

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 Acticity 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 Montoring 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 Managemental 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

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environmental insight. Especially, purpose and objectives of Environment Monitoring 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 a 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 tmpact 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

No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
<b>Managed Significant Impact (Management referrals result of ANDAL)</b>							
<b>PRE-CONSTRUCTION PHASE</b>							
<b>1</b>	<b>Land Acquisition</b>						
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	<p><b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</p> <p><b>b. Supervisor</b></p> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> <li>• Food Crops Agency of Subang regency</li> <li>• Marine and Fisheries Agency of Subang regency</li> <li>• National Land Agency of Subang Regency</li> </ul> <p><b>c. Reporting</b></p> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul>
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 untill construction phase	<p><b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</p> <p><b>b. Supervisor</b></p> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> <li>• Transmigration and Workforce</li> </ul>

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No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
				<ul style="list-style-type: none"> <li>- Conducting venture capital aid program</li> <li>- Conducting new business activity program</li> <li>- Conducting marketing assistance program</li> <li>- Conducting equipments aid program</li> </ul>	<p>Village</p> <p>Pusakajaya District: 1) Pusakajaya Village</p>		<p>Agency of Subang Regency</p> <p><b>c. Reporting</b></p> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul>
1C	Public Unrest	Land Acquisition	Reducing of negative perceptions and increasing of positive perceptions of people to the activity plans.	<p>a. Land acquisition mechanism refers to the statutes No.2 Year 2012 about Land acquisition fo Public interest and Presidential decree Republic of Indonesia No.71 year 2012 about Land acquisition for development of Public interest</p> <p>b. Coordinating with related intitutions in conduct livelihood recovery program for people affected</p> <p>c. Making complaint center/fast respons team to accomodate and respons public unrest to the Patimban Seaport development</p> <p>d. Making community discussion forum with local government to solve the problem that arouse when development activity</p> <p>e. Replace the land in accordance to the agreement, regulation, and related institution recommendation.</p>	<p>People around the project site</p> <p>Pusakanagara district: 1) Patimban Village 2) Gempol Village 3) Kalentambo Village 4) Kotasari Village 5) Pusakaratu Village</p> <p>Pusakajaya district: 1) Pusakajaya village</p>	During Pre-construction untill construction phase	<p><b>a. Implementer</b></p> <p>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</p> <p><b>b. Supervisor</b></p> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> <li>• National Land Agency of Subang Regency</li> <li>• Pusakanagara district</li> <li>• Pusakajaya district</li> </ul> <p><b>c. Reporting</b></p> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul>
<b>CONSTRUCTION PHASE</b>							
<b>2</b>	<b>Procurement of Labor and Basecamp operation</b>						
2A	Opening job and business opportunity	Procurement of labor and basecamp operation	People affected/local people that recruited as workers > 20%)	a. Including the contract clause with implementer contractor to prioritize local workers from the people affected as required, educational background, qualification needed,	<p>People around the project site</p> <p>Pusakanagara district:</p>	Selama tahap konstruksi berlangsung	<p><b>a. Implementer</b></p> <p>Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</p>



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No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
				and inclusion of workers social assurance, also payment according to UMK (Regional Minimum Wage) b. Coordinating with related institution in conduct livelihood recovery program of people affected, as stated in the LARAP document as follow: <ul style="list-style-type: none"> <li>- Conducting training program</li> <li>- Conducting venture capital aid program</li> <li>- Conducting new business activity program</li> <li>- Conducting marketing assistance program</li> <li>- Conducting equipments aid program</li> </ul> c. Coordinating with Pusakanagara district and Pusakajaya about job vacancy information	1) Patimban Village 2) Gempol Village 3) Kalentambo Village 4) Kotasari Village 5) Pusakaratu Village  Pusakajaya district: 1) Pusakajaya village		<b>b. Supervisor</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> <li>• Transmigration and Workforce Agency of Subang Regency</li> <li>• Pusakanagara district</li> <li>• Pusakajaya district</li> </ul> <b>c. Reporting</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul>
<b>3</b>	<b>Heavy Equipment and Materials Mobilization</b>						
3A	Land traffic disruption	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	<ul style="list-style-type: none"> <li>• Pantura road</li> <li>• Patimban seaport access road</li> <li>• Crossing of Pantura road and Patimban seaport access road</li> </ul>	During heavy equipment and materials mobilization activity	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  <b>b. Supervisor</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> <li>• Transportation Agency of Subang regency</li> </ul> <b>c. Reporting</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> </ul>

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No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
				in the entry and exit access of patimban seaport development location. f. Implementing ANDALLALIN (Assessment Impact of Traffic) recommendation			• Environment Agency of Subang Regency
3B	Decreasing of air quality (TSP and emission)	Heavy equipment and materials mobilization	Concentration of SO <sub>2</sub> , CO, NO <sub>2</sub> and TSP not exceed air quality standard in Government regulations No. 41 year 1999 about Air pollutions control	<p>a. Heavy equipment and materials mobilization use construction access road of Patimban seaport which is relatively quiet and away from settlements (Red soil road)</p> <p>b. Closing the tanks of transporting material vehicle with tarps</p> <p>c. Transporting the materials to the location using operation worthy vehicle and passed of KIR test (in order to public vehicles is roadworthy)</p> <p>d. Developing of washhouse to clean transporting vehicle wheels before out from project site location</p> <p>e. If there are materials spills on the passing road from construction materials mobilization, it will be cleaned as soon as possible</p> <p>f. Flushing the road periodically</p>	<ul style="list-style-type: none"> <li>• Patimban seaport development location</li> <li>• Pantura road</li> <li>• Patimban seaport access road</li> <li>• Crossing of Pantura road and Patimban seaport access road</li> </ul>	During heavy equipment and materials mobilization	<p><b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</p> <p><b>b. Supervisor</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of Subang Regency</p> <p><b>c. Reporting</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of West Java Province • Environment Agency of Subang Regency</p>
3C	Sea traffic disruption	Heavy equipment and materials mobilization	Ship collision does not occur on the Patimban waters	<p>a. Coordinating with UPP (Port Operator Unit) Pamanukan about material transporting route on the sea</p> <p>b. Coordinating with Tanjung Priok Navigation Distric about materials transporting sailing line</p> <p>c. Socializing materials transporting route to the fishermen</p> <p>d. Organizing material transporting time</p> <p>e. Implementer contractor open the communication with the ships around materials transporting route</p>	Material transporting route on the Patimban waters	During heavy equipment and materials mobilization	<p><b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</p> <p><b>b. Supervisor</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of Subang Regency • UPP Pamanukan • Tanjung Priok Navigation Distric</p>

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No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
							<b>c. Reporting</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul>
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 respons team to accomodate and respons public unrest to the Patimban Seaport development d. Making community discussion forum with local government to solve the problem that arouse when development activity	<ul style="list-style-type: none"> <li>• Settlements around heavy equipment and materials mobilization access road in study area</li> <li>• Fishermen settlements around Patimban waters</li> </ul>	During heavy equipment and materials mobilization activity	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  <b>b. Supervisor</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> </ul> <b>c. Reporting</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul>
<b>4</b>	<b>Reclamation and off-shores facility development</b>						
4A	Decreasing of sea water quality (TSS)	Reclamation and off-shores faciity 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 faciity development location	During Reclamation and off-shores faciity development	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  <b>b. Supervisor</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> </ul> <b>c. Reporting</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and</li> </ul>

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							Forestry Republic of Indonesia • Environment Agency of West Java Province • Environment Agency of Subang Regency
4B	Fishing ground change	Reclamation and off-shores faciity 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 faciity 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	<ul style="list-style-type: none"> <li>Fishermen around location plan, especially TPI Kaligenteng, TPI Trumtum dan TPI Tanjung Pura.</li> <li>Rumpon around Patimban waters out of DLKP and DLKR Patimban seaport</li> </ul>	During reclamation and off-shores faciity development	<p>a. <b>Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</p> <p>b. <b>Supervisor</b> • Ministry of Indonesian Reublic Environment and Forestry • Environment Agency of Subang Regency • Marine and Fishery Agency of Subang Regency</p> <p>c. <b>Reporting</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of West Java Province • Environment Agency of Subang Regency</p>
4C	Public unrest	Reclamation and off-shores faciity development	No public unrest occured	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 accomodate and respons public unrest to the Patimban Seaport development c. Making community discussion	Fishermen settlements around Patimban waters	During reclamation and off-shores faciity development	<p>a. <b>Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</p> <p>b. <b>Supervisor</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of Subang Regency</p> <p>c. <b>Reporting</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of West Java</p>

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No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
				forum with local government to solve the problem that arouse when development activity			Province • Environment Agency of Subang Regency
<b>5</b>	<b>Dredging and dumping</b>						
5A	Decreasing of sea water quality (TSS)	Dredging and dumping	TSS concentration below environment quality standard based on Kepmen LH No 51 year 2004 Sea water quality standard Appendix I (80 mg/L)	<ul style="list-style-type: none"> <li>a. Constructing seawall in the early phase</li> <li>b. Installing silt protector around dredging area by grab dredging</li> <li>c. Disposing dumping materials do not in one point but disperse in dumping area</li> <li>d. Using proper equipments for dredging and dumping</li> </ul>	Dredging and dumping location	During Dredging and dumping activities	<p><b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</p> <p><b>b. Supervisor</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of Subang Regency</p> <p><b>c. Reporting</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of West Java Province • Environment Agency of Subang Regency</p>
<b>6</b>	<b>On-shore Facility Development</b>						
6A	Increasing of water run-off	On-shore facility development	No flooding occurred	<ul style="list-style-type: none"> <li>a. Make drainage that can hold water run-off</li> <li>b. Optimizing of RTH (Green Open Space) on the unused land</li> <li>c. Coordinating with Bina Marga and Irrigation Agency, related on drainage construction in the seaport location</li> </ul>	On-shore facility development location	During On-shore facility development	<p><b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</p> <p><b>b. Supervisor</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of Subang Regency • Bina Marga and Irrigation Agency</p> <p><b>c. Reporting</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of West Java</p>

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No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
							Province • Environment Agency of Subang Regency
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 <i>underpass/fly over</i> or moving the road on the public access road which is crossed with Patimban seaport access road c. Making complaint center/fast respons team to accomodate and respons public unrest to the Patimban Seaport development d. Making community discussion forum with local government to solve the problem that arouse when development activity	People around seaport area	During construction phase	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  <b>b. Supervisor</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of Subang Regency  <b>c. Reporting</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of West Java Province • Environment Agency of Subang Regency
7.	<b>Access Road Development</b>						
	-						
<b>OPERASIONAL PHASE</b>							
8	<b>Procurement of labor</b>						
8A	Opening job and business opportunity	Operation workers recruitment	People affected/local people that recruited as workers > 30%)	a. Obligating BUP (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	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  <b>b. Supervisor</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of Subang Regency • Transmigration and Workforce Agency of Subang Regency <b>c. Reporting</b>

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No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
				facility c. Coordinating with Pusakanagara district and Pusakajaya about job vacancy information	Pusakajaya district: 1) Pusakajaya village		<ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul>
<b>9.</b>	<b>Off-shore Facility Operation</b>						
9A	Sedimentation	Off-shore facility operation	Waters depth as plans	<p>a. Doing <i>maintenance dredging</i> preserve the depth in the port basin (-14 meter) and in the port channel (-14 meter)</p> <p>(<i>Supplementary Note on Approved AMDAL</i>)</p> <p>Doing maintenance dredging for access channel for the fishing boats as well</p> <p>b. Placing materials from dredging result to the dumping area location</p>	<ul style="list-style-type: none"> <li>• Seaport basin</li> <li>• Seaport channel</li> <li>• Dumping Area</li> </ul> <p>(<i>Supplementary Note on Approved AMDAL</i>)</p> <ul style="list-style-type: none"> <li>• Access channel for the fishing boats</li> </ul>	During operational activities (once in 5-10 years)	<p><b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</p> <p><b>b. Supervisor</b>  <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> </ul> </p> <p><b>c. Reporting</b>  <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul> </p>
9B	Shoreline change	Off-shore facility operation	Shoreline change does not affect infrastructure damage or existing land	Building and maintaining <i>revetments</i> in shoreline area which is abraded	Along shoreline in <i>back-up area</i>	During operational activities	<p><b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</p> <p><b>b. Supervisor</b>  <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> </ul> </p> <p><b>c. Reporting</b>  <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> </ul> </p>

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No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
							<ul style="list-style-type: none"> <li>• Environment Agency of Subang Regency</li> </ul>
9C	Fishing ground change	Off-shore facility operation	No report of fishing area disruption and/or decreasing of fishermen production/income	<p>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</p> <p>b. Obligating BUP to do CSR to the firshermen community around the Patimban waters including TPI Kali Genteng, Truntum and Tanjung Pura</p>	<p>around Patimban waters out of DLKP and DLKR Patimban seaport</p> <p>TPI Kali Genteng, Truntum and Tanjung Pura</p>	During operational activities	<p><b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</p> <p><b>b. Supervisor</b>  <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> <li>• Marine and Fishery Agency of Subang Regency</li> </ul> </p> <p><b>c. Reporting</b>  <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul> </p>
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	<p><b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</p> <p><b>b. Supervisor</b>  <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> </ul> </p> <p><b>c. Reporting</b>  <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul> </p>
<b>10.</b>	<b>On-shore facility operation</b>						



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No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
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<b>11.</b>	<b>Maintenance of Basin and Sailing channel</b>						
	-						
<b>12</b>	<b>Access road operation</b>						
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 accordingg to the criteria c. Placement of officer to arrange traffic in the entry and exit access of patimban seaport development location. d. Implementing ANDALLALIN / <i>Analisis Dampak Lingkungan Lalu Lintas</i> (Assessment Impact of Traffic) recommendation	<ul style="list-style-type: none"> <li>• Crossing between Pantura road and access road</li> <li>• Pantura road</li> <li>• Seaport access road</li> </ul>	During operational activities	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia <b>b. Supervisor</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> <li>• Transportation Agency of Subang regency</li> </ul> <b>c. Reporting</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul>
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  <i>(Supplementary Note on Approved AMDAL)</i> If the noise level is above the Indonesian standard based on the noize monitoring and it is derived from the access road traffic, necessary measures such as installation of noise barrier shall be conducted.	<ul style="list-style-type: none"> <li>• Settlements in crossing between Pantura road and Seaport access road</li> <li>• Settlements in Seaport access road</li> <li>• Patimban seaport in and out access</li> </ul>	During operational activities	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia <b>b. Supervisor</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> </ul> <b>c. Reporting</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang</li> </ul>

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No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
							Regency
12C	Public unrest	Access road operation	No public unrest occurred	<p>a. Maintaining <i>underpass/fly over</i> on access road which is crossed with Patimban seaport access road</p> <p>b. Optimizing traffic arrange in the crossing between Pantura road dan Seaport access road</p>	<ul style="list-style-type: none"> <li>• Settlements in crossing between Pantura road dan Seaport access road</li> <li>• Residents access road which is crossing with seaport access road</li> </ul>	During operational activities	<p><b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</p> <p><b>b. Supervisor</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of Subang Regency</p> <p><b>c. Reporting</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of West Java Province • Environment Agency of Subang Regency</p>
<b>Managed Other Impact</b>							
<b>Construction phase</b>							
2	<b>Procurement of labor and Basecamp operation</b>						
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 septictank and its maintenance	In development location and base camp	Making portable toilet once in construction activity and maintenance is done during construction	<p><b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</p> <p><b>b. Supervisor</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of Subang Regency</p> <p><b>c. Reporting</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of West Java Province • Environment Agency of Subang Regency</p>
2B	Infectious	Procurement of	The number of patients	a. Coordinating with related institution	Location around	Before and during	<b>a. Implementer</b>

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No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
	diseases emergences	labor and basecamp operation	and infectious diseases are not increased because of contruction workers	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, gonorhea, and syphillis by injection and oral method in the Pusakanegara public healthy center (Puskesmas). Routine examination (every 3 months) by VCT (Value Clarification Technique) method c. Cooperating 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, temporary garbage collection place (TPS), and processing facility	development plan, especially Pusakanagara district dan Pusakajaya district	construction phase	Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia <b>b. Supervisor</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of Subang Regency • Health agency of Subang Regency <b>c. Reporting</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of West Java Province • Environment Agency of Subang Regency
<b>3</b>	<b>Heavy equipment and materials mobilization</b>						
3A	Increasing of Noise	Heavy equipment and materials mobilization	Noise intensity according to Ministerial decree of environment ministry No. Kep. 48/MENLH/II/1996	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	• Patimban seaport development location • Pantura road • Patimban seaport access road • Crossing of Pantura road dan Patimban seaport access road	During heavy equipment and materials mobilization	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia <b>b. Supervisor</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of Subang Regency <b>c. Reporting</b>

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No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
							<ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul>
3B	Road damage	Heavy equipment and materials mobilization	Road damage can be minimize	a. Choosing most efficient sea channel for equipment and material transporting that exceed road capacity b. Material transporting tonage for construction is adapted with road class and driving license 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) d. Repairing road if there is damage caused by project activity e. Vehicle using terpal (tarpaulin) f. Cooperating with Bina Marga and Irrigation Agency of Subang Regency in managing (repairing) if there is Road damage	Gempol Prapatan road and Pantura Pusanagara road	During heavy equipment and materials mobilization	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  <b>b. Supervisor</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> <li>• Bina Marga and Irrigation Agency of Subang Regency</li> </ul> <b>c. Reporting</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul>
<b>6</b>	<b>On-shore facility operation</b>						
6A	Decreasing of air quality (TSP and emission)	On-shore facility operation	Concentration of SO <sub>2</sub> , CO, NO <sub>2</sub> 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)	Development plan location	During construction	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  <b>b. Supervisor</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> </ul>

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No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
							<b>c. Reporting</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul>
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	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia <b>b. Supervisor</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> </ul> <b>c. Reporting</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul>
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	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia <b>b. Supervisor</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> </ul> <b>c. Reporting</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java</li> </ul>

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No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
							Province • Environment Agency of Subang Regency
6D	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 that habitat b. Workers are not allowed to disturb terrestrial fauna around activity location	On-shore facility operation plan location	During construction periode	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia <b>b. Supervisor</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of Subang Regency <b>c. Reporting</b> • 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	Precense 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 periode	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia <b>b. Supervisor</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of Subang Regency <b>c. Reporting</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of West Java Province • Environment Agency of Subang Regency

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No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
7	<b>Access road construction</b>						
7A	Decreasing of air quality (TSP and emission)	Access road construction	Concentration of SO <sub>2</sub> , CO, NO <sub>2</sub> and TSP not exceed air quality standard in Government regulations No. 41 year 1999 about Air pollutions control	<ol style="list-style-type: none"> <li>Doing treatment of trucks and equipments in order to remain in good condition</li> <li>Using cover on tailgate that bring construction materials if necessary</li> <li>Making guardrail made of iron sheeting with minimal height 2.5 meter (if necessary)</li> </ol>	Access road construction location	During construction	<p><b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</p> <p><b>b. Supervisor</b></p> <ul style="list-style-type: none"> <li>Ministry of Environment and Forestry Republic of Indonesia</li> <li>Environment Agency of Subang Regency</li> </ul> <p><b>c. Reporting</b></p> <ul style="list-style-type: none"> <li>Ministry of Environment and Forestry Republic of Indonesia</li> <li>Environment Agency of West Java Province</li> <li>Environment Agency of Subang Regency</li> </ul>
7B	Increasing of Noise	Access road construction	Noise level is below environment quality standard based on Kepmen LH No 48 Year 1996 about Noise level standard	<ol style="list-style-type: none"> <li>Doing treatment of trucks and equipments in order to remain in good condition</li> <li>Avoiding construction activity that cause noise to do at the night,</li> </ol>	Access road construction location	During construction	<p><b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</p> <p><b>b. Supervisor</b></p> <ul style="list-style-type: none"> <li>Ministry of Environment and Forestry Republic of Indonesia</li> <li>Environment Agency of Subang Regency</li> </ul> <p><b>c. Reporting</b></p> <ul style="list-style-type: none"> <li>Ministry of Environment and Forestry Republic of Indonesia</li> <li>Environment Agency of West Java Province</li> <li>Environment Agency of Subang Regency</li> </ul>
7C	Decreasing of surface water quality	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	<p><b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</p>

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No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
			quality management and Water pollution control				<b>b. Supervisor</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> </ul> <b>c. Reporting</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul>
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	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia <b>b. Supervisor</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> </ul> <b>c. Reporting</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul>
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 respons team to accomodate and respons public unrest to the Patimban Seaport development	Access road construction location	During construction	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia <b>b. Supervisor</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang</li> </ul>



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No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
							Regency <b>c. Reporting</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul>
<b>Operation Phase</b>							
<b>8</b>	<b>Procurement of labor</b>						
8A	Infectious diseases emergencies	Procurement of labor	The number of infectious disease is not increased	<p>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</p> <p>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</p> <p>c. Cooperating 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.</p> <p>d. Developing sanitary facility,</p>	Location around development especially Pusakanagara district dan Pusakajaya district	During operation phase	<p><b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia</p> <p><b>b. Supervisor</b>  <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> <li>• Health agency of Subang Regency</li> </ul> </p> <p><b>c. Reporting</b>  <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul> </p>

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No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
				temporary garbage collection place (TPS), and processing facility			
<b>9</b>	<b>Off-shore facility operation</b>						
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	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia <b>b. Supervisor</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of Subang Regency <b>c. Reporting</b> • 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	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia <b>b. Supervisor</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of Subang Regency <b>c. Reporting</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of West Java Province • Environment Agency of Subang Regency
9C	Marine Traffic	Off-shore	No disruption of	a. Developing security control plan	Sailing channel area	During operation activity	<b>a. Implementer</b>

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No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
	Disruption	facility operation	fishermen ships and vessels passing through the sailing channel	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.	PT Pertamina's pipeline		Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia <b>b. Supervisor</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of Subang Regency <b>c. Reporting</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of West Java Province • Environment Agency of Subang Regency
9D	Waste generation	Off-shore facility operation	No waste pollution in the sea	a. Accomodating and accepting waste from the ships in the <i>reception facility</i> , 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	<ul style="list-style-type: none"> <li>• <i>Reception facility (RF)</i></li> <li>• Seaport manager office / TPS B3</li> <li>• Domestic TPS</li> </ul>	<ul style="list-style-type: none"> <li>• RF is built once when construction and maintenance is done everyday</li> <li>• Maximum storage ≤ 90 days</li> <li>• Transporting is done minimum twice a day</li> </ul>	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia  <b>b. Supervisor</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of Subang Regency <b>c. Reporting</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of West Java Province • Environment Agency of Subang Regency
<b>10</b>	<b>On-shore facility operation</b>						
10A	Increasing of water run off rate	On-shore facility operation	No Flooding	a. Make drainage that can hold water run-off b. Optimizing of RTH (Green Open Space) on the unused land	<ul style="list-style-type: none"> <li>• On-shore facility drainage</li> <li>• On-shore facility RTH (Green Open</li> </ul>	During operation phase	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia

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No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
					Space)		<b>b. Supervisor</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> </ul> <b>c. Reporting</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul>
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 <i>back-up area</i>	During operation activity	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia <b>b. Supervisor</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> </ul> <b>c. Reporting</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul>
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	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia <b>b. Supervisor</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> </ul>

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No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
							<b>c. Reporting</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul>
<b>11.</b>	<b>Maintenance of Basin and Sailing channel</b>						
11A	Decreasing of sea water quality (TSS)	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	<ul style="list-style-type: none"> <li>• Dumping area</li> <li>• Maintenance of Basin and Sailing channel location</li> </ul>	During operational activities (once in 5-10 years)	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia <b>b. Supervisor</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> </ul> <b>c. Reporting</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul>
<b>12</b>	<b>Access road operation</b>						
12A	Decreasing of air quality (TSP and emission)	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	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia <b>b. Supervisor</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> </ul> <b>c. Reporting</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> </ul>

CHAPTER II – ENVIRONMENTAL MANAGEMENT PLAN

No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
							<ul style="list-style-type: none"> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul>
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	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia <b>b. Supervisor</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> </ul> <b>c. Reporting</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul>
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 curvert, 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	<b>a. Implementer</b> Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia <b>b. Supervisor</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of Subang Regency</li> </ul> <b>c. Reporting</b> <ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry Republic of Indonesia</li> <li>• Environment Agency of West Java Province</li> <li>• Environment Agency of Subang Regency</li> </ul>
12D	Road damage	Access road	Road damage can be	Coordinating with related institution	Access road and	During operation	<b>a. Implementer</b>

CHAPTER II – ENVIRONMENTAL MANAGEMENT PLAN

No	Managed environmental impact	Source of impact	Success indicator of environmental management	Form of environmental management	Location of environmental management	Periode of environmental management	Institution of environmental management
		operation	minimize	to conduct the increasing and repairing of road which is connected to seaport access road	surrounding area	phase	Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia <b>b. Supervisor</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of Subang Regency <b>c. Reporting</b> • Ministry of Environment and Forestry Republic of Indonesia • Environment Agency of West Java Province • Environment Agency of Subang Regency

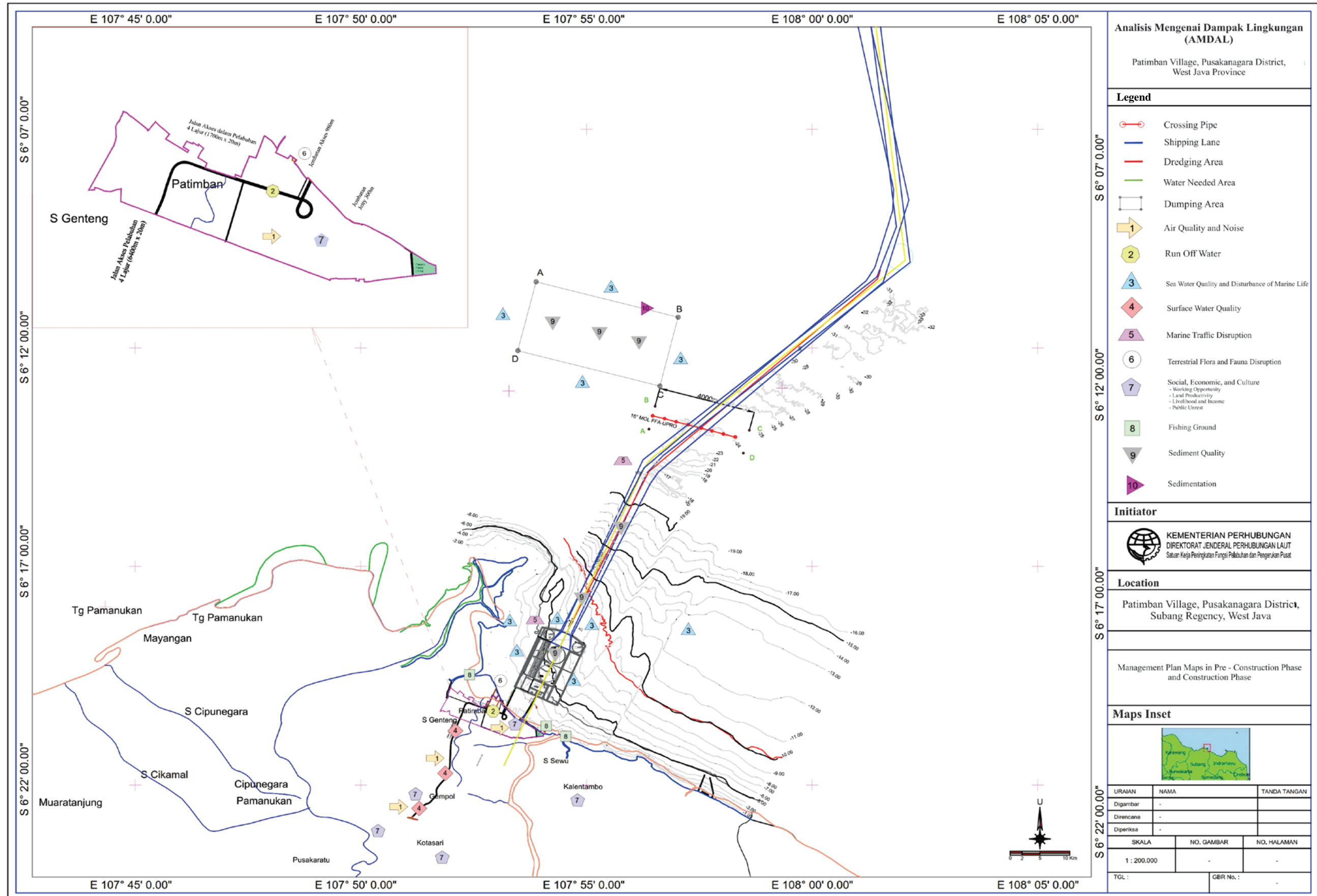


Figure 2.1. Maps of Environmental Management Plan in Pre-Construction Phase and Construction Phase of Patimban Port



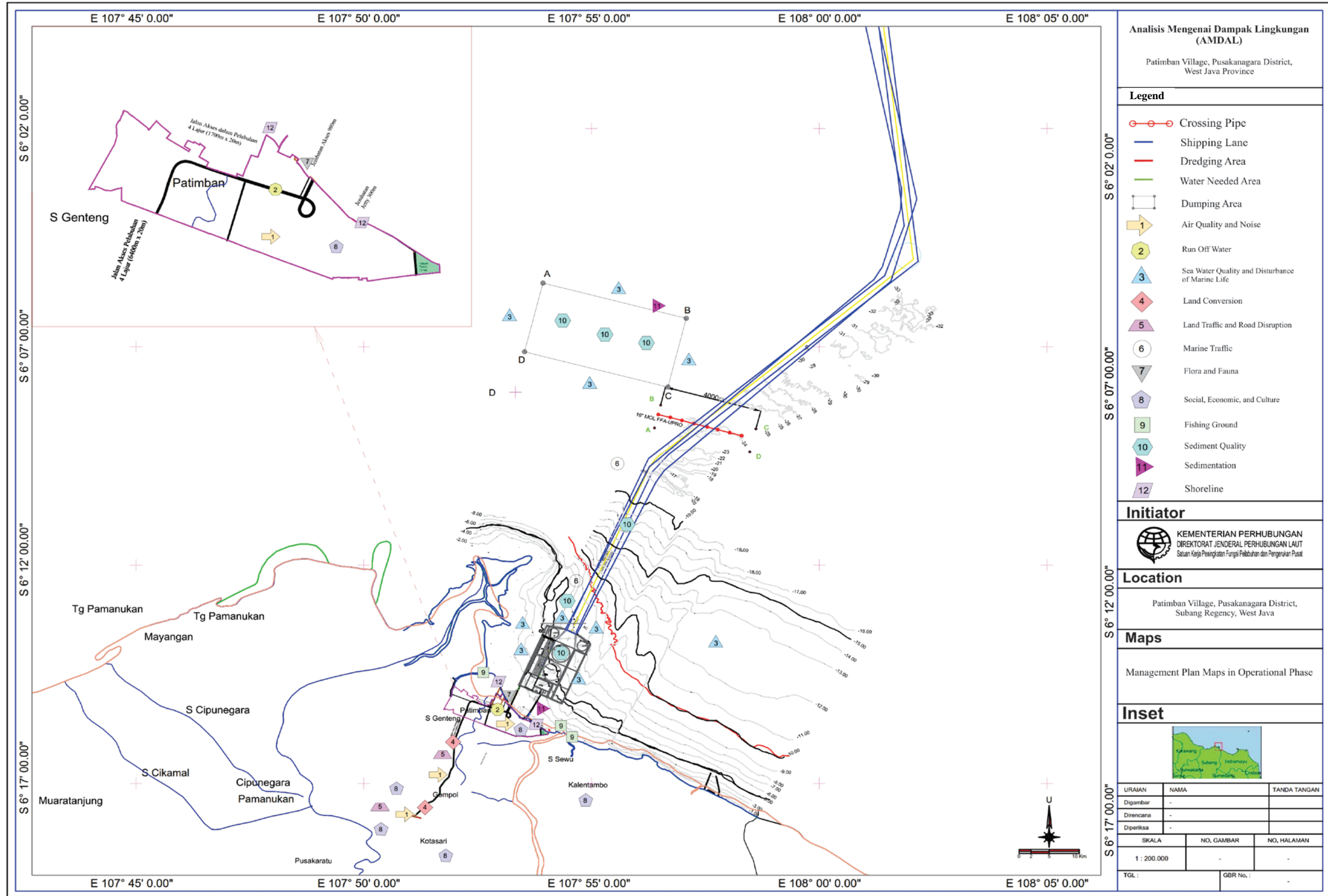


Figure 2.1. Map of Environmental Management Plan at Patimban Seaport in Operation Phase

## 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 tmpact 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

No	Monitored environmental impact			Environmental Monitoring Form			Environmental management institution		
	Type of Impact	Indicator / Parameter	Impact source	Method of Collection and Analysis Data	Monitoring location	Time and frequency	Implementer	Supervisor	Reporting
<b>Managed Significant Impacts (Management referrals result of ANDAL)</b>									
<b>PRE-CONSTRUCTION PHASE</b>									
<b>I. Land Acquisition</b>									
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 e. National Land 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
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

CHAPTER III – ENVIRONMENTAL MONITORING PLAN

No	Monitored environmental impact			Environmental Monitoring Form			Environmental management institution		
	Type of Impact	Indicator / Parameter	Impact source	Method of Collection and Analysis Data	Monitoring location	Time and frequency	Implementer	Supervisor	Reporting
				with public figure d. 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					
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
<b>CONSTRUCTION PHASE</b>									
2.	<b>Procurement of Labor and Pengoperasian Base camp</b>								
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

No	Monitored environmental impact			Environmental Monitoring Form			Environmental management institution		
	Type of Impact	Indicator / Parameter	Impact source	Method of Collection and Analysis Data	Monitoring location	Time and frequency	Implementer	Supervisor	Reporting
				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.	Pusakajaya district Pusakajaya village			c. Labor and Transmigration Agency of Subang regency d. Pusakanagara district e. Pusakajaya district	agency of Subang regency
<b>3. Heavy equipments and materials mobilization</b>									
3A	Decreasing of air quality (TSP and emission)	Concentration of SO <sub>2</sub> , CO, NO <sub>2</sub> and TSP not exceed air quality standard in Government regulations No. 41 year 1999 about Air pollutions control	Heavy equipments and materials mobilization	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.	a. Patimban seaport development location b. Pantura road c. Patimban seaport access road d. Crossing of Pantura road and Patimban seaport access road	Twice a year (dry and rainy season)	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
3B	Land traffic disruption	No occurrence of traffic jam as the effect of heavy equipment and materials mobilization	Heavy equipments 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	a. Ministry of Environment and Forestry Republic of Indonesia b. Environment agency of Subang regency c. Transportation	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

No	Monitored environmental impact			Environmental Monitoring Form			Environmental management institution		
	Type of Impact	Indicator / Parameter	Impact source	Method of Collection and Analysis Data	Monitoring location	Time and frequency	Implementer	Supervisor	Reporting
								agency of Subang regency	
3C	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 Subang regency c. UPP Pamanukan d. Tanjung Priok District Navigation	a. Ministry of Environment and Forestry Republic of Indonesia b. Environment agency of West Java province c. Environment agency of Subang regency
3D	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

No	Monitored environmental impact			Environmental Monitoring Form			Environmental management institution		
	Type of Impact	Indicator / Parameter	Impact source	Method of Collection and Analysis Data	Monitoring location	Time and frequency	Implementer	Supervisor	Reporting
				based on the research needs and taken from community that has been known its characteristic					
<b>4.</b>	<b>Reclamation and off-shores facility development</b>								
4A	Decreasing of sea water quality (TSS)	TSS concentration below environment quality standard based on Kepmen LH No 51 year 2004 Sea water quality standard Appendix I (80 mg/L)	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	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
4B	Fishing ground change	No report of fishing area disruption and/or decreasing of fishermen production/income	Reclamation activity and off-shore facility development	a. Collecting data of complaints number in analysis consultation table based on consultan survey b. Monitoring fisheries production and its condition by interview with fishermen	a. TPI Kali Genteng, Trumtum dan Tanjung Pura b. Location around rumpon installation; TPI Kaligenteng, Tanjungpura dan Trumtum.	Once a months during Construction phase	Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia	a. Ministry of Environment and Forestry agency of Subang regency b. Environment agency of Subang regency c. Marine and Fisheries Agency of Subang regency	a. Ministry of Environment and Forestry agency of West Java province c. Environment agency of Subang regency
4C	Public unrest	No public unrest occurrence	Reclamation activity and off-shore facility development	a. Measurement of people number whom feel worried of reclamation 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	Development location	Once a month during construction	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

No	Monitored environmental impact			Environmental Monitoring Form			Environmental management institution		
	Type of Impact	Indicator / Parameter	Impact source	Method of Collection and Analysis Data	Monitoring location	Time and frequency	Implementer	Supervisor	Reporting
				<p>obtained by notes and information from environment caretaker, village government, or initiator representatives (secondary data)</p> <p>d. Information and data that need to be explored deeper, will be done deep interview with key informant, such as with public figure</p> <p>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</p>					
<b>5</b>	<b>Dredging and dumping</b>								
5A	Decreasing of sea water quality (TSS)	TSS concentration below environment quality standard based on Kepmen LH No 51 year 2004 Sea water quality standard Appendix I (80 mg/L)	Dredging and dumping	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.	10 location points	<p>a. For complete water quality parameter is done 6 months at 2 points (surface and bottom)</p> <p>b. Specifically for TSS sampling is done once a week at 10 points during dredging and dumping activity and 3 points everyday</p>	Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia	<p>a. Ministry of Environment and Forestry Republic of Indonesia</p> <p>b. Environment agency of Subang regency</p>	<p>a. Ministry of Environment and Forestry Republic of Indonesia</p> <p>b. Environment agency of West Java province</p> <p>c. Environment agency of Subang regency</p>
<b>6.</b>	<b>On-shore facility development</b>								



CHAPTER III – ENVIRONMENTAL MONITORING PLAN

No	Monitored environmental impact			Environmental Monitoring Form			Environmental management institution		
	Type of Impact	Indicator / Parameter	Impact source	Method of Collection and Analysis Data	Monitoring location	Time and frequency	Implementer	Supervisor	Reporting
6A	Increasing of water run-off rate	No flooding	On-shore facility development	Direct monitoring to the presence and function of drainage channel and RTH (Green Opened Space)	Project location	Conducted 2 times at rainy season when heavy rain, during 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. Bina Marga 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
6B	Public unrest	No public unrest occurrence	On-shore facility development	a. Monitoring of new irrigation channel as replacement of disconnected irrigation channel. b. Monitoring underpass/fly over on the public access road which is crossed with Patimban seaport access road c. Measurement of people number whom feel worried of On-shore facility development activity d. Measurement is done by interview using questionnaire (primary data) e. 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)	Public facility, Social facility, and utility operational office.	Once a year 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

No	Monitored environmental impact			Environmental Monitoring Form			Environmental management institution		
	Type of Impact	Indicator / Parameter	Impact source	Method of Collection and Analysis Data	Monitoring location	Time and frequency	Implementer	Supervisor	Reporting
				f. Information and data that need to be explored deeper, will be done deep interview with key informant, such as with public figure g. 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					
<b>OPERATIONAL PHASE</b>									
<b>8.</b>	<b>Procurement of Labor</b>								
8A	Opening job and business opportunity	People affected/local people that recruited as workers > 30%)	Procurement of labor operation activity	a. Identifying local workers that hired b. Information and data that need to be explored deeper, will be done deep interview with key informant, such as with public figure a. 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	Seaport area dan <i>back-up area</i>	Once a year during operational	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
<b>9.</b>	<b>Off-shore facility operation</b>								
9A	Sedimentation	Waters depth as plans	Off-shore facility operation	a. Monitoring of dredging material sediment quality before dumping b. Bathymetry survey in dumping location	a. Dredging area (3 points) and dumping area (3 points) b. Dumping area	a. Before dumping (once)	Directorate General of Sea Transportation	a. Ministry of Environment and Forestry Republic of Indonesia	a. Ministry of Environment and Forestry Republic of Indonesia b. Environment

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No	Monitored environmental impact			Environmental Monitoring Form			Environmental management institution		
	Type of Impact	Indicator / Parameter	Impact source	Method of Collection and Analysis Data	Monitoring location	Time and frequency	Implementer	Supervisor	Reporting
						b. Before and after dumping activity		b.Environment agency of Subang regency	agency of West Java province c. Environment agency of Subang regency
9B	Shoreline change	Shoreline change does not affect infrastructure damage or existing land	Off-shore facility operation activity	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.	North side shoreline	Once a year	Directorate General of Sea Transportation	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
9C	Fishing ground change	No report of fishing area disruption and/or decreasing of fishermen production/income	Off-shore facility operation activity	a. Fields observation and interview to the fishermen of TPI Kali Genteng, Trumtum and Tanjung Pura about productivity in the rumpon installation location and then analyzed descriptively b. Field bservation, interview with fishermen in TPI (Fish Auction) Kali Genteng, Trumtum and Tanjung Pura, and analyzed descriptively about CSR implementation.	a. TPI Kali Genteng, Trumtum and Tanjung Pura  b. Patimban seaport general administration in Ministry of transportation and TPI Kali Genteng, Trumtum and Tanjung Pura	Conducted once in 6 months during operation phase	Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia	a. Ministry of Environment and Forestry b. Dinas Lingkungan Hidup Kabupaten Subang c. Marine and Fisheries Agency of Subang regency	a. Ministry of Environment and Forestry b. Environment agency of West Java province c. Environment agency of Subang regency
9D	Public unrest	No public unrest occurrence	Off-shore facility operation activity	a. Reporting the number of complaints b. Monitoring production and condition of fishermen	a. Seaport location b. TPI Kali Genteng, Trumtum and Tanjung Pura	Once a year	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

No	Monitored environmental impact			Environmental Monitoring Form			Environmental management institution		
	Type of Impact	Indicator / Parameter	Impact source	Method of Collection and Analysis Data	Monitoring location	Time and frequency	Implementer	Supervisor	Reporting
									agency of Subang regency
<b>12</b>	<b>Access road operation</b>								
12A	Increasing of noise	Noise level is below environment quality standard based on Kepmen LH No 48 Year 1996 about Noise level standard	Access road operation	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.	3 points around project location	Conducted twice a year (dry and rainy season)	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
12B	Land traffic disruption	No occurrence of traffic jam as the effect of heavy equipment and materials mobilization	Access road operation	a. Direct monitoring to the traffic b. Giving information about accident number	Pantura road and access road	Once in 6 months. Can be done in the early year (1st month) and mid of the year (7th month or 8th month)	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. Transportation 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
12C	Public unrest	No public unrest occurrence	Access road operation	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	Access road	Once a year	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

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No	Monitored environmental impact			Environmental Monitoring Form			Environmental management institution		
	Type of Impact	Indicator / Parameter	Impact source	Method of Collection and Analysis Data	Monitoring location	Time and frequency	Implementer	Supervisor	Reporting
				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					
<b>Managed other environmental impact</b>									
<b>CONSTRUCTION PHASE</b>									
<b>2. Procurement of Labor and Basecamp operation</b>									
2A	Decreasing of sea water quality	Sea water is not polluted by workers domestic waste	Procurement of labor and Basecamp operation	Confirmation and maintenance of sanitary facility, water waste management facility	Location of construction and basecamp	During construction phase (every once in 2 months)	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
2B	Appearance of infectious diseases	The number of patients and infectious diseases are not increased because of construction workers	Procurement of labor and Basecamp operation	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	Location around project	During construction phase	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

No	Monitored environmental impact			Environmental Monitoring Form			Environmental management institution		
	Type of Impact	Indicator / Parameter	Impact source	Method of Collection and Analysis Data	Monitoring location	Time and frequency	Implementer	Supervisor	Reporting
				and comparing with data before construction				c. Healthy agency of Subang regency	regency
<b>3. Heavy equipments and materials mobilization</b>									
3A	Road damage	Road damage can be minimized	Equipments and materials mobilization	Monitoring directly of road condition  Analysis based on consultan survey	Gempol Prapatan road and Pantura  Pusakanagara road	Once a month during construction	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
3B	Increasing of noise	Noise intensity according to Ministerial decree of environment ministry No. Kep. 48/MENLH/II/1996	Equipments and materials mobilization	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 critrical level.	Development location of Patimban seaport, Pantura road, Patimban seaport access road, Crossing of Pantura road and Patimban seaport access road	Twice a year (rainy and dry season)	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
<b>4 Reclamation and Marine Facility Construction (Supplementary Note on Approved AMDAL)</b>									
4A	Disturbance of Marine Life (Nekton and Benthos)	Marine life is not much disturbed by the project	Reclamation and Marine Facility Construction	Monitoring neckton and benthos then comparing with base line survey result	5 locations at the sea	Nekton: 2 times a year (rainy and dry season)  Benthos: 1 time a year	Directorate General of Sea Transportation	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

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No	Monitored environmental impact			Environmental Monitoring Form			Environmental management institution		
	Type of Impact	Indicator / Parameter	Impact source	Method of Collection and Analysis Data	Monitoring location	Time and frequency	Implementer	Supervisor	Reporting
									Subang regency
<b>5. Dredging and Disposal (Supplementary Note on Approved AMDAL)</b>									
5A	Disturbance of Marine Life (Nekton and Benthos)	Sediment quality is not deteriorated	Dumping activity	a. Monitoring of dredging material sediment quality before dumping  b. Bathymetry survey in dumping location	a. Dredging area (3 points) and dumping area (3 points)  b. Dumping area	a. Before dumping (once)  b. Before and after dumping activity	Directorate General of Sea Transportation	c. Ministry of Environment and Forestry Republic of Indonesia  d. Environment agency of Subang regency	d. Ministry of Environment and Forestry Republic of Indonesia  e. Environment agency of West Java province  f. Environment agency of Subang regency
<b>6. On-shore facility development</b>									
6A	Decreasing of air quality (TSP and emission)	Concentration of SO <sub>2</sub> , CO, NO <sub>2</sub> and TSP not exceed air quality standard in Government regulations No. 41 year 1999 about Air pollutions control	On-shore facility development	Conducting air quality laboratory analysis, then the results are compared with air 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.	3 points around the activity location	Twice a year during construction phase (rainy and dry season)	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
6B	Increasing of noise	Noise level is below environment quality standard based on Kepmen LH No 48 Year 1996 about Noise level standard	On-shore facility development	Conducting noise parameter 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	3 points around the activity location	Twice a year during construction phase (rainy and dry season)	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	a. Ministry of Environment and Forestry Republic of Indonesia  b. Environment agency of West Java province  c. Environment

CHAPTER III – ENVIRONMENTAL MONITORING PLAN

No	Monitored environmental impact			Environmental Monitoring Form			Environmental management institution		
	Type of Impact	Indicator / Parameter	Impact source	Method of Collection and Analysis Data	Monitoring location	Time and frequency	Implementer	Supervisor	Reporting
				time to time (data trend) to see the tendency of environment quality change and critical level.				regency	agency of Subang regency
6C	Decreasing of sea water change	Sea water quality does not decrease drastically because of project activity	On-shore facility construction	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.	10 location on the sea	4 times in a year with 2 surfaces (top and bottom surfaces)	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
6D	Disruption of terrestrial fauna (bird)	Precense of habitats for terrestrial fauna	On-shore facility development	a. Giving the report about new habitat b. Direct monitoring in the fields	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	a. Ministry of Environment and Forestry Republic of Indonesia b. Environment agency of West Java province c. Environment agency of Subang regency
6E	Disruption of terrestrial flora	Precense of habitats for terrestrial flora	On-shore facility development	Giving the report about new habitat	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	a. Ministry of Environment and Forestry Republic of Indonesia b. Environment agency of West Java province c. Environment agency of Subang regency
<b>7.</b>	<b>Access road development</b>								
7A	Decreasing of air	Concentration of SO <sub>2</sub>	Access road	Conducting air quality	3 points around the	Twice in a year during	Directorate	a. Ministry of	a. Ministry of



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No	Monitored environmental impact			Environmental Monitoring Form			Environmental management institution		
	Type of Impact	Indicator / Parameter	Impact source	Method of Collection and Analysis Data	Monitoring location	Time and frequency	Implementer	Supervisor	Reporting
	quality (TSP and emission)	CO, NO <sub>2</sub> and TSP not exceed air quality standard in Government regulations No. 41 year 1999 about Air pollutions control	development activity	laboratory analysis, then the results are compared with air 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.	activity location	construction phase	General of Sea Transportation, Ministry of Transportation Republic of Indonesia	Environment and Forestry Republic of Indonesia b. Environment agency of Subang regency	Environment and Forestry Republic of Indonesia b. Environment agency of West Java province c. Environment agency of Subang regency
7B	Increasing of noise	Noise level is below environment quality standard based on Kepmen LH No 48 Year 1996 about Noise level standard	Access road development activity	Conducting laboratory analysis of noise parameter, then the results are compared with noise standard quality Kepmen LH No 48 Year 1996.	3 points around the activity location	Twice in a year during construction phase	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
7C	Decreasing of surface water quality	Surface water quality below environment quality standard Based on PP No. 82 Tahun 2001 about Water quality management and Water pollution control	Access road development	Monitoring TSS using turbidity meter	3 points along the location of access road construction	Everyweek	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
7D	Increasing of water run-off rate	Excessive run-off does not occur	Access road development	Direct monitoring in the fields	Development location	Conducted 2 times at rainy season when heavy rain, during activity	Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia	a. Ministry of Environment and Forestry Republic of Indonesia b. Environment	a. Ministry of Environment and Forestry Republic of Indonesia b. Environment agency of West

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No	Monitored environmental impact			Environmental Monitoring Form			Environmental management institution		
	Type of Impact	Indicator / Parameter	Impact source	Method of Collection and Analysis Data	Monitoring location	Time and frequency	Implementer	Supervisor	Reporting
							Indonesia	agency of Subang regency	Java province c. Environment agency of Subang regency
7E	Public unrest	No public unrest occurrence	Access road development	<p>a. Measurement of people number whom feel worried of access road operation activity</p> <p>b. Measurement is done by interview using questionnaire (primary data)</p> <p>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)</p> <p>d. Information and data that need to be explored deeper, will be done deep interview with key informant, such as with public figure</p> <p>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</p>	Around the seaport project location	Before development and after finishing	Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia	<p>a. Ministry of Environment and Forestry Republic of Indonesia</p> <p>b. Environment agency of Subang regency</p>	<p>a. Ministry of Environment and Forestry Republic of Indonesia</p> <p>b. Environment agency of West Java province</p> <p>c. Environment agency of Subang regency</p>
<b>OPERATIONAL PHASE</b>									
<b>8.</b>	<b>Procurement of Labor</b>								
8A	Appearance of infectious diseases	The number of infectious disease is not increased	Operational source	<p>a. Giving report about implementation of HIV / AIDS prevention program</p> <p>b. Giving report and</p>	Around the activity location	Once a year (during 3 years)	Directorate General of Sea Transportation, Ministry of	<p>a. Ministry of Environment and Forestry Republic of</p>	<p>a. Ministry of Environment and Forestry Republic of Indonesia</p>

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No	Monitored environmental impact			Environmental Monitoring Form			Environmental management institution		
	Type of Impact	Indicator / Parameter	Impact source	Method of Collection and Analysis Data	Monitoring location	Time and frequency	Implementer	Supervisor	Reporting
				maintenance of sanitary facility, water waste management facility, and garbage dump. c. Identifying patient number and comparing with data before construction			Transportation Republic of Indonesia	Indonesia b. Environment agency of Subang regency	b. Environment agency of West Java province c. Environment agency of Subang regency
<b>9.</b>	<b>Off-shore facility operation</b>								
9A	Decreasing of air quality (TSP and emission)	Air quality remains below environment quality standard based on Government regulation No. 41 years 1999 about air pollution control	Off-shore facility operation	Direct monitoring in the fields	Seaport area	Twice a year (Dry and rainy season)	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
9B	Decreasing of sea water change	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	Off-shore facility operation	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.	a. 1 point b. 10 points	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)	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
9C	Sea traffic disruption	No disruption of fishermen ships and vessels passing	Off-shore facility operation	Direct monitoring	Seaport location	Everyday	Directorate General of Sea Transportation,	a. Ministry of Environment and Forestry	a. Ministry of Environment and Forestry Republic

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No	Monitored environmental impact			Environmental Monitoring Form			Environmental management institution		
	Type of Impact	Indicator / Parameter	Impact source	Method of Collection and Analysis Data	Monitoring location	Time and frequency	Implementer	Supervisor	Reporting
		through the sailing channel					Ministry of Transportation Republic of Indonesia	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
9D	Waste generation	No waste pollution in to the sea	Off-shore facility operation	Monitoring the presence and function of RF (Receiving facility), TPS B3 (collection of toxic and hazardous waste/B3) and domestic collection	RF, TPS B3, domesticTPS	a. Maintenance of RF is done everyday b. Maximum storage ≤ 90 days c. Transporting is done minimum every 2 days	Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia	a. Ministry of Environment and Forestry Republic of Indonesia b. Dinas Lingkungan Hidup Kabupaten Subang	a. Ministry of Environment and Forestry Republic of Indonesia b. Dinas Lingkungan Hidup Provinsi Jawa Barat c. Dinas Lingkungan Hidup Kabupaten Subang
<b>Supplementary Note on Approved AMDAL</b>									
9E	Disturbance of Marine Life (Nekton and Benthos)	Marine life is not much disturbed by the project	Off-shore facility operation	Monitoring nekton and benthos then comparing with base line survey result	5 locations at the sea	Nekton: 2 times a year (rainy and dry season)  Benthos: 1 time a year	Directorate General of Sea Transportation	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
<b>10.</b>	<b>On-shore facility operation</b>								
10A	Increasing of water run-off rate	No excessive water run-off	On-shore facility operation	Direct monitoring of drainage condition	Along the access road	Conducted 2 times at rainy season when heavy rain, during 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	a. Ministry of Environment and Forestry Republic of Indonesia b. Environment agency of West Java province c. Environment

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No	Monitored environmental impact			Environmental Monitoring Form			Environmental management institution		
	Type of Impact	Indicator / Parameter	Impact source	Method of Collection and Analysis Data	Monitoring location	Time and frequency	Implementer	Supervisor	Reporting
								regency	agency of Subang regency
10B	Decreasing of sea water quality	Sea water quality remains below environment quality standard based on Kepmen LH No 51 year 2004 about sea water standard quality	On-shore facility operation	Conducting sea water quality laboratory analysis 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.	10 points	a. For parameter of complete water quality is conducted 4 times in a year at 2 points (Surface and bottom)	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
10C	Disruption of terrestrial fauna (bird)	Precense of habitats for terrestrial fauna	On-shore facility operation	Direct monitoring to the new habitat	New habitat	Once a year	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
<b>11</b>	<b>Maintenance of basin and sailing channel</b>								
11A	Decreasing of sea water quality (TSS)	TSS concentration below environment quality standard based on Kepmen LH No 51 year 2004 Sea water quality standard Appendix I (80 mg/L)	Maintenance of basin and sailing channel	Conducting TSS monitoring 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.	10 points	Sampling of TSS is done everyday during maintenance dredging activity that causing turbidity	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
<b>12.</b>	<b>Access road operation</b>								

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No	Monitored environmental impact			Environmental Monitoring Form			Environmental management institution		
	Type of Impact	Indicator / Parameter	Impact source	Method of Collection and Analysis Data	Monitoring location	Time and frequency	Implementer	Supervisor	Reporting
12A	Decreasing of air quality (TSP and emission)	Air quality does not decrease because of operation	Access road operation	Monitoring directly	Along the access road	Twice a year (dry and rainy season)	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
12B	Increasing of water run-off rate	No occurrence of excessive water run-off	Access road operation	Direct monitoring for the condition of the drainage	Along the access road	Conducted 2 times at rainy season when heavy rain, during 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
12C	Land conversion	Appearance of settlements and various public facility and economic facility around access road location	Access road operation	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)	Along the access road	During operational (dry and rainy season)	Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia	a. Ministry of Environment and Forestry Republic of Indonesia b. Dinas Lingkungan Hidup Kabupaten Subang	a. Ministry of Environment and Forestry Republic of Indonesia b. Dinas Lingkungan Hidup Provinsi Jawa Barat c. Dinas Lingkungan Hidup Kabupaten Subang
12D	Road damage	Road damage can be minimized	Traffic on the access road	Direct monitoring to the road damage	Pantura road	Twice a year (3 years)	Directorate General of Sea Transportation, Ministry of Transportation Republic of Indonesia	a. Ministry of Environment and Forestry Republic of Indonesia b. Environment agency of	a. Ministry of Environment and Forestry Republic of Indonesia b. Environment agency of West Java province

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No	Monitored environmental impact			Environmental Monitoring Form			Environmental management institution		
	Type of Impact	Indicator / Parameter	Impact source	Method of Collection and Analysis Data	Monitoring location	Time and frequency	Implementer	Supervisor	Reporting
								Subang regency	c. Environment agency of Subang regency

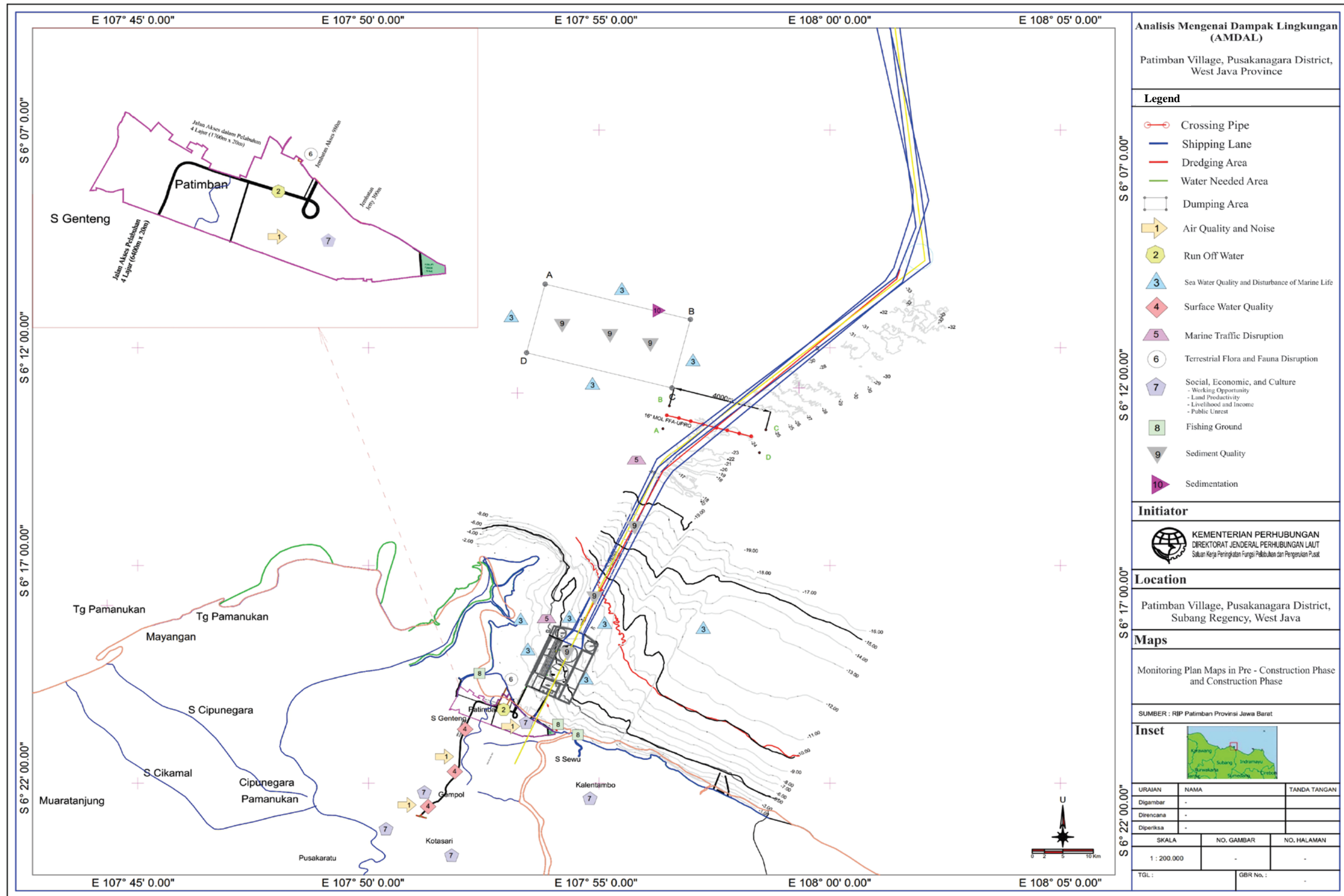


Figure 3.1. Monitoring Maps of Patimban Seaport in Pre-construction and Construction Phase





# **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