Initial Environmental Examination

March 2018

Indonesia: Neighborhood Upgrading and Shelter Project – Phase 2

CURRENCY EQUIVALENTS
(as of 15 March 2018)

Currency unit – rupiah (Rp)
Rp1.00 = $0,0000725
$1.00 = Rp13,783

ABBREVIATIONS

ADB – Asian Development Bank
APBD – Anggaran Pendapatan dan Belanja Daerah (Regional Budget for Income and Expenditure)
DGHS – Directorate General of Human Settlements

NOTES

(i) The fiscal year (FY) of the Government of Indonesia and its agencies ends on 31 December. “FY” before a calendar year denotes the year in which the fiscal year ends, e.g., FY2011 ends on 31 December 2011.

(ii) In this report, "$" refers to US dollars.

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I.E.E.
INITIAL ENVIRONMENTAL EXAMINATION
KENDARI CITY

THE GOVERNMENT OF KENDARI CITY
FISCAL YEAR 2017
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ABBREVIATIONS

ADB : Asian Development Bank
AMDAL : Environmental Impact Assessment
Bappeda : Development Planning Agency (at city level)
CIO : Community Implementing Organization
BLH : Environmental Agency (at city level)
BMKG : Meteorological, Climatological and Geophysical Agency
BOD : Biochemical Oxygen Demand
BPN : National Land Agency (at city level)
CA : Community Advisory
CC : City Coordinator
COD : Chemical Oxygen Demand
DGHP : Directorate General of Housing Provision
DGHS : Directorate General of Human Settlements
EMP : Environmental Management Plan
IEE : Initial Environmental Examination
IPLT : Sewage Treatment Plant
LCO : Local Coordinating Office
MASL : Meter above sea level
MBR : Low Income Community
NGOs : Non-Government Organizations
NSD : New Site Development
NUSP : Neighborhood Upgrading and Shelter Project
O & M : Operation and Maintenance
PIU : Project Implementation Unit (locally known as “Satker”)
PDAM : Local government-owned Water Supply Company
PLN : State-owned Electricity Company
PMU : Project Management Unit
PPK : Commitment Officer
RMC : Regional Management Consultant
RPJMN : National Medium-Term Development Plan
RTH : Green Open Space
RTRW : Spatial Plan (at city level)
SATKER : Project Implementation Unit
SIAP : Slum Improvement Action Plan
SPS : Safeguard Policy Statement
TPA : Municipal waste landfill
TPS : Temporary domestic waste storage site/shelter
TSS : Total suspended solid
UKL-UPL : Environmental Management Effort - Environmental Monitoring Effort Document
UMP : Provincial Minimum Wages
UPTD : Government Technical Implementation Unit (at city level)
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EXECUTIVE SUMMARY

1 Project background. The Neighborhood Upgrading and Shelter Project - Phase 2 (NUSP-2) is a community driven development project included in the National Medium-Term Development Plan (known as RPJMN) 2015 - 2019 of Indonesian Government with the objective to achieve the “Cities without Slums Program” and address ongoing issues related to rapid urbanization. The project will be implemented in 20 cities, supported by the Asian Development Bank (ADB) and executed by the Directorate General of Human Settlements (DGHS) - the Ministry of Public Works and Housing (MPWH). This project is expected to contribute towards meeting the Millennium Development Goals (MDG), particularly in improving the lives of slum dwellers and reducing (by half) the proportion of households without sustainable access to safe drinking water and basic sanitation.

2 Kendari City as the capital of Southeast Sulawesi Province encounters rapid urbanization and high population growth of about 2.8% per annum. These conditions have resulted in that the low-income families are forced to settle in disadvantaged neighborhoods (slum settlements) without basic sanitation and safe drinking water due to lacking financial resources and infrastructure. The slum settlements in Kendari City have reached about 497.27 hectares and are distributed in 53 neighborhoods. This city has been selected to participate in the NUSP-2 and developed the Slum Improvement Action Plan (SIAP) in 2015 as required to implement the project.

3 Environmental safeguards. Asian Development Bank (ADB) will finance the construction of facility and infrastructure for the NSD in Kelurahan Purirano (Purirano NSD), Kendari city; and therefore, according to ADB’s Safeguard Policy Statement (ADB SPS 2009) on Environment and the Environmental Assessment and Review Framework (EARF) document prepared by the DGHS for the NUSP Phase 2 Project (January 2014), an Initial Environmental Examination (IEE) for this Category B Project is required. In addition, the NUSP-2 has secured the approval for the environmental management and monitoring effort (known as UKL-UPL) document and obtained the Environmental Permit for the Purirano NSD on 29 December 2016 from the Environmental Agency of Kendari Municipality to comply with the requirements of Government Regulation No. 27/2012 on Environmental Permitting. This IEE and UKL-UPL are the environmental safeguard documents that should be complied by the Project Executing Agency during the project implementation.

4 Existing development at Purirano NSD. The local government (Kendari Municipality) has provided approximately 4.19-hectare land on R. E. Martadinata Street in Kelurahan (neighborhood) Purirano for the NSD. This site is designated as the permanent housing area according to the Spatial Plan of Kendari City for 2012 – 2032. This Spatial Plan is enacted by the Local Regulation (Peraturan Daerah) No 1/2012 (dated 29 February 2012). Further, the local government has undertaken assessment of potential beneficiaries (i.e., low-income families) from Kelurahan (neighborhood) Punggaloba and Purirano for resettlement at the Purirano NSD. The construction of houses was commenced in 2016, and this has progressed through 2017. The existing development of Purirano NSD has included 225 houses of 36 m², and neighborhood road, drainage system, and groundwater well for the clean water supply that has been partly constructed and financed by DGHP and local government (Kendari
5 **Planned development at Purirano NSD.** The NSD plans to complete construction of the facility and infrastructure for the neighborhood in 2018 and followed by a maintenance period of 6 months. This construction activity will be funded by ADB. Subsequent to this, the maintenance and operation of the Purirano NSD will be handed over to the local government (Kendari Municipality) and managed by the Purirano NSD management (*Badan Pengelola*) of the Public Work Agency of Kendari Municipality.

6 The construction that will be funded by ADB is presented in the following table.

<table>
<thead>
<tr>
<th>Items</th>
<th>Planned Facility and Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighborhood road (paving blocks)</td>
<td>1,266 m in total (2 to 8-meter width)</td>
</tr>
<tr>
<td>Open drainage channel (cemented gravel/cobble)</td>
<td>2,589 m in total</td>
</tr>
<tr>
<td>Storm water retention pond (unlined)</td>
<td>260 m²</td>
</tr>
<tr>
<td>Clean water supply</td>
<td></td>
</tr>
<tr>
<td>- Pipeline (high density poly ethylene)</td>
<td>2,824 m in total</td>
</tr>
<tr>
<td>- Elevated reservoir (concrete)</td>
<td>30 m³</td>
</tr>
<tr>
<td>- Meter box</td>
<td>225 units</td>
</tr>
<tr>
<td>Household (solid) waste management</td>
<td>Temporary waste disposal storage/shelter</td>
</tr>
<tr>
<td></td>
<td>2 units of garbage motor vehicle</td>
</tr>
<tr>
<td></td>
<td>2 large waste bins</td>
</tr>
<tr>
<td>Retaining wall for areas prone to landslide/erosion</td>
<td>662 m³</td>
</tr>
<tr>
<td>Street lighting*</td>
<td>83 units</td>
</tr>
<tr>
<td>Landscaping and signage</td>
<td>1 package</td>
</tr>
</tbody>
</table>

Note: *Power pole and erection will be undertaken by the state-owned electricity company PT PLN.

7 Prior to commencing the construction (pre-construction phase) at the Purirano NSD, the PMU requires the local government (Kendari Municipality) to carry out the dissemination on the project, including its anticipated disturbance and environmental impacts as well as corresponding migration measures; and to establish a Grievance Redress Mechanism (GRM). The construction phase will include: recruitment of construction labors; mobilization of equipment and construction materials; and construction of facility and infrastructure itself as presented in the above table. Upon completion of the construction activity, the Contractor will maintain the facility and infrastructure already constructed for 6-month period.

8 **Environmental and social baseline conditions.** The Purirano NSD has an elevation of approximately 60 - 75 meters above sea level, and a slope of 8 - 15%. The highest rainfall was about 245 mm in March whereas the lowest rainfall was about 45 mm in September based on the average data recorded from 2005 to 2015.

9 The ambient air quality at the Purirano NSD is considered relatively good as the related parameters (i.e. sulphur dioxide, nitrogen dioxide, carbon monoxide, particulate, lead and ozone) analyzed are well below the threshold value stipulated by Government Regulation No. 41/999 on Air Pollution Control. The noise level at the neighborhood is measured well below 55
dB(A) which is the threshold value stipulated by the Ministry of Environment Decree No. 48/1996 on Noise Level Standard.

10 The groundwater quality for the clean water supply at Purirano NSD are still relatively good as the key parameters analyzed (i.e. pH, iron, fluoride, chloride, manganese, sulfate, and coliform) are below the threshold values stipulated in the Ministry of Health Regulation No. 416/1990, Attachment II on Clean Water Quality Standard.

11 There are no flora and fauna species identified at the Purirano NSD categorized as endemic, rare, protected or other conservation status. Further, there is no nearby stream, river or sea considered ecologically important within the neighborhood.

12 Based on the statistical data of Kendari in Number Year 2015, the number of residents in Kelurahan Purirano was 1,256 people, comprising 348 families. About 815 people (163 families) were categorized low-income family, with an average income of 1 - 2 million rupiah/month. This low-income family primarily works in the informal sector such as fishermen, daily labors, and farmers. The population density is 541/km$^2$ categorized as low-density population area. Culturally, there is neither historical building nor archaeological site located in the Purirano NSD site.

13 **Anticipated environmental impacts and planned mitigation measures.** The pre-construction, construction and maintenance/operation activities will generate relatively minimal environmental impacts limited within the Purirano NSD site. If well managed, these impacts are unlikely to be encountered beyond the perimeter of the site. The impacts of this type of neighborhood development are anticipated on: public perception and attitude towards the project and contractors; ambient air quality and noise level; sedimentation and surface water quality; groundwater resources; work and business opportunities; and occupational health, safety and hygiene.

14 Corresponding measures that should be implemented to mitigate the environmental impacts mentioned earlier are, among others:

- Conduct dissemination about the project and planned activity prior to the construction phase and during maintenance period;
- Establish a Grievance Redress Mechanism to manage complaints and concerns raised by the community and other stakeholders in a structured manner;
- Conduct water spraying of the construction sites as well as along the main road leading to the Purirano NSD construction at least once per day or more frequent during dusty road condition;
- Construct and maintain a temporary drainage channel and settling ponds to manage runoff and siltation during the construction period;
- Limit groundwater abstraction up to 1.3 liter/second and for a period of up to 8 hours per day to reduce the drawdown of groundwater table;
- Conduct induction for labors on occupational health, safety and hygiene; HIV/AIDS and other infectious diseases; and the use of protective equipment (PPE) as the requirement
to work as construction labor;

- Provide and maintain adequate toilet, bathing and washing facilities at the construction site.

15 The mitigation measures and monitoring requirements are detailed in the Environmental Management Plan (EMP) of this IEE, including the distribution of responsibilities of the Contractor, City Satker and Local Coordinating Office within the Kendari Municipality, and Project Management Unit – the Directorate General of Housing Settlements. The project has estimated a cost of USD 9,135 will be required for implementing the mitigation measures and monitoring requirements defined in the EMP.

16 As part of information disclosure, the IEE, UKL-UPL and quarterly monitoring report of the Purirano NSD will be made available to the public. The IEE and its update, if any, and quarterly monitoring report will be posted at ADB’s website. The information of regarding NUSP-2 will be provided at the City Satker Office (Public Work Agency of Kendari City) and the office of NSD management board (Badan Pengelola) in form of document copies, leaflet, booklets and short movie.
Chapter 1 Introduction

1.1 Project Background

1. The Neighborhood Upgrading and Shelter Project Phase 2 (NUSP-2) is a community driven development project stated in the 2015 - 2019 National Medium-Term Development Plan of Indonesian Government. Implementation of the NUSP-2 project is underway to achieve the "Cities without Slums Program" and address ongoing issues on slum settlements related to rapid urbanization. This project will be implemented in 20 cities, supported by the Asian Development Bank (ADB) and executed by the Ministry of Public Works and Housing (MPWH), particularly the Directorate General of Human Settlements (DGHS) as the key Project Executing Agency (EA). The main tasks of the DGHS are to develop and implement inclusive pro-poor city development plans and improve living conditions in slum areas.

2. The NUSP-2 project is implemented through collaborative works involving: the DGHS to construct infrastructure; the Directorate General of Housing Provision (DGHP) to construct the houses; and the selected local government (regency/municipality) to provide at least 2-hectare vacant land ready for the establishment of new site development. This project is expected to contribute towards meeting the Millennium Development Goals (MDG), particularly to improve the lives of slum dwellers and to reduce (by half) the proportion of households without sustainable access to safe drinking water and basic sanitation. The outputs of the project are:

- Institutional capacities for managing pro-poor urban development strengthened;
- Infrastructure in slum neighborhood upgraded; and
- New settlements for poor families established.

3. Kendari City as the capital of South-east Sulawesi Province has been selected as one of the participating city of the NUSP Phase 2 Project. Like other growing cities in Indonesia, Kendari City encounters rapid urbanization and high population growth of about 2.8% per annum. These conditions have resulted in that the low-income families are forced to settle in disadvantaged neighborhoods (slum settlements) without basic sanitation infrastructure due to lack of financial resources and affordable housing. These slum settlements have been identified in coastal areas, river banks, economic activity centers and protected areas. The local government (Kendari Municipality) as the city administration has undertaken field verification that the slum settlements in the city have reached about 497.27 hectares, and these settlements are distributed in 53 neighborhoods. The existence of these slum settlements is confirmed through the Mayor of Kendari Decree No. 767/2014 (this Decree has no date) on Determination of Slum Neighborhoods in Kendari City.

4. Based on the above framework, the local government (Kendari Municipality) has developed a Slum Improvement Action Plan (SIAP) in 2015 as the basis to implement the NUSP-2 project, particularly the construction of facilities and infrastructure at the Purirano New Site Development (known as Purirano NSD site). This Initial Environmental Examination (IEE) describes the scope of the mention construction projects, including its anticipated impacts and corresponding mitigation measures as well as those responsible for implementing these measures.
1.2 Objective of the Initial Environmental Examination

ADB will support the construction of facilities and infrastructure for the Purirano NSD in Kendari city; and therefore, as part of ADB's Safeguard Policy Statement (ADB SPS 2009) on Environment, an Initial Environmental Examination (IEE) for this scope of work should be developed. The IEE development is mandated in the Environmental Assessment and Review Framework document prepared by the Directorate General of Human Settlements (DGHS or known as Direktorat Jenderal Cipta Karya) for the NUSP Phase 2 Project (January 2014). This IEE is prepared by the local government (Kendari Municipality), as integral part of the Purirano NSD proposal, for subsequent endorsement by DGHS and ADB.

The IEE is the reference document to assess environmental impacts and set Environmental Management Plan (EMP), defining mitigation measures and monitoring requirements based on the anticipated impacts to be undertaken by the project in implementing the Purirano NSD development including its housing infrastructure. This IEE, particularly the EMP, should be used by the Executing Agencies at national, provincial and city levels (based on their respective functions) to implement mitigation measures in reducing the project’s impacts and monitor effectiveness of such measures during the pre-construction, construction and operation phases. The IEE does not replace the Environmental Management Effort - Environmental Monitoring Effort document (UKL-UPL) that has been prepared and approved by the Environmental Agency of Kendari in December 2016, and therefore the requirements of both IEE and UKL-UPL should be implemented by the Project Executing Agency and/or its appointed local authorities. (Appendices 1 and 2).

The contents of the IEE include: executive summary; introduction; applicable environmental legal and administrative framework; project description; environmental and social baseline; anticipated environmental impacts and mitigation measures; information disclosure and stakeholder consultation and participation; grievance redress mechanism; environmental management plan; conclusions and recommendations; and references used.
2.1 ADB Environmental Safeguard Policy

ADB requires environmental safeguard measures in all aspects of ADB operations, in accordance with ADB SPS 2009, which states that ADB requires an environmental assessment of all activity loans, program loans, sectoral loans, loan sector development programs, and loans involving financial agent, and private sector loans. The type of environmental assessment required depends on the nature, magnitude, significance, and sensitivity of environmental impact of the project. ADB uses the following categorization to screen expected environmental impacts of a Project:

- **Category A**: Projects could have significant and adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works. An Environmental Impact Assessment (EIA) is required for the category A project.

- **Category B**: Projects could have some adverse environmental impacts, but of less degree or significance than those of category A. These impacts are site-specific and can be readily addressed through common mitigation measures. An Initial Environmental Examination (IEE) is required for the category B project.

- **Category C**: Projects are likely to have minimal or no adverse environmental impacts. No environmental assessment is required although environmental implications need to be reviewed.

- **Category Financial Intermediary (FI)**: Projects involves a credit line through financial intermediary or an equity investment. The FI must apply for an environmental management system.

The Purirano NSD development in Kendari City including the construction or upgrading of its infrastructure, will improve the welfare of its community, and is expected to generate typical impacts associated with relatively small-scale building and infrastructure construction activities. These impacts, which neither adverse nor significance, can be readily mitigated with common mitigation measures. Therefore, the IEE is required for the mentioned NSD as the environmental safeguard document required by ADB.

2.2 Requirements of Government of Indonesia

Government of Indonesia has environmental protection and management policy and legal framework stipulated through Environmental Protection and Management Act No. 32/2009. Subsequently, the Government Regulation (Peraturan Pemerintah) No. 27/2012 on Environmental Permit is stipulated as one of the implementing regulation, requiring that that every business and/or activity that will generate significant environmental impacts must have an **AMDAL** (Procedures of Environmental Impact Assessment), whereas those that do not generate significant impacts must have an Environmental Management Effort and Environmental Monitoring Effort (**UKL-UPL**) document. These documents are subject to approval by the Ministry of Environment and Forestry or local governments (i.e. provincial and regency/city) depending on the nature, scope, and administrative location of the business.
and/or activity. Based on the AMDAL or UKL-UPL approval, the mentioned GR 27/2012 requires that the business and/or activity apply for the Environmental Permit (Izin Lingkungan) to the same government authority granting the AMDAL and UKL-UPL approval.

11 Activities that do not require either AMDAL or UKL-UPL should submit a statement letter regarding the commitment to undertake environmental management and monitoring (Surat Pernyataan Pengelolaan dan Pemantauan Lingkungan or SPP).  

12 Other key regulations related to the environmental assessment that are adhered to by the Purirano NSD development are as follows:

   i.  Minister of Environment Regulation No. 5/2012 on Type of Business and/or Activity Requiring AMDAL.

   ii. Minister of Environment Regulation No. 16/2012 on Guidelines for the Preparation of Environmental Documents.

   iii. Minister of Public Works Regulation No. 10/PRT/M/2008 on Types of Business and/or Activity in Public Works Sector Requiring UKL-UPL.

13 Based on the Indonesian environmental laws and regulations described earlier, the Purirano NSD development has developed the required UKL-UPL and secured its approval based on the Head of Kendari Environmental Agency Decree No. 191/2016 (dated 29 December 2016) on Approval for the UKL-UPL Document of the New Site Development in Kendari City; and secured the required environmental permit from the same authority.
Chapter 3  Project Description

3.1 The Need for NSD Implementation

Following the implementation of the project, the local government (Kendari Municipality) has undertaken assessment of potential beneficiaries (i.e., low-income families) of Punggaloba and Purirano neighborhoods who are entitled to resettlement to the Purirano NSD. To this end, the construction of houses in Purirano NSD was commenced in 2016, and this was progressed through to 2017. Some facilities and infrastructure have also been constructed in 2017.

Neighborhood roads, clean water supply, and communal park/playground are among others the public facilities and infrastructure that will be constructed at the Purirano NSD using ADB funding in 2018. This construction is important undertaking for the Purirano NSD and its residents in terms of providing safe mobility, social interaction, and affordable access to basic sanitation facilities. The following sub-sections describe both the existing and future development of the Purirano NSD.

3.2 Existing Development

The local government (Kendari Municipality) has provided approximately 4.19-hectare land for the Purirano NSD on R. E. Martadinata Street, in Purirano neighborhood, Kendari City. The use of this area for this NSD has been legally designated as permanent housing area based on the Spatial Plan (Rencana Tata Ruang Wilayah or RTRW) of Kendari City for 2012 – 2032 based on Local Regulation (Peraturan Daerah) No. 1/2012 (dated 29 February 2012) issued by the Mayor of Kendari and the Local House of Representative (Dewan Perwakilan Rakyat Daerah or DPRD) of Kendari City (Appendix 3). The site designated in the RTRW for the Purirano NSD is shown in Figure 1. The location of Purirano NSD in Kendari city is shown in Figure 2.

The local government (Kendari Municipality) owns the land mentioned earlier based on the Statement Letter (Surat Keterangan) No. 593/3633 and 032/5746 issued by the Regional Secretary of Kendari City (these letters have no date). Further, this land ownership by the local government is also endorsed by the DPRD of Kendari City Letter No. 648.2/177/DPRD/2015 (dated 5 May 2015) concerning Approval of Utilization of Land Ownership by the Local Government (Kendari Municipality). These three letters are included in Appendices 4, 5 and 6.

The first development phase of Purirano NSD included construction of 105 houses of Type 36/120 i.e., 36-m² house on 120-m² land, some infrastructure and public facilities in 2016. The second development phase comprised 120 houses of Type 36/96 i.e., 36 m² house on 96 m² land, some infrastructures and public facilities constructed in 2017. These houses have the same specification of construction materials, including hard rock for foundation, cemented brick for the wall, light steel for the roof frame, and galvalume zinc sheet for the roof. The aerial view and the existing layout of Purirano NSD site are shown in Figures 3 and 4.
Figure 1 The Purirano NSD Site Designated in the Spatial Plan of Kendari City
Figure 2 Purirano NSD Site in Kendari City
Figure 3 Aerial View of Existing Purirano NSD Site
Figure 4 Existing Development of Purirano NSD

Note:
- All housing units were constructed by DGHP
- The highlighted segment is infrastructure constructed by DGHP, i.e. = roads and drainage.
- Infrastructure in the whole NSD site (except for the highlighted segment) will be constructed by NUSP Phase 2 in 2018.
Public facilities and infrastructures that have been constructed at the Purirano NSD in 2016 – 2017 are detailed in Table 1, and these include: 225 houses; 591-meter road; 1286-meter open drainage channel; deep well and reservoir for the clean water supply; and communal toilet and washing facility.

### Table 1 Existing Development

<table>
<thead>
<tr>
<th>No.</th>
<th>Items</th>
<th>Time of Construction</th>
<th>Volume/Dimension</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>House and septic tank system</td>
<td>2016 – 2017</td>
<td>• Type 36 m² house/96 m² land (Type 36/96): 120 units&lt;br&gt;• Type 36/120: 105 units&lt;br&gt;• Each house is provided with a septic tank system (using a 15 cm thick concrete slab cover, fitted with contour pits and semi-permanent septic tank cover.)</td>
<td>DGHP</td>
</tr>
<tr>
<td>2</td>
<td>Neighborhood road using paving blocks</td>
<td>2016</td>
<td>• 9-meter wide road (ROW 10 m): 82-meter long&lt;br&gt;• 4-meter wide road (ROW 5.2 m): 434.5-meter long&lt;br&gt;• 4-meter wide road (ROW 5 m): 59-meter long&lt;br&gt;• 2.4-meter wide road (ROW 3 m): 15.3-meter long</td>
<td>DGHP</td>
</tr>
<tr>
<td>3</td>
<td>Drainage</td>
<td>2016</td>
<td>• 1,105.62-meter long of drainage channel (width: 0.3 m)&lt;br&gt;• 180-meter long of drainage channel (width: 0.5 m)</td>
<td>DGHP</td>
</tr>
<tr>
<td>4</td>
<td>Clean water reservoir</td>
<td>2016</td>
<td>2 unit, with 30 m³ capacity each</td>
<td>Local Government (Kendari Municipality)</td>
</tr>
<tr>
<td>5</td>
<td>Deep well for clean water supply</td>
<td>2017</td>
<td>1 unit, the depth of well is 40 m, designed to supply water at 1.3 liter/second</td>
<td>Local Government (Kendari Municipality)</td>
</tr>
<tr>
<td>6</td>
<td>Communal toilet and washing facility</td>
<td>2015</td>
<td>1 unit</td>
<td>Local Government (Kendari Municipality)</td>
</tr>
<tr>
<td>8</td>
<td>Wastewater Treatment Plant (IPAL)</td>
<td>2015</td>
<td>1 unit (this IPAL will not be connected to treat sewage from the septic tank system)</td>
<td>Local Government (Kendari Municipality)</td>
</tr>
</tbody>
</table>

### 3.3 Future Development

The NUSP-2 project plans to construct public facilities and infrastructure for the Purirano NSD in 2018. No more houses will be constructed at this site. ADB will provide funding for the followings (Table 2):

- Construction of: neighborhood roads; drainage system and associated retention ponds; reservoir and piping system for the clean water supply; and retaining wall.
- Provision of facility and equipment to support solid waste management within the housing complex;
- Provision of street lighting, signages, and landscaping.
Table 2 Facility and Infrastructure to be constructed

<table>
<thead>
<tr>
<th>No.</th>
<th>Items</th>
<th>Volume/dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Neighborhood roads made of paving block</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Road ROW 9.2 Wide 8 m</td>
<td>50 m</td>
</tr>
<tr>
<td></td>
<td>b. Road ROW 7.2 Wide 6 m</td>
<td>53 m</td>
</tr>
<tr>
<td></td>
<td>c. Road ROW 5.5 Wide 4.3 m</td>
<td>151 m</td>
</tr>
<tr>
<td></td>
<td>d. Road ROW 5.2 Wide 4 m</td>
<td>378 m</td>
</tr>
<tr>
<td></td>
<td>e. Road ROW 4.9 Wide 4 m</td>
<td>99 m</td>
</tr>
<tr>
<td></td>
<td>f. Road ROW 4.7 Wide 3.5 m</td>
<td>99 m</td>
</tr>
<tr>
<td></td>
<td>g. Road ROW 4.5 Wide 3.3 m</td>
<td>27 m</td>
</tr>
<tr>
<td></td>
<td>h. Road ROW 4.2 Wide 3 m</td>
<td>167 m</td>
</tr>
<tr>
<td></td>
<td>i. Road ROW 2 Wide 2 m</td>
<td>50 m</td>
</tr>
<tr>
<td></td>
<td>j. Pedestrian road around the retention pond</td>
<td>192 m</td>
</tr>
<tr>
<td>2.</td>
<td>Drainage System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Drainage for ROW 9.2 Wide 8 m</td>
<td>100 m</td>
</tr>
<tr>
<td></td>
<td>b. Drainage for ROW 7.2 Wide 6 m</td>
<td>106 m</td>
</tr>
<tr>
<td></td>
<td>c. Drainage for ROW 5.5 Wide 4.3 m</td>
<td>302 m</td>
</tr>
<tr>
<td></td>
<td>d. Drainage for ROW 5.2 Wide 4 m</td>
<td>756 m</td>
</tr>
<tr>
<td></td>
<td>e. Drainage for ROW 4.9 Wide 4 m</td>
<td>198 m</td>
</tr>
<tr>
<td></td>
<td>f. Drainage for ROW 4.7 Wide 3.5 m</td>
<td>198 m</td>
</tr>
<tr>
<td></td>
<td>g. Drainage for ROW 4.5 Wide 3.3 m</td>
<td>54 m</td>
</tr>
<tr>
<td></td>
<td>h. Drainage for ROW 4.2 Wide 3 m</td>
<td>334 m</td>
</tr>
<tr>
<td></td>
<td>i. Concrete Plate</td>
<td>126 m</td>
</tr>
<tr>
<td></td>
<td>j. Plat Deucker</td>
<td>5 m</td>
</tr>
<tr>
<td></td>
<td>k. Drainage B-1M</td>
<td>12.5 m</td>
</tr>
<tr>
<td></td>
<td>l. Drainage Type 1</td>
<td>107 m</td>
</tr>
<tr>
<td></td>
<td>m. Drainage Type 2</td>
<td>290 m</td>
</tr>
<tr>
<td>3.</td>
<td>• Retention Pond Type 1</td>
<td>139.5 m³</td>
</tr>
<tr>
<td></td>
<td>• Retention Pond Type 2</td>
<td>120.8 m³</td>
</tr>
<tr>
<td>4.</td>
<td>Water Supply System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Water Pipeline System</td>
<td>2,824 m</td>
</tr>
<tr>
<td></td>
<td>b. Water Reservoir</td>
<td>1 Unit</td>
</tr>
<tr>
<td></td>
<td>c. Meter Box</td>
<td>225 Units</td>
</tr>
<tr>
<td>5.</td>
<td>Waste System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Garbage Motor Vehicle</td>
<td>2 Units</td>
</tr>
<tr>
<td></td>
<td>b. Waste Containers</td>
<td>2 Units</td>
</tr>
<tr>
<td></td>
<td>c. Temporary Waste Storage</td>
<td>1 Unit</td>
</tr>
<tr>
<td>6.</td>
<td><em>Talud</em> (Retaining Wall)</td>
<td>662 m³</td>
</tr>
<tr>
<td>7.</td>
<td>Street Lighting</td>
<td>83 Units</td>
</tr>
<tr>
<td>8.</td>
<td>Landscape and Signages</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Signage</td>
<td>3 Units</td>
</tr>
<tr>
<td></td>
<td>b. Tree Planting</td>
<td>65 Units</td>
</tr>
<tr>
<td></td>
<td>c. Park and Landscape</td>
<td>3 Units</td>
</tr>
<tr>
<td></td>
<td>d. Street Furniture</td>
<td>1 Package</td>
</tr>
</tbody>
</table>

3.3.1 Pre-construction Phase

21 Development and Evaluation of UKL-UPL Document. The UKL-UPL document for Purirano NSD was completed and approved by the Environmental Agency of Kendari
Municipality in 2016 to meet the requirements of Government Indonesia on Environmental Permitting. Subsequently, the Environmental Permit for the Purirano NSD has also been secured from the same authority.

The UKL-UPL document was disseminated, as part of the evaluation process, on 26 October 2016 (at the office of Public Works Agency of Kendari City) and attended by officials of Kelurahan Purirano, City Satker, Public Works Agency of Kendari, community representatives of Kelurahan Purirano community, and the Consultant from Muhammadiyah University of Kendari (Figure 5). The main agenda discussed were the NSD development plan, potential impacts such as wastewater, solid waste, noise and air pollution, and management measures to be undertaken, and the need of labour for construction activity. In this event, 5 out of 20 participants were women and they are actively involved in the discussion. The response of the personnel attending this event on the NSD activity was generally positive. The list of attendance of the UKL-UPL evaluation/dissemination is included in Appendices 7 and 8. The Minute of Meeting of the mentioned dissemination event is not available.

Figure 5 Evaluation of UKL-UPL Document of Purirano NSD

Dissemination of Construction Activities at Purirano NSD. The PMU will require the local government (Kendari Municipality) to carry out an appropriate dissemination prior to commencement of the construction activity at the Purirano NSD site. This activity is expected to be held in February/March 2018 inviting the local government, contractor, and Purirano and nearby communities. The main agenda of this planned dissemination is to provide transparent information about the construction activity to be undertaken at the Purirano NSD site including local business and employment opportunities that may be generated from such construction activities; to establish a Grievance Redress Mechanism (GRM); and to hold a question & answer session for the invitees. The dissemination event is expected to take place at the office of Kelurahan Purirano.
3.3.2 Construction Phase

24 Recruitment of construction labors. The construction of facilities and infrastructure for the Purirano NSD requires skilled and unskilled labors. The requirement of labors consists of drivers, heavy equipment operators, project supervisor/foremen, stone men, carpenters, electricians, and daily labors. It is expected that most of labors will be recruited from the community around Kelurahan Purirano. Skilled labors that cannot be supplied from this kelurahan will be recruited from elsewhere. It is estimated that the total number of labors required for the construction activity is up to 80 people, but this number will be reduce in line with the work progress. The mobilization of labors from outside the area will be accommodated in a temporary labor basecamp that will be established at the construction site within the Purirano NSD.

25 Mobilization of equipment and construction materials. The mobilization of equipment will include small to medium-sized excavators for earthworks and small tonnage of dump trucks for transportation of construction materials. Construction materials to be mobilized are soils, rocks/stones, sand, cement, bricks, steels, and woods.

26 Construction of public facilities and infrastructures. The construction activities planned for the Purirano NSD in 2018 are scheduled for 6 months and include the followings:

a. Neighborhood road. According to the master plan for the development of NSD Purirano, the neighborhood road will be constructed using paving blocks construction underlying with a sand base (approximately 25-cm thick). The total length of the road to be constructed is approximately 1,266 m.

b. Drainage system. An open channel drainage system using cemented gravel with a total length of approximately 2,588 m will be constructed. The dimension of the drainage channel is in a range of 0.3 to 0.5 (width) and 0.4 to 0.6 m (depth). In addition to drainage system, two retention ponds to manage water runoff will be constructed at the lowest contour of NSD sites. There are two types of retention ponds: type 1 (139.5 m³ capacity) and type 2 (120.8 m³ capacity). In terms of retention pond construction, the heavy equipment to be used on site is excavator. The use of excavator will only take approximately 3-5 days for soil dredging, and the following activity will be done by the labor manually. The short duration use of excavator will not involve any activity of oil change for the equipment to minimize oil spills or leaks.

c. Clean water supply. The clean water supply for the Purirano NSD will be sourced from the existing 40-meter deep well designed at an abstraction rate of 1.3 liter/sec for pumping approximately 8-hour per day. In order to ensure fulfillment of water supply needed for the entire houses in the Purirano NSD, an additional elevated concrete reservoir of 30-m³ capacity will be constructed to complement the existing reservoirs. A total of approximately 2,824-m High Density Poly Ethylene (HDPE) pipeline of 2-inch and 4-inch diameter will be installed to supply clean water from the reservoirs to each house.

d. Solid waste temporary shelter. A temporary shelter for temporary waste storage will be constructed at the Purirano NSD using concrete/pavement floor and roof structure.
Solid, non-hazardous wastes from each house will be collected and stored at the temporary waste storage shelter prior to transportation to the final disposal site at Puuwatu (Tempat Pembuangan Akhir or TPA Puuwatu) in Kendari city.

e. **Retaining wall (talud).** The loose soil condition in the Purirano NSD requires retaining wall to be constructed at areas adjacent to the slope and near the main entrance area. Total volume of retaining wall to be constructed is approximately 662 m³.

f. **Street lighting.** It is planned to provide 83 units of street lights and its installation at several strategic points. PLN (the state-owned electricity company) will provide power sources, concrete electricity poles and erection of the electricity poles (12 m high).

g. **Landscaping and Signages.** Landscaping is designated to minimize air pollution and noise within the Purirano NSD. The work for landscape consists of 65 trees planting and construction of 3 parks/green area. The type of crops will be planted are Royal Palm, Pilicium Decipiens, Acaccia Mangium and Mimusops Elengi. The site plan showing the landscape location can be seen in Figure 6. The signage aimed to display information (street direction and building names). The signages consist of 3 units signage and a package of street furniture. The contractor is also responsible to provide safety signages during the construction works.

### 3.3.3 Post-construction Phase

27 **Final disposal of construction wastes.** The disposal of construction wastes (e.g. rocks, soil, paving, wood, sacks, sand etc.) at the end of the construction period will be undertaken to TPA Puuwatu in Kendari city. The construction activity of Purirano NSD will not use materials that potentially produce hazardous waste, including spillover oil from heavy equipment.

28 **Household (solid) waste management.** Solid wastes generated by the household activities from the Purirano NSD will be collected by a 3-wheeled garbage motor vehicles and stored at the temporary waste storage shelter. Two garbage motor vehicles will be provided. The organic waste (e.g. food/vegetable remains) and inorganic waste (e.g. cans, bottles and papers) will be separately collected from each house and transported to temporary shelter mentioned earlier. Subsequently, these wastes may be sorted for composting, recycling or disposal.

29 The waste material remains from this segregation will be transported to regularly to the TPA Puuwatu as the final disposal site. The expected volume of waste at the NSD settlement, assuming 225 HHs with average members of 5 resides, is approximately 2,812.5 liter/day (2.5 liter/person/day x 5 persons x 225 housing units). This waste will be transported by the related agency of Kendari City to the final disposal site at Puuwatu in Kendari city. The Local Government (Kendari Municipality) will provide an arm roll truck to collect the waste from the Purirano NSD.

30 **Maintenance of water Supply system.** This activity will include inspection of the water meter and regular cleaning of the water reservoir from moss and sediment.
Disposal of septic tank sludge. The sludge at the septic tank system is scheduled for removal once every three years. The sludge will be removed and transported to the sludge treatment facility at Anduonohu area in Kendari City.
Figure 6 Landscaping Plan
3.3.4 Schedule of Future Development

The construction of public facilities and infrastructure at Purirano NSD is scheduled for 2018 as shown in Table 3.

Table 3 Schedule of NSD Implementation

<table>
<thead>
<tr>
<th>Phase of Activities</th>
<th>2016</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oct</td>
<td>Nov</td>
</tr>
<tr>
<td>Pre-Construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socialization of Safeguard Documents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(UKL-UPL)</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Land Acquisition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land Clearing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recruitment and mobilization of labours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobilization of equipments and materials</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction of Infrastructures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post Construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobilization of construction waste</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operational and Maintenance for</td>
<td></td>
<td></td>
</tr>
<tr>
<td>waste and sludge management</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2018

Pre-Construction

Socialization of Safeguard Documents (UKL-UPL)

Land Acquisition

Land Clearing

Mobilization of equipment and materials

Construction of Infrastructures

Post Construction

Mobilization of construction waste

Operational and Maintenance for waste and sludge management
Chapter 4 Environmental and Social Baseline

4.1 Climate
33 There are two seasons in Kendari City, the rainy and the dry season. The dry season (June to October), influenced by the Australian continental air masses, and the rainy season (November to March) is caused by Asia and Pacific Ocean air. Based on Maritime Meteorology Station of Kendari, Kendari City is a tropical region with a maximum air temperature of 32.4 °C, air pressure of 1,011 millibar, humidity of 85%, and wind speed up to 1.8 m/second.

34 From 2005 to 2015, the rainfall data of Kendari City indicate a total annual rainfall of about 1991.2 mm and 171 rainy days. The highest rainfall was about 245 mm in March whereas the lowest rainfall was about 45 mm in September. Table 4 presents the average rainfall and number of rainy days of Kendari City for the mentioned period.

Table 4 Rainfall Recorded in Kendari City in 2005 - 2015

<table>
<thead>
<tr>
<th>Month</th>
<th>Average Rainfall (mm)</th>
<th>Rainy Day (Day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>206.4</td>
<td>19</td>
</tr>
<tr>
<td>February</td>
<td>210.8</td>
<td>18</td>
</tr>
<tr>
<td>March</td>
<td>245.6</td>
<td>18</td>
</tr>
<tr>
<td>April</td>
<td>200.8</td>
<td>19</td>
</tr>
<tr>
<td>May</td>
<td>222.2</td>
<td>15</td>
</tr>
<tr>
<td>June</td>
<td>238.9</td>
<td>16</td>
</tr>
<tr>
<td>July</td>
<td>161.6</td>
<td>12</td>
</tr>
<tr>
<td>August</td>
<td>93.5</td>
<td>10</td>
</tr>
<tr>
<td>September</td>
<td>45.3</td>
<td>6</td>
</tr>
<tr>
<td>October</td>
<td>68.7</td>
<td>9</td>
</tr>
<tr>
<td>November</td>
<td>124.4</td>
<td>12</td>
</tr>
<tr>
<td>December</td>
<td>202.6</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>1991.2</td>
<td>171</td>
</tr>
</tbody>
</table>

Source: Maritime Meteorology Station of Kendari, 2015

4.2 Ambient Air Quality
35 The ambient air quality at the Purirano NSD is influenced mostly by emission from vehicle traffic entering and exiting the development site. The ambient air quality sampling was conducted at two points, i.e. one inside and one outside the Purirano NSD site in 2017.

36 The ambient air quality was analyzed by the DLHK (Dinas Lingkungan Hidup dan Kehutanan) of Kendari City Laboratory for the following parameter sulphur dioxide, nitrogen dioxide, carbon monoxide, particulate, lead and ozone. The analytical result as presented in Table 5 suggest that the concentrations of all ambient air quality parameters are well below the threshold values stipulated in Government Regulation No. 41 Year 1999 (GR 41/1999) on Air Pollution Control. This means that the ambient air quality within the NSD site is in relatively good condition.
Table 5 Ambient Air Quality Inside and Outside Purirano NSD

<table>
<thead>
<tr>
<th>No</th>
<th>Parameter</th>
<th>Sampling Time</th>
<th>Unit</th>
<th>Analytical Results</th>
<th>Threshold values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inside NSD</td>
<td>Outside NSD</td>
<td>(GR 41/1999)</td>
</tr>
<tr>
<td>1</td>
<td>Sulphur Dioxide (SO₂)</td>
<td>24 hours</td>
<td>µg/Nm³</td>
<td>23.60</td>
<td>25.20</td>
</tr>
<tr>
<td>2</td>
<td>Nitrogen Dioxide (NO₂)</td>
<td>24 hours</td>
<td>µg/Nm³</td>
<td>57.80</td>
<td>64.30</td>
</tr>
<tr>
<td>3</td>
<td>Carbon Monoxide (CO)</td>
<td>24 hours</td>
<td>µg/Nm³</td>
<td>140</td>
<td>173</td>
</tr>
<tr>
<td>4</td>
<td>Particulate</td>
<td>24 hours</td>
<td>µg/Nm³</td>
<td>41.90</td>
<td>47.55</td>
</tr>
<tr>
<td>5</td>
<td>Lead (Pb)</td>
<td>24 hours</td>
<td>µg/Nm³</td>
<td>0.001</td>
<td>0.002</td>
</tr>
<tr>
<td>6</td>
<td>Ozone (O₃)</td>
<td>24 hours</td>
<td>µg/Nm³</td>
<td>61.5</td>
<td>61.5</td>
</tr>
</tbody>
</table>

Source: Analytical Result from the Laboratory of DLHK (Dinas Lingkungan Hidup dan Kehutanan) of Kendari City, September 2017 (Appendix 9). The laboratory is not yet accredited by the Indonesian Accreditation Committee (KAN).

4.3 Ambient Noise Level

The ambient noise level at the Purirano NSD is categorized as low. The noise level measured in the Purirano NSD ranges from 15.2 to 17.2 dB(A) and that outside the NSD site ranges from 28.0 to 30.0 dB(A).

4.4 Topography and Soil

The Purirano NSD site is geographically located at South Latitude: 03°57’9.60” and East Longitude: 122°36’56.76”. This site has an elevation of approximately 60 - 75 meters above sea level, and a fair slope of 8 - 15%. The contour of flat-hilly land is observed at the site. The soil type in this area is dominated by a yellow red podzolic soil type that is quite sensitive to erosion.

4.5 Groundwater Resources and Quality

The hydrological settling in the Purirano NSD of Kendari City is supported by the potential of deep groundwater. The source of raw water is obtained from the deep well through drilling. Based on the Geoelectric Survey conducted by the Kendari Municipality in 2017, a deep well has been constructed with a depth of 40 m and pumping rate of 1.3 liter/second. The result of water quality testing collected at a water tap at Purirano NSD is presented in Table 6.

Table 6 Result of Water Quality Testing

<table>
<thead>
<tr>
<th>No</th>
<th>Test Parameters</th>
<th>Unit</th>
<th>Quality Standard (MOH 416/1990)</th>
<th>Test Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Temperature</td>
<td>°C</td>
<td>-</td>
<td>25.2</td>
</tr>
<tr>
<td>2</td>
<td>Color</td>
<td>TCU</td>
<td>50</td>
<td>&lt;5</td>
</tr>
<tr>
<td>3</td>
<td>Odor</td>
<td>-</td>
<td>No odor</td>
<td>No odor</td>
</tr>
<tr>
<td>4</td>
<td>Turbidity</td>
<td>NTU</td>
<td>25</td>
<td>6.8</td>
</tr>
</tbody>
</table>
Based on the testing result presented at Table 6, it can be concluded that the quality of clean water in the Purirano NSD is still in good condition, and none of the environmental parameters tested exceeds the standard required by the Minister of Health Regulation No. 416 Year 1990, Appendix 2 on Clean Water Quality Standard.

### 4.6 Flora

The flora observation in the Purirano NSD area was conducted by the DLHK (Dinas Lingkungan Hidup dan Kehutanan) personnel of Kendari City in October 2017 (1-day observation). The vegetation identified in the site includes crops, fruits and shrubs presented in Table 7 and included in the UKL-UPL document of Purirano NSD.

#### Table 7 Types of Flora at Purirano NSD

<table>
<thead>
<tr>
<th>No</th>
<th>Species</th>
<th>Local Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Cocos nucifera</td>
<td>Kelapa</td>
</tr>
<tr>
<td>02</td>
<td>Musa paradisiaca</td>
<td>Pisang</td>
</tr>
<tr>
<td>03</td>
<td>Acacia auriculiformis</td>
<td>Akasia</td>
</tr>
<tr>
<td>04</td>
<td>Ficus benyamminna</td>
<td>Beringin</td>
</tr>
<tr>
<td>05</td>
<td>Terminalia catappa</td>
<td>Ketapang</td>
</tr>
<tr>
<td>06</td>
<td>Tectona grandis</td>
<td>Jati</td>
</tr>
<tr>
<td>07</td>
<td>Artocarpus altiilis</td>
<td>Sukun</td>
</tr>
<tr>
<td>08</td>
<td>Manihot esculenta</td>
<td>Ubi kayu</td>
</tr>
<tr>
<td>09</td>
<td>Annacardium occidentale</td>
<td>Jambu mente</td>
</tr>
<tr>
<td>10</td>
<td>Andropogon aciculatus</td>
<td>Rumput jarum</td>
</tr>
</tbody>
</table>
### Species and Local Name

<table>
<thead>
<tr>
<th>No.</th>
<th>Species</th>
<th>Local Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.</td>
<td><em>Terminalia catappa</em></td>
<td>Ketapang</td>
</tr>
<tr>
<td>12.</td>
<td><em>Tamarindus indica</em></td>
<td>Asam</td>
</tr>
<tr>
<td>13.</td>
<td><em>Cyperus rotundus</em></td>
<td>Rumput teki</td>
</tr>
<tr>
<td>14.</td>
<td><em>Imperata cylindrica</em></td>
<td>Alang-alang</td>
</tr>
</tbody>
</table>

Source: UKL-UPL of Purirano NSD, September 2017

### Fauna

Based on observations and interviews that had been conducted around the areas, only few types of birds were identified in the Purirano NSD (Table 8). No species of mammal or reptile as well as endangered animals are survey or identified at the site.

#### Table 8 Types of Fauna at Purirano NSD

<table>
<thead>
<tr>
<th>No.</th>
<th>Tribe</th>
<th>Type of Bird</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>01.</td>
<td>Apodidae</td>
<td><em>Collocalia linchi</em></td>
<td>Cave swiftlet</td>
</tr>
<tr>
<td>02.</td>
<td>Cisticolidae</td>
<td><em>Orthotomus ruficeps</em></td>
<td>Ashy tailorbird</td>
</tr>
<tr>
<td>03.</td>
<td>Columbidae</td>
<td><em>Streptopelia chinensis</em></td>
<td>Spotted dove</td>
</tr>
<tr>
<td>04.</td>
<td>Hirundinidae</td>
<td><em>Hirundo tahitica</em></td>
<td>Pacific swallow</td>
</tr>
<tr>
<td>05.</td>
<td>Ploceidae</td>
<td><em>Lonchura punctulata</em></td>
<td>Scay-breasted munia</td>
</tr>
<tr>
<td>06.</td>
<td>Pycnonotidae</td>
<td><em>Pycnonotus goiavier</em></td>
<td>Yellow-vented bulbul</td>
</tr>
<tr>
<td>07.</td>
<td>Zosteropidae</td>
<td><em>Zosterops palpebrosus</em></td>
<td>Oriental white-eye</td>
</tr>
</tbody>
</table>

Source: UKL-UPL of Purirano NSD, September 2017

There is no nearby stream, river and sea in the Purirano NSD. Therefore, no baseline information on aquatic ecology was undertaken for this site.

### Population, Livelihood, and Archaeological Site

Based on the statistical data “Kendari in Number Year 2015 (Kendari Dalam Angka Tahun 2015) published by the local government (Kendari Municipality), the number of residents in Kelurahan Purirano was 1,256 people (comprising 348 families). About 815 people (comprising 163 families) were categorized low-income family, with an average income of 1 - 2 million rupiah/month. This low-income family primarily works in the formal sector such as fishermen, daily labors and farmers. The population density in Kelurahan Purirano was 541 people/km² categorized as low-density population area with a population growth of 3.45 % per year.

No historical building or archaeological site is reportedly identified in the Purirano NSD site and surrounding area.

### Drainage Water Quality

A sample of drainage water from the area surrounding the Purirano NSD was collected and analyzed for the parameters of wastewater stipulated in the Ministry of Environment and Forestry Regulation No. P.68 year 2016 (MOEF 68/2016) on Effluent Standard from Domestic/Household Activities (*Baku Mutu Air Limbah Domestik*). In the absence of drainage water standard in Indonesia, the domestic effluent standard is selected
to assess the result of drainage water analyzed (Table 9).

The analytical result below indicates that the concentrations of parameters analyzed are below the threshold concentration of effluent standard stipulated in the MOEF 68/2016. This analytical result is considered as baseline condition of drainage water quality nearby the Purirano NSD area.

Table 9 Drainage Water Analytical Result

<table>
<thead>
<tr>
<th>No.</th>
<th>Parameter</th>
<th>Unit</th>
<th>Analytical Result</th>
<th>Threshold concentration (MOEF 68/2016)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01.</td>
<td>pH</td>
<td>-</td>
<td>6.3</td>
<td>6 - 9</td>
</tr>
<tr>
<td>02.</td>
<td>BOD</td>
<td>mg/l</td>
<td>21</td>
<td>30</td>
</tr>
<tr>
<td>03.</td>
<td>COD</td>
<td>mg/l</td>
<td>72</td>
<td>100</td>
</tr>
<tr>
<td>04.</td>
<td>TSS</td>
<td>mg/l</td>
<td>12.4</td>
<td>30</td>
</tr>
<tr>
<td>05.</td>
<td>Oil and Grease</td>
<td>mg/l</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>06.</td>
<td>Total coliform</td>
<td>Amount/100 ml</td>
<td>410</td>
<td>3,000</td>
</tr>
</tbody>
</table>

Source: Analytical Result from the Laboratory of DLHK (Dinas Lingkungan Hidup dan Kehutanan) of Kendari City, September 2017. The laboratory is not yet accredited by KAN.
Chapter 5 Anticipated Environmental Impacts and Mitigation Measures

47 The development of Purirano NSD commenced in 2016 and progressed through 2017 in which a total 225 houses and some facilities and infrastructure has been constructed. Individual septic tank, road, drainage system, water reservoir, and a deep well have also been constructed at the NSD site. In addition, land acquisition and land clearing have been completed prior to this construction. This development is funded by the DGHP and local government (Kendari Municipality). Considering this existing development, environmental impacts that may have been generated due to the mentioned construction are not assessed in this IEE and mitigation measures that may have been implemented are also not described herein.

48 This IEE focuses on assessing environmental impacts anticipated from constructing the facilities and infrastructure of Purirano NSD that will be funded by ADB (Chapter 3 of this IEE). Corresponding measures to mitigate the anticipated environmental impacts from this construction activity and monitoring requirements are also defined in this document.

5.1 Pre-Construction Phase

49 The activities of Purirano NSD development anticipated to generate impacts, concerns as well as provide benefits at the pre-construction phase is the dissemination of the NSD construction of facilities and infrastructure associated with Purirano NSD development. This activity may in turn result in concerns for the local community, government, and civil society. To resolve with the problem, it is expected to involve the stakeholders including the local government, contractor and Purirano surrounding community with the main agenda to provide information about the project and socialize construction activity with objective to minimize potential problem during implementation. The impacts mentioned earlier including the proposed mitigation measures are elaborated in subsequent sections of this IEE.

5.1.1 Public Perception and Attitude

50 The Project Executing Agency and/or its delegated authorities plan to undertake an appropriate dissemination on the planned construction of facility and infrastructure at the Purirano NSD. This dissemination will be undertaken prior to commencement of the construction activity and expected to establish a constructive communication mechanism between the local government (Kendari Municipality), contractor, community, and civil society within Kelurahan Purirano. Further, the dissemination will not only provide adequate information about the project itself, but also may generate work and business opportunities due to the construction activity.

51 On the other hand, the dissemination described earlier may create unfavorable or negative perception and attitude from the community and other stakeholders due to among others: if there have been ongoing issues/complaints that have not been followed up and/or resolved from the past; feeling that the project will not provide business and employment opportunities for the local community; or concerns that the construction workforce is not sourced from the local community or Kendari city. Such impacts, if they materialize, will result in adverse and long-term impacts on the community and NUSP-2 project.
The anticipated impacts described earlier, should be mitigated from the early phase of the project using the following measures, among others:

- Undertake an appropriate dissemination on the planned construction at the Purirano NSD prior to commencing the construction activities; the dissemination should involve the Project Executing Agency, related local government agencies, and representation of community stakeholders including vulnerable groups such as women and those directly affected by the project; this should be undertaken in a transparent manner using appropriate materials e.g. leaflet, booklet; the dissemination may be undertaken on a regular basis as required.
- Establish and disseminate the Grievance Redress Mechanism (GRM) as the formal system to document, address, and follow-up concerns and grievances related to the activities of Purirano NSD.

5.2 Construction Phase

The construction phase of Purirano NSD will primarily consist of three main activities: recruitment of construction labors; mobilization of equipment and materials; and construction of facilities and infrastructures as described in Section 3 of this IEE. The impacts anticipated from the construction activities will occur for approximately 6 to 9-month period; and these impacts will be mitigated using the measures described at the following paragraphs.

5.2.1 Ambient Air Quality and Noise Level

The mobilization of equipment and materials as well as construction activities in the Purirano NSD are anticipated to increase air pollutants, primarily dust/particulates in the ambient air, and elevate the ambient noise level. It is not expected that increased air pollutants and noise level would be significant i.e., exceeding the ambient air quality and noise standards stipulated by the Indonesian Government, and distributed far beyond the construction site. Nevertheless, the following mitigation measures will be implemented to minimize such impacts:

- Use construction equipment and vehicles that have valid licenses and pass the required testing by the related Transportation Agency of Kendari Municipality.
- Limit the age of construction equipment and vehicles used to ensure its operability, emission, and noise meet the required standards.
- Enforce a maximum speed limit of 20 km/hour to reduce airborne dust and minimize incident due to vehicle – human interaction at the Purirano NSD.
- Conduct water spraying at dusty locations and roads at the Purirano NSD site at least once per day or more frequent during dusty conditions.
- Require the vehicle carrying out construction materials and wastes with tarpaulin.
- Limit the construction activities including mobilization of construction materials between 08.00 and 16.00 hours; in case the duration of construction activity is required to exceed the normal working hours, the contracted is obliged to obtain permit from related government agencies and consent from the Purirano NSD and nearby communities.
5.2.2 Sedimentation and Surface Water Quality

The construction activities at Purirano NSD will cause limited land disturbance, particularly during excavation and stockpiling of soils to construct drainage system, retention ponds, and neighborhood road. In the event of rainy days, surface runoff is anticipated to cause soil erosion at the Purirano NSD that will eventually increase siltation in the receiving drainage channel and/or reduce the quality of nearby water bodies. Therefore, the following mitigation measures will be implemented to minimize such impacts:

- Install adequate retaining wall (typically made of wood or other suitable materials) to localize soil erosion and control water runoff.
- Construct a temporary drainage system or pipeline to channel the runoff to the temporary settling pond (to be constructed at the perimeter of Purirano NSD).
- Regularly remove the silt accumulated in the drainage channel that has been completely constructed (during the construction phase) to reduce the silt exiting the Purirano NSD.
- Conduct water spraying at the road that has been completely constructed (during the construction phase) to reduce the silt exiting the Purirano NSD.
- Stockpile the silt removed from the drainage channel and road and for subsequent compaction and landscaping purpose at the Purirano NSD.

5.2.3 Groundwater

The clean water source within Purirano NSD site will be provided from one deep well (40-m depth) to supply clean water to 225 houses. The groundwater will be abstracted at a rate of 1.3 liter/second for a maximum of 8 hours per day, if required, and stored at three water reservoirs to meet the water need for these houses. Based on this pumping design and provision of water reservoir, local subsidence and drawdown of groundwater table downstream of the Purirano NSD are not expected to occur. Such pumping rate and duration could also serve as the mitigation measures to minimize impacts on groundwater resources.

If the pumping rate and duration need to be increased in the near future, an investigation should be undertaken whether this pumping rate will not cause impact to surrounding areas.

5.2.4 Flora and Fauna

No endemic, rare or endangered flora and fauna are reportedly identified in the Purirano NSD and its surroundings, therefore no mitigation measures are required for these aspects.

5.2.5 Work and Business Opportunities

The construction activities to be undertaken at the Purirano NSD will generate positive, short-term impacts such as local business establishment (e.g. establishment of food and beverage kiosks (warung makan) and small-scale shops, and suppliers of goods and services to meet the construction needs). Employment opportunities are the other benefit in that the construction activity create the need for daily labor. These benefits will be short-term and have local scale as the construction activity is scheduled for approximately 6-month period and limited at the Purirano NSD.
Employment and business opportunities as described earlier can raise concern, complaint, and grievance from the community nearby the Purirano NSD, particularly if they feel not well fairly treated or do not receive benefits from the project. Therefore, the following mitigation measures will be implemented to minimize such impacts:

- Undertake an appropriate dissemination on the planned construction at the Purirano NSD prior to commencing the construction activities as described earlier; the dissemination can be undertaken on regular basis as required.
- Ensure that the recruitment process prioritizes local workers and suppliers from Kelurahan Purirano (proved by ID card and/or company address) assuming they meet the qualification and specification required by the Purirano NSD; this clause will be included in the contract between the local Executing Agency (“City Satker” residing at the Public Work Agency of Kendari City) and its contractors.
- Enforce the obligation to the contractor in reporting to local authorities on the number and composition of their labors including employees as well as good and services provided by local suppliers.
- Encourage the community to use the GRM in raising their concern, complaint, and grievance related with the project.

5.2.6 Public Perception and Attitude

The construction activity, and employment and business opportunities described earlier can raise community concern, complaint, and grievance from the community nearby the Purirano NSD. Dusty conditions, increased noise level, and increased road traffic due to the construction activity are potential sources for negative perception and attitude from the public towards the project. To minimize such impacts, the following mitigation measures will be implemented:

- Undertake an appropriate dissemination on the planned construction at the Purirano NSD prior to commencing the construction activities as described earlier; the dissemination can be undertaken on regular basis as required.
- Build close communication among the Project Executing Agency, contractors and local communities to facilitate suggestions, ideas and complaints from local community.
- Schedule the transportation of construction materials so that it avoids rush hour in the morning and afternoon, but this is to be conducted within the defined work hours of the project from 8.00 to 16.00 hour.
- Provide warning signages and lighting at specified points to alert about the construction activity at the Purirano NSD (minimum 50 m before the project location) and deploy a traffic officer as required.
- Require the contractor to stockpile the materials only at designated locations at the Purirano NSD site.

5.2.7 Occupational Health and Safety, and Hygiene

The construction activity to be undertaken at the Purirano NSD will expose the labors to safety risks, among others, fall, hit by heavy objects or vehicle, sprain, and electrocuted that could lead to injury or fatality, if these risks are not well managed. Exposure to health risks include working at dusty condition and elevated noise level. Employee hygiene and sanitation will also be a problematic issues commonly encountered at the construction site.
particularly in the absence of adequate toilet and washing facilities as well as hygiene culture among the labors.

63 To reduce the risks mentioned earlier, the Contractor should assign dedicated personnel to be responsible for implementing the following mitigation measures:

**Occupational Health**

- Implement adequate health examination as the requirement for every personnel applying for employment during the construction phase; the health examination is to be conducted by competent medical doctors. Implementation of this requirement it to ensure that every personnel working at the Purirano NSD is declared “fit for work.”
- Conduct an awareness/dissemination session on HIV/AIDS and other infectious diseases to every labor; this session should be undertaken by competent health personnel.
- Provide First Aid kits and trainings for the contractor’s employee and/or labors to be assigned as the First Aider; These trainings should be undertaken to enable any injured person, if any, are handled at the construction site for first aid treatment prior to the injured person is mobilized to nearby hospital for further medication.

**Occupational Safety**

- Conduct the risk assessment to identify all occupational health and safety risks associated with the construction activity and define the mitigation measure for each risk.
- Conduct health, safety and hygiene induction for labors to disseminate, among others on the need for personnel protective equipment (PPE) use according to the requirement of Ministry of Labors and Transmigration Decree No.08/MEN/VII/2010 on Personal Protective Equipment; and awareness of health and safety risks at the construction site. The safety induction must be undertaken for every employee prior to commencing his/her works at the construction site.
- Conduct safety talks every day prior to commencing the work as a way to ensure that every labor is in fit-for-work condition to do his/her job every day.
- The contractor is obliged to provide and requires each labor to wear PPE i.e., mask, safety helmet, safety glass/google, and safety boot as the minimum requirements when performing their jobs.
- Install protection fences around the NSD site and establish security post at the entrance to avoid unauthorized party or person entering the construction site.
- Assign some dedicated personnel to regulate the vehicles entering and exiting the Purirano NSD during the construction period.
- Install safety signage to alert people, such as “Beware of In/Out Vehicles” or “Slower Your Vehicle” sign etc.

**Hygiene at the Construction Sites**

- Provide adequate toilet including washing/bathing facilities with proper septic tank and drainage system at the construction site;
- Regularly clean the toilet and washing facilities as well as drainage system.

5.3 **Maintenance/Operation Phase**

The construction phase of Purirano NSD is scheduled for approximately 6 months and then followed by a 6-month maintenance phase by the Contractor prior to hand-over to the local government (Kendari Municipality). Key activities at this maintenance phase, which may also be considered as operation phase, will be: final disposal of remaining construction waste; maintenance of water supply system, particularly regular cleaning of the reservoir; and regular disposal of septic tank sludges.

Environmental impacts on ambient air quality and noise level; water quality; and soil quality are anticipated from this maintenance phase. These impacts are expected to be minimal; however, mitigation remains to be implemented as described in the following paragraphs.

5.3.1 **Ambient Air Quality and Noise Level**

Once the construction activity is complete, remaining construction wastes, including rocks, soil, paving, wood, sand etc. will be removed from the Purirano NSD. Such construction wastes, if not disposed, will make the Purirano NSD looks untidy and become the source of airborne dust. Removal of this waste using trucks and other equipment will increase air pollutants and noise level within the Purirano NSD, but these impacts will be intermittent and localized. This wastes will be finally disposed to the final disposal site at Puuwatu in Kendari City that is managed by the local government (Kendari Municipality). The following mitigation measures will be implemented to minimize such impacts:

- Use construction equipment and vehicles that have valid licenses and pass the required testing by the related Transportation Agency of Kendari Municipality.
- Limit the age of construction equipment and vehicles used to ensure its operability, emission, and noise meet the required standards.
- Enforce a maximum speed limit of 20 km/hour to reduce airborne dust and minimize incident due to vehicle – human interaction at the Purirano NSD.
- Require the vehicle carrying out construction materials and wastes to use tarpaulin.

5.3.2 **Odor, Insect, and Rodent**

The household activities at the Purirano NSD will generate solid wastes, among others, leftover food, plastic, and cardboard. Solid waste generated from these activities is assumed to be approximately 2,800 liters/day (assuming 2.5 liters/person/day x 5 persons/house x 225 houses). The wastes, particularly organic wastes, will generate odor and leachate, and attract pest and flies if not properly handled at the Purirano NSD. Therefore, the following mitigation measures will be implemented by the Management Unit (Badan Pengelola) of Purirano NSD (to be established):

- Disseminate and require the residents of Purirano NSD to provide separate, closed waste bins for organic and inorganic wastes and ensure proper waste storage.
• Conduct routine inspection and cleaning of the waste shelter to maintain good housekeeping and prevent insect and rodent from hosting at this site.
• Assign operators for the garbage motor vehicle to regularly collect and transport the wastes from each house to the temporary waste storage shelter provided at the Purirano NSD.
• Collaborate with the related agency of Kendari Municipality to schedule daily removal of the wastes from Purirano NSD to the final disposal site at Puuwatu in Kendari City.

5.3.3 Clean Water Quality

68 Maintenance of the water supply system, particularly the water reservoirs at the Purirano NSD site is needed. Without regular maintenance, the inner wall of the water will be covered by moss that may in turn reduce the clean water quality of water distributed to each house. Therefore, the inner wall of the reservoir will be cleaned manually to remove the moss.

5.3.4 Surface Water Quality

69 Liquid wastes, among others, sewage from toilet and water from household cleaning and bathroom (known as grey water) will be generated from each house at the Purirano NSD that has been occupied. Sewage from the toilet will be managed using an onsite septic tank provided for each house. Without regular maintenance the individual septic tank will be over capacity and generate odor and overflow.

70 The mitigation that will be implemented for the sludge is to appoint a third party to remove the sludge from the septic tank once every three years; and dispose it to the sludge treatment unit at Anduonohu in Kendari City.

5.3.5 Public Perception and Attitude

71 The completion of the construction of facilities and infrastructure and occupation of the houses at the Purirano NSD will provide its residents with adequate housing, sanitation facility and good infrastructure to improve their livelihood. Furthermore, the Purirano NSD a is good lesson learned for other local governments to mitigate the establishment of slum settlements. These benefits are expected to create positive public perception and attitude towards the NUSP-2 project, and should be maintained through the implementation of the followings:
• The management unit of Purirano NSD will conduct regular community/communication forum on a regular basis (e.g. monthly) to establish good relationship and provide the residents with capacity building to manage its neighborhood in a sustained manner.
• Implement GRM to address concerns and complaints related to the project.
Chapter 6 Public Consultation and Information Disclosure

6.1 Public Consultation

72 The early public consultation on the Purirano NSD was indirectly conducted during the evaluation meeting of its UKL-UPL document. This meeting was facilitated by the Environmental Agency of Kendari Municipality on 26 October 2016 and attended by the government officials of Kelurahan Purirano, City Satker, Public Works Agency of Kendari, and the Consultant from Muhammadiyah University of Kendari as well as the community representatives of the mentioned kelurahan.

73 The main agenda of this consultation was the Purirano NSD plan to mitigate the problematic issues associated with slum settlements, anticipated environmental impacts due to the construction and mitigation measures to be undertaken. At this event, five out of 20 participants were women and they were actively involved in the discussion. The response of the personnel attending this event on the NSD activity was generally positive. The list of attendees at the UKL-UPL evaluation meeting is included in Appendices 5 and 6, but the Minute of Meeting is not available.

74 In addition, the Project Executing Agency will require the Local Government (Kendari Municipality) to schedule a Public Consultation: (i) prior to the construction of facility and infrastructure of the Purirano NSD; and (ii) after or during the maintenance phase of the mentioned construction. Any environmental concerns and public complaints raised at the consultation will be documented in the minute of meeting; and any community complaints and grievances should be handled and followed up according to the GRM (Chapter 7 of this IEE). The Consultation should invite the adequate representation of key stakeholders including women and vulnerable groups.

6.2 Information Disclosure

75 Environmental documents related to the Purirano NSD will be made available to public including affected people and interested stakeholders. These environmental documents will be submitted to ADB for subsequent disclosure on its website:

- Final IEE and a new or updated IEE, if any.
- Corrective action plan, if any, during project implementation.
- Semi-annual environmental monitoring report describing implementation of mitigation measures and monitoring requirements described in the IEE.

76 UKL-UPL and IEE (new or updated IEE if required and corrective action plan if any during project implementation) will be made available to public including affected people and interested stakeholders. Monitoring reports on the implementation of the UKL-UPL and IEE should also be made available. These documents should be provided in the format and language that can be understood by the public.

77 The Kendari Municipality will provide the copy of IEE document at the City Satker Office (at the Public Work Agency of Kendari City) and the office of NSD management unit (Badan Pengelola). Furthermore, the Kendari Municipality will provide public information regarding the NUSP-2 project in the forms of booklets and short movie as appropriate.
Chapter 7 Grievance Redress Mechanism

78 A Grievance Redress Mechanism (GRM) will be established and disseminated to the stakeholders as a formal mean for the project to manage complaints and/or queries related to disturbance/environmental impacts of the Purirano NSD’s project activities, i.e. construction of facility and infrastructure. The proposed GRM for this project comprises three levels described below with the key objective to address any complaints from affected people during project implementation. The levels of the GRM are presented in Figure 7 and described as follows:

(i) At the neighborhood (kelurahan) level, the kelurahan office will handle and subsequently resolve the complaint; the Kelurahan office will coordinate and provide feedback to the contractor and City Satker in this matter. The complaint and acknowledgement forms, and a register/folder should be provided at the kelurahan office. The kelurahan office should issue a written acknowledgement within 5 days upon receiving the complaint. Also, during these 5 days mentioned before, a research and verification will be held to formulate the remedial actions to the complaint. The community will be involved during research and verification. If needed, a coordination meeting (formal or informal) can be held within 7 days to determine the follow up procedure (outputs from this meeting is list of attendance, minutes of meeting signed by key representative of the attendees, and photograph documentation which should be well maintained by the kelurahan office and at City Satker). If the grievance cannot be addressed at the kelurahan office, the complaint will be escalated to the city level.

(ii) At the city level, the complaints will be handled by the Local Coordinating (LCO) residing at the Bappeda (planning agency) of Kendari Municipality; and the compliant should be followed up and/or resolved within 14 workdays of receiving the complaints and coordinated with the City Satker. Further, a folder/register of these complaints should be maintained at this office. If the grievance cannot be addressed at the city level, the complaint will be escalated to the PMU, representing DGHS, at the national government level.

(iii) At the national government level, the complaints will be coordinated by the Project Executing Agency, in which for NSD project is the DGHS, represented by the PMU); and the compliant should be followed up and/or resolved within 14 workdays of receiving the complaints. Further, a folder/register of these complaints should be maintained at this office.
Figure 7 Flowchart of Grievance Redress Mechanism
Chapter 8 Environmental Management Plan (EMP)

8.1 Mitigation Measures

The anticipated disturbance/environmental impacts due the construction activity of the Purirano NSD are expected to be minimal and commonly encountered for such construction activity. Nevertheless, mitigation measures should be implemented at the pre-construction, construction, and maintenance/operation phases as described in Section 5 and summarized in Table 10 to reduce the disturbance/impacts to a minimal level. Key indicators, party to implement and monitoring the mitigation measures are also identified in this table. Implementation of the mitigation measures should be supported by relevant, written, and other formal evidences. Table 10 is part of the Environmental Management Plan which will be monitored and reported on regular basis during the project implementation.

<table>
<thead>
<tr>
<th>Project Phases/Activities</th>
<th>Anticipated Impacts</th>
<th>Mitigation Measures</th>
<th>Key Indicators</th>
<th>Party to Implement</th>
<th>Party to Monitor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-construction Phase</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development and Evaluation of UKL-UPL Document</td>
<td>-</td>
<td>None, these activities have been completed as part of the environmental permitting of Purirano NSD in 2016.</td>
<td>• List of attendance UKL-UPL approval secured Environmental Permit secured</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Dissemination of Purirano NSD construction activities</td>
<td>Public Perception and Attitude</td>
<td>Undertake dissemination of the project activity and Grievance Redress Mechanism (GRM) to related local government agency and community representatives (i.e. women and vulnerable groups).</td>
<td>• Invitation letter to the dissemination activity • List of attendance completed with signature and contact details • Minutes of Meeting</td>
<td>Local Government (Kendari Municipality) / City Satker</td>
<td>PMU at the central government level (representing DGHS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Establish and implement the GRM to address community complaints and concerns on Purirano NSD activities.</td>
<td>• Grievance form, acknowledgment, and register/folder • Numbers of complaints received, followed up and resolved</td>
<td>City Satker (at the Public Work office of Kendari Municipality)</td>
<td>PMU</td>
</tr>
<tr>
<td><strong>Construction Phase</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Mobilization of equipment and construction materials</td>
<td>Ambient Air Quality and Noise Level</td>
<td>• Test the construction vehicles for emission test from the Transportation Agency of Kendari Municipality. • Limit the age of equipment and vehicles used in construction activity. • Limit the speed of equipment and vehicles</td>
<td>• Testing/Pass certificate from the Transportation Agency of Kendari Municipality. • Ambient air quality is not exceeding the quality standard in accordance with Government</td>
<td>Contractor</td>
<td>City Satker</td>
</tr>
<tr>
<td>Project Phases/Activities</td>
<td>Anticipated Impacts</td>
<td>Mitigation Measures</td>
<td>Key Indicators</td>
<td>Party to Implement</td>
<td>Party to Monitor</td>
</tr>
<tr>
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</table>
| NSD                       | (20 km/hour) at construction sites.  
- Conduct water spraying of the construction sites as well as along the road to the location at least once a day or more frequent during dusty condition.  
- Provide tarpaulin for each truck delivering construction materials.  
- Limit construction/mobilization activity between 08.00 to 16.00 hours. | Regulation 41 /1999.  
- Noise level is not exceeding quality standard in accordance with Decree of Ministry of Environment 48 /1996.  
- Complaint (if any) from community regarding construction activity. | Contractor | City Satker |
| Sedimentation/Surface Water Quality | Install adequate retaining wall  
- Construct temporary drainage system and settling ponds at the perimeter of Purirano NSD | The formwork (bekisting) is installed in the construction site.  
- Temporary settling pond is provided in the site  
- No flood occurs in Purirano NSD surroundings. | Contractor | City Satker |
| Groundwater | Limit groundwater pumping at 1.3 liter/second for 8 hours per day | Daily monitoring form for groundwater pumping.  
- Complaint (if any) from community regarding their wells are dry | Contractor | City Satker |
| Work and Business Opportunities at Local Scale | Undertake appropriate dissemination as described above.  
- Prioritize local workers and suppliers from Kelurahan Purirano; this will be included in the | List of workers and suppliers complete with copy of IDs.  
- Contract clause includes requirement for contractor to | Local Government (Kendari Municipality)  
Contractor | City Satker |
<table>
<thead>
<tr>
<th>Project Phases/ Activities</th>
<th>Anticipated Impacts</th>
<th>Mitigation Measures</th>
<th>Key Indicators</th>
<th>Party to Implement</th>
<th>Party to Monitor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>contract between City Satker and contractor.</td>
<td>prioritize local workers and suppliers.</td>
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<tr>
<td></td>
<td></td>
<td>• Oblige the contractor to report all labors recruited both local workers and outside workers and suppliers to local authorities</td>
<td>• Report about labor employment provided by the contractor to the local government.</td>
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<td></td>
<td></td>
<td>Use GRM to address public complaints related with the project.</td>
<td>Public complaints (if any) regarding the project; and GRM register/folder.</td>
<td>Kelurahan office / Contractor</td>
<td>City Satker/ LCO (Bappeda office) / PMU</td>
</tr>
<tr>
<td>Mobilization of equipment and construction materials</td>
<td>Public Perception and Attitude</td>
<td>Undertake dissemination of the project activity and GRM as described earlier</td>
<td>• Invitation letter to the dissemination activity</td>
<td>Local Government (Kendari Municipality) / City Satker</td>
<td>PMU</td>
</tr>
<tr>
<td>Construction of facility and infrastructure at the Purirano NSD.</td>
<td></td>
<td>• Schedule the transportation of construction materials to avoid rush hours, but within normal working hour.</td>
<td>• Vehicle logbook</td>
<td>Contractor</td>
<td>City Satker</td>
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<tr>
<td></td>
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<td>• Provide signages and lighting at specified points to alert about project activity (minimum 50 m before the project location) and deploy a traffic officer.</td>
<td>• Signages (include signage for location of stockpiles) and lighting are installed within Purirano NSD site.</td>
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<td></td>
<td></td>
<td>• Require the contractor to stockpile the materials only at Purirano NSD site.</td>
<td>• List of attendance/ training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupational Health</td>
<td>Occupational Health (OHS) and Hygiene</td>
<td>• Assign the contractor’s dedicated personnel for implementing the OHS related to the project.</td>
<td>• Letter of assignment of implementing OHS matter</td>
<td>Contractor</td>
<td>City Satker</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Conduct an awareness session on HIV/AIDS and other infectious diseases</td>
<td>• List of attendance/ training</td>
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<td></td>
<td></td>
<td>• Provide First Aid Kits at the construction sites and related trainings.</td>
<td>• Minute of meeting.</td>
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<tr>
<td></td>
<td></td>
<td>• First Aid Kits</td>
<td>• First Aid Kits</td>
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<tr>
<td>Project Phases/Activities</td>
<td>Anticipated Impacts</td>
<td>Mitigation Measures</td>
<td>Key Indicators</td>
<td>Party to Implement</td>
<td>Party to Monitor</td>
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</tr>
<tr>
<td>Occupational Health &amp; Safety (OHS) and Hygiene</td>
<td>Occupational Safety&lt;br&gt;• Conduct risk assessment to identify OHS risks associated with the construction activity.&lt;br&gt;• Conduct OHS induction for labors and the use of personnel protective equipment (PPE).&lt;br&gt;• Conduct safety talks prior to starting the works every day.&lt;br&gt;• Provide and requires labors to wear PPE i.e. masks, safety helmets, gloves, safety glass, and safety boots as the minimum requirements.&lt;br&gt;• Install protection fences around the NSD site including security post at the front gate.&lt;br&gt;• Assign some dedicate employee to assist traffic management.&lt;br&gt;• Installing safety signage to alert people, such as “Beware of in/Out Vehicles” or “Slower Your Vehicle” sign etc.</td>
<td>Hygiene at the Construction Site&lt;br&gt;• Provide adequate toilet including washing/bathing facilities with proper septic tank and drainage system for construction labors.&lt;br&gt;• Regularly clean the toilet and washing/bathing facilities as well as drainage system.</td>
<td>• Risk register&lt;br&gt;• protective equipment in the site location.&lt;br&gt;• List of attendance and induction presentation materials&lt;br&gt;• List of attendance and topics on safety talks every day.&lt;br&gt;• List of PPE issued and worn by labors.&lt;br&gt;• Protection fence and security post installed and maintained.&lt;br&gt;• Traffic warden regularly assigned&lt;br&gt;• Safety signage installed and maintained&lt;br&gt;• No occurrence of work accident in the Purirano NSD construction site (zero accident).</td>
<td>Contractor</td>
<td>City Satker</td>
</tr>
</tbody>
</table>

- Mobilization of equipment and construction materials
- Construction of facility and infrastructure at the Purirano NSD

**Post-construction Phase**

<p>| Operational and Maintenance | Ambient Air Quality and Noise Level | Collects and transports the remaining construction waste to final disposal site at Puuwatu in Kendari City. | No construction waste remaining at the project site | Contractor | City Satker |</p>
<table>
<thead>
<tr>
<th>Project Phases/Activities</th>
<th>Anticipated Impacts</th>
<th>Mitigation Measures</th>
<th>Key Indicators</th>
<th>Party to Implement</th>
<th>Party to Monitor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Odor, Insect, and Rodent</td>
<td>• Require the residents of Purirano NSD to provide separate, closed waste bins for organic and inorganic wastes and practice proper waste storage.                                                                                       • Conduct routine inspection and maintain good housekeeping of the waste shelter.                                                                                     • Assign operators for the garbage motor vehicles to regularly remove the wastes from each house to the waste shelter. Collaborate with the related agency of Kendari Municipality to schedule daily removal of the wastes from Purirano NSD.</td>
<td>• Proper waste bins are available at each house. • Schedule and inspection checklist are available and completed. • Operator of garbage motor vehicle is regularly available. • Daily schedule for waste collection within Purirano NSD site. • Daily schedule for waste collection from Purirano NSD Site to TPA Puuwatu.</td>
<td>The NSD management board (Badan Pengelola)</td>
<td>The local government (Kendari Municipality)</td>
</tr>
<tr>
<td>Operational and Maintenance</td>
<td>Clean Water Quality</td>
<td>Maintain the water supply system, the inner wall of the reservoir will be cleaned manually to remove the moss and sediment.</td>
<td>Schedule and inspection checklist are available and completed</td>
<td>NSD Management Board (Badan Pengelola)</td>
<td>The local government (Kendari Municipality)</td>
</tr>
<tr>
<td>Operational and Maintenance</td>
<td>Surface Water Quality</td>
<td>• Appoint a third party to remove the sludge from the septic tank once every three years. • Dispose the sludge to the sludge treatment unit at Anduonohu in Kendari City.</td>
<td>Agreement between the Badan Pengelola and the third party. Schedule for sludge collection and transportation to IPLT Anduonohu.</td>
<td>NSD Management Board (Badan Pengelola)</td>
<td>The local government (Kendari Municipality)</td>
</tr>
<tr>
<td>Operational and Maintenance</td>
<td>Community Perception and Attitude</td>
<td>• Conduct regular (monthly) community and communication forum facilitated by the NSD management board (Badan Pengelola) • Implement GRM as described above</td>
<td>Minute of meeting. List of attendance. Grievance form and register. Numbers of complaints received, followed up and resolved.</td>
<td>NSD Management Board (Badan Pengelola)</td>
<td>The local government (Kendari Municipality)</td>
</tr>
</tbody>
</table>

8.2 Monitoring Requirements

Environmental monitoring will be undertaken to assess whether the mitigation measures implemented as part of the construction activity at the Purirano NSD are effective and efficient in minimizing the resulting environmental disturbance/impacts. As described in Table 11, environmental monitoring will be undertaken at the pre-construction up to operation/maintenance phases.
Table 11 Environmental Monitoring Requirements

<table>
<thead>
<tr>
<th>Project Phases/Activities</th>
<th>Anticipated Impacts</th>
<th>Monitoring Method and Indicators</th>
<th>Monitoring Frequency and Location</th>
<th>Reporting Requirements</th>
<th>Party to Implement</th>
<th>Party to Monitor</th>
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<tbody>
<tr>
<td>Pre-construction Phase</td>
<td></td>
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<tr>
<td>Development and Evaluation of UKL-UPL Document</td>
<td>None</td>
<td>None, this activity has been completed as part of the environmental permitting of Purirano NSD in 2016.</td>
<td>None</td>
<td>UKL-UPL implementation reports every six months</td>
<td>Local Government (Kendari Municipality) / City Satker</td>
<td>PMU (at the central government level representing DGHS)</td>
</tr>
<tr>
<td>Public Perception and Attitude</td>
<td>Evaluation of the results of dissemination activity on Purirano NSD (as described in Table 10).</td>
<td>• Two times during project implementation (i) prior to construction and (ii) before construction completion/ during early maintenance period of Purirano NSD at City Satker’s office</td>
<td>Evaluation results to be included in the Project’s monthly progress report.</td>
<td></td>
<td>City Satker (at the Public Work Agency of Kendari Municipality)</td>
<td>PMU</td>
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<td></td>
<td>• Periodic review of grievance/complaints received and followed up to be carried out at the city level forum.</td>
<td>• Monthly at City Satker’s office.</td>
<td>Evaluation results to be included in the Project’s monthly progress report.</td>
<td></td>
<td>City Satker</td>
<td>PMU</td>
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<td></td>
<td>• Evaluation of the implementation of the follow up actions at the community level and its result.</td>
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<tr>
<td>Construction Phase</td>
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<tr>
<td>Recruitment of construction labors</td>
<td>Public Perception and Attitude</td>
<td>Calculation on the proportion of recruited local labors compared to the total construction workforce.</td>
<td>Once, prior to construction and monthly during construction period at the contractor office.</td>
<td>This labor calculation is included in the Project’s monthly progress report.</td>
<td>Contractor</td>
<td>City Satker</td>
</tr>
<tr>
<td>Mobilization of equipment and construction materials</td>
<td>Ambient Air Quality and Noise Level</td>
<td>• Carry out ambient air quality sampling and testing according to the requirements of Government Regulation No. 41/1999;</td>
<td>• Once, prior to construction; once during construction; and once after construction/ during maintenance period.</td>
<td>Ambiant air quality testing and noise level measurement results and interpretations.</td>
<td>Contractor</td>
<td>City Satker</td>
</tr>
<tr>
<td>Project Phases/Activities</td>
<td>Anticipated Impacts</td>
<td>Monitoring Method and Indicators</td>
<td>Monitoring Frequency and Location</td>
<td>Reporting Requirements</td>
<td>Party to Implement</td>
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<td></td>
<td>• Carry out measure of ambient noise level according to the requirement of Ministry of Environment Decree No. KEP-48/1996.</td>
<td>one location outside the Purirano NSD</td>
<td>• The sampling and analysis as well as measurement should be undertaken using the laboratory accredited by Indonesian Accreditation Commission <em>(Komisi Akreditasi Nasional).</em></td>
<td>Inspection checklist and notes are signed; and photos included in the Project's monthly progress report.</td>
<td>Contractor</td>
<td>City Satker</td>
</tr>
<tr>
<td>Sedimentation and Surface Water Quality</td>
<td>Field checking/visual inspection for indication of siltation and turbid water quality</td>
<td>Weekly inspection at areas where land disturbance occurs; at settling pond inside the NSD site; and at the drainage channel outside the NSD site.</td>
<td>Groundwater quality testing results and interpretations.</td>
<td>Contractor</td>
<td>City Satker</td>
<td></td>
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<tr>
<td>Groundwater</td>
<td>• Evaluate the daily monitoring form of groundwater pumping</td>
<td>Monthly sampling and analysis of groundwater, directly collected at the outlet of the reservoir; and the sampling and analysis should be undertaken using the laboratory accredited by Indonesian Accreditation Commission <em>(Komisi Akreditasi Nasional).</em></td>
<td>Groundwater quality testing results and interpretations.</td>
<td>Contractor</td>
<td>City Satker</td>
<td></td>
</tr>
<tr>
<td>Work and Business Opportunities at Local Scale</td>
<td>• Evaluate the construction labors and suppliers based on their IDs including the type of goods and services purchased from surrounding NSD site.</td>
<td>Monthly during construction at the NSD site.</td>
<td>Evaluation results of these aspects included in the Project's monthly progress report.</td>
<td>Contractor</td>
<td>City Satker</td>
<td></td>
</tr>
<tr>
<td>Project Phases/Activities</td>
<td>Anticipated Impacts</td>
<td>Monitoring Method and Indicators</td>
<td>Monitoring Frequency and Location</td>
<td>Reporting Requirements</td>
<td>Party to Implement</td>
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</tbody>
</table>
| Public Perception and Attitude | • Evaluation of the result of regular community and consultation forum as described in the minute of meeting.  
• Field checking to monitor schedule of material transportation. | Monthly during construction at the NSD site. | Evaluation results of these aspects included in the Project’s monthly progress report. | Contractor | City Satker |
| Visual inspection to ensure signage and lightings are installed and in good operating condition within Purirano NSD site. | Weekly at the NSD site. | Inspection checklist and photos included in the Project’s monthly progress report. | Contractor | City Satker |
| Occupational Health, Safety, and Hygiene | Evaluation of the result of occupational health and safety work (K3) dissemination and safety talks as described in the minute of meeting and daily toolbox talk forms. | Monthly at the NSD site. | List of attendance, presentation materials and minute of meeting, included in the Project’s monthly progress report. | Contractor | City Satker |
| Visual inspection and documentation on:  
• The availability and proper use of PPE  
• Protection fences.  
• Security post.  
• Employee to assist traffic management.  
• Safety signages.  
• Temporary public toilet.  
• First Aid Kits and training | Weekly at the NSD site. | Inspection checklist, notes, and photos included in the Project’s monthly progress report. | Contractor | City Satker |
<table>
<thead>
<tr>
<th>Project Phases/Activities</th>
<th>Anticipated Impacts</th>
<th>Monitoring Method and Indicators</th>
<th>Monitoring Frequency and Location</th>
<th>Reporting Requirements</th>
<th>Party to Implement</th>
<th>Party to Monitor</th>
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<td></td>
<td>• Evaluation of the construction labors that they are fit for work based on the letter issued by competent doctors.</td>
<td>Once, prior to construction at NSD site contractor office.</td>
<td>Evaluation report included in the Project’s monthly progress report.</td>
<td>Contractor</td>
<td>City Satker</td>
<td></td>
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<tr>
<td>Post-construction Phase</td>
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<tr>
<td>Operational and Maintenance</td>
<td>Ambient Air Quality and Noise</td>
<td>Visual inspection of areas where construction wastes are stored; the inspection should be completed with checklist/notes, photos and personnel signature.</td>
<td>Weekly until the remaining construction waste have been completely removed from the NSD site.</td>
<td>Description on final construction waste disposal included in the Project’s monthly report.</td>
<td>Contractor</td>
<td>City Satker</td>
</tr>
</tbody>
</table>
|                           | Odor, Insect, and Rodent | • Conduct visual inspection of waste bins at each house and temporary waste shelter/storage at the NSD site for odor, housekeeping and indication of vector.  
• Complete inspection checklist with /notes, photos, and personnel signature. | Weekly | Inspection results included in the in the Project’s monthly report (during maintenance period) | Contractor (during maintenance period) | City Satker |
|                           |                     |                                 |                                  |                        |                   |                 |
|                           |                     |                                 |                                  |                        |                   |                 |
| Clean Water Quality       | • Evaluate the reservoir inspection forms.  
• Field check to monitor water discharge.  
• Conduct clean water quality testing once a month. | Monthly, directly at the outlet of the groundwater well or reservoir | Evaluation and inspection results are included in the Project’s monthly report. Water quality testing result. | The Purirano NSD management board | The Purirano NSD management board | City Satker |
<p>| | | | | | | |
|                           |                     |                                 |                                  |                        |                   |                 |
| Surface Water Quality     | Regular disposal of septic tank sludge | Once in three years | Schedule and record on sludge disposal | The Purirano NSD management board | City Satker and LCO |                 |</p>
<table>
<thead>
<tr>
<th>Project Phases/Activities</th>
<th>Anticipated Impacts</th>
<th>Monitoring Method and Indicators</th>
<th>Monitoring Frequency and Location</th>
<th>Reporting Requirements</th>
<th>Party to Implement</th>
<th>Party to Monitor</th>
</tr>
</thead>
</table>
| Community Perception and Attitude | • Evaluate the results of regular community forum as described in the minute of meeting.  
• Evaluate the results of GRM implemented. | Monthly | The evaluation results are recorded in the Project's monthly report. | The Purirano NSD management board | City Satker and LCO |
8.3 Institutional Arrangement

81 The Project Management Unit (PMU) of Directorate General of Human Settlements, Ministry of Public Work and Housing will take overall, day-to-day responsibility for the management, coordination, and monitoring of EMP implementation described in this IEE.

82 The Local Coordinating Office (at the Bappeda/Planning Agency of Kendari Municipality) will provide coordination, supervision and monitoring including environmental checklist.

83 The City Satker (at the Public Work Agency of the Kendari Municipality) together with the local government (Kendari Municipality) will disseminate the NSD activity and establish the Grievance Redress Mechanism for implementation at the Purirano NSD; and supervise contractor and the NSD management board regarding EMP implementation.

Table 12 Roles and Responsibilities on EMP Implementation and Reporting

<table>
<thead>
<tr>
<th>Government Level / Institution</th>
<th>Responsibilities</th>
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</thead>
<tbody>
<tr>
<td><strong>National Government Level</strong></td>
<td></td>
</tr>
</tbody>
</table>
| Ministry of Public Works – Directorate General of Human Settlements / Project Management Unit (PMU) | • Overall coordination, supervision, monitoring.  
• Preparation and submission of consolidated quarterly progress reports and evaluation reports.  
• Prepare guidelines for the environmental due diligence and monitoring of environmental management plan. |
| **Kendari City/Municipality** |                  |
| Local Coordinating Office (at Bappeda/Planning Agency of Kendari Municipality) | • Provide overall coordination, supervision, monitoring and approval of village proposals including environmental checklists.  
• Prepare quarterly progress reports including environmental.  
• Provide technical support to community advisors and BKMs/CIOs.  
• Carry out environmental due diligence.  
• Monitor the implementation of the environmental management plan. |
| City Satker (at Public Work Agency of Kendari Municipality) | • Undertake dissemination regarding NSD activity  
• Establish Grievance Redress Mechanism (GRM) to address community complaints regarding NSD activity. |
| Environmental Agency of Kendari Municipality | • Provide guidance on environmental checklists.  
• Coordinate with community advisors to conduct site visits, if necessary, to validate the screening/assessment results.  
• Review the engineering design and environmental checklists and provide permit for construction of a deep well.  
• Conduct random checking during construction and after completion to inspect environmental procedures and impacts. |
| Health Agency of Kendari Municipality | • Test collected water quality samples to determine if collected water sources meet the drinking water standards. |
### Government Level / Institution

<table>
<thead>
<tr>
<th>Contractor</th>
<th>Responsibilities</th>
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</thead>
<tbody>
<tr>
<td>- Carry out construction phase consist of (i) recruitment of labor, (ii) mobilization of equipment and materials, and (iii) construction of infrastructures.</td>
<td></td>
</tr>
<tr>
<td>- Carry out operational and maintenance for 6 (six) months after construction phase is completed.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NSD Management Board (Badan Pengelola) at the Public Work Agency of Kendari Municipality</th>
<th>After handover to City Satker, the NSD Management Board will be responsible for:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Carry out management, regular maintenance and immediate repair and coordination meeting regarding damage components of housing (roof, wall and floor) and infrastructure in each housing such as electricity and water supply system.</td>
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<tr>
<td>- Carry out management and regular maintenance for waste and sludge collection/suctioning and transportation to TPA Puuwatu or IPLT Anduonohu.</td>
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<tr>
<td>- Carry out maintenance of NSD landscape.</td>
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<tr>
<td>- Carry out regular coordination meeting through community forum.</td>
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</table>

### 8.4 Cost Estimate for EMP Implementation

The following table presents the cost estimate required for EMP for the pre-construction, construction, and post-operation phases. The Project has estimated a cost of USD 9,135 for implementing the mitigation and monitoring associated with the construction of facility and infrastructure of Purirano NSD which will be financed from various sources.

<p>| Table 13 Cost Estimate for EMP Implementation |
|---|---|---|---|---|---|
| Item | Unit | Cost per Unit (USD) | Quantity | Total (USD) | Funding Source |
| Mitigation Cost | | | | | |
| Pre-construction/Construction | | | | | |
| Project dissemination activities | Event | 50 | 2 events | 100 | City Satker |
| Runoff and sedimentation control | Package (construction and post construction) | 500 | 1 package | 500 | Contractor |
| Construction of protection fence, security post, and temporary toilet | Package | 3,000 | 1 package | 3,000 | Contractor |
| Provision of PPE | Package (for 80 persons) | 800 | 1 package | 800 | Contractor |
| Health examination by doctors | Package/month (for 80 persons) | 75 | 6 months | 450 | Contractor |
| HIV/AIDS infectious diseases Induction (by contractor) | Package | 75 | 1 package | 75 | Contractor |
| Solid, construction waste management (construction and post construction) | Month | 150 | 6 months | 900 | Contractor |</p>
<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Cost per Unit (USD)</th>
<th>Quantity</th>
<th>Total (USD)</th>
<th>Funding Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water reservoir regular cleaning</td>
<td>Cleaning is once every 3 months</td>
<td>50</td>
<td>2 cleaning events for 6 months</td>
<td>100</td>
<td>Contractor</td>
</tr>
<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td>Sub-total cost for mitigation</td>
<td></td>
<td></td>
<td></td>
<td>5,925</td>
<td></td>
</tr>
</tbody>
</table>

| Monitoring Cost                          |                               |                     |                   |             |                |

### Preconstruction/Construction

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Cost per Unit (USD)</th>
<th>Quantity</th>
<th>Total (USD)</th>
<th>Funding Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Periodic review and evaluation of grievance reports</td>
<td>Once per month</td>
<td>35</td>
<td>6 months</td>
<td>210</td>
<td>City Satker</td>
</tr>
<tr>
<td>Ambient air quality testing and ambient noise level measurements</td>
<td>Per sampling and analysis event</td>
<td>300</td>
<td>2 events</td>
<td>600</td>
<td>Contractor</td>
</tr>
<tr>
<td>Clean water quality sampling and testing</td>
<td>Per sampling and testing event</td>
<td>25</td>
<td>6 events</td>
<td>150</td>
<td>Contractor</td>
</tr>
</tbody>
</table>

### Post Construction/Maintenance

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Cost per Unit (USD)</th>
<th>Quantity</th>
<th>Total (USD)</th>
<th>Funding Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field checking for water supply system and waste management</td>
<td>Once per month</td>
<td>25</td>
<td>6 months</td>
<td>150</td>
<td>Contractor</td>
</tr>
<tr>
<td>Clean water quality sampling and testing</td>
<td>Per sampling and testing event</td>
<td>350</td>
<td>6 months</td>
<td>2,100</td>
<td>Contractor</td>
</tr>
</tbody>
</table>

Sub-total cost for monitoring 3,210

GRAND TOTAL 9,135

### 8.5 Reporting Procedures

85 The contractor will prepare the Project’s monthly reports about the EMP implementation (both mitigation and monitoring) during the construction and post-construction/maintenance phases and submit them to the City Satker for review/verification. Upon review by the City Satker, these reports will be submitted to PMU which will carry out quarterly review to assess how effectively the EMP has been implemented and compliance with ADB environmental safeguard requirements. The result of this review will be included in the quarterly monitoring report and submitted to ADB.
Chapter 9 Conclusions

86 The IEE report has been prepared primarily for the planned construction of facilities and infrastructure of the Purirano New Site Development (NSD) in Kendari City which is to be funded by ADB.

87 The anticipated environmental impacts related with the planned activities at the pre-construction, construction, and maintenance/operation phases of Purirano NSD are temporary and localized within the construction site and they are mostly construction related impacts. These impacts can be readily managed to a minimal level with adequate resources and consistent implementation of mitigation measures and monitoring requirements defined in the Environmental Management Plan. The mitigation and monitoring will be primarily undertaken by the Contractor during the construction phase on: ambient air quality and noise level; sedimentation and surface water quality; groundwater flow and quality; work and business opportunities; public perception and attitude; and occupational health and safety, and hygiene. The City Satker will supervise the contractor.

88 The overall development of Purirano NSD will improve the welfare of its resident in terms of providing proper housing for low-income communities with adequate facility and infrastructure; and alleviate the issues due to growing slum settlements in Kendari City.

89 Dissemination about project implementation through Public Consultation and establishment of Grievance Redress Mechanism (GRM) will be undertaken during the project implementation as defined in the EMP. In addition, regular communication and community forum will be established to facilitate communication between the residents of Purirano NSD and related Project’s stakeholders.

90 The implementation of EMP will be reported on quarterly basis to ADB for subsequent disclosure at ADB’s website. Further, the information regarding NUSP-2, IEE and EMP will be provided at the City Satker (Public Work Agency of Kendari City) and the office of Purirano NSD management board (Badan Pengelola) in the forms of document, leaflet, booklets, and short movie as appropriate.
# Chapter 10 References

<table>
<thead>
<tr>
<th>Source</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPS Kota Kendari 2015:</td>
<td>Kendari Dalam Angka tahun 2015. Badan Pusat Statistik Kota Kendari</td>
</tr>
<tr>
<td>UKL-UPL, 2016</td>
<td>Dokumen UKL-UPL Kegiatan Pembangunan Permukiman Baru Pemerintah Kota Kendari</td>
</tr>
<tr>
<td>GoI 2012</td>
<td>Type of Business and/or Activity Requiring AMDAL, Minister of Environment Regulation No. 5 Year 2012</td>
</tr>
<tr>
<td>GoI 2012</td>
<td>Guidelines for the Preparation of Environmental Documents, Minister of Environment Regulation No. 16 Year 2012</td>
</tr>
<tr>
<td>GoI 2008</td>
<td>Types of Business and/or Activity in Public Works Sector Requiring UKL-UPL, Minister of Public Works Regulation No. 10/PRT/M/2008</td>
</tr>
</tbody>
</table>
APPENDICES
Appendix 1 Decree of Head of Environmental Agency in Kendari City about UKL-UPL Approval at NSD Locations in Kendari City

PEMERINTAH KOTA KENDARI
BADAN LINGKUNGAN HIDUP
Jalan Balai Kota II No 65 Telp (0401) 324314 Kendari

KEPUTUSAN KEPALA BADAN LINGKUNGAN HIDUP
KOTA KENDARI
NOMOR 31 TAHUN 2016

TENTANG
Persetujuan Upaya Pengelolaan Lingkungan Hidup
DAN Upaya Pemantauan Lingkungan Hidup (UKL-UPL)
Kegiatan Pembangunan Pemukiman Baru
PEMERINTAH KOTA KENDARI

Menimbang:

a. bahwa setiap rencana dan/atau kegiatan yang pada dasarnya menimbulkan dampak terhadap lingkungan hidup, perlu dialisisi sejak awal perencanaannya, sehingga langkah pengendalian dampak negatifnya dapat dipersiapkan sedini mungkin;

b. bahwa penyelenggaraan pengelolaan lingkungan hidup dalam rangka pembangunan berkelanjutan yang berawasan lingkungan, harus didasarkan pada norma hukum;

c. bahwa untuk memenuhi maksud huruf a dan huruf b diatas, dipandang perlu memberikan Persetujuan UKL-UPL Kegiatan Pembangunan Pemukiman Baru Pemerintah Kota Kendari dengan Keputusan Kepala Badan Lingkungan Hidup Kota Kendari.

Mengingat:

1. Undang-Undang Nomor 5 Tahun 1990 tentang Konservasi Sumberdaya Hayati dan Ekosistemnya (Lembaran Negara Republik Indonesia Tahun 1990 Nomor 49, Tambahan Lembaran Negara Republik Indonesia Nomor 3419);

2. Undang-Undang Nomor 6 Tahun 1995 tentang Pembentukan Kotamadya Daerah Tingkat II Kendari (Lembaran Negara Republik Indonesia Tahun 1995 Nomor 44, Tambahan Lembaran Negara Republik Indonesia Nomor 3206);

3. Undang-Undang Nomor 41 Tahun 1999 tentang Kehutanan (Lembaran Negara Republik Indonesia Tahun 1999 Nomor 167, Tambahan Lembaran Negara Republik Indonesia Nomor 3888), sebagaimana telah diubah dengan Undang-Undang Nomor 19 Tahun 2004 tentang Penetapan Peraturan Pengganti Undang-Undang Nomor 1 Tahun 2004 tentang Perubahan atas Undang-Undang Nomor 41 Tahun 1999 tentang Kehutanan Menjadi Undang-Undang (Lembaran Negara Republik Indonesia Tahun 2004 Nomor 67, Tambahan Lembaran Negara Republik Indonesia Nomor 4401);
4. Undang-Undang Nomor 26 Tahun 2007 tentang Penataan Ruang (Lembaran Negara Republik Indonesia Tahun 2007 Nomor 68, Tambahan Lembaran Negara Republik Indonesia Nomor 4725 Tahun 2007);
5. Undang Undang Republik Indonesia Nomor 18 Tahun 2008 tentang Pengelolaan Sampah (Lembaran Negara Republik Indonesia Tahun 2008 Nomor 69, Tambahan Lembaran Negara Republik Indonesia Nomor 4851)
6. Undang Undang Republik Indonesia Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup (Lembaran Negara Republik Indonesia Tahun 2009 Nomor 140, Tambahan Lembaran Negara Republik Indonesia Nomor 5059);
7. Undang Undang Nomor 1 Tahun 2011 Tentang Perumahan dan Kawasan Pemukiman (Lembaran Negara Republik Indonesia Tahun 2011 Nomor 7, Tambahan Lembaran Negara Republik Indonesia Nomor 5188);
8. Undang-Undang Nomor 23 Tahun 2014 tentang Pemerintahan Daerah (Lembaran Negara Republik Indonesia Tahun 2014 Nomor 244, Tambahan Lembaran Negara Republik Indonesia Nomor 5587) sebagaimana telah diubah terakhir dengan Undang-Undang Nomor 9 Tahun 2015 tentang perubahan kedua atas Undang-Undang Nomor 23 Tahun 2014 tentang Pemerintahan Daerah (Lembaran Negara Republik Indonesia Tahun 2015 Nomor 58, Tambahan Lembaran Negara Republik Indonesia Nomor 5679);
9. Peraturan Pemerintah Republik Indonesia Nomor 82 Tahun 2001 tentang Pengelolaan Kualitas Air dan Pengendalian Pencemaran Air (Lembaran Negara Republik Indonesia Tahun 2001 Nomor 153, Tambahan Lembaran Negara Republik Indonesia Nomor 4161);
10. Peraturan Pemerintah Nomor 27 Tahun 2012 tentang Izin Lingkungan (Lembaran Negara Republik Indonesia Tahun 2012 Nomor 48, Tambahan Lembaran Negara Republik Indonesia Nomor 5285);
11. Peraturan Pemerintah Nomor 81 Tahun 2012 tentang Pengelolaan Sampah Rumah Tangga dan Sampah Sejenis Sampah Rumah Tangga (Lembaran Negara Republik Indonesia Tahun 2012 Nomor 188, Tambahan Lembaran Negara Republik Indonesia Nomor 5347);
13. Peraturan Menteri Lingkungan Hidup Nomor 16 Tahun 2012 tentang Pedoman Penyusunan Dokumen Lingkungan Hidup;
14. Peraturan Menteri Lingkungan Hidup Nomor 08 Tahun 2013 tentang Tata Laksana Penilaian dan Pemeriksaan Dokumen Lingkungan Hidup serta Penerbitan Izin Lingkungan;
15. Peraturan Menteri Lingkungan hidup Republik Indonesia Nomor 5 Tahun 2014 Tentang Baku Mutu Air limbah;
16. Peraturan Daerah Kota Kendari Nomor 2 Tahun 2008 tentang Urusan Pemerintah yang Menjadi Kewenangan Pemerintah Kota Kendari (Lembaran Daerah Tahun 2008 Nomor 2);
17. Peraturan Daerah Kota Kendari Nomor 4 Tahun 2009 tentang Analisis Mengenai Dampak Lingkungan (AMDAL), Upaya Pengelolaan Lingkungan (UKL), Upaya Pemantauan Lingkungan (UPL) dan Standar Operasional Procedure (SOP), (Lembaran Daerah Kota Kendari Nomor 4 Tahun 2009);


19. Peraturan Daerah Kota Kendari Nomor 5 Tahun 2016 tentang Pembentukan dan Susunan Perangkat Daerah Kota Kendari (Lembaran Daerah Kota Kendari Tahun 2016 Nomor 5);

Memperhatikan:

MEMUTUSKAN:

Menetapkan:


KEDUA : Dengan persetujuan UKL-UPL dimaksud pada Diktum KESATU, pemrakarsa harus memperhatikan ketentuan-ketentuan sebagai berikut:
1. Dokumen UKL-UPL yang disusun oleh pemrakarsa/penanggung jawab usaha dan/atau kegiatan harus dijadikan pedoman dalam pelaksanaan Kegiatan Pembangunan Pemukiman Baru Pemerintah Kota Kendari dengan sungguh-sungguh dan konsekuen;
2. Menjaga ketertiban umum dan senantiasa membina hubungan baik dengan tetangga sekitar;
3. Apabila timbul kerusakan dan pencemaran lingkungan serta keresahan sosial di lingkungan sekitar lokasi pelaksanaan Kegiatan Pembangunan Pemukiman Baru Pemerintah Kota Kendari, maka Penanggung Jawab Usaha dan/atau Kegiatan harus bertanggung jawab atas akibat yang ditimbulkannya;
4. Sarana dan prasarana instalasi pengolahan limbah cair dan padat yang disepakati dalam Dokumen UKL-UPL harus dioperasionalkan secara maksimal agar kualitas air di lokasi sekitarnya dan ekosistem pada umumnya tidak melampaui ambang batas.
8. Menyediakan lahan untuk Pembangunan dan penempatan TPS dan RTH.
9. Menyediakan sarana angkutan sampah untuk digunakan sebagai mobilisasi angkutan sampah dari kompleks pemukiman ke TPS.
13. Apabila dalam pelaksanaan Kegiatan Pembangunan Pemukiman Baru Pemerintah Kota Kendari menimbulkan dampak penting, akan tetapi dampak yang dimaksud belum diatur dalam Dokumen UKL-UPL maka kepada penanggung jawab usaha dan/atau kegiatan wajib untuk melakukan pengelolaan dan pemantauan lingkungan hidup sesuai dengan beban kerusakan dan pencemaran lingkungan.
KETIGA: Keputusan ini menjadi dasar dalam hal mengurus perizinan yang berkaitan dengan Kegiatan Pembangunan Pemukiman Baru Pemerintah Kota Kendari.

KEEMPAT: Keputusan ini mulai berlaku pada tanggal ditetapkan, dengan ketentuan apabila dikemudian hari terdapat kekeliruan didalamnya maka akan diadakan pembetulan sebagaimana mestinya.

Ditetapkan di Kendari pada tanggal, 29-12-2016

KEPALA BADAN LINGKUNGAN HIDUP
KOTA KENDARI

Pembina Utama Muda, Gol. IV/c
NIP. 19610505 199103 2 004

Tembusan:
1. Walikota Kendari (sebagai laporan), di Kendari;
2. Kepala Dinas Tata Kota dan Perumahan Kota, Kendari di Kendari;
4. Camat Kendari, di Kendari;
5. Lurah Purirani, di Purirano;
6. Arsip.
Appendix 2 Environment Permit (Izin Lingkungan)

PEMERINTAH KOTA KENDARI
BADAN LINGKUNGAN HIDUP
Jalan Balai Kota II No 65 Telp (0401) 324314 Kendari

KEPUTUSAN KEPALA BADAN LINGKUNGAN HIDUP
KOTA KENDARI
NOMOR 192 TAHUN 2016

TENTANG
IZIN LINGKUNGAN RENCANA PENGELOLAAN LINGKUNGAN HIDUP
DAN RENCANA PEMANTAUAN LINGKUNGAN HIDUP KEGIATAN
PEMBANGUNAN PEMUKIMAN BARU PEMERINTAH KOTA KENDARI

KEPALA BADAN LINGKUNGAN HIDUP KOTA KENDARI,

Menimbang:

a. bahwa Rencana Pengelolaan Lingkungan Hidup dan
   Rencana Pemantauan Lingkungan Hidup Kegiatan
   Pembangunan Pemukiman Baru Pemerintah Kota
   Kendari merupakan kegiatan yang wajib memiliki
   UKL-UPL;

b. bahwa terhadap usaha dan/atau kegiatan yang
   wajib memiliki UKL-UPL dan dinyatakan layak
   ditinjau dari aspek lingkungan hidup, wajib
   diterbitkan izin lingkungan;

c. bahwa berdasarkan pertimbangan sebagaimana
   dimaksud dalam huruf a dan huruf b, perlu
   menetapkan Keputusan Kepala Badan Lingkungan
   Hidup Kota Kendari tentang Izin Lingkungan
   Rencana Pengelolaan Lingkungan Hidup Dan
   Pemantauan Lingkungan Hidup Kegiatan
   Pembangunan Pemukiman Baru Pemerintah Kota
   Kendari.

Mengingat:

1. Undang-Undang Nomor 5 Tahun 1990 tentang
   Konservasi Sumberdaya Hayati dan Ekosistemnya
   (Lembaran Negara Republik Indonesia Tahun 1990
   Nomor 49, Tambahan Lembaran Negara Republik
   Indonesia Nomor 3419);

2. Undang-Undang Nomor 6 Tahun 1995 tentang
   Pembentukan Kotamadya Daerah Tingkat II Kendari
   (Lembaran Negara Republik Indonesia Tahun 1995
   Nomor 44, Tambahan Lembaran Negara Republik
   Indonesia Nomor 3206);

3. Undang-Undang Nomor 41 Tahun 1999 tentang
   Kehutanan (Lembaran Negara Republik Indonesia
   Tahun 1999 Nomor 167, Tambahan Lembaran
   Negara Republik Indonesia Nomor 3888),
   sebagaimana telah diubah dengan Undang-Undang
   Nomor 19 Tahun 2004 tentang Penetapan
   Peraturan Pengganti Undang-Undang Nomor 1
   Tahun 2004 tentang Perubahan atas Undang-
   Undang Nomor 41 Tahun 1999 tentang Kehutanan
   Menjadi Undang-Undang (Lembaran Negara
   Republik Indonesia Tahun 2004 Nomor 67,
   Tambahan Lembaran Negara Republik Indonesia

54
4. Undang-Undang Nomor 26 Tahun 2007 tentang Penataan Ruang (Lembaran Negara Republik Indonesia Tahun 2007 Nomor 68, Tambahan Lembaran Negara Republik Indonesia Nomor 4725 Tahun 2007);
5. Undang-Undang Republik Indonesia Nomor 18 Tahun 2008 tentang Pengelolaan Sampah (Lembaran Negara Republik Indonesia Tahun 2008 Nomor 69, Tambahan Lembaran Negara Republik Indonesia Nomor 4851);
6. Undang-Undang Republik Indonesia Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup (Lembaran Negara Republik Indonesia Tahun 2009 Nomor 140, Tambahan Lembaran Negara Republik Indonesia Nomor 5059);
7. Undang-Undang Nomor 1 Tahun 2011 Tentang Perumahan dan Kawasan Pemukiman (Lembaran Negara Republik Indonesia Tahun 2011 Nomor 7, Tambahan Lembaran Negara Republik Indonesia Nomor 5188);
8. Undang-Undang Nomor 9 Tahun 2015 tentang Perubahan Kedua atas Undang-Undang Nomor 23 Tahun 2014 tentang Pemerintahan Daerah (Lembaran Negara Republik Indonesia Tahun 2015 Nomor 58, Tambahan Lembaran Negara Republik Indonesia Nomor 5679);
9. Peraturan Pemerintah Republik Indonesia Nomor 82 Tahun 2001 tentang Pengelolaan Kualitas Air dan Pengendalian Pencemaran Air (Lembaran Negara Republik Indonesia Tahun 2001 Nomor 153, Tambahan Lembaran Negara Republik Indonesia Nomor 4161);
10. Peraturan Pemerintah Nomor 27 Tahun 2012 tentang Izin Lingkungan (Lembaran Negara Republik Indonesia Tahun 2012 Nomor 48, Tambahan Lembaran Negara Republik Indonesia Nomor 5285);
11. Peraturan Pemerintah Nomor 81 Tahun 2012 tentang Pengelolaan Sampah Rumah Tangga dan Sampah Sejenis Sampah Rumah Tangga (Lembaran Negara Republik Indonesia Tahun 2012 Nomor 188, Tambahan Lembaran Negara Republik Indonesia Nomor 5347);
13. Peraturan Menteri Lingkungan Hidup Nomor 16 Tahun 2012 tentang Pedoman Penyusunan Dokumen Lingkungan Hidup;
14. Peraturan Menteri Lingkungan Hidup Nomor 08 Tahun 2013 tentang Tata Laksana Penilaian dan Pemeriksaan Dokumen Lingkungan Hidup serta Penerbitan Izin Lingkungan;
15. Peraturan Menteri Lingkungan Hidup Republik Indonesia Nomor 5 Tahun 2014 Tentang Baku Mutu Air limbah;
16. Peraturan Daerah Kota Kendari Nomor 2 Tahun 2008 tentang Urusan Pemerintah Yang Menjadi Kewenangan Pemerintah Kota Kendari (Lembaran Daerah Tahun 2008 Nomor 2);
17. Peraturan Daerah Kota Kendari Nomor 4 Tahun 2009 tentang Analisis Mengenai Dampak Lingkungan (AMDAL), Upaya Pengelolaan Lingkungan (UKL), Upaya Pemantauan Lingkungan (UPL) dan Standar Operasional Procedure (SOP), (Lembaran Daerah Kota Kendari Nomor 4 Tahun 2009);
19. Peraturan Daerah Kota Kendari Nomor 5 Tahun 2016 tentang Pembentukan dan Susunan Perangkat Daerah Kota Kendari (Lembaran Daerah Kota Kendari Tahun 2016 Nomor 5);


MEMUTUSKAN:

Menetapkan : Memberikan izin lingkungan kepada:
1. Nama Perusahaan : 
2. Jenis Usaha dan/atau Kegiatan : Pembangunan Pemukiman baru
3. Penanggung Jawab : Ir. Yohanis Tulak
   (081245833500)
4. Alamat : Jl. Abunawas No. 4
   Kota Kendari
5. Lokasi Kegiatan : Jl. R.E Martadinata
   Kel. Purirano Kec. Kendari
   Kota Kendari

KEDUA : Ruang lingkup kegiatan dalam Keputusan Kepala Badan Lingkungan Hidup Kota Kendari ini meliputi:
a. Luas tanah tersedia: 41.907 m²;
b. Jumlah unit rumah yang akan dibangun yaitu: 225 unit Jenis bangunan permanent;
c. Tipe rumah yang akan dibangun yaitu tipe 36
d. Penggunaan lahan yang lain selain untuk perumahan yaitu tempat pengolahan sampah terpadu (TPST), kolam retensi, jalan kompleks, dan ruang terbuka hijau (RTH);
e. Sarana dan prasarana pendukung yang akan dibangun:
- Jalan masuk kompleks dengan ukuran lebar 8 m dan jalan lingkungan lebar 6 m dengan konstruksi Aspal/paving blok.
- Saluran drainase tipe 60 dan tipe 80 Saluran drainase dialirkan ke drainase utama yang ada di jalan R.E Martadinata.
- Tempat pengolahan sampah terpadu (TPST)
- Ruang Terbuka Hijau (RTH) Jenis tanaman RTH yaitu trabes, tanjung, palm putri dan bunga penghis.
- Kolam retensi dengan kapasitas 200 s/d 220 m³ air limbah dengan teknologi biologis an-aerob berupa pengendapan dan penjernihan.

f. Jumlah penggunaan energi: sebesar 1.300 watt untuk tiap unit (energi listrik);

Sumber air bersih berasal dari PDAM.

KETIGA : Penanggung Jawab Usaha dan/atau Kegiatan dalam melaksanakan kegiatannya harus memenuhi persyaratan memiliki izin usaha dan/atau izin lain yang terkait dengan kegiatannya.

KEEMPAT : Instansi pemberi izin wajib memperhatikan izin lingkungan sebagai syarat penerbitan izin dalam pelaksanaan kegiatan sebagaimana dimaksud dalam diktum KETIGA.

KELIMA : Penanggung Jawab Usaha dan/atau Kegiatan dalam melaksanakan kegiatannya harus memenuhi kewajiban melakukan pengelolaan dampak sebagaimana tercantum dalam Upaya Pengelolaan Lingkungan dan Upaya Pemantauan Lingkungan (UKL-UPL) sebagaimana tercantum dalam Lampiran I yang merupakan bagian tidak terpisahkan dari Keputusan ini.

KEENAM : Selain kewajiban sebagaimana dimaksud dalam diktum KELIMA penanggung jawab usaha dan/atau kegiatan wajib melakukan pengelolaan dampak dengan pendekatan institusi, sosial ekonomi dan teknologi sebagaimana dimaksud dalam Lampiran II yang merupakan bagian tidak terpisahkan dari Keputusan ini.


KEDELapan : Izin Lingkungan ini berlaku sama dengan masa berlakunya masa izin usaha dan/atau kegiatan.
KESEMBILAN : Penanggung jawab usaha dan/atau kegiatan wajib mengajukan permohonan perubahan izin lingkungan apabila terjadi perubahan atas rencana usaha dan/atau kegiatannya sesuai dengan kriteria perubahan yang tercantum dalam Pasal 50 Peraturan Pemerintah Nomor 27 Tahun 2012 tentang Izin Lingkungan.

KESEPULUH : Menyampaikan laporan pelaksanaan persyaratan dan kewajiban sebagaimana dimaksud dalam Lampiran I, Lampiran II ketentuan dalam izin yang terkait Pengelolaan Lingkungan Hidup dan Pemantauan Lingkungan Hidup serta ketentuan-ketentuan lain terkait rekomendasi UKL-UPL yang memuat komponen fisik, kimia, dan biologi, setiap 6 (enam) bulan sekali sejak Keputusan ini ditetapkan melalui Badan Lingkungan Hidup Kota Kendari.

KESEBELAS : Menyampaikan laporan pelaksanaan persyaratan dan kewajiban sebagaimana dimaksud dalam Lampiran I dan Lampiran II, di luar dari komponen fisik, kimia, dan biologi, setiap 6 (enam) bulan sekali sejak Keputusan ini ditetapkan kepada instansi lain yang membimbing sebagaimana tercantum dalam Lampiran I dan Lampiran II.

KEDUABELAS : Apabila berdasarkan hasil pelaksanaan usaha dan/atau kegiatan, timbul dampak lingkungan hidup di luar dari dampak yang dikelola sebagaimana dimaksud dalam Lampiran I dan Lampiran II, penanggung jawab usaha dan/atau kegiatan wajib melaporkan kepada instansi terkait, sebagaimana dimaksud dalam diktem KESEPULUH dan diktem KEBELAS.

KETIGABELAS : Keputusan ini mulai berlaku pada tanggal ditetapkan, apabila dikemudian hari terdapat kekeliruan dalam Keputusan ini, maka akan dilakukan pembetulan sebagaimana mestinya

Ditetapkan di Kendari pada tanggal, 29-12-2016

KEPALA BADAN LINGKUNGAN HIDUP
KOTA KENDARI

Ir. RUSNANI
Pembina Utama Muda, Gol. IV/c
NIP. 19610505 199103 2 004

Tembusan :
1. Walikota Kendari (Sebagai Laporan), di Kendari;
2. Kepala Dinas Tata Kota dan Perumahan Kota Kendari di Kendari;
4. Kabag Hukum dan Perundang-undangan Set-Kota Kendari, di Kendari;
5. Dan Yang Bersangkutan.
Appendix 3 Local Regulation No 1/2012 about Kendari Spatial Plan

WALIKOTA KENDARI

PERATURAN DAERAH KOTA KENDARI
NOMOR : 1 TAHUN 2012

TENTANG
RENCANA TATA RUANG WILAYAH KOTA KENDARI
TAHUN 2010-2030

DENGAN RAHMAT TUHAN YANG MAHA ESA
WALIKOTA KENDARI,

Menimbang :

a. bahwa pembangunan wilayah Kota Kendari didasarkan
   pada Rencana Tata Ruang Wilayah Kota agar
   pembangunannya lebih berdaya guna, berhasil guna,
   berseri, selaras, seimbang dan berkelanjutan dalam rangka
   menjadikan kesejahteraan masyarakat yang terlibat, aman,
   dan berkeadilan;

b. bahwa Peraturan Daerah Kota Kendari Nomor 7 Tahun
   2002 tentang Rencana Tata Ruang Wilayah Kota Kendari
   Tahun 2001 s/d 2010 sudah tidak sesuai dengan
   kebutuhan dan perkembangan pembangunan wilayah Kota
   Kendari;

c. bahwa berdasarkan perimbangan pada huruf a dan huruf
   b, dipandang perlu menetapkan Peraturan Daerah tentang
   Rencana Tata Ruang Wilayah Kota Kendari Tahun 2010
   sampai Tahun 2030.

Mengingat :

1. Pasal 18 ayat (6) Undang-Undang Dasar Negara Republik
   Indonesia Tahun 1945;

2. Undang-Undang Nomor 5 Tahun 1960 tentang Peraturan
   Dasar Pokok-Pokok Negara (Lembaran Negara Republik
   Indonesia Tahun 1960 Nomor 104, Tambahan Lembaran
   Negara Republik Indonesia Nomor 2043);

3. Undang-Undang Nomor 5 Tahun 1964 tentang Perda
   (Lembaran Negara Republik Indonesia Tahun 1984 Nomor 2, Tambahan Lembaran Negara
   Republik Indonesia Nomor 3374);

4. Undang-Undang Nomor 4 Tahun 1992 tentang
   Perumahan dan Pembukaan (Lembaran Negara Republik
   Indonesia Tahun 1992 Nomor 23, Tambahan Lembaran
   Negara Republik Indonesia Nomor 3460);
PEMERINTAH KOTA KENDARI
SEKRETARIAT DAERAH KOTA KENDARI
Jalan Drs. H. Abdullah Siloae No.8 Telp. {0401} 321402 Fax. {0401} 323760 Kendari

SURAT KETERANGAN
Nomor: 593/3633

Yang bertanda tangan di bawah ini, Sekretaris Daerah Kota Kendari menerangkan bahwa:

Lokasi Tanah yang terletak di Kelurahan Puriruno, Kecamatan Kendari, Kota Kendari seluas ± 35.000 M² adalah benar bahwa tanah tersebut berada dalam pengusahaan dan pengelolaan Pemerintah Daerah Kota Kendari.

Demikian surat ini dibuat dengan penuh tanggung jawab, untuk memenuhi persyaratan usulan pembangunan Rumah Khusus.

SEKRETARIS DAERAH KOTA KENDARI

Dr. ALAMSYAH LOTUNAN, SE, M.SI
Pembina Utama Madya, Gol. IV/d
NIP: 19580114 196503 1 013
PEMERINTAH KOTA KENDARI
SEKRETARIAT DAERAH KOTA KENDARI
Jalan Drs. H. Abdullah Silindae No.8 Telp. (0401) 331402 Fax. (0401) 3223760 Kendari

SURAT KETERANGAN

Nomor: 032/5746

Yang bertanda tangan di bawah ini, Sekretaris Daerah Kota Kendari menerangkan bahwa:

Lokasi Tanah yang terletak di Kelurahan Puripano, Kecamatan Kendari, Kota Kendari yang merupakan tambahan perluasan untuk Lokasi Pembangunan Rumah Khusus seluas ± 10.000 M² adalah benar bahwa tanah tersebut berada dalam pengusahaan dan pengelolaan Pemerintah Daerah Kota Kendari.

Demikian surat ini dibuat dengan penuh tanggung jawab, untuk memenuhi persyaratan usulan pembangunan Rumah Khusus.

SEKRETARIS DAERAH KOTA KENDARI

Dr. ALAM SYAH LOTUNANI, SE, M.Si
Perbinaan Utama Madya, Gol. IV/d
NP: 19580114 198503 1 013
Kepada

Yth. Walikota Kendari
di -

Kendar


Selubungung dengan maksud tersebut, guna mendukung Pemerintah Kota Kendari dalam upaya percepatan pelaksanaan program pembangunan sektor infrastruktur, khususnya pada program-program kegiatan strategis yang mempunyai multi player effect terhadap pertumbuhan ekonomi serta layanan pada masyarakat yang membahasakan penyelesai secara komprehensif dan berkesinambungan serta dalam rangka mendukung percepatan pencapaian target millennium Development Goals (MDG’s) untuk penanganan permakanan kemiskinan di Perkotaan melalui kegiatan New Site Development (NSD) NUSP-2, maka plda prinsipnya DPKD Kota Kendari menyusui rencana pemanfaatan lahan milik Pemerintah Kota Kendari yang berlokasi di Kelurahan Purireno Kecamatan Kendari sebagai program pendukung (Kukind Program) lokasi kegiatan New Site Development (NSD) NUSP-2 di Kota Kendari dengan ketentuan pelaksanaaninya sesuai dengan peraturan Perundang-undangan yang berlaku.

Demikian Persetujuan ini disampaikan untuk menjadi bahan tindak lanjut, terima kasih.

DEWAN PERWAKILAN RAKYAT DAERAH KOTA KENDARI

[Signature]

ABD. RASAK, SP

Tembusan kepada Yth:
1. Sekretaris Daerah Kota Kendari di Kendari
2. Kepala Bappeda Kota Kendari di Kendari
3. Kepala Inspektorat Kota Kendari di Kendari
4. Kepala BPKAD Kota Kendari di Kendari
5. Camat Kendari di Kendari
6. Lurah Purireno di Purireno
7. Arsip.
Appendix 7 List of Attendance

<table>
<thead>
<tr>
<th>No.</th>
<th>NAMA</th>
<th>INSTANSI/UTUSAN</th>
<th>TANDA TANGAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>JERRY MAULPAH</td>
<td>LURAH PURIRANO</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>LA SALSACI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>H. YOHANIS TULAK</td>
<td>SATKER PIP</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Siti Nurwiyah</td>
<td>DINOS PUR</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>AMIR M</td>
<td>KONSULTAN UMKM</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>ARMIN RAUF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>P. SANTWAN</td>
<td>RT.02</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Ruswani</td>
<td>WARGA RT.02</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Sawaludin</td>
<td>WARGA LPM PURIRANO</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Curitida</td>
<td>WARGA PURIRANO</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Dona Aini</td>
<td>DINOS PUR</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>HASTA</td>
<td>WARGA PURIRANO</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>EDNY</td>
<td>RT.01</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>WAHAB</td>
<td>RT.07/RW.02</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>JAMAL</td>
<td>RT.07/RW.02</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Nasir</td>
<td>RT.07/RW.02</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Walima</td>
<td>RW.07/RW.02</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Daudz Sambi</td>
<td>RT.2/RW.1</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Siti Rahma</td>
<td>RT.2/RW.1</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>NUR SALIM</td>
<td>RT.0/RW.01</td>
<td></td>
</tr>
</tbody>
</table>
Appendix 8 Minute of Dissemination (Material of Dissemination is not available)
### Appendik 9 Ambient Air Quality Inside and Outside Purirano NSD

**Hasil Uji Kualitas Udara Ambient, Partikel, dan Kebisingan**

<table>
<thead>
<tr>
<th>No</th>
<th>Parameter</th>
<th>Waktu Pemantauan</th>
<th>Satuan</th>
<th>Hasil Pemantauan</th>
<th>Ruang Melu (MB)</th>
<th>Keterangan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sulfur Dioksida (SO2)</td>
<td>24 jam</td>
<td>ppm</td>
<td>13,40</td>
<td>21,30</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Nitrogen Dioksida (NO2)</td>
<td>24 jam</td>
<td>ppm/2h</td>
<td>6,12</td>
<td>4,66</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>Karbon Monoksida (CO)</td>
<td>24 jam</td>
<td>ppm</td>
<td>2,31</td>
<td>2,71</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Partikel (PM10)</td>
<td>24 jam</td>
<td>ppm</td>
<td>41,25</td>
<td>34,30</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>Umahatmakan (PM2.5)</td>
<td>24 jam</td>
<td>ppm</td>
<td>3,91</td>
<td>0,02</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Oksidasi O3</td>
<td>24 jam</td>
<td>ppm</td>
<td>81,5</td>
<td>81,5</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>Kebisingan</td>
<td>1 jam</td>
<td>s</td>
<td>55</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Nota:**
- Buku Mutu Ambien Mengandung peraturan No. 31 Tahun 2002 tentang Pengendalian Polusi Udara.
- Kepala Situ Pengawas: Dipo Tarib.
- Temperatur: 31°C - 37°C, Kelembaban: 65% - 85%.
- STA 1: Luar Lembaga BNS.
- STA 2: Jl. Pura RI Melastina, Kel. Purirano.

Diperiksa oleh,
Kepala UPT Laboratorium

Disahkan,
Kepala UPT Laboratorium

[Signature]

ANDI SETIAWAN, A. MKS
NIP. 197009011984041007
# Appendix 10 Result of Water Quality Testing

## PEMERINTAH KOTA KENDARI
### DINAS LINGKUNGAN HIDUP DAN KEHUTANAN
### UPTB LABORATORIUM LINGKUNGAN

Jl. Dangga No. 65 - (0401) 3126953 - Kota Kendari

Nomor: 660/84.2/UPT.Lab/2017  
Perihal: Hasil Pengujian Kualitas Air  
Lamp.: -

Kepada Yth  
Pemrakarsa Program NSD  
Kelurahan Purirano di -  
Kendari

---

## HASIL PENGUJIAN KUALITAS AIR

<table>
<thead>
<tr>
<th>No</th>
<th>Parameter Uji</th>
<th>Satuan</th>
<th>Baku Mutu</th>
<th>Hasil Uji</th>
<th>Keterangan</th>
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</thead>
<tbody>
<tr>
<td>A.</td>
<td>pH</td>
<td>-</td>
<td>6-9</td>
<td>7,2</td>
<td>MS BML</td>
</tr>
<tr>
<td>1</td>
<td>Suhu</td>
<td>°C</td>
<td></td>
<td>25,2</td>
<td>Deviasi 3</td>
</tr>
<tr>
<td>2</td>
<td>Warna</td>
<td>TCU</td>
<td>50</td>
<td>&lt; 5</td>
<td>MS BML</td>
</tr>
<tr>
<td>3</td>
<td>Bau</td>
<td>Tidak Berbau</td>
<td>6,8</td>
<td></td>
<td>MS BML</td>
</tr>
<tr>
<td>4</td>
<td>Kecepatan</td>
<td>NTU</td>
<td>25</td>
<td></td>
<td>MS BML</td>
</tr>
<tr>
<td>5</td>
<td>Residu Terlarut (TDS)</td>
<td>mg/l</td>
<td>1,500</td>
<td>83</td>
<td>MS BML</td>
</tr>
</tbody>
</table>

## KIMIA

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>A.</td>
<td>pH</td>
<td>-</td>
<td>6-9</td>
</tr>
<tr>
<td>1</td>
<td>Suhu</td>
<td>°C</td>
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</tr>
<tr>
<td>2</td>
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<td>TCU</td>
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<td>3</td>
<td>Bau</td>
<td>Tidak Berbau</td>
<td>6,8</td>
</tr>
<tr>
<td>4</td>
<td>Kecepatan</td>
<td>NTU</td>
<td>25</td>
</tr>
<tr>
<td>5</td>
<td>Residu Terlarut (TDS)</td>
<td>mg/l</td>
<td>1,500</td>
</tr>
</tbody>
</table>

## Mikrobiologis

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</thead>
<tbody>
<tr>
<td>C.</td>
<td>Caliform</td>
<td>Jm/100 ml</td>
<td>50</td>
</tr>
<tr>
<td>1</td>
<td>E-coli</td>
<td>Jm/100 ml</td>
<td>-</td>
</tr>
</tbody>
</table>

Keterangan:  
1. Baku Mutu Berdasarkan Permenkes No. 416 Th. 1990, Tentang BM Air Bersih  
2. (t) = belum diartikulan BML  
3. MS BML = Memenuhi Syarat Baku Mutu Lingkungan  
4. ttd = Tidak Terdeteksi  

Kendari, 22 September 2017  
Dliji Oleh,  

[Signature]

ANDIK SETIAWAN, A. MKL  
NIP. 33800903 200604 1 009

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