အစိုးရဌာနဆိုင်ရာအဖွဲ့အစည်းများ ရက်စွဲ# ၂၀၂၃ ခုနှစ်၊ ဇူလိုင်လ (၅) ရက်

စဉ်	အမည်	ရာထူး	ဌာန/အဖွဲ့အစည်း	ဆက်သွယ်ရန်ဖုန်း	လက်မှတ်
၁	ဦးကျော်စွာ	ဦးဦးစွာ	ရ.အေးချမ်းသာယာ		
၂	ဦးကျော်စွာ	ဦးဦးစွာ	ရ.အေးချမ်းသာယာ		
၃	ဦးကျော်စွာ	ဦးဦးစွာ	ရ.အေးချမ်းသာယာ		

တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်ခရိုင်၊ ထားဝယ်မြို့နယ်၊ သပြေချောင်းကျေးရွာအနီးရှိ ကွင်းအမှတ် (၁၀၄)၊ မြေဧရိယာ (၂၀ ဧက) အတွင်းတွင် တည်ဆောက်မည့် ထားဝယ်မြို့ အဝေးပြေးယာဉ်ရပ်နားစခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်းစီမံကိန်း၏ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ငန်းနှင့် ပတ်သက်၍ စီမံကိန်းအကြောင်းအရာများအား ရှင်းလင်းတင်ပြခြင်းနှင့် အများပြည်သူနှင့် ဆွေးနွေးညှိနှိုင်းသဘောထားရယူခြင်း (Public Consultation) သို့ တက်ရောက်သူများစာရင်း

ရပ်မိရပ်ဖ ဒေသခံပြည်သူများ ရက်စွဲ# ၂၀၂၃ ခုနှစ်၊ ဇူလိုင်လ (၅) ရက်

စဉ်	အမည်	နေရပ်လိပ်စာ	အလုပ်အကိုင်	ဆက်သွယ်ရန်ဖုန်း	လက်မှတ်
၁		ရပ်မိရပ်ဖ	ရပ်မိရပ်ဖ		
၂		ရပ်မိရပ်ဖ	ရပ်မိရပ်ဖ		
၃		ရပ်မိရပ်ဖ	ရပ်မိရပ်ဖ		
၄		ရပ်မိရပ်ဖ	ရပ်မိရပ်ဖ		
၅		ရပ်မိရပ်ဖ	ရပ်မိရပ်ဖ		
၆		ရပ်မိရပ်ဖ	ရပ်မိရပ်ဖ		
၇		ရပ်မိရပ်ဖ	ရပ်မိရပ်ဖ		
၈		ရပ်မိရပ်ဖ	ရပ်မိရပ်ဖ		
၉		ရပ်မိရပ်ဖ	ရပ်မိရပ်ဖ		
၁၀		ရပ်မိရပ်ဖ	ရပ်မိရပ်ဖ		



တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်ခရိုင်၊ ထားဝယ်မြို့နယ်၊ သပြေချောင်းကျေးရွာအနီးရှိ ကွင်းအမှတ် (၁၀၄)၊ မြေဧရိယာ (၂၀ ဧက) အတွင်းတွင် တည်ဆောက်မည့် ထားဝယ်မြို့ အဝေးပြေးယာဉ်ရပ်နားခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်းစီမံကိန်း၏ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ငန်းနှင့် ပတ်သက်၍ စီမံကိန်းအကြောင်းအရာများအား ရှင်းလင်းတင်ပြခြင်းနှင့် အများပြည်သူနှင့် ဆွေးနွေးညှိနှိုင်းသဘောထားရယူခြင်း အခမ်းအနား (Public Consultation) သို့ တက်ရောက်သူများစာရင်း

ရက်စွဲ။ ၂၀၂၃ ခုနှစ်၊ ဇူလိုင်လ (၅) ရက်

စဉ်	အမည်	နေရပ်လိပ်စာ	အလုပ်အကိုင်	ဆက်သွယ်ရန်ဖုန်း	လက်မှတ်
၁၇		သပြေချောင်း	မို့မို့		
၁၈		မ မ မ	ပျပ်ပျပ်		
၁၉		။	ဇွဲကယုတ်စူး		၆၈၆၉
၂၀		စတုရန်း	ယုတ်ချင်		
၂၁		။	လူလူ		၆၅၈
၂၂		။	ချေးကျင်		
၂၃		ကည့်ရပ်	စင်/မာ		၆၅၈
၂၄		စတုရန်း	လူလူ		၆၅၈
၂၅		စတုရန်း	မို့မို့		၆၅၈
၂၆		။	။		၆၀

တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်ခရိုင်၊ ထားဝယ်မြို့နယ်၊ သပြေချောင်းကျေးရွာအနီးရှိ ကွင်းအမှတ် (၁၀၄)၊ မြေဧရိယာ (၂၀ ဧက) အတွင်းတွင် တည်ဆောက်မည့် ထားဝယ်မြို့ အဝေးပြေးယာဉ်ရပ်နားခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်းစီမံကိန်း၏ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ငန်းနှင့် ပတ်သက်၍ စီမံကိန်းအကြောင်းအရာများအား ရှင်းလင်းတင်ပြခြင်းနှင့် အများပြည်သူနှင့် ဆွေးနွေးညှိနှိုင်းသဘောထားရယူခြင်း အခမ်းအနား (Public Consultation) သို့ တက်ရောက်သူများစာရင်း

ရက်စွဲ။ ၂၀၂၃ ခုနှစ်၊ ဇူလိုင်လ (၅) ရက်

စဉ်	အမည်	နေရပ်လိပ်စာ	အလုပ်အကိုင်	ဆက်သွယ်ရန်ဖုန်း	လက်မှတ်
၂၁		စတုရန်း	ပျပ်ပျပ်		
၂၂		ကည့်ရပ်	စင်/မာ		
၂၃		စတုရန်း	စင်/မာ		

တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်ခရိုင်၊ ထားဝယ်မြို့နယ်၊ သပြေချောင်းကျေးရွာအနီးရှိ ကွင်းအမှတ် (၁၀၄)၊ မြေဧရိယာ (၂၀ ဧက) အတွင်းတွင် တည်ဆောက်မည့် ထားဝယ်မြို့ အဝေးပြေးယာဉ်ရပ်နားခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်းစီမံကိန်း၏ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ငန်းနှင့် ပတ်သက်၍ စီမံကိန်းအကြောင်းအရာများအား ရှင်းလင်းတင်ပြခြင်းနှင့် အများပြည်သူနှင့် ဆွေးနွေးညှိနှိုင်းသဘောထားရယူခြင်း အခမ်းအနား (Public Consultation) သို့ တက်ရောက်သူများစာရင်း

ရက်စွဲ။ ၂၀၂၃ ခုနှစ်၊ ဇူလိုင်လ (၅) ရက်

စဉ်	အမည်	နေရပ်လိပ်စာ	အလုပ်အကိုင်	ဆက်သွယ်ရန်ဖုန်း	လက်မှတ်
၁၇		စတုရန်း	ပျပ်ပျပ်		
၁၈		ပျပ်ပျပ်	ပျပ်ပျပ်		

တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်ခရိုင်၊ ထားဝယ်မြို့နယ်၊ သပြေချောင်းကျေးရွာအနီးရှိ ကွင်းအမှတ် (၁၀၄)၊ မြေဧရိယာ (၂၀ ဧက) အတွင်းတွင် တည်ဆောက်မည့် ထားဝယ်မြို့ အဝေးပြေးယာဉ်ရပ်နားစခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်းစီမံကိန်း၏ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ငန်းနှင့် ပတ်သက်၍ စီမံကိန်းအကြောင်းအရာများအား ရှင်းလင်းတင်ပြခြင်းနှင့် အများပြည်သူနှင့် ဆွေးနွေးညှိနှိုင်းသဘောထားရယူခြင်း အခမ်းအနား (Public Consultation) သို့ တက်ရောက်သူများစာရင်း

ရက်စွဲ ၂၀၂၃ ခုနှစ်၊ စက်တင်ဘာလ (၅) ရက်

စဉ်	အမည်	နေရပ်လိပ်စာ	အလုပ်အကိုင်	ဆက်သွယ်ရန်ဖုန်း	လက်မှတ်
၁။		သပြေချောင်း	ကျွန်ုပ်		သေး
၂။		။	ပုဂံ		ဦးငယ်
၃။		။	မောင်		၆၀၀ (၇)
၄။		။	ရိုက်ကူးရေး		
၅။		သပြေချောင်း ၃၇၅	စက်မှု/အဖွဲ့ (၅၆)		
၆။		သပြေချောင်း	ကျေးဇူး ဆရာမ		၂၈၅
၇။		၃၅၆ ဖွဲ့စည်း			၂၅၅၇
၈။		ကိတ်ကျွတ်			
၉။		အိမ်ခြေ ၁၆			၆၇၃
၁၀။		ဝေး	ဂဏန်း		

တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်ခရိုင်၊ ထားဝယ်မြို့နယ်၊ သပြေချောင်းကျေးရွာအနီးရှိ ကွင်းအမှတ် (၁၀၄)၊ မြေဧရိယာ (၂၀ ဧက) အတွင်းတွင် တည်ဆောက်မည့် ထားဝယ်မြို့ အဝေးပြေးယာဉ်ရပ်နားစခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်းစီမံကိန်း၏ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ငန်းနှင့် ပတ်သက်၍ စီမံကိန်းအကြောင်းအရာများအား ရှင်းလင်းတင်ပြခြင်းနှင့် အများပြည်သူနှင့် ဆွေးနွေးညှိနှိုင်းသဘောထားရယူခြင်း အခမ်းအနား (Public Consultation) သို့ တက်ရောက်သူများစာရင်း

INGOs/NGOs ရက်စွဲ ၂၀၂၃ ခုနှစ်၊ စက်တင်ဘာလ (၅) ရက်

Sr. စဉ်	Name အမည်	Organization/ Position အဖွဲ့အစည်း/ရာထူး	Phone No ဆက်သွယ်ရန်ဖုန်း	Email Address အီးမေးလ်လိပ်စာ	Signature လက်မှတ်
၁		လှိုင်အောင်			
၂		အောင်			
၃		၀၂၈၈၈ (၀၈၀)			
၄		၀.၈.၈ (၀.၀)			
၅		၈၀၆၈၀၆			
၆		၈၀၆			
၇					
၈		၈၅၀၆၀၆			
၉		၈၅၀၆၀၆			

တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်ခရိုင်၊ ထားဝယ်မြို့နယ်၊ သပြေချောင်းကျေးရွာအနီးရှိ ကွင်းအမှတ် (၁၀၄)၊ မြေဧရိယာ (၂၀ ဧက) အတွင်းတွင် တည်ဆောက်မည့် ထားဝယ်မြို့ အဝေးပြေးယာဉ်ရပ်နားစခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်းစီမံကိန်း၏ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ငန်းနှင့် ပတ်သက်၍ စီမံကိန်းအကြောင်းအရာများအား ရှင်းလင်းတင်ပြခြင်းနှင့် အများပြည်သူနှင့် ဆွေးနွေးညှိနှိုင်းသဘောထားရယူခြင်း အခမ်းအနား (Public Consultation) သို့ တက်ရောက်သူများစာရင်း

INGOs/NGOs ရက်စွဲ ၂၀၂၃ ခုနှစ်၊ စက်တင်ဘာလ (၅) ရက်

Sr. စဉ်	Name အမည်	Organization/ Position အဖွဲ့အစည်း/ရာထူး	Phone No ဆက်သွယ်ရန်ဖုန်း	Email Address အီးမေးလ်လိပ်စာ	Signature လက်မှတ်
၁		၈၀၆၈၀၆			
၂		၈၀၆၈၀၆			
၃		၈၀၆၈၀၆			
၄		၈၀၆၈၀၆			
၅		၈၀၆၈၀၆			
၆		၈၀၆၈၀၆			
၇		၈၀၆၈၀၆			

တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်ခရိုင်၊ ထားဝယ်မြို့နယ်၊ သပြေချောင်းကျေးရွာအနီးရှိ ကွင်းအမှတ် (၁၀၄)၊ မြေဧရိယာ (၂၀ ဧက) အတွင်းတွင် တည်ဆောက်မည့် ထားဝယ်မြို့ အဝေးပြေးယာဉ်ရပ်နားခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်းစီမံကိန်း၏ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ငန်းနှင့် ပတ်သက်၍ စီမံကိန်းအကြောင်းအရာများအား ရှင်းလင်းတင်ပြခြင်းနှင့် အများပြည်သူနှင့် ဆွေးနွေးညှိနှိုင်းသဘောထားရယူခြင်း အခမ်းအနား (Public Consultation) သို့ တက်ရောက်သူများစာရင်း

INGOs/NGOs ရက်စွဲ။ ၂၀၂၃ ခုနှစ်၊ ဇူလိုင်လ (၅) ရက်

Sr. စဉ်	Name အမည်	Organization/ Position အဖွဲ့အစည်း/ရာထူး	Phone No ဆက်သွယ်ရန်ဖုန်း	Email Address အီးမေးလ်လိပ်စာ	Signature လက်မှတ်
		ဦးကျော်စွာ			
		ကျော်စွာ			
		ရွှေမျှော်စင်			

တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်ခရိုင်၊ ထားဝယ်မြို့နယ်၊ သပြေချောင်းကျေးရွာအနီးရှိ ကွင်းအမှတ် (၁၀၄)၊ မြေဧရိယာ (၂၀ ဧက) အတွင်းတွင် တည်ဆောက်မည့် ထားဝယ်မြို့ အဝေးပြေးယာဉ်ရပ်နားခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်းစီမံကိန်း၏ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ငန်းနှင့် ပတ်သက်၍ စီမံကိန်းအကြောင်းအရာများအား ရှင်းလင်းတင်ပြခြင်းနှင့် အများပြည်သူနှင့် ဆွေးနွေးညှိနှိုင်းသဘောထားရယူခြင်း အခမ်းအနား (Public Consultation) သို့ တက်ရောက်သူများစာရင်း

ပုဂ္ဂလိက ကုမ္ပဏီများ (Private Company) ရက်စွဲ။ ၂၀၂၃ ခုနှစ်၊ ဇူလိုင်လ (၅) ရက်

စဉ်	အမည်	ရာထူး	ကုမ္ပဏီအမည်	ဆက်သွယ်ရန်ဖုန်း	လက်မှတ်
၁	ဦးကျော်စွာ	Chairman	KSP Co., Ltd	၀၉၅၅၂၇၄၄၄	
၂	ဦးကျော်စွာ	Chairman	KSP Co., Ltd	၀၉၅၅၇၆၂၈၈	

တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်ခရိုင်၊ ထားဝယ်မြို့နယ်၊ သပြေချောင်းကျေးရွာအနီးရှိ ကွင်းအမှတ် (၁၀၄)၊ မြေဧရိယာ (၂၀ ဧက) အတွင်းတွင် တည်ဆောက်မည့် ထားဝယ်မြို့ အဝေးပြေးယာဉ်ရပ်နားခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်းစီမံကိန်း၏ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ငန်းနှင့် ပတ်သက်၍ စီမံကိန်းအကြောင်းအရာများအား ရှင်းလင်းတင်ပြခြင်းနှင့် အများပြည်သူနှင့် ဆွေးနွေးညှိနှိုင်းသဘောထားရယူခြင်း အခမ်းအနား (Public Consultation) သို့ တက်ရောက်သူများစာရင်း

ပုဂ္ဂလိက ကုမ္ပဏီများ (Private Company) ရက်စွဲ။ ၂၀၂၃ ခုနှစ်၊ ဇူလိုင်လ (၅) ရက်

စဉ်	အမည်	ရာထူး	ကုမ္ပဏီအမည်	ဆက်သွယ်ရန်ဖုန်း	လက်မှတ်
1.	U Kyaw Hla	P.O	KSP	၀၉-၇၅၀၂၈၅၈၂၄	
2.		Director	KSP ၅၂၆၄၄ Heithun		
3.		Manager	KSP Company		
4.		Accountant	KSP Company		
5.		Cashier	KSP Co., Ltd		
6.		Site. Engr.	KSP Co., Ltd.		
7.		site Engr.	KSP Co., Ltd.		
8.		Aes Manager	KSP Co., Ltd		
9.		Engineer	KSP Co., Ltd		
10.		Stone	" "		

တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်ခရိုင်၊ ထားဝယ်မြို့နယ်၊ သပြေချောင်းကျေးရွာအနီးရှိ ကွင်းအမှတ် (၁၀၄)၊ မြေဧရိယာ (၂၀ ဧက) အတွင်းတွင် တည်ဆောက်မည့် ထားဝယ်မြို့ အဝေးပြေးယာဉ်ရပ်နားစခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်းစီမံကိန်း၏ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ငန်းနှင့် ပတ်သက်၍ စီမံကိန်းအကြောင်းအရာများအား ရှင်းလင်းတင်ပြခြင်းနှင့် အများပြည်သူနှင့် ဆွေးနွေးညှိနှိုင်းသဘောထားရယူခြင်း အခမ်းအနား (Public Consultation) သို့ တက်ရောက်သူများစာရင်း

ပုဂ္ဂလိက ကုမ္ပဏီများ (Private Company)

ရက်စွဲ။ ၂၀၂၃ ခုနှစ်၊ စက်တင်ဘာလ (၅) ရက်

စဉ်	အမည်	ရာထူး	ကုမ္ပဏီအမည်	ဆက်သွယ်ရန်ဖုန်း	လက်မှတ်
၀၁၀		Surveyor	MSP CO. LTD		
၀၂-		Sale & Marketing	"		
၀၃-		Site Engineer	"		
၀၄-		Sale & Marketing	"		
၀၅-					
၀၆-					
၀၇-					
၀၈-					
၀၉-					
၁၀-					

တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်ခရိုင်၊ ထားဝယ်မြို့နယ်၊ သပြေချောင်းကျေးရွာအနီးရှိ ကွင်းအမှတ် (၁၀၄)၊ မြေဧရိယာ (၂၀ ဧက) အတွင်းတွင် တည်ဆောက်မည့် ထားဝယ်မြို့ အဝေးပြေးယာဉ်ရပ်နားစခန်းနှင့် ဆက်စပ်ဝန်ဆောင်မှုလုပ်ငန်းစီမံကိန်း၏ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ငန်းနှင့် ပတ်သက်၍ စီမံကိန်းအကြောင်းအရာများအား ရှင်းလင်းတင်ပြခြင်းနှင့် အများပြည်သူနှင့် ဆွေးနွေးညှိနှိုင်းသဘောထားရယူခြင်း အခမ်းအနား (Public Consultation) သို့ တက်ရောက်သူများစာရင်း

ပုဂ္ဂလိက ကုမ္ပဏီများ (Private Company)

ရက်စွဲ။ ၂၀၂၃ ခုနှစ်၊ စက်တင်ဘာလ (၅) ရက်

စဉ်	အမည်	ရာထူး	ကုမ္ပဏီအမည်	ဆက်သွယ်ရန်ဖုန်း	လက်မှတ်
၁-		MEP Engineer	KSP Co., Ltd		
၂-		Site Engineer	KSP Co., Ltd		
၃-		ကုန်ဆိုင်ခွဲ	"		
၄-		ကုန်ဆိုင်ခွဲ	"		
၅-		ကုန်ဆိုင်ခွဲ	"		

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