DIRECTORATE GENERAL OF SEA TRANSPORTATION

ENVIRONMENTAL MANAGEMENT PLAN
AND
ENVIRONMENTAL MONITORING PLAN
OF
NEW PORT DEVELOPMENT PROJECT
IN
EASTERN METROPOLITAN AREA
(PATIMBAN)

FEBRUARY 2017
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CHAPTER I

INTRODUCTION

1.1 Background

In effort to reduce negative impact as minimum as possible and improve positive impact are caused by Development of Patimban New Port, then Directorate General of Sea Transportation (DGST) as initiator has sought to conduct study of Environment Impact Assessment (EIA).

Through this study, significant impacts are identified and evaluated, so some problems of environment can be recognized earlier and can be anticipated with create handling steps. Therefore, a sustainable and environmental insighted development model will be formed.

Preparation of EIA document of Patimban New Port refers to Government Regulation No. 27 Year 2012 on Environment Permit and Minister of Environment Regulation No. 16 Year 2012 on Guidelines for Preparation of Environmental Document.

As the same with impact study which has been mentioned in ANDAL, that Patimban New Port Activity is expected will cause various significant impacts to environment around. To overcome and manage those impacts, initiator shall prepare Environment Management Plan (EMP) and Environment Monitoring Plan (EMoP) for Patimban New Port Activity which are parts of EIA Document.

1.2 Purposes and Objectives

1.2.1 Environmental Management Plan (EMP)

The purposes of preparation of Environment Management Plan (EMP) Document are:
1. Explaining the significant impacts that merge cause by every activity of Patimban new Port to Components of Chemical Geophysics, Biology, Social-Economical-Cultural, and Public Health.
2. Determine activity steps to handle/overcome negative impacts and improve positive impacts of Patimban New Port which have evaluated and declared as Significant impact
3. Clearing governmental institutions or bodies which have duty to supervise those activity steps for effort to manage and handle environmental impacts.

1.2.2 Environmental Monitoring Plan (EMoP)

On the basis, Environmental Monitoring Plan (EMoP) activity is conducted with purpose to fulfill government provision about environment monitoring and implement policy of development with
environmental insight. Especially, purpose and objectives of Environment Montoring Plan (EMoP) of Patimban New Port Activity are:

- Monitor environment components in area of Patimban New Port which are affected by Port Activity in accordance with analysis result of environment impacts
- Determine environmental parameters that will be monitored, such as location, time, method, measuring and supervision of monitoring implementation method

1.3 Policies of Environment Management Implementation

Development with environmental insight that has understanding as effort to improve prosperity and life quality is carried out at a time with conserving natural environment capability, to keep support the sustainable development. So, in every plan of activity or business that on early planning already predict environment changes that will occur and then implement prevention and overcome effort of pollution and damaging the environment.

Constitution No. 32 year 2009 on Protection and Management of Environment contains provisions that every activities and/or businesses that are predicted have significant impacts to environment, must be completed with Study Environment Impacts Assessment. In term to implement that constitution, it has appointed Government Regulation No. 27 year 2012 on environment permit which is criteria of activity or business that is predicted has significant impacts.

The criteria of activity or business which can merge significant impact or environmental changes in very basic, are:

1. Activity causes change of land form and landscape.
2. Activity which exploits natural resources whether renewable one or non-renewable one.
3. Process and activity that potentially can cause wasting, pollution, and damaging to environment, also natural resource decadency in its utilization
4. Process and activity whose product can affect natural environment, artificial environment, and social-cultural environment
5. Process and activity whose product will affect preservation of conservation area, natural resources and/or protection of cultural heritage
6. Introduction of Plant Species, animal species, and microorganism
7. Creation and usage of biological and non-biological matter
8. Application of technology which is predicted has huge potential to affect the environment
9. Activity that has high risk, and/or affect national defence
From this provision of constitution, activity of Patimban New Port is an activity that will merge the impacts to environment. In guidance to Minister of Environment regulation No. 5 year 2012 on types of Activity or business that must be completed by EIA Document, then activity plan of Patimban New Port is obligated to prepare EIA Study.
CHAPTER 2
ENVIRONMENTAL MANAGEMENT PLAN

2.1 Environmental Management Plan

In the previous chapter has been analyzed about the impact and its evaluation, so the activity that potentially has impact is identified, either positif or negatif. Basically, all of impact still on controlled range limit, either through technological approach, social economy, or institutional approach.

Based on that result of study, so the environmental management activity scope that will be done is related to all of activity components which affected significant negative impact and significant positive impact.

Analysis of environmental management plan include discussion about:

- Environmental Impact
- Source of impact
- Environmental management
- Success indicator of Environmental management
- Form of environmental management
- Location of environmental management
- Periode of environmental management
- Institution of environmental management
  - Environmental management implementer
  - Environmental management supervisor
  - Result of Environmental management report

Environmental management plan is technic and non technic effort to prevent, overcome the negative impact and increase/withstand positif impact of activities, so the intention and objective of Environmental management are achieved.

Table 2.1 below will be presented environmental management plan to the activity which can induce significant impact in the pre-construction phase, construction and operation phase, and management for other categorized impact.
### Table 2.1 Summary of Environmental Management Plan

<table>
<thead>
<tr>
<th>No</th>
<th>Managed environmental impact</th>
<th>Source of impact</th>
<th>Success indicator of environmental management</th>
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<th>Institution of environmental management</th>
</tr>
</thead>
</table>
| 1A | Land productivity loss        | Land acquisition | Rate of similar land productivity around Patimban seaport. | a. Coordinating with institution in the fishery and farming sector in regency and provincial level for land productivity intensification  
b. Replacing land that freed according to agreement, regulation, and recommendation of related institution. | Pusakanagara district | After land acquisition | a. **Implementer**  
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
b. **Supervisor**  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of Subang Regency  
• Food Crops Agency of Subang regency  
• Marine and Fisheries Agency of Subang regency  
• National Land Agency of Subang Regency  
c. **Reporting**  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of West Java Province  
• Environment Agency of Subang Regency |
| 1B | Loss of livelihood and Income | Land acquisition | Recovery of affected people livelihoods | a. Including the contract clause with implementer contractor to prioritize local workers from the people affected as required, educational background, and qualification needed.  
b. Coordinating with related institution in conduct livelihood recovery program of people affected, as stated in the LARAP document as follow:  
- Conducting training program  
People around the project site  
Pusakanagara district:  
1) Patimban Village  
2) Gempol Village  
3) Kalentambo Village  
4) Kotasari Village  
5) Pusakaratu | During pre-construction until construction phase | a. **Implementer**  
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
b. **Supervisor**  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of Subang Regency  
• Transmigration and Workforce |
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<th>Institution of environmental management</th>
</tr>
</thead>
<tbody>
<tr>
<td>1C</td>
<td>Public Unrest</td>
<td>Land Acquisition</td>
<td>Reducing of negative perceptions and increasing of positive perceptions of people to the activity plans.</td>
<td>- Conducting venture capital aid program &lt;br&gt; - Conducting new business activity program &lt;br&gt; - Conducting marketing assistance program &lt;br&gt; - Conducting equipments aid program</td>
<td>Village &lt;br&gt; Pusakajaya District: 1) Pusakajaya Village</td>
<td>During Pre-construction until construction phase</td>
<td>Agency of Subang Regency</td>
</tr>
</tbody>
</table>

**c. Reporting**<br> • Ministry of Environment and Forestry Republic of Indonesia<br> • Environment Agency of West Java Province<br> • Environment Agency of Subang Regency

| 2 | Procurement of Labor and Basecamp operation | People affected/local people that recruited as workers > 20% | Procurement of labor and basecamp operation | a. Including the contract clause with implementer contractor to prioritize local workers from the people affected as required, educational background, qualification needed, | People around the project site <br> Pusakanagara district: 1) Patimban Village <br> 2) Gempol Village <br> 3) Kalentambo Village <br> 4) Kotasari Village <br> 5) Pusakaratu Village <br> Pusakajaya district: 1) Pusakajaya village | Selama tahap konstruksi berlangsung | a. Implementer Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia

**b. Supervisor**<br> • Ministry of Environment and Forestry Republic of Indonesia<br> • Environment Agency of Subang Regency<br> • National Land Agency of Subang Regency<br> • Pusakanagara district<br> • Pusakajaya district

**c. Reporting**<br> • Ministry of Environment and Forestry Republic of Indonesia<br> • Environment Agency of West Java Province<br> • Environment Agency of Subang Regency
### CHAPTER II – ENVIRONMENTAL MANAGEMENT PLAN

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</table>
| 1  |                               |                  | Success indicator of environmental management | and inclusion of workers social assurance, also payment according to UMK (Regional Minimum Wage) | 1) Patimban Village  
2) Gempol Village  
3) Kalentambo Village  
4) Kota Sari Village  
5) Pusakaratu Village  
Pusakajaya district:  
1) Pusakajaya village | b. Supervisor  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of Subang Regency  
• Transportation Agency of Subang Regency  
• Environment Agency of West Java Province |
| 2  |                               |                  | Success indicator of environmental management | Coordinating with related institution in conduct livelihood recovery program of people affected, as stated in the LARAP document as follow:  
- Conducting training program  
- Conducting venture capital aid program  
- Conducting new business activity program  
- Conducting marketing assistance program  
- Conducting equipments aid program  
Coordinating with Pusakanagara district and Pusakajaya about job vacancy information |  
| 3  | Heavy Equipment and Materials Mobilization | Heavy equipment and materials mobilization | No occurrence of traffic jam as the effect of heavy equipment and materials mobilization | a. Coordinating with transportation institution to install traffic sign around the development of Patimban seaport location in accordance with ministerial regulation No.13 year 2014 about the traffic sign.  
b. Coordinating with police agencies to organize traffic around the Patimban seaport development location  
c. Installing sign of construction warning signs in the entry and exit access of patimban seaport development location.  
d. Arranging schedule of heavy equipment and materials mobilization not in the vehicle peak hours  
e. Placement of officer to arrange traffic | • Pantura road  
• Patimban seaport access road  
• Crossing of Pantura road and Patimban seaport access road  
During heavy equipment and materials mobilization activity | a. Implementer  
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
b. Supervisor  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of Subang Regency  
• Transportation Agency of Subang regency  
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• Environment Agency of West Java Province |
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| 3B | Decreasing of air quality (TSP and emission) | Heavy equipment and materials mobilization | Concentration of SO₂, CO, NO₂ and TSP not exceed air quality standard in Government regulations No. 41 year 1999 about Air pollutions control | a. Heavy equipment and materials mobilization use construction access road of Patimban seaport which is relatively quiet and away from settlements (Red soil road)
b. Closing the tanks of transporting material vehicle with tarp
c. Transplanting the materials to the location using operation worthy vehicle and passed of KIR test (in order to public vehicles is roadworthy)
d. Developing washhouse to clean transporting vehicle wheels before out from project site location
e. If there are materials spills on the passing road from construction materials mobilization, it will be cleaned as soon as possible
f. Flushing the road periodically |
| 3C | Sea traffic disruption | Heavy equipment and materials mobilization | Ship collision does not occur on the Patimban waters | a. Coordinating with UPP (Port Operator Unit) Pamanukan about material transporting route on the sea
b. Coordinating with Tanjung Priok Navigation Distric about materials transporting sailing line
c. Socializing materials transporting route to the fishermen
d. Organizing material transporting time
e. Implementer contractor open the communication with the ships around materials transporting route |
| | | | | Material transporting route on the Patimban waters | During heavy equipment and materials mobilization | |
| | | | | a. Implementer
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia |
| | | | | b. Supervisor
- Ministry of Environment and Forestry Republic of Indonesia
- Environment Agency of Subang Regency |
| | | | | c. Reporting
- Ministry of Environment and Forestry Republic of Indonesia
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- Environment Agency of Subang Regency |
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</table>
| 3D | Public unrest                | Heavy equipment and materials mobilization | no public unrest occurred | a. Socializing transporting route of heavy equipment and materials mobilization in the land to the people around  
b. Socializing materials transporting route to the fishermen  
c. Making complaint center/fast response team to accomodate and respond public unrest to the Patimban Seaport development  
d. Making community discussion forum with local government to solve the problem that arise when development activity | • Settlements around heavy equipment and materials mobilization access road in study area  
• Fishermen settlements around Patimban waters | During heavy equipment and materials mobilization activity | a. Implementer  
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
b. Supervisor  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of Subang Regency  
c. Reporting  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of Subang Regency |
| 4  | Reclamation and off-shores facility development | Reclamation and off-shores facility development | TSS concentration below environment quality standard based on Kepmen LH No 51 year 2004 Sea water quality standard Appendix I (80 mg/L) | a. Reclamation activity is done in the waters area which has been bordered by seawall  
b. Minimizing dumping volume as many as possible by using it with the newest technology such as Cement Pipe Mixing | Reclamation and off-shores facility development location | During Reclamation and off-shores facility development | a. Implementer  
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
b. Supervisor  
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</table>
| 4B | Fishing ground change         | Reclamation and off-shores facility development | No report of fishing area disruption and/or decreasing of fishermen production/income | a. Communicating and socializing with fishermen community about reclamation and off-shores facility development  
b. Making basic rumpon (artificial fish reef) according to the Regulation of Marine and fisheries ministry Republic of Indonesia No. 26/Permen-KP/2014 around Patimban waters out of DLKP (Regional Sphere of Interest) and DLKR (Area Work) Patimban seaport | Fishermen around location plan, especially TPI Kaligenteng, TPI Trumtum dan TPI Tanjung Pura.  
Rumpon around Patimban waters out of DLKP and DLKR Patimban seaport | During reclamation and off-shores facility development | a. Implementer  
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
b. Supervisor  
• Ministry of Indonesian Republic Environment and Forestry  
• Environment Agency of Subang Regency  
c. Reporting  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of Subang Regency |
| 4C | Public unrest                 | Reclamation and off-shores facility development | No public unrest occurred | a. Socializing to the fishermen about rumpon (artificial fish reef) placement plan according to the Regulation of Marine and fisheries ministry Republic of Indonesia No. 26/Permen-KP/2014 around Patimban waters out of DLKP (Regional Sphere of Interest) and DLKR (Area Work) Patimban seaport  
b. Making complaint center/fast respons team to accommodate and respons public unrest to the Patimban Seaport development  
c. Making community discussion | Fishermen settlements around Patimban waters | During reclamation and off-shores facility development | a. Implementer  
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
b. Supervisor  
• Ministry of Environment and Forestry Republic of Indonesia  
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<td>5</td>
<td>Dredging and dumping</td>
<td>Dredging and dumping</td>
<td>TSS concentration below environment quality standard based on Kepmen LH No 51 year 2004 Sea water quality standard Appendix I (80 mg/L)</td>
<td>a. Constructing seawall in the early phase&lt;br&gt;b. Installing silt protector around dredging area by grab dreging&lt;br&gt;c. Disposing dumping materials do not in one point but disperse in dumping area&lt;br&gt;d. Using proper equipments for dredging and dumping</td>
<td>Dredging and dumping location</td>
<td>During Dredging and dumping activities</td>
<td>a. Implementer&lt;br&gt;Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia&lt;br&gt;b. Supervisor&lt;br&gt;• Ministry of Environment and Forestry Republic of Indonesia&lt;br&gt;• Environment Agency of Subang Regency&lt;br&gt;c. Reporting&lt;br&gt;• Ministry of Environment and Forestry Republic of Indonesia&lt;br&gt;• Environment Agency of West Java Province&lt;br&gt;• Environment Agency of Subang Regency</td>
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<tr>
<td>6</td>
<td>On-shore Facility Development</td>
<td>On-shore facility development</td>
<td>No flooding occured</td>
<td>a. Make drainage that can hold water run-off&lt;br&gt;b. Optimizing of RTH (Green Open Space) on the unused land&lt;br&gt;c. Coordinating with Bina Marga and Irrigation Agency, related on drainage construction in the seaport location</td>
<td>On-shore facility development location</td>
<td>During On-shore facility development</td>
<td>a. Implementer&lt;br&gt;Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia&lt;br&gt;b. Supervisor&lt;br&gt;• Ministry of Environment and Forestry Republic of Indonesia&lt;br&gt;• Environment Agency of Subang Regency&lt;br&gt;c. Reporting&lt;br&gt;• Ministry of Environment and Forestry Republic of Indonesia&lt;br&gt;• Environment Agency of West Java Province</td>
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</table>
| 6B | Public unrest                | On-shore facility development | No Public unrest occurred                     | a. Making new irrigation channel to replace disconnected irrigation channels affected by On-shore facility development  
b. Making underpass/fly over or moving the road on the public access road which is crossed with Patimban seaport access road  
c. Making complaint center/fast response team to accommodate and respond public unrest to the Patimban Seaport development  
d. Making community discussion forum with local government to solve the problem that arise when development activity | People around seaport area | During construction phase | a. Implementer  
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
b. Supervisor  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of Subang Regency  
c. Reporting  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of West Java Province  
• Environment Agency of Subang Regency |

7. Access Road Development

-  

**OPERATIONAL PHASE**

8 Procurement of labor

| 8A | Opening job and business opportunity | Operation workers recruitment | People affected/local people that recruited as workers > 30% | a. Obligating HUP (Port Bussiness Entities) to prioritize local workers from the people affected as required, educational background, qualification needed, and inclusion of workers social assurance, also payment according to Upah Minimum Karyawan / UMK (Regional Minimum Wage)  
b. Giving business opportunity to the people around the project site on the ±5 hectares area that have been provided in the seaport on-shore | People around the project site  
Pusakanagara district:  
1) Patimban Village  
2) Gempol Village  
3) Kalentambo Village  
4) Kotasari Village  
5) Pusakaratu Village | During operational activities | a. Implementer  
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
b. Supervisor  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of Subang Regency  
c. Reporting  
• Transmigration and Workforce Agency of Subang Regency |
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</table>
|    |                               |                  |                                               | facility                         | Pusakajaya district: 1) Pusakajaya village |                       | • Ministry of Environment and Forestry Republic of Indonesia  
|    |                               |                  |                                               |                                 |                                     |                                     | • Environment Agency of West Java Province  
|    |                               |                  |                                               |                                 |                                     |                                     | • Environment Agency of Subang Regency |

#### 9. Off-shore Facility Operation

| 9A | Sedimentation | Off-shore facility operation | Waters depth as plans | a. Doing maintenance dredging preserve the depth in the port basin (-14 meter) and in the port channel (-14 meter)  
(Supplementary Note on Approved AMDAL)  
Doing maintenance dredging for access channel for the fishing boats as well | • Seaport basin  
• Seaport channel  
• Dumping Area  
(Supplementary Note on Approved AMDAL)  
• Access channel for the fishing boats | During operational activities (once in 5-10 years) | a. **Implementer**  
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  

b. **Supervisor**  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of Subang Regency  

c. **Reporting**  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of West Java Province  
• Environment Agency of Subang Regency |

| 9B | Shoreline change | Off-shore facility operation | Shoreline change does not affect infrastructure damage or existing land | Building and maintaining revetments in shoreline area which is abraded | Along shoreline in back-up area | During operational activities | a. **Implementer**  
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  

b. **Supervisor**  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of Subang Regency  

c. **Reporting**  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of West Java Province |
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</table>
| 9C | Fishing ground change         | Off-shore facility operation | No report of fishing area disruption and/or decreasing of fishermen production/income | a. Making basic rumpon (artificial fish reef) according to the Regulation of Marine and fisheries ministry Republic of Indonesia No. 26/Permen-KP/2014 around Patimban waters out of DLKP (Regional Sphere of Interest) and DLKR (Area Work) Patimban seaport  
  b. Obligating BUP to do CSR to the fishermen community around the Patimban waters including TPI Kali Genteng, Truntum and Tanjung Pura | around Patimban waters out of DLKP and DLKR Patimban seaport  
  TPI Kali Genteng, Truntum and Tanjung Pura | During operational activities | a. **Implementer**  
  Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
  b. **Supervisor**  
  • Ministry of Environment and Forestry Republic of Indonesia  
  • Environment Agency of Subang Regency  
  • Marine and Fishery Agency of Subang Regency  
  c. **Reporting**  
  • Ministry of Environment and Forestry Republic of Indonesia  
  • Environment Agency of West Java Province  
  • Environment Agency of Subang Regency |
| 9D | Public unrest                 | Off-shore facility operation | No public unrest occurred | Socializing sailing channel from and head to Patimban seaport to the fishermen | Fishermen settlements around Patimban waters | During operational activities | a. **Implementer**  
  Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
  b. **Supervisor**  
  • Ministry of Environment and Forestry Republic of Indonesia  
  • Environment Agency of Subang Regency  
  c. **Reporting**  
  • Ministry of Environment and Forestry Republic of Indonesia  
  • Environment Agency of West Java Province  
  • Environment Agency of Subang Regency |

10. On-shore facility operation
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<tbody>
<tr>
<td>11</td>
<td>Maintenance of Basin and Sailing channel</td>
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<tr>
<td>12</td>
<td>Access road operation</td>
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</tbody>
</table>
| 12A Land traffic disruption | Access road operation | Traffic jam is not occur as the effect of seaport access road operation | a. Optimizing truck waiting yard area  
   b. Expanding crossing between Pantura road with seaport access road according to the criteria  
   c. Placement of officer to arrange traffic in the entry and exit access of patimban seaport development location.  
   d. Implementing ANDALLALIN / Analisis Dampak Lingkungan Lalu Lintas (Assessment Impact of Traffic) recommendation | • Crossing between Pantura road and access road  
   • Pantura road  
   • Seaport access road | During operational activities | a. Implementer  
   Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
   b. Supervisor  
   • Ministry of Environment and Forestry Republic of Indonesia  
   • Environment Agency of Subang Regency  
   • Transportation Agency of Subang regency  
   c. Reporting  
   • Ministry of Environment and Forestry Republic of Indonesia  
   • Environment Agency of West Java Province  
   • Environment Agency of Subang Regency |
| 12B Increasing of Noise | Access road operation | Noise level is below environment quality standard based on Kepmen LH No 48 Year 1996 about Noise level standard | a. Optimizing space for greening activity  
   b. Organizing of vehicle speed  
   c. Using proper vehicle  
   (Supplementary Note on Approved AMDAL)  
   If the noise level is above the Indonesian standard based on the noise monitoring and it is derived from the access road traffic, necessary measures such as installation of noise barrier shall be conducted. | • Settlements in crossing between Pantura road and Seaport access road  
   • Settlements in Seaport access road  
   • Patimban seaport in and out access | During operational activities | a. Implementer  
   Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
   b. Supervisor  
   • Ministry of Environment and Forestry Republic of Indonesia  
   • Environment Agency of Subang Regency  
   • Transportation Agency of Subang regency  
   c. Reporting  
   • Ministry of Environment and Forestry Republic of Indonesia  
   • Environment Agency of West Java Province  
   • Environment Agency of Subang Regency |
### CHAPTER II – ENVIRONMENTAL MANAGEMENT PLAN

<table>
<thead>
<tr>
<th>No</th>
<th>Managed environmental impact</th>
<th>Source of impact</th>
<th>Success indicator of environmental management</th>
<th>Form of environmental management</th>
<th>Location of environmental management</th>
<th>Periode of environmental management</th>
<th>Institution of environmental management</th>
</tr>
</thead>
</table>
| 12C | Public unrest | Access road operation | No public unrest occurred | a. Maintaining *underpass/fly over* on access road which is crossed with Patimban seaport access road  
   b. Optimizing traffic arrangement in the crossing between Pantura road dan Seaport access road | • Settlements in crossing between Pantura road dan Seaport access road  
   • Residents access road which is crossing with seaport access road | During operational activities | a. Implementer  
   Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
   b. Supervisor  
   • Ministry of Environment and Forestry Republic of Indonesia  
   • Environment Agency of Subang Regency  
   c. Reporting  
   • Ministry of Environment and Forestry Republic of Indonesia  
   • Environment Agency of West Java Province  
   • Environment Agency of Subang Regency |

#### Managed Other Impact

**Construction phase**

<table>
<thead>
<tr>
<th>2</th>
<th>Procurement of labor and Basecamp operation</th>
</tr>
</thead>
</table>
| 2A | Decreasing of sea water quality  
   Procurement of labor and basecamp operation | Sea water is not polluted by workers domestic waste | Making portable toilet and water waste processing facility such as septic tank and its maintenance | In development location and base camp | Making portable toilet once in construction activity and maintenance is done during construction | a. Implementer  
   Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
   b. Supervisor  
   • Ministry of Environment and Forestry Republic of Indonesia  
   • Environment Agency of Subang Regency  
   c. Reporting  
   • Ministry of Environment and Forestry Republic of Indonesia  
   • Environment Agency of West Java Province  
   • Environment Agency of Subang Regency |
| 2B | Infectious | Procurement of | The number of patients | a. Coordinating with related institution | Location around | Before and during | a. Implementer |
## Environmental Management Plan

### Disease Emergences

<table>
<thead>
<tr>
<th>No</th>
<th>Managed Environmental Impact</th>
<th>Source of Impact</th>
<th>Success Indicator of Environmental Management</th>
<th>Form of Environmental Management</th>
<th>Location of Environmental Management</th>
<th>Periode of Environmental Management</th>
<th>Institution of Environmental Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Diseases Emergences</td>
<td>Labor and basecamp operation</td>
<td>and infectious diseases are not increased because of construction workers</td>
<td>and civil society organizations in the making and providing of HIV/AIDS prevention program, including holding socialization about sexual infectious diseases prevention</td>
<td>development plan, especially Pusakanagara district dan Pusakajaya district</td>
<td>construction phase</td>
<td>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
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<tr>
<td></td>
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<td></td>
<td>b. Coordinating with related institution to hold treatment for patients suffering sexual infectious diseases, gonorrhea, and syphilis by injection and oral method in the Pusakanegara public healthy center (Puskesmas). Routine examination (every 3 months) by VCT (Value Clarification Technique) method</td>
<td></td>
<td></td>
<td>b. Supervisor</td>
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<td>c. Coordinating with Warga Peduli AIDS (WPA) at the village level to do many positive activity ODHA (People With HIV / AIDS), such as gathering activity. At this moment, WPA organization at the village level only exist in Patimban Village and Kotasari Village while WPA at District level has not formed yet.</td>
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<td>• Ministry of Environment and Forestry Republic of Indonesia</td>
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<td></td>
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<td></td>
<td>d. Developing sanitary facility, temporary garbage collection place (TPS), and processing facility</td>
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<td></td>
<td>• Environment Agency of Subang Regency</td>
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<td>• Environment Agency of Subang Regency</td>
</tr>
</tbody>
</table>

### Heavy Equipment and Materials Mobilization

<table>
<thead>
<tr>
<th>3A</th>
<th>Increasing of Noise</th>
<th>Heavy equipment and materials mobilization</th>
<th>Noise intensity according to Ministerial decree of environment ministry No. Kep. 48/MENLH/II/1996</th>
<th>a. Heavy equipment and materials mobilization using Patimban seaport construction access road which is relatively quiet and away from settlements (Red soil road) b. Heavy equipment and materials mobilization are not done in convoy / tandem c. Vehicle speed setting d. Using proper vehicle</th>
<th>Patimban seaport development location • Pantura road • Patimban seaport access road • Crossing of Pantura road dan Patimban seaport access road</th>
<th>During heavy equipment and materials mobilization</th>
<th>a. Implementer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>a. Implementer</td>
<td>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
<td>b. Supervisor</td>
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<td></td>
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<td>b. Supervisor</td>
<td>• Ministry of Environment and Forestry Republic of Indonesia</td>
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<td>c. Reporting</td>
<td>• Environment Agency of Subang Regency</td>
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<tr>
<td>No</td>
<td>Managed environmental impact</td>
<td>Source of impact</td>
<td>Success indicator of environmental management</td>
<td>Form of environmental management</td>
<td>Location of environmental management</td>
<td>Periode of environmental management</td>
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</tr>
<tr>
<td>3B</td>
<td>Road damage</td>
<td>Heavy equipment and materials mobilization</td>
<td>Road damage can be minimize</td>
<td>a. Choosing most efficient sea channel for equipment and material transporting that exceed road capacity</td>
<td>Gempol Prapatan road and Pantura Pusakanagara road</td>
<td>During heavy equipment and materials mobilization</td>
<td>a. <strong>Implementer</strong> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>b. Material transporting tonage for construction is adapted with road class and driving license</td>
<td></td>
<td></td>
<td>b. <strong>Supervisor</strong> Ministry of Environment and Forestry Republic of Indonesia, Environment Agency of West Java Province, Environment Agency of Subang Regency</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>c. Using of heavy equipments have to convenient with decision of directorate general of land transportation about Technical guidelines for the heavy vehicle operation on the road (Ministry of Transportation Regulation Number PM 32 Years 2016)</td>
<td></td>
<td></td>
<td>c. <strong>Reporting</strong> Ministry of Environment and Forestry Republic of Indonesia, Environment Agency of Subang Regency</td>
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<tr>
<td></td>
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<td></td>
<td>d. Repairing road if there is damage caused by project activity</td>
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<td>e. Vehicle using terpal (tarpaulin)</td>
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<td></td>
<td></td>
<td></td>
<td>f. Cooperating with Bina Marga and Irrigation Agency of Subang Regency in managing (repairing) if there is Road damage</td>
<td></td>
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</tr>
<tr>
<td>6</td>
<td>On-shore facility operation</td>
<td>Decreasing of air quality (TSP and emission)</td>
<td>Concentration of SO₂, CO, NO₂ and TSP not exceed air quality standard in Government regulations No. 41 year 1999 about Air pollutions control</td>
<td>a. Doing treatment of trucks and equipments in order to remain in good condition</td>
<td>Development plan location</td>
<td>During construction</td>
<td>a. <strong>Implementer</strong> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>b. Using cover on tailgate that bring construction materials if necessary</td>
<td></td>
<td></td>
<td>b. <strong>Supervisor</strong> Ministry of Environment and Forestry Republic of Indonesia, Environment Agency of Subang Regency</td>
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<td></td>
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<td></td>
<td>c. Making guardrail made of iron sheeting with minimal height 2.5 meter (if necessary)</td>
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</tr>
</tbody>
</table>

**Environmental Management Plan and Environmental Monitoring Plan of New Port Development Project in Eastern Metropolitan Area**

**Directorate General of Sea Transportation**

II-15
### CHAPTER II – ENVIRONMENTAL MANAGEMENT PLAN

<table>
<thead>
<tr>
<th>No</th>
<th>Managed environmental impact</th>
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<th>Location of environmental management</th>
<th>Periode of environmental management</th>
<th>Institution of environmental management</th>
</tr>
</thead>
</table>
| 6B | Increasing of Noise | On-shore facility operation | Noise level is below environment quality standard based on Kepmen LH No 48 Year 1996 about Noise level standard | a. Doing treatment of trucks and equipments in order to remain in good condition  
b. Avoiding construction activity that cause noise to do at the night, such as mounting pile | Development plan location | During construction periode | c. Reporting  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of West Java Province  
• Environment Agency of Subang Regency | a. Implementer  
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
b. Supervisor  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of Subang Regency  
c. Reporting  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of Subang Regency |
| 6C | Decreasing of sea water quality | On-shore facility operation | Sea water quality does not decrease drastically because of project activity | Reducing or regulating waste water discharge volume produced by former fishpond location when landfill process in that location | Development plan location | During construction periode | a. Implementer  
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
b. Supervisor  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of Subang Regency  
c. Reporting  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of West Java |
<table>
<thead>
<tr>
<th>No</th>
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<th>Source of impact</th>
<th>Success indicator of environmental management</th>
<th>Form of environmental management</th>
<th>Location of environmental management</th>
<th>Period of environmental management</th>
<th>Institution of environmental management</th>
</tr>
</thead>
</table>
| 6D | Disruption of terrestrial fauna (Bird) | On-shore facility operation | Presence of habitats for terrestrial fauna | a. Making new habitat (such as plant mangrove) for terrestrial fauna and maintain that habitat  
  b. Workers are not allowed to disturb terrestrial fauna around activity location | On-shore facility operation plan location | During construction period | a. Implementer  
  Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
 b. Supervisor  
  • Ministry of Environment and Forestry Republic of Indonesia  
  • Environment Agency of Subang Regency  
 c. Reporting  
  • Ministry of Environment and Forestry Republic of Indonesia  
  • Environment Agency of West Java Province  
  • Environment Agency of Subang Regency |
| 6E | Disturbance of Terrestrial Flora | On-shore facility operation | Presence of habitats for terrestrial flora | a. Making new habitat (such as plant mangrove) for terrestrial flora and maintain that habitat  
  b. Workers are not allowed to disturb terrestrial flora around activity location | On-shore facility operation plan location | During construction period | a. Implementer  
  Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
 b. Supervisor  
  • Ministry of Environment and Forestry Republic of Indonesia  
  • Environment Agency of Subang Regency  
 c. Reporting  
  • Ministry of Environment and Forestry Republic of Indonesia  
  • Environment Agency of West Java Province  
  • Environment Agency of Subang Regency |
### CHAPTER II – ENVIRONMENTAL MANAGEMENT PLAN

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<th>Periode of environmental management</th>
<th>Institution of environmental management</th>
</tr>
</thead>
</table>
| 7  | Access road construction     | Access road construction | Concentration of SO₂, CO, NO₂ and TSP not exceed air quality standard in Government regulations No. 41 year 1999 about Air pollutions control | a. Doing treatment of trucks and equipments in order to remain in good condition  
b. Using cover on tailgate that bring construction materials if necessary  
c. Making guardrail made of iron sheeting with minimal height 2.5 meter (if necessary) | Access road construction location | During construction | a. **Implementer**  
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
b. **Supervisor**  
- Ministry of Environment and Forestry Republic of Indonesia  
- Environment Agency of Subang Regency  
c. **Reporting**  
- Ministry of Environment and Forestry Republic of Indonesia  
- Environment Agency of West Java Province  
- Environment Agency of Subang Regency |
| 7A | Decreasing of air quality (TSP and emission) | Access road construction | Noise level is below environment quality standard based on Kepmen LH No 48 Year 1996 about Noise level standard | a. Doing treatment of trucks and equipments in order to remain in good condition  
b. Avoiding construction activity that cause noise to do at the night, | Access road construction location | During construction | a. **Implementer**  
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
b. **Supervisor**  
- Ministry of Environment and Forestry Republic of Indonesia  
- Environment Agency of Subang Regency  
c. **Reporting**  
- Ministry of Environment and Forestry Republic of Indonesia  
- Environment Agency of West Java Province  
- Environment Agency of Subang Regency |
| 7B | Increasing of Noise | Access road construction | Surface water quality below environment quality standard Based on PP No. 82 Tahun 2001 about Water | Doing prevention to reduce turbidity in the water such as make drainage channel or emergency retention pond during construction process | Access road construction location | During construction | a. **Implementer**  
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
b. **Supervisor**  
- Ministry of Environment and Forestry Republic of Indonesia  
- Environment Agency of Subang Regency  
c. **Reporting**  
- Ministry of Environment and Forestry Republic of Indonesia  
- Environment Agency of West Java Province  
- Environment Agency of Subang Regency |
### Table: Environment Impact and Management Plan

<table>
<thead>
<tr>
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<td></td>
<td>b. Supervisor</td>
</tr>
</tbody>
</table>
| 7D | Increasing water run-off rate | Access road construction | Excessive run-off does not occur | Make drainage channel or emergency retention pond during construction process | Access road construction location | During construction | • Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of Subang Regency |
|    |                               |                  |                                               |                                 |                                      |                                     | c. Reporting                           |
|    |                               |                  |                                               |                                 |                                      |                                     | • Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of West Java Province  
• Environment Agency of Subang Regency |
| 7E | Public unrest                | Access road construction | No public unrest occurred | a. Installing a pedestrian bridge to be able to cross to the access road  
b. Installing fences along access road to secure safety and to prevent accidents of people or animals  
c. Making complaint center/fast response team to accommodate and respond public unrest to the Patimban Seaport development | Access road construction location | During construction | a. Implementer  
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
b. Supervisor  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of Subang Regency  
c. Reporting  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of West Java Province  
• Environment Agency of Subang Regency |

**Table: Environment Impact and Management Plan of New Port Development Project in Eastern Metropolitan Area**

**Directorate General of Sea Transportation**
## ENVIRONMENTAL MANAGEMENT PLAN

### Operation Phase

<table>
<thead>
<tr>
<th>No</th>
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<td>Regency</td>
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<td>• Environment Agency of West Java Province</td>
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<td></td>
<td>• Environment Agency of Subang Regency</td>
</tr>
</tbody>
</table>

**Operation Phase 8** Procurement of labor

8A Infectious diseases emergences Procurement of labor The number of infectious disease is not increased

a. Coordinating with related institution and civil society organizations in the making and providing of HIV/AIDS prevention program, including holding socialization about sexual infectious diseases prevention

b. Coordinating with related institution to hold treatment for patients suffering sexual infectious diseases, gonorrhea, and syphilis by injection and oral method in the Pusakanegara public healthy center (Puskesmas).

Routine examination (every 3 months) by VCT (Value Clarification Technique) method

c. Coorperating with Warga Peduli AIDS (WPA) at the village level to do many positive activity ODHA (People with HIV / AIDS), such as gathering activity. At this moment, WPA organization at the village level only exist in Patimban Village and Kotasari Village while WPA at District level has not formed yet.

d. Developing sanitary facility, Location around development especially Pusakanagara district dan Pusakajaya district

During operation phase

a. Implementer

Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia

b. Supervisor

• Ministry of Environment and Forestry Republic of Indonesia
• Environment Agency of Subang Regency
• Health agency of Subang Regency
c. Reporting

• Ministry of Environment and Forestry Republic of Indonesia
• Environment Agency of West Java Province
• Environment Agency of Subang Regency
<table>
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<th>No</th>
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<th>Source of impact</th>
<th>Success indicator of environmental management</th>
<th>Form of environmental management</th>
<th>Location of environmental management</th>
<th>Periode of environmental management</th>
<th>Institution of environmental management</th>
</tr>
</thead>
</table>
| 9A | Decreasing of air quality (TSP and emission) | Off-shore facility operation | Air quality remains below environment quality standard based on Government regulation No. 41 years 1999 about air pollution control | Planting and maintaining perennials to absorb pollutants around seaport area | Seaport location | Planting is done once when operation activity started, maintenance and rejuvenation carried out as necessary | a. Implementer: Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
b. Supervisor:  
   - Ministry of Environment and Forestry Republic of Indonesia  
   - Environment Agency of Subang Regency  
c. Reporting:  
   - Ministry of Environment and Forestry Republic of Indonesia  
   - Environment Agency of West Java Province  
   - Environment Agency of Subang Regency |
| 9B | Decreasing of sea water quality | Off-shore facility operation | a. Sea water quality remains below environment quality standard based on Kepmen LH No 51 year 2004 about sea water standard quality,  
b. Permen LH No. 5 Tahun 2014 about waste water quality standard | a. Managing waste from ships that transit and indirectly discharge waste to the sea, include cooperation with licensed third party for waste handling,  
b. Maintaining reception facility, IPAL (Waste Water Treatment Plant) in order to remain optimally functional | Reception facility, IPAL | During operation activity | a. Implementer: Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
b. Supervisor:  
   - Ministry of Environment and Forestry Republic of Indonesia  
   - Environment Agency of Subang Regency  
c. Reporting:  
   - Ministry of Environment and Forestry Republic of Indonesia  
   - Environment Agency of West Java Province  
   - Environment Agency of Subang Regency |
<p>| 9C | Marine Traffic | Off-shore | No disruption of | a. Developing security control plan | Sailing channel area | During operation activity | a. Implementer |</p>
<table>
<thead>
<tr>
<th>No</th>
<th>Managed environmental impact</th>
<th>Source of impact</th>
<th>Success indicator of environmental management</th>
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<th>Periode of environmental management</th>
<th>Institution of environmental management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disruption</td>
<td>facility operation</td>
<td>fishermen ships and vessels passing through the sailing channel</td>
<td>including but not limited in installing sea traffic signs, safety regulation navigation, work safety training, and possibility of oil spills b. Planning steps needed related with the precense of Pertamina’s pipeline on the sailing channel.</td>
<td>PT Pertamina’s pipeline</td>
<td></td>
<td>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia b. Supervisor • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of Subang Regency c. Reporting • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of West Java Province • Environment Agency of Subang Regency</td>
</tr>
<tr>
<td>9D</td>
<td>Waste generation</td>
<td>Off-shore facility operation</td>
<td>No waste pollution in the sea</td>
<td>a. Accomodating and accepting waste from the ships in the reception facility, to be handed to the licensed third party b. B3 waste such as fluorescent lamp, ink catridge, and other B3 waste are stored in B3 waste TPS (Temporary Waste Disposal) to be handed to the licensed third party c. Domestic waste from off-shore facilities activities are collected in the temporary storage, and will cooperate with the local sanitary agency</td>
<td>• Reception facility (RF) • Seaport manager office / TPS B3 • Domestic TPS</td>
<td>• RF is built once when construction and maintenance is done everyday • Maximum storage ≤ 90 days • Transporting is done minimum twice a day</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>On-shore facility operation</td>
<td>On-shore facility operation</td>
<td>No Flooding</td>
<td>a. Make drainage that can hold water run-off b. Optimizing of RTH (Green Open Space) on the unused land</td>
<td>• On-shore facility drainage • On-shore facility RTH (Green Open</td>
<td>During operation phase</td>
<td>a. Implementer Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
</tr>
</tbody>
</table>

**ENVIRONMENTAL MANAGEMENT PLAN AND ENVIRONMENTAL MONITORING PLAN OF NEW PORT DEVELOPMENT PROJECT IN EASTERN METROPOLITAN AREA**

**DIRECTORATE GENERAL OF SEA TRANSPORTATION**

II-22
## CHAPTER II – ENVIRONMENTAL MANAGEMENT PLAN

<table>
<thead>
<tr>
<th>No</th>
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<th>Source of impact</th>
<th>Success indicator of environmental management</th>
<th>Form of environmental management</th>
<th>Location of environmental management</th>
<th>Periode of environmental management</th>
<th>Institution of environmental management</th>
</tr>
</thead>
</table>
| 10B | Decreasing of sea water quality | On-shore facility operation | Sea water quality remains below environment quality standard based on Kepmen LH No 51 year 2004 about sea water standard quality | Maintaining reception facility, IPAL (Waste Water Treatment Plant) in order to remain optimally functional then can be discharge to the sea | IPAL (Waste Water Treatment Plant) in back-up area | During operation activity | a. **Implementer**  
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
b. **Supervisor**  
Ministry of Environment and Forestry Republic of Indonesia  
Environment Agency of Subang Regency  
c. **Reporting**  
Ministry of Environment and Forestry Republic of Indonesia  
Environment Agency of West Java Province  
Environment Agency of Subang Regency |
| 10C | Disruption of terrestrial fauna (Bird) | On-shore facility operation | Precense of habitats for terrestrial fauna | a. Making new habitat (such as plant mangrove) for terrestrial fauna and maintain the habitats  
b. Workers are not allowed to disturb terrestrial fauna around activity location | Back up area | During operation phase | a. **Implementer**  
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
b. **Supervisor**  
Ministry of Environment and Forestry Republic of Indonesia  
Environment Agency of Subang Regency  
c. **Reporting**  
Ministry of Environment and Forestry Republic of Indonesia  
Environment Agency of West Java Province  
Environment Agency of Subang Regency |
### CHAPTER II – ENVIRONMENTAL MANAGEMENT PLAN

<table>
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<th>Location of environmental management</th>
<th>Period of environmental management</th>
<th>Institution of environmental management</th>
</tr>
</thead>
</table>
| 11 | Maintenance of Basin and Sailing channel | Maintenance of Basin and Sailing channel | TSS concentration below environment quality standard based on Kepmen LH No 51 year 2004 Sea water quality standard Appendix I (80 mg/L) | a. Disposing dumping materials do not in one point but disperse in dumping area  
b. Using proper equipments for dredging and dumping | • Dumping area  
• Maintenance of Basin and Sailing channel location | During operational activities (once in 5-10 years) | c. Reporting  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of West Java Province  
• Environment Agency of Subang Regency |
| 12 | Access road operation | Access road operation | Air quality does not decrease because of operation | a. Maintaining vehicle condition in order to remain in the good condition  
b. Planting trees along road green area | Location around access road | During operation activity | a. Implementer  
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
b. Supervisor  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of Subang Regency  
c. Reporting  
• Ministry of Environment and Forestry Republic of Indonesia |

**11A** Decreasing of sea water quality (TSS)

**12A** Decreasing of air quality (TSP and emission)
<table>
<thead>
<tr>
<th>No</th>
<th>Managed environmental impact</th>
<th>Source of impact</th>
<th>Success indicator of environmental management</th>
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<th>Location of environmental management</th>
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</thead>
<tbody>
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<td></td>
</tr>
</tbody>
</table>
| 12B | Increasing of water run off rate | Access road operation | No occurrence of excess water run-off | a. Strengthening the existing drainage condition Memperkuat kondisi (if necessary)  
b. Maintaining drainage | Location around access road | During operation activity | a. Implementer  
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
b. Supervisor  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of Subang Regency  
c. Reporting  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of West Java Province  
• Environment Agency of Subang Regency |
| 12C | Land conversion | Access road operation | Appearance of settlements and various public facility and economic facility around access road location | a. Making guardrail along access road constructed, but still provides underpass/overpass access, box curvet, or bridge for people access  
b. Developing appropriate design which is regulated by Subang regency RTRW (Spatial Plan)  
c. Directorate General of Sea Transportation give suggestion to local government regarding landuse policy around project area | Along the access road | During operation phase | a. Implementer  
Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  
b. Supervisor  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of Subang Regency  
c. Reporting  
• Ministry of Environment and Forestry Republic of Indonesia  
• Environment Agency of West Java Province  
• Environment Agency of Subang Regency |
| 12D | Road damage | Access road | Road damage can be | Coordinating with related institution | Access road and | During operation | a. Implementer |

**CHAPTER II – ENVIRONMENTAL MANAGEMENT PLAN**

**ENVIRONMENTAL MANAGEMENT PLAN AND ENVIRONMENTAL MONITORING PLAN OF NEW PORT DEVELOPMENT PROJECT IN EASTERN METROPOLITAN AREA**

**DIRECTORATE GENERAL OF SEA TRANSPORTATION**

II-25
### CHAPTER II – ENVIRONMENTAL MANAGEMENT PLAN

<table>
<thead>
<tr>
<th>No</th>
<th>Managed environmental impact</th>
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<th>Institution of environmental management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>operation</td>
<td>minimize</td>
<td>to conduct the increasing and repairing of road which is connected to seaport access road</td>
<td>surrounding area</td>
<td>phase</td>
<td></td>
<td>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
</tr>
</tbody>
</table>

**b. Supervisor**
- Ministry of Environment and Forestry Republic of Indonesia
- Environment Agency of Subang Regency

**c. Reporting**
- Ministry of Environment and Forestry Republic of Indonesia
- Environment Agency of West Java Province
- Environment Agency of Subang Regency
Figure 2.1. Maps of Environmental Management Plan in Pre-Construction Phase and Construction Phase of Patimban Port
Figure 2.1. Map of Environmental Management Plan at Patimban Seaport in Operation Phase
CHAPTER 3
ENVIRONMENTAL MONITORING PLAN

3.1. Environmental Impact Monitoring Plan

In the ANDAL document of Patimban seaport Patimban village Pusakanagara district has been analyzed about the impacts and its evaluation, so the activities that potentially causing impacts either positive or negative are identified. Basically, all of impacts still on the controlled range limit, either through technology approach, social, economy, or institutional.

Based on that result of study, so the environmental monitoring plan scope that will be done is related to all of activity components which affected significant negative impact and significant positive impact.

Analysis of environmental monitoring plan include discussion about :

1. Types of impact
2. Indicator/parameter
3. Impact source
4. Data collection and analysis method
5. Location of environmental monitoring
6. Time and frequency environmental monitoring
7. Institution of environmental monitoring
   - Implementer of environmental monitoring
   - Supervisor of environmental monitoring
   - Reporting of environmental monitoring result

Environmental monitoring plan is technic and non technic effort to prevent, overcome the negative impact and increase/withstand positif impact of activities, so the intention and objective of environmental monitoring are achieved.

Based on ANDAL document, which contains referrals for environmental management and monitoring plan, it is necessary to formulate more detail about technical environmental monitoring so it can be used as consideration to make technical plan and become basic implementation of environmental monitoring activity.
# Table 3.1 Summary of Environmental Monitoring Plan

<table>
<thead>
<tr>
<th>No</th>
<th>Monitored environmental impact</th>
<th>Indicator / Parameter</th>
<th>Impact source</th>
<th>Method of Collection and Analysis Data</th>
<th>Monitoring location</th>
<th>Time and frequency</th>
<th>Implementer</th>
<th>Supervisor</th>
<th>Reporting</th>
</tr>
</thead>
</table>
| 1A | Loss of land productivity     | Rate of land productivity which is relatively similar around Patimban seaport | Land acquisition | a. Information and data that need to be explored deeper, will be done deep interview with key informant, such as with public figure  
b. Doing survey/monitoring to the recommended replacement land | Pusakanagara district | Twice in a year during minimum 2 years (4 times monitoring) | Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia | a. Ministry of Environment and Forestry Republic of Indonesia  
b. Environment agency of Subang regency  
c. Food Crops Agency of Subang regency  
d. Marine and Fisheries Agency of Subang regency  
b. Environment agency of West Java province  
c. Environment agency of Subang regency |
| 1B | Loss of livelihood and income | Recovery of affected people livelihoods | Land acquisition | a. Evaluating the number of workers from local people affected by land acquisition impact  
b. Evaluating livelihood recovery program (LRP) and explain LRP clearly and transparently  
c. Information and data that need to be explored deeper, will be done deep interview with key informant, such as | Pusakanagara district  
1) Pusakaratu village  
2) Gempol village  
3) Kalentambo village  
4) Kotasari village  
5) Patimban village  
Pusakajaya district  
Pusakajaya village | Minimal 1 month after management activity | Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia | a. Ministry of Environment and Forestry Republic of Indonesia  
b. Environment agency of Subang regency  
c. Labor and Transmigration Agency of Subang regency | a. Ministry of Environment and Forestry Republic of Indonesia  
b. Environment agency of West Java province  
c. Environment agency of Subang regency |
## Environmental Monitoring Plan

### Chapter 1 – Environmental Monitoring Plan

<table>
<thead>
<tr>
<th>No</th>
<th>Type of Impact</th>
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<th>Monitoring location</th>
<th>Time and frequency</th>
<th>Implementer</th>
<th>Supervisor</th>
<th>Reporting</th>
</tr>
</thead>
</table>
| 1C | Public unrest  | Reducing of negative perceptions and increasing of positive perceptions of people to the activity plans. | Land acquisition | a. Making the minutes of each meeting and evaluating land acquisition activity  
b. Survey and interview to the people affected which is related to livelihood recovery program implementation  
c. Monitoring turmoil, retention, and conflict in the Land acquisition phase. | Pusakanagara district  
1) Pusakaratu village  
2) Gempol village  
3) Kalentambo village  
4) Kotasari village  
5) Patimban village  
Pusakajaya district  
Pusakajaya village | Minimal 1 month after management activity | Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia | a. Ministry of Environment and Forestry Republic of Indonesia  
b. Environment agency of Subang regency  
c. National Land Agency of Subang regency  
d. Pusakanagara district  
e. Pusakajaya district | a. Ministry of Environment and Forestry Republic of Indonesia  
b. Environment agency of West Java province  
c. Environment agency of Subang regency |

### Construction Phase

2. Procurement of Labor and Pengoperasian Base camp

| 2A | Opening job and business opportunity | People affected/local people that recruited as workers > 20% | Procurement of Labor dan Basecamp operation | a. Identifying the number of local workers  
b. Identifying the number and type of business opportunity that evolve around the activity location  
c. Evaluating livelihood recovery program for people | People around project  
Pusakanagara district  
1) Pusakaratu village  
2) Gempol village  
3) Kalentambo village  
4) Kotasari village  
5) Patimban village | Once a month during construction activity | Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia | a. Ministry of Environment and Forestry Republic of Indonesia  
b. Environment agency of Subang regency | a. Ministry of Environment and Forestry Republic of Indonesia  
b. Environment agency of West Java province  
c. Environment |
### CHAPTER III – ENVIRONMENTAL MONITORING PLAN

<table>
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<tr>
<th>No</th>
<th>Type of Impact</th>
<th>Indicator / Parameter</th>
<th>Impact source</th>
<th>Method of Collection and Analysis Data</th>
<th>Monitoring location</th>
<th>Time and frequency</th>
<th>Implementer</th>
<th>Supervisor</th>
<th>Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>3A</td>
<td>Decreasing of air quality (TSP and emission)</td>
<td>Concentration of NO₂, CO, NOₓ and TSP not exceed air quality standard in Government regulations No. 41 year 1999 about Air pollutions control</td>
<td>Heavy equipments and materials mobilization</td>
<td>Conducting air quality laboratory analysis, then the results are compared with air quality standard quality PP No. 41 tahun 1999. Furthermore, monitoring results are made the average and compared from time to time (data trend) to see the tendency of environment quality change and critical level.</td>
<td>Pusakajaya district Pusakajaya village</td>
<td>Twice a year (dry and rainy season)</td>
<td>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
<td>a. Ministry of Environment and Forestry Republic of Indonesia</td>
<td>a. Ministry of Environment and Forestry Republic of Indonesia</td>
</tr>
</tbody>
</table>

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**Notes:**
- Impact affected:
  - d. Information and data that need to be explored deeper, will be done deep interview with key informant, such as with public figure
  - e. Monitoring workers recruitment appropriate with qualification
  - f. Monitoring whole of workers releasing process runs safely especially in construction phase.

---

**3. Heavy equipments and materials mobilization**

3A Decreasing of air quality (TSP and emission)

- Concentration of NO₂, CO, NOₓ and TSP not exceed air quality standard in Government regulations No. 41 year 1999 about Air pollutions control
- Conducting air quality laboratory analysis, then the results are compared with air quality standard quality PP No. 41 tahun 1999. Furthermore, monitoring results are made the average and compared from time to time (data trend) to see the tendency of environment quality change and critical level.
- Pusakajaya district Pusakajaya village
- Twice a year (dry and rainy season)
- Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia

3B Land traffic disruption

- No occurrence of traffic jam as the effect of heavy equipment and materials mobilization
- a. Monitoring traffic condition b. Identifying accident number that occurred
- a. Pantura road b. Patimban seaport access road c. Crossing of Pantura road and Patimban seaport access road
- Once a year during construction activity
- Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia

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**Environmental management institution**

- c. Labor and Transmigration Agency of Subang regency
- d. Pusakanagara district
- e. Pusakajaya district
- a. Ministry of Environment and Forestry Republic of Indonesia
- b. Environment agency of West Java province
- c. Environment agency of Subang regency

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**Reporting**

- agency of Subang regency
**CHAPTER III – ENVIRONMENTAL MONITORING PLAN**

<table>
<thead>
<tr>
<th>No</th>
<th>Monitored environmental impact</th>
<th>Type of Impact</th>
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<th>Method of Collection and Analysis Data</th>
<th>Monitoring location</th>
<th>Time and frequency</th>
<th>Implementer</th>
<th>Supervisor</th>
<th>Reporting</th>
</tr>
</thead>
</table>
|    |                                | Sea traffic disruption | No occurrence of ship collision on the Patimban waters | Heavy equipments and materials mobilization | a. Monitoring sea traffic condition  
b. Identifying accident number that occurred | Patimban beach | Once a month during construction activity | Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia | a. Ministry of Environment and Forestry Republic of Indonesia  
b. Environment agency of West Java province  
c. Environment agency of Subang regency | a. Ministry of Environment and Forestry Republic of Indonesia  
b. Environment agency of West Java province  
c. Environment agency of Subang regency |
| 3C |                                | Public unrest | No public unrest occurrence | Heavy equipments and materials mobilization | a. Measurement of people number that feel worried about socialization activity heavy equipments and materials mobilization by interview  
b. Measurement of people protest and demonstration number to the initiator representative office is obtained by notes and information from environment caretaker, village government, or initiator representatives (secondary data)  
c. Information and data that need to be explored deeper, will be done deep interview with key informant, such as with public figure  
d. Sample number is determined by purposive sampling, which the determination of sample is | Development location | Once a month during construction activity | Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia | a. Ministry of Environment and Forestry Republic of Indonesia  
b. Environment agency of Subang regency | a. Ministry of Environment and Forestry Republic of Indonesia  
b. Environment agency of West Java province  
c. Environment agency of Subang regency |
### CHAPTER III – ENVIRONMENTAL MONITORING PLAN

<table>
<thead>
<tr>
<th>No</th>
<th>Monitored environmental impact</th>
<th>Environmental Monitoring Form</th>
<th>Environmental management institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Reclamation and off-shores facility development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4A</td>
<td>Decreasing of sea water quality (TSS)</td>
<td>TSS concentration below environment quality standard based on Kepmen LH No 51 year 2004 Sea water quality standard Appendix I (80 mg/L)</td>
<td>Reclamation activity and off-shore facility development Conducting sea water quality laboratory analysis, then the results are compared with air quality standard quality Kepmen LH no. 51 year 2004. Furthermore, monitoring results are made the average and compared from time to time (data trend) to see the tendency of environment quality change and critical level. 10 location a. For complete water quality parameter is done 6 months at 2 points (surface and bottom) b. Special for TSS sampling is done once a week at 10 points during dredging and dumping activity and 3 points everyday</td>
</tr>
</tbody>
</table>

**No**
- Monitored environmental impact
- Environmental Monitoring Form
- Environmental management institution
## CHAPTER III – ENVIRONMENTAL MONITORING PLAN

<table>
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<th>No</th>
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<th>Environmental management institution</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>obtained by notes and information from environment caretaker, village government, or initiator representatives (secondary data)</td>
<td>Monitoring location</td>
<td>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
</tr>
<tr>
<td>d.</td>
<td>Information and data that need to be explored deeper, will be done deep interviews with key informant, such as with public figure</td>
<td>Time and frequency</td>
<td>Implementer</td>
<td>Supervisor</td>
<td>Reporting</td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td>Sample number is determined by purposive sampling, which the determination of sample is based on the research needs and taken from community that has been known its characteristic</td>
<td>Monitoring location</td>
<td>Time and frequency</td>
<td>Implementer</td>
<td>Supervisor</td>
<td>Reporting</td>
</tr>
<tr>
<td>5</td>
<td>Dredging and dumping</td>
<td>TSS concentration below environment quality standard based on Kepmen LH No 51 year 2004 Sea water quality standard Appendix I (80 mg/L)</td>
<td>Dredging and dumping</td>
<td>Conducting TSS measurement, then the results are compared with sea water quality standard Kepmen LH no. 51 year 2004. Furthermore, monitoring results are made the average and compared from time to time (data trend) to see the tendency of environment quality change and critical level.</td>
<td>10 location points</td>
<td>a. For complete water quality parameter is done 6 months at 2 points (surface and bottom) b. Specifically for TSS sampling is done once a week at 10 points during dredging and dumping activity and 3 points everyday</td>
</tr>
<tr>
<td>5A</td>
<td>Decreasing of sea water quality (TSS)</td>
<td>Dredging and dumping</td>
<td>Conducting TSS measurement, then the results are compared with sea water quality standard Kepmen LH no. 51 year 2004. Furthermore, monitoring results are made the average and compared from time to time (data trend) to see the tendency of environment quality change and critical level.</td>
<td>10 location points</td>
<td>a. For complete water quality parameter is done 6 months at 2 points (surface and bottom) b. Specifically for TSS sampling is done once a week at 10 points during dredging and dumping activity and 3 points everyday</td>
<td>a. Ministry of Environment and Forestry Republic of Indonesia b. Environment agency of West Java province c. Environment agency of Subang regency</td>
</tr>
<tr>
<td>6</td>
<td>On-shore facility development</td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

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ENVIRONMENTAL MANAGEMENT PLAN AND ENVIRONMENTAL MONITORING PLAN OF NEW PORT DEVELOPMENT PROJECT IN EASTERN METROPOLITAN AREA
DIRECTORATE GENERAL OF SEA TRANSPORTATION III-7
### CHAPTER III – ENVIRONMENTAL MONITORING PLAN

<table>
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<th>No</th>
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<th>Impact source</th>
<th>Method of Collection and Analysis Data</th>
<th>Monitoring location</th>
<th>Time and frequency</th>
<th>Implementer</th>
<th>Supervisor</th>
<th>Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>6A</td>
<td>Increasing of water run-off rate</td>
<td>No flooding</td>
<td>On-shore facility development</td>
<td>Direct monitoring to the presence and function of drainage channel and RTH (Green Opened Space)</td>
<td>Project location</td>
<td>Conducted 2 times at rainy season when heavy rain, during activity</td>
<td>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
<td>a. Ministry of Environment and Forestry Republic of Indonesia b. Environment agency of West Java province c. Environment agency of Subang regency</td>
<td>a. Ministry of Environment and Forestry Republic of Indonesia b. Environment agency of West Java province c. Environment agency of Subang regency</td>
</tr>
</tbody>
</table>
### OPERATIONAL PHASE

#### 8. Procurement of Labor

<table>
<thead>
<tr>
<th>No</th>
<th>Type of Impact</th>
<th>Monitored environmental impact</th>
<th>Indicator / Parameter</th>
<th>Impact source</th>
<th>Method of Collection and Analysis Data</th>
<th>Environmental Monitoring Form</th>
<th>Environmental management institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>8A</td>
<td>Opening job and business opportunity</td>
<td>People affected/local people that recruited as workers &gt; 30%</td>
<td>Procurement of labor operation activity</td>
<td>a. Identifying local workers that hired</td>
<td>f. Information and data that need to be explored deeper, will be done deep interview with key informant, such as with public figure</td>
<td>Seaport area dan back-up area</td>
<td>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
</tr>
</tbody>
</table>

#### 9. Off-shore facility operation

| 9A | Sedimentation | Waters depth as plans | Off-shore facility operation | a. Monitoring of dredging material sediment quality before dumping | a. Dredging area (3 points) and dumping area (3 points) | a. Before dumping (once) | Directorate General of Sea Transportation | a. Ministry of Environment and Forestry Republic of Indonesia |

### TYPE OF IMPACT

- Operational phase

### METODOLOGY

- Open deep interview with key informant, such as with public figure
- Sample number is determined by purposive sampling, which the determination of sample is based on the research needs and taken from community that has been known its characteristic
<table>
<thead>
<tr>
<th>No</th>
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<th>Environmental Monitoring Form</th>
<th>Environmental management institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>9B</td>
<td>Shoreline change</td>
<td>Shoreline change</td>
<td>Off-shore facility operation activity</td>
<td>a. Tracking shore line along 5 km to the east and west of Patimban seaport, selected time for tracking is at the highest tide while monitoring. b. Measuring bathymetry periodically on the sailing line area of vessels and fisheries ships to know the sediment thickness during operational.</td>
<td>b. Before and after dumping activity</td>
<td>a. Ministry of Environment and Forestry Republic of Indonesia</td>
</tr>
<tr>
<td>No.</td>
<td>Environmental Monitoring Form</td>
<td>Environmental management institution</td>
<td></td>
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<td></td>
<td><strong>No.</strong></td>
<td><strong>Type of Impact</strong></td>
<td><strong>Indicator / Parameter</strong></td>
<td><strong>Impact source</strong></td>
<td><strong>Method of Collection and Analysis Data</strong></td>
<td><strong>Monitoring location</strong></td>
</tr>
<tr>
<td>12</td>
<td>12A</td>
<td>Access road operation</td>
<td>Increasing of noise</td>
<td>Access road operation</td>
<td>Conducting noise laboratory analysis, then the results are compared with noise standard quality Kepmen LH No. 48 year 1996. Furthermore, monitoring results are made the average and compared from time to time (data trend) to see the tendency of environment quality change and critical level.</td>
<td>3 points around project location (dry and rainy season)</td>
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<td>Noise level is below environment quality standard based on Kepmen LH No 48 Year 1996 about Noise level standard</td>
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<td></td>
<td>12B</td>
<td>Access road operation</td>
<td>No occurrence of traffic jam as the effect of heavy equipment and materials mobilization</td>
<td>Access road operation</td>
<td>a. Direct monitoring to the traffic b. Giving information about accident number</td>
<td>Pantura road and access road</td>
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<tr>
<td></td>
<td>12C</td>
<td>Access road operation</td>
<td>Public unrest</td>
<td>Access road operation</td>
<td>a. Measurement of people number whom feel worried of access road activity b. Measurement is done by interview using questionnaire (primary data) c. Measurement of people protest and demonstration number to the initiator representative office is obtained by notes and information from environment</td>
<td>Access road</td>
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<tr>
<td></td>
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<td></td>
<td>No public unrest occurrence</td>
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### Managed other environmental impact

#### CONSTRUCTION PHASE

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<th>Supervisor</th>
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<tbody>
<tr>
<td>2A Decreasing of sea water quality</td>
<td>Sea water is not polluted by workers domestic waste</td>
<td>Procurement of labor and Basecamp operation</td>
<td>Confirmation and maintenance of sanitary facility, water waste management facility</td>
<td>Location of construction and basecamp</td>
<td>During construction phase (every once in 2 months)</td>
<td>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
<td>a. Ministry of Environment and Forestry Republic of Indonesia</td>
<td>a. Ministry of Environment and Forestry Republic of Indonesia</td>
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<tr>
<td>2B Appearance of infectious diseases</td>
<td>The number of patients and infectious diseases are not increased because of construction workers</td>
<td>Procurement of labor and Basecamp operation</td>
<td>a. Giving report about implementation of HIV / AIDS prevention program b. Giving report and maintenance of sanitary facility, water waste management facility, and garbage dump c. Identifying patient number</td>
<td>Location around project</td>
<td>During construction phase</td>
<td>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
<td>a. Ministry of Environment and Forestry Republic of Indonesia</td>
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</table>

- caretaker, village government, or initiator representatives (secondary data)
- d. Information and data that need to be explored deeper, will be done deep interview with key informant, such as with public figure
- e. Sample number is determined by purposive sampling, which the determination of sample is based on the research needs and taken from community that has been known its characteristic

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**ENVIRONMENTAL MANAGEMENT PLAN AND ENVIRONMENTAL MONITORING PLAN OF NEW PORT DEVELOPMENT PROJECT IN EASTERN METROPOLITAN AREA**

**DIRECTORATE GENERAL OF SEA TRANSPORTATION**

III-12
### CHAPTER III – ENVIRONMENTAL MONITORING PLAN

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<td>3</td>
<td>Heavy equipments and materials mobilization</td>
<td>Road damage</td>
<td>Monitoring directly of road condition</td>
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<tr>
<td>3A</td>
<td>Road damage</td>
<td>Road damage can be minimized</td>
<td>Analysis based on consultant survey</td>
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<td>3B</td>
<td>Increasing of noise</td>
<td>Noise intensity according to Ministerial decree of environment ministry No. Kep. 48/MENLH/II/1996</td>
<td>Conducting noise laboratory analysis, then the results are compared with noise standard quality Kepmen LH No. 48 year 1996. Furthermore, monitoring results are made the average and compared from time to time (data trend) to see the tendency of environment quality change and critical level.</td>
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<td>4</td>
<td>Reclamation and Marine Facility Construction (Supplementary Note on Approved AMDAL)</td>
<td>Disturbance of Marine Life (Nekton and Benthos)</td>
<td>Monitoring nekton and benthos then comparing with base line survey result</td>
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<td>4A</td>
<td>Disturbance of Marine Life (Nekton and Benthos)</td>
<td>Marine life is not much disturbed by the project</td>
<td>Monitoring nekton and benthos then comparing with base line survey result</td>
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<td>5A</td>
<td>Dredging and Disposal (Supplementary Note on Approved AMDAL)</td>
<td>Disturbance of Marine Life (Nekton and Benthos)</td>
<td>Sediment quality is not deteriorated</td>
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<td>6A</td>
<td>On-shore facility development</td>
<td>Decreasing of air quality (TSP and emission)</td>
<td>Concentration of SO₂, CO, NO₂ and TSP not exceed air quality standard in Government regulations No. 41 year 1999 about Air pollutions control</td>
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<td>6B</td>
<td>Increasing of noise</td>
<td>Noise level is below environment quality standard based on Kepmen LH No 48 Year 1996 about Noise level standard</td>
<td>On-shore facility development</td>
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**Subang regency**
### CHAPTER III – ENVIRONMENTAL MONITORING PLAN

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<td>time to time (data trend) to see the tendency of environment quality change and critical level.</td>
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<td>regency agency of Subang regency</td>
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<tr>
<td>6C</td>
<td>Decreasing of sea water change</td>
<td>Sea water quality does not decrease drastically because of project activity</td>
<td>On-shore facility construction</td>
<td>Doing sampling of sea water and then the results are compared with Kepmen LH No. 51 tahun 2004. Furthermore, monitoring results are made the average and compared from time to time (data trend) to see the tendency of environment quality change and critical level.</td>
<td>10 location on the sea 4 times in a year with 2 surfaces (top and bottom surfaces)</td>
<td>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
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<td>6D</td>
<td>Disruption of terrestrial fauna (bird)</td>
<td>Presence of habitats for terrestrial fauna</td>
<td>On-shore facility development</td>
<td>Giving the report about new habitat a. Giving the report about new habitat b. Direct monitoring in the fields</td>
<td>Around the seaport project location Before development and after finishing</td>
<td>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
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<td>c. Environment agency of Subang regency</td>
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<tr>
<td>6E</td>
<td>Disruption of terrestrial flora</td>
<td>Presence of habitats for terrestrial flora</td>
<td>On-shore facility development</td>
<td>Giving the report about new habitat</td>
<td>Around the seaport project location Before development and after finishing</td>
<td>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
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<tr>
<td>7.</td>
<td>Access road development</td>
<td>Decreasing of air</td>
<td>Access road</td>
<td>Conducting air quality 3 points around the</td>
<td>Twice in a year during</td>
<td>Directorate a. Ministry of Environment and Forestry Republic of Indonesia</td>
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<tr>
<td>7A</td>
<td></td>
<td>Concentration of SO₂</td>
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<td>a. Ministry of Environment and Forestry Republic of Indonesia</td>
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<td></td>
<td></td>
<td>Access road</td>
<td>Conducting air quality</td>
<td>3 points around the</td>
<td>Twice in a year during</td>
<td>Directorate a. Ministry of Environment and Forestry Republic of Indonesia</td>
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</table>

ENVIRONMENTAL MANAGEMENT PLAN AND ENVIRONMENTAL MONITORING PLAN OF NEW PORT DEVELOPMENT PROJECT IN EASTERN METROPOLITAN AREA
DIRECTORATE GENERAL OF SEA TRANSPORTATION

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<table>
<thead>
<tr>
<th>No</th>
<th>Type of Impact</th>
<th>Indicator / Parameter</th>
<th>Impact source</th>
<th>Method of Collection and Analysis Data</th>
<th>Monitoring location</th>
<th>Time and frequency</th>
<th>Implementer</th>
<th>Supervisor</th>
<th>Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>7B</td>
<td>Increasing of noise level</td>
<td>Noise level is below environment quality standard based on Kepmen LH No 48 Year 1996 about Noise level standard</td>
<td>Access road development activity</td>
<td>Conducting laboratory analysis of noise parameter, then the results are compared with noise standard quality Kepmen LH No 48 Year 1996.</td>
<td>3 points around the activity location</td>
<td>Twice in a year during construction phase</td>
<td>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
<td>Environment and Forestry Republic of Indonesia a. Ministry of Environment and Forestry Republic of Indonesia b. Environment agency of West Java province c. Environment agency of Subang regency</td>
<td>Environment and Forestry Republic of Indonesia a. Ministry of Environment and Forestry Republic of Indonesia b. Environment agency of West Java province c. Environment agency of Subang regency</td>
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### Monitored environmental impact

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<th>Type of Impact</th>
<th>Indicator / Parameter</th>
<th>Impact source</th>
<th>Method of Collection and Analysis Data</th>
<th>Monitoring location</th>
<th>Time and frequency</th>
<th>Implementer</th>
<th>Supervisor</th>
<th>Reporting</th>
</tr>
</thead>
</table>
| 7E | Public unrest  | No public unrest occurrence | Access road development | a. Measurement of people number whom feel worried of access road operation activity  
b. Measurement is done by interview using questionnaire (primary data)  
c. Measurement of people protest and demonstration number to the initiator representative office is obtained by notes and information from environment caretaker, village government, or initiator representatives (secondary data)  
d. Information and data that need to be explored deeper, will be done deep interview with key informant, such as with public figure  
e. Sample number is determined by purposive sampling, which the determination of sample is based on the research needs and taken from community that has been known its characteristic | Around the seaport project location | Before development and after finishing | Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia | a. Ministry of Environment and Forestry Republic of Indonesia  
b. Environment agency of Subang regency | Java province  
c. Environment agency of Subang regency |

### OPERATIONAL PHASE

8. **Procurement of Labor**

| 8A | Appearance of infectious diseases | The number of infectious disease is not increased | Operational source | a. Giving report about implementation of HIV / AIDS prevention program  

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**ENVIORNMENTAL MANAGEMENT PLAN AND ENVIRONMENTAL MONITORING PLAN OF NEW PORT DEVELOPMENT PROJECT IN EASTERN METROPOLITAN AREA**  
**DIRECTORATE GENERAL OF SEA TRANSPORTATION**  
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<table>
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<th>Method of Collection and Analysis Data</th>
<th>Monitoring location</th>
<th>Time and frequency</th>
<th>Implementer</th>
<th>Supervisor</th>
<th>Reporting</th>
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<tbody>
<tr>
<td>9A</td>
<td>Decreasing of air quality (TSP and emission)</td>
<td>Air quality remains below environment quality standard based on Government regulation No. 41 years 1999 about air pollution control</td>
<td>Off-shore facility operation</td>
<td>Direct monitoring in the fields</td>
<td>Seaport area</td>
<td>Twice a year (Dry and rainy season)</td>
<td>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
<td>b. Environment agency of Subang regency</td>
<td>c. Environment agency of Subang regency</td>
</tr>
<tr>
<td>9B</td>
<td>Decreasing of sea water change</td>
<td>a. Sea water quality remains below environment quality standard based on Kepmen LH No 51 year 2004 about sea water standard quality , b. Permen LH No. 5 Tahun 2014 about waste water quality standard</td>
<td>Off-shore facility operation</td>
<td>a. Doing sampling of effluent IPAL (Waste Water Treatment Plant), drainage, oil separator b. Conducting sea water quality sampling and then the results are compared with seawater standard quality Kepmen LH no. 51 tahun 2004. Furthermore, monitoring results are made the average and compared from time to time (data trend) to see the tendency of environment quality change and critical level.</td>
<td>a. 1 point b. 10 points</td>
<td>a. Conducted twice a year b. For parameter of complete water quality is conducted 4 times in a year at 2 points (Surface and bottom)</td>
<td>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
<td>a. Ministry of Environment and Forestry Republic of Indonesia b. Environment agency of Subang regency</td>
<td>c. Environment agency of Subang regency</td>
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</tbody>
</table>

**Note:**
- **Onshore facility operation**
- **Offshore facility operation**
- **Environmental Management Institution**
  - a. Ministry of Environment and Forestry Republic of Indonesia
  - b. Environment agency of Subang regency
  - c. Environment agency of West Java province
  - d. Environment agency of Subang regency
### CHAPTER III – ENVIRONMENTAL MONITORING PLAN

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<th>Indicator / Parameter</th>
<th>Impact source</th>
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<th>Monitoring location</th>
<th>Time and frequency</th>
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<th>Supervisor</th>
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<tr>
<td></td>
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<td>through the sailing channel</td>
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<td>Ministry of Transportation Republic of Indonesia</td>
<td>Republic of Indonesia b. Environment agency of Subang regency</td>
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<tr>
<td>9D</td>
<td>Waste generation</td>
<td>No waste pollution into the sea</td>
<td>Off-shore facility operation</td>
<td>Monitoring the presence and function of RF (Receiving facility), TPS B3 (collection of toxic and hazardous waste/B3) and domestic collection</td>
<td>RF, TPS B3, domesticTPS</td>
<td>a. Maintenance of RF is done everyday b. Maximum storage ( \leq ) 90 days c. Transporting is done minimum every 2 days</td>
<td>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
<td>a. Ministry of Environment and Forestry Republic of Indonesia b. Dinas Lingkungan Hidup Kabupaten Subang</td>
<td>a. Ministry of Environment and Forestry Republic of Indonesia b. Dinas Lingkungan Hidup Provinsi Jawa Barat c. Dinas Lingkungan Hidup Kabupaten Subang</td>
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<tr>
<td>9E</td>
<td>Disturbance of Marine Life (Nekton and Benthos)</td>
<td>Marine life is not much disturbed by the project</td>
<td>Off-shore facility operation</td>
<td>Monitoring nekton and benthos then comparing with base line survey result</td>
<td>5 locations at the sea Nekton: 2 times a year (rainy and dry season) Benthos: 1 time a year</td>
<td>Directorate General of Sea Transportation</td>
<td>a. Ministry of Environment and Forestry Republic of Indonesia b. Environment agency of Subang regency</td>
<td>a. Ministry of Environment and Forestry Republic of Indonesia b. Environment agency of West Java province c. Environment agency of Subang regency</td>
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#### Supplementary Note on Approved AMDAL

- **Disturbance of Marine Life (Nekton and Benthos):**
  - Marine life is not much disturbed by the project.
  - Monitoring nekton and benthos then comparing with base line survey result.
  - Monitoring locations: 5 locations at the sea.
  - Monitoring schedule:
    - Nekton: 2 times a year (rainy and dry season).
    - Benthos: 1 time a year.

- **On-shore facility operation:**
  - Direct monitoring of drainage condition along the access road.
  - Monitoring conducted 2 times at rainy season when heavy rain, during activity.

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**ENVIRONMENTAL MANAGEMENT PLAN AND ENVIRONMENTAL MONITORING PLAN OF NEW PORT DEVELOPMENT PROJECT IN EASTERN METROPOLITAN AREA**

**DIRECTORATE GENERAL OF SEA TRANSPORTATION**

III-19
### CHAPTER III – ENVIRONMENTAL MONITORING PLAN

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<td>Decreasing of sea water quality</td>
<td>Sea water quality remains below environment quality standard based on Kepmen LH No 51 year 2004 about sea water standard quality</td>
<td>On-shore facility operation</td>
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<td>11</td>
<td>Maintenance of basin and sailing channel</td>
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<td>11A</td>
<td>Decreasing of sea water quality (TSS)</td>
<td>TSS concentration below environment quality standard based on Kepmen LH No 51 year 2004 Sea water quality standard Appendix I (80 mg/L)</td>
<td>Maintenance of basin and sailing channel</td>
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<td>Access road operation</td>
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**ENVIRONMENTAL MANAGEMENT PLAN AND ENVIRONMENTAL MONITORING PLAN OF NEW PORT DEVELOPMENT PROJECT IN EASTERN METROPOLITAN AREA**

**DIRECTORATE GENERAL OF SEA TRANSPORTATION**  

III-20
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<th>Supervisor</th>
<th>Reporting</th>
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<tr>
<td>12A</td>
<td>Decreasing of air quality (TSP and emission)</td>
<td>Air quality does not decrease because of operation</td>
<td>Access road operation</td>
<td>Monitoring directly</td>
<td>Along the access road</td>
<td>Twice a year (dry and rainy season)</td>
<td>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
<td>a. Ministry of Environment and Forestry Republic of Indonesia b. Environment agency of West Java province c. Environment agency of Subang regency</td>
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<td>Increasing of water run-off rate</td>
<td>No occurrence of excessive water run-off</td>
<td>Access road operation</td>
<td>Direct monitoring for the condition of the drainage</td>
<td>Along the access road</td>
<td>Conducted 2 times at rainy season when heavy rain, during activity</td>
<td>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
<td>a. Ministry of Environment and Forestry Republic of Indonesia b. Environment agency of West Java province c. Environment agency of Subang regency</td>
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<tr>
<td>12C</td>
<td>Land conversion</td>
<td>Appearance of settlements and various public facility and economic facility around access road location</td>
<td>Access road operation</td>
<td>a. Direct monitoring to the land use change that appropriate with RTRW (Spatial Plan) regulation of Subang regency b. Monitoring and maintaining planted trees (park and protector road)</td>
<td>Along the access road</td>
<td>During operational (dry and rainy season)</td>
<td>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
<td>a. Ministry of Environment and Forestry Republic of Indonesia b. Dinas Lingkungan Hidup Kabupaten Subang</td>
<td></td>
</tr>
<tr>
<td>12D</td>
<td>Road damage</td>
<td>Road damage can be minimized</td>
<td>Traffic on the access road</td>
<td>Direct monitoring to the road damage</td>
<td>Pantura road</td>
<td>Twice a year (3 years)</td>
<td>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</td>
<td>a. Ministry of Environment and Forestry Republic of Indonesia b. Environment agency of West Java province</td>
<td></td>
</tr>
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</table>
## Monitored Environmental Impact

<table>
<thead>
<tr>
<th>No</th>
<th>Type of Impact</th>
<th>Indicator / Parameter</th>
<th>Impact source</th>
<th>Method of Collection and Analysis Data</th>
<th>Monitoring location</th>
<th>Time and Frequency</th>
<th>Implementer</th>
<th>Supervisor</th>
<th>Reporting</th>
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<td>Subang regency</td>
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Figure 3.1. Monitoring Maps of Patimban Seaport in Pre-construction and Construction Phase
CHAPTER III – ENVIRONMENTAL MONITORING PLAN

Figure 3.2. Monitoring Maps of Patimban Seaport in Operation Phase
CHAPTER IV

NUMBER AND TYPES OF REQUIRED PPLH PERMITS

In accordance with Article 48 of Government Regulation (Peraturan Pemerintah) No. 27 Year 2012 on Environment Permit, then Development of Patimban New Port Plan in Patimban Village, Pusakanagara District, Subang Regency requires PPLH Permits as Following:

- Permit of Temporary Storage of B3 Waste
- Permit of discharge of waste water to the sea