

Due Diligence Report

December 2020

CAM: Second Urban Environmental Management in the Tonle Sap Basin Project

Stueng Saen Solid Waste Management Subproject

Prepared by the Project Management Consultant for the Ministry of Public Works and Transport and for the Asian Development Bank.

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Due Diligence Report

Project No. 50102-002
Loan 3684-CAM
December 2020

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Tonle Sap Basin Project

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Prepared by the Ministry of Public Works and Transport with the assistance of project management consultants.

ABBREVIATIONS

ADB	–	Asian Development Bank
AH	–	affected household
AHH	–	Affected household head
AP	–	affected person/people
DED	–	detailed engineering design
DMS	–	detailed measurement survey
DRP	–	Detailed Resettlement Plan
GDR	–	General Department of Resettlement
IRC	–	Inter- Ministerial Resettlement Committee
IRP	–	Income Restoration Program
MEF	–	Ministry of Economy and Finance
MPWT	–	Ministry of Public Works and Transport
PGRC	–	Provincial Grievance Redress Committee
PMC	–	Project Management Consultant
PRSC	–	Provincial Resettlement Sub-Committee
RGC	–	Royal Government of Cambodia
RCS	–	Resettlement Cost Study
RF	–	Resettlement Framework
ROW	–	right of way
RP	–	Resettlement Plan
SES	–	Socio-Economic Survey
SWM	–	Solid Waste Management
TL	–	Team Leader
WG	–	working group
WWTP	–	waste water treatment plant

NOTES

- (i) The fiscal year (FY) of the Government of Cambodia ends on 31 December.
- (ii) In this report “\$” refers to US dollars.

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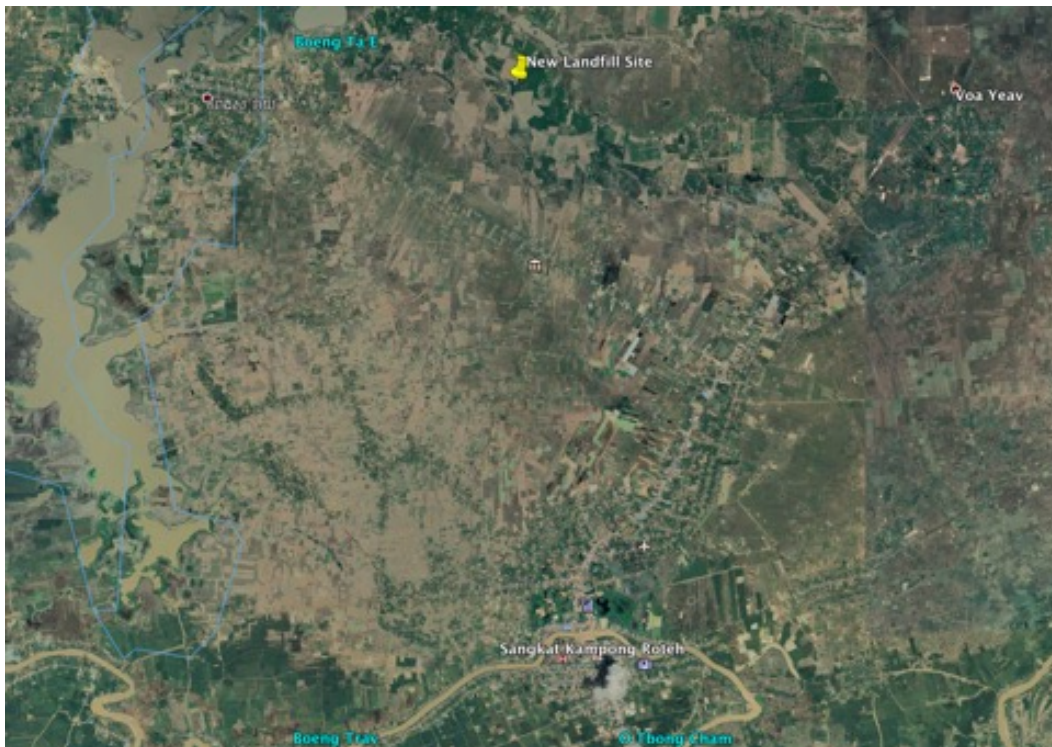
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I. Project and Subproject Description

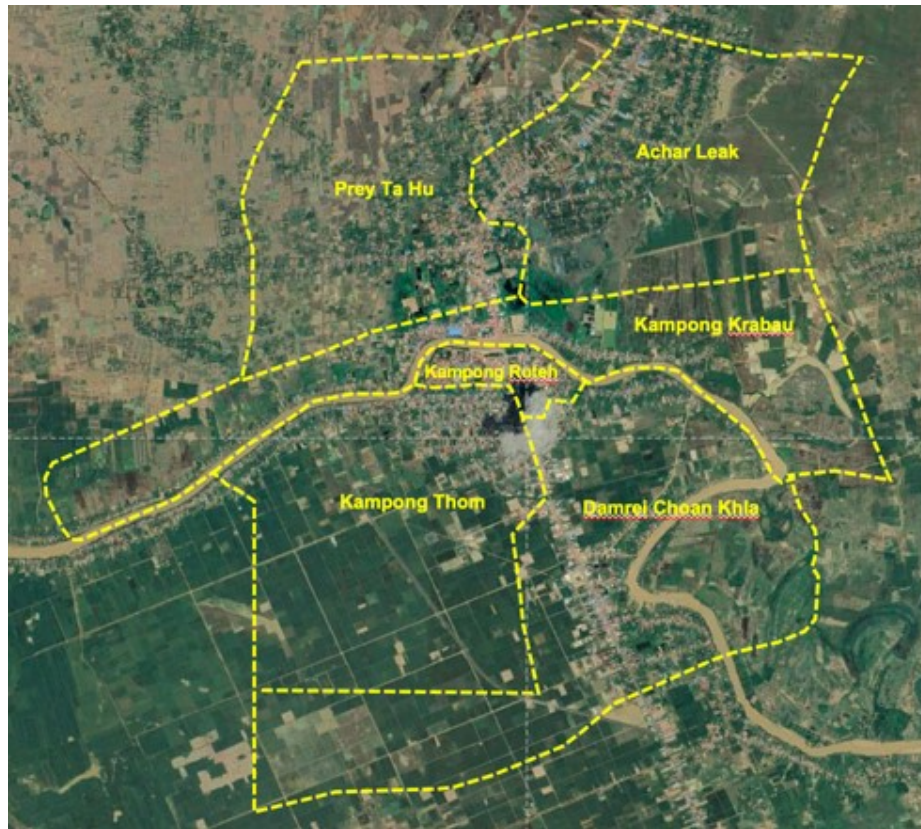
1. The Second Urban Environmental Management in the Tonle Sap Basin (TS-2, or the Project) funded by the Asian Development Bank (ADB) will improve the urban environmental services in Battambang, Serei Saophoan and Stung Saen, three of Cambodia's provincial cities located around the Tonle Sap lake. The Project will also improve institutional effectiveness to provide sustainable services and support an improved policy and planning environment for wastewater and solid waste management.
2. Stung Saen Solid Waste Management (SWM) subproject includes 76,375 m³ controlled landfill and associated landfill operations structures and equipment at the new site. The new landfill site is located 12.5 km from the town center on a total area of 19.7 ha (*Figure 1*). The Provincial Authorities plan is to bring solid waste from two other districts, which are Prasat Sambour (which is 30 km from the proposed site) and Kampong Svay (which is 8.50 km from the proposed landfill site). In order to construct the landfill site and easily reach it all-year-round, a 2.5 km approach road must be upgraded.

Figure 1 New Landfill Site Location



3. Based on the 2019 census, Stung Saen has a population of 34,890. The total population covered by solid waste services is 31,814. Currently, waste collection frequency is twice a week. As per the estimate of the town, per day solid waste collection is estimated between 30-36 tons. There is no weigh bridge facility in the town to verify the amount of waste collected per day. For collection of waste, a monthly charge of US \$ 1-1.5 /HH is levied. The town has 1 hospital, 8 clinics and 4 public health centers. Moreover, there are 21 handicraft industries in the town. At present, there is no proper hospital waste management system in the town. The service area is shown in Figure 2.

Figure 2 Proposed Service Area



4. The landfill stage 1, to be constructed now, is designed for 7-years' life-span (Figure 3). Following project implementation, the municipalities will have the technical designs and skills necessary to build and operate subsequent stages. The landfill design will incorporate the following features:
 - A gravel or laterite access road from the appropriate main road to the landfill site (2,500m);
 - Full perimeter fence;
 - Buildings for the gatehouse, generator where required and office buildings and ablution facilities;
 - An artificially lined cell with sufficient life for five years' operation;
 - A leachate collection system;
 - Internal access roads;
 - Appurtenant works such as lighting, weighbridge, sump pumps; and
 - Equipment including a 20-ton bulldozer, a 20-ton tracked excavator and a 6 x 4 tipping truck.
5. The new landfill site is located on land which is partially unmaintained plantation and partially secondary forest and shrub land area. The site connects directly to the access road at two locations in its Western perimeter. The site is surrounded by similar secondary forest and plantations (Annex E).

Figure 3 Landfill Site Outline Design



6. The new landfill site has 10 separate land parcels, but owned by only one land owner (see Annex B). Total area of the site is 19.7 ha, and it is to be purchased via willing buyer - willing seller (WBWS) agreement. Due to the acquisition done under WBWS arrangement no consultations were conducted by PMC, but GDR and PMU conducted consultations during pre-purchase and purchase agreement stages. WBWS process associated documents for the land purchase are available for ADB review at GDR office.
7. The subproject includes closure of existing landfill of 0.98 ha in Stueng Saen filled to a depth of 4 m. The existing landfill site is on state-owned land and has been in use since 2009. Crude dumping method is followed for disposal of waste. Recycling is solely done by the informal sector, i.e. waste pickers collecting recyclable materials. Spontaneous burning of waste is used at the landfill site. The existing landfill site is to be closed by the Project. The key components of a current landfill closure plan will be to encapsulate any remaining waste on site and put in place an environmental management and monitoring plans. The encapsulation will entail profiling, compacting and covering the dump pile with soil. Grass or other vegetation should be planted to minimize the erosion.

8. The existing landfill has 13 AHs / 56 APs of waste pickers working. All of the waste pickers are included under the Stueng Saen Wastewater treatment plant (WWTP) subproject DRP, both in the income restoration plan (IRP) for economic displacement. All eligible AHs choose cash-only assistance, as detailed in Stueng Saen WWTP DRP (para. 120). Double compensation will be paid under special package for 5 AHs / 21 APs waste pickers who are also classified as vulnerable (poor) as per Table 4 and Table 21 of the Stueng Saen WWTP DRP¹. All eligible vulnerable AHs will receive their cash assistance from WWTP DRP budget by end of November 2020 by GDR. Official public consultations and focus group discussions with waste pickers were conducted and reported in detail under MEF/GDR supervision prior and during preparation of the detailed resettlement plan (DRP) for Stueng Saen Wastewater System and Drainage Subproject, and reported as appropriate in the DRP².

II. Objective of Due Diligence

9. The main objective of this report is to confirm in detail the results of the IR impact and screening assessment, determine the IR impact classification and conclude the resettlement safeguard due diligence for the Stueng Saen SWM subproject landfill site and access road only. This is in line with the requirements of draft Resettlement Plan (RP, May 2018) para. 7.

III. Due Diligence Review

10. The finalization of the design of the SWM subproject is being completed in Q3-Q4 2020 in parallel with Battambang and Serei Saophoan SWM designs (one contract package with three lots for Stung Saen, Battambang and Serei Saophon SWM subprojects). This is much later than the Stueng Saen wastewater treatment (WWTP) and drainage subproject, which design was completed already in 2019 and the project implementation has started in Q3/2020. At the same time, the Stueng Saen SWM subproject landfill site and access road is categorized as C for IR, and hence does not require a DRP. Therefore, in order to facilitate and speed up the SWM design and procurement process, the compensation and IRP for waste pickers of the Stung Saen SWM subproject are covered under Stueng Saen WWTP DRP was cleared by ADB on May 2020. The compensation process with waste picker AHs is being finalized by GDR.
11. The due diligence and site screening were conducted through landfill site visits and discussions, consultations with the local authorities, and desk review and reporting. Field visits were conducted from September 2019 to February 2020 in parallel to the WWTP subproject detailed measurement survey (DMS) and preparation of DRP. A short pre-screening report was prepared and submitted to the GDR in June 2020. Final verification and confirmation that the Stung Saen landfill access road will not entail IR impact was conducted in October 2020. The SWM subproject has been categorized involuntary resettlement category B only due to the economic displacement of waste pickers (Annex A), which are included in the IRP of the Stueng Saen WWTP DRP.
12. During the preparation of draft RP and IEE (May, 2018) a total of three options for landfill site were identified³, but final selection was not made at this stage, hence it was decided to address the landfill site due diligence at preparation of the detailed engineering design (DED) stage. Henceforth, the SWM subproject landfill site was selected in 2019 out of the three options (Option 2). The purchase of the site has been completed by GDR on July 2019.

¹ ADB, May 2020. Second Urban Environmental Management in the Tonle Sap Basin Project. Detailed Resettlement Plan.

² ADB, May 2020. Second Urban Environmental Management in the Tonle Sap Basin Project. Detailed Resettlement Plan.

³ ADB, May 2018. Second Urban Environmental Management in the Tonle Sap Basin Project. initial Environmental Examination.

Figure 4 Landfill Site Options



Source: ADB, May 2018. *Second Urban Environmental Management in the Tonle Sap Basin Project. initial Environmental Examination.*

13. The most suitable site was selected for the Stung Saen landfill from the three proposed options via WBWS process. For example, during the selection process the owner of nearby cashew nuts farm (approximately 7 ha) refused to sell the land for the project (hence this farm is not impacted by the project). The site with willing seller is very suitable for landfill development due to its location and no economic or physical displacement impact.
14. The purchased privately-owned landfill site is currently an unmaintained tree plantation with secondary forest and shrubs. The site is mainly planted with Thong tree, but also with some cashew and other fruit trees growing. All the larger timber trees have been cut before the project feasibility study. The composition of trees is estimated 87% Thlong trees and 13% unproductive cashew trees, but with small numbers of cassava, sour fruit (krasaing), June Phum (Mkak), Ampel Teuk and tamarind, also unproductive. The plantation does not have any workers, as trees are not matured yet (see Picture 1 and Picture 2). Compensation for the trees to the land owner is included in WBWS agreement. Therefore, GDR role is limited to land purchase and compensation / IRP for the waste pickers. The landfill site has no IR impacts.

Picture 1 Landfill site trees (source: PMC)



Picture 2 Landfill site border with unaffected plantation season (source: PMC)



15. For any temporary site installation or other area, the contractor will have to propose in a site installation and access plan and obtain approval from the PMU. Where possible, unoccupied, and unused public land will be used for temporary land use or storage. Also, the new landfill site can be used as storage. in case other than the new landfill is used, the contractor shall rent the private space with agreed rental fee. Both private and public space shall be returned in the same or improved condition compared with pre-project situation. Through a transparent and contractual approach, the PMU will provide the contractor with the Project's land acquisition and compensation principles to ensure that (i) official compensation rates are applied, (ii) re-instatement of affected assets contractually defined, (iii) consultation takes place, (iv) the grievance mechanism is followed, (v) the EMP is applied, and (vi) other items specified are complied with, in compliance with the ADB SPS and RGC's SOP.

16. The current existing road to the landfill site is laterite road with two lanes (~6-10 m width) in acceptable condition (Pictures 3-4) but will require upgrading with minimal widening. The widening is only done within the existing ROW and where there is no private structures, trees or potential for impact on secondary structures. The length of the road is 2.5 km (
17. Figure 5). The right-of-way (ROW) of the road is 15 m from centerline, with total ROW of 30 m (Annex D). The road is a linkage road to O'Rom Deng village, and is planned to be widened under Provincial development project in the future (Annex D). The COI of the access road upgrade includes carriage way and shoulders, whereas drainage ditches is not to be constructed on the side of the road and there is no need to increase the height of the road which would impact the slopes. ROW of existing road has no encroachment and COI is clear for construction (Table 1). Detailed images with access road COI are in Annex C. The landfill site parcel is immediately next to the road, so connecting the site to the access road does not involve any land acquisition or impact.

Table 1 Access Road Existing and Planned per Sections (source: PMC)

No	Location on Road (0+000)	ROW (m)	Existing Width* (m)	Design width * (m)
1	00+000 - 1+600	Total 30m	6.5m	6m
2	1+600 - 2+100	Total 30m	7m	6m
Total access road = 2.1km New road proposed = 6m Total RoW width = 30m (15m each side/from the centerline)				

* Width includes carriage way and shoulders

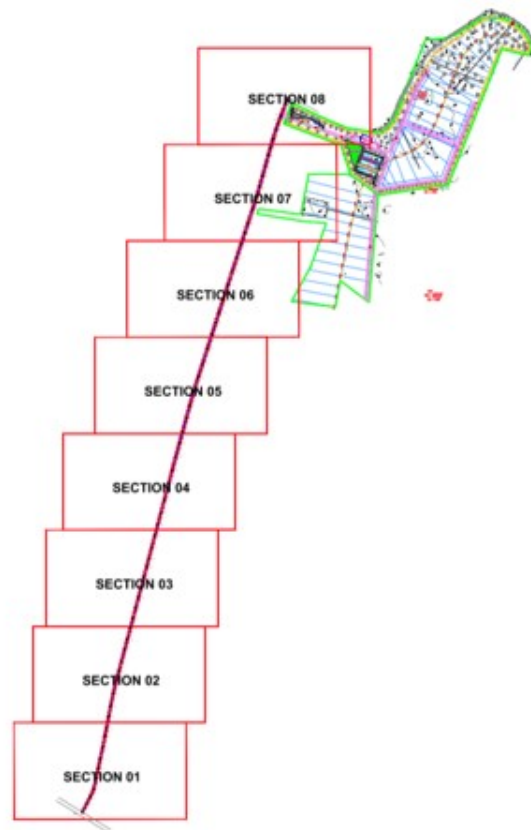
Picture 3 Access Road Key Sections in Beginning of the Road (source: PMC)



Picture 4 Access Road Key Sections in Middle and End of Road (source: PMC)



Figure 5 Overview of access road



18. The houses along the access roads are located away from the immediate roadside. Subproject EMP covers dust and other environmental impacts during the road improvement by the project. Hence, there are no temporary impacts anticipated during construction of the subproject. The HHs were not consulted during the impact screening. Official consultations will be conducted during the preparation of updated IEE/EMP for the new landfill with focus on mitigation measures to be applied under IEE/EMP on the environmental impacts and risks. These will be reported in the updated EMP/IEE reports.

19. The construction contractor will need to ensure access during construction for through traffic and agricultural operations in the vicinity of the new landfill site and access road in close coordination with the PIU and HHs in the area.
20. Four (4) HHs located near the site: (i) 30 m, (ii) 80 m, (iii) 150 m and (iv) 350 m distance from landfill (Picture 5). The houses are located to the north and east of the northern section of the landfill (Figure 6). A three-phase electrical line is also located nearby, but not impacted. Environmental impact mitigation to the nearby houses will be included in the project Environmental Management Plan (EMP). The HHs were not consulted with as all of the houses at the time of impact screening were unoccupied.

Figure 6 Location of nearby houses to the landfill site



Picture 5 Example of nearby house to the landfill site



21. Based on the resettlement impact screening and assessment, the landfill subproject activities and investment do not have any involuntary resettlement (IR) impact at the new landfill site or along the access road. However, closing the existing dumpsite is part of the solid waste management subproject/component and will impact 13 AHs/56 APs waste pickers. Income restoration program for waste pickers is covered under the Stueng Saen WWTP DRP which was approved by RGC, cleared by ADB and disclosed on ADB website in May 2020.

IV. Mitigation Measures

22. Detailed mitigation measures for the households located in proximity of the landfill site are included in the updated IEE and EMP of the subproject. The nearby households will be provided with environmental impact mitigation for dust, smell and flies. The measures at the landfill site itself will include trees and fence to be placed to surrounding the landfill site to reduce wind speeds, and to minimize smell and waste flying off. EMP for the subproject will include mitigation budget for the households in proximity of the landfill site.

V. Monitoring and Reporting

23. This subproject will entail impact on waste pickers resulting from closure of the existing dumpsite. The new landfill site was purchased based on willing buyer-willing seller and its access road do not cause any involuntary resettlement impact. Monitoring of the IRP and compensation for waste pickers will follow monitoring as described in detail in the Stueng Saen WWTP DRP.
24. Internal social safeguards monitoring will be prepared by DIMDM for the project on quarterly basis. It will also describe the Stung Saen SWM subproject, including its income restoration program implemented for the waste pickers and payment of special assistance to vulnerable AHs. Details of the monitoring and reporting are described in the Stung Saen DRP disclosed on ADB website.
25. The implementation of the environmental mitigation measures for the four households located nearby to the landfill site will be covered in the semi-annual environmental safeguards monitoring report. The primary responsibility for monitoring during construction phase lies with

the PIU and PMU. The PMU, through periodical monitoring reports will summarize the progress, assisted by the PMC for social and environmental safeguards. The Project semiannual environmental and social safeguards monitoring reports that PMU will submit to ADB will report on implementation compliance status by subproject. .

VI. Grievance Redress Mechanism

26. Grievance redress mechanism (GRM) is in place and operational under the Stueng Saen WWTP DRP for all issues related to IR, such as IRP and payment of vulnerability special assistance to the waste pickers. EMP includes GRM for environmental aspects.

VII. Conclusions

27. The landfill site is purchased through WBWS arrangement from a single owner. The agreed price included all trees at the site. The site has no associated structures or workers. The mitigation measures for houses located nearby are included under the updated EMP for the subproject. At the same time, the access road does not have any IR impact. However, the landfill subproject component of closing the existing dumpsite will impact 13 AHs / 56 APs of waste pickers. Measures to help restoring waste-pickers livelihoods are included in the DRP prepared for the Stung Saen WWTP.

Annex A: Involuntary Resettlement Impact Screening Checklist

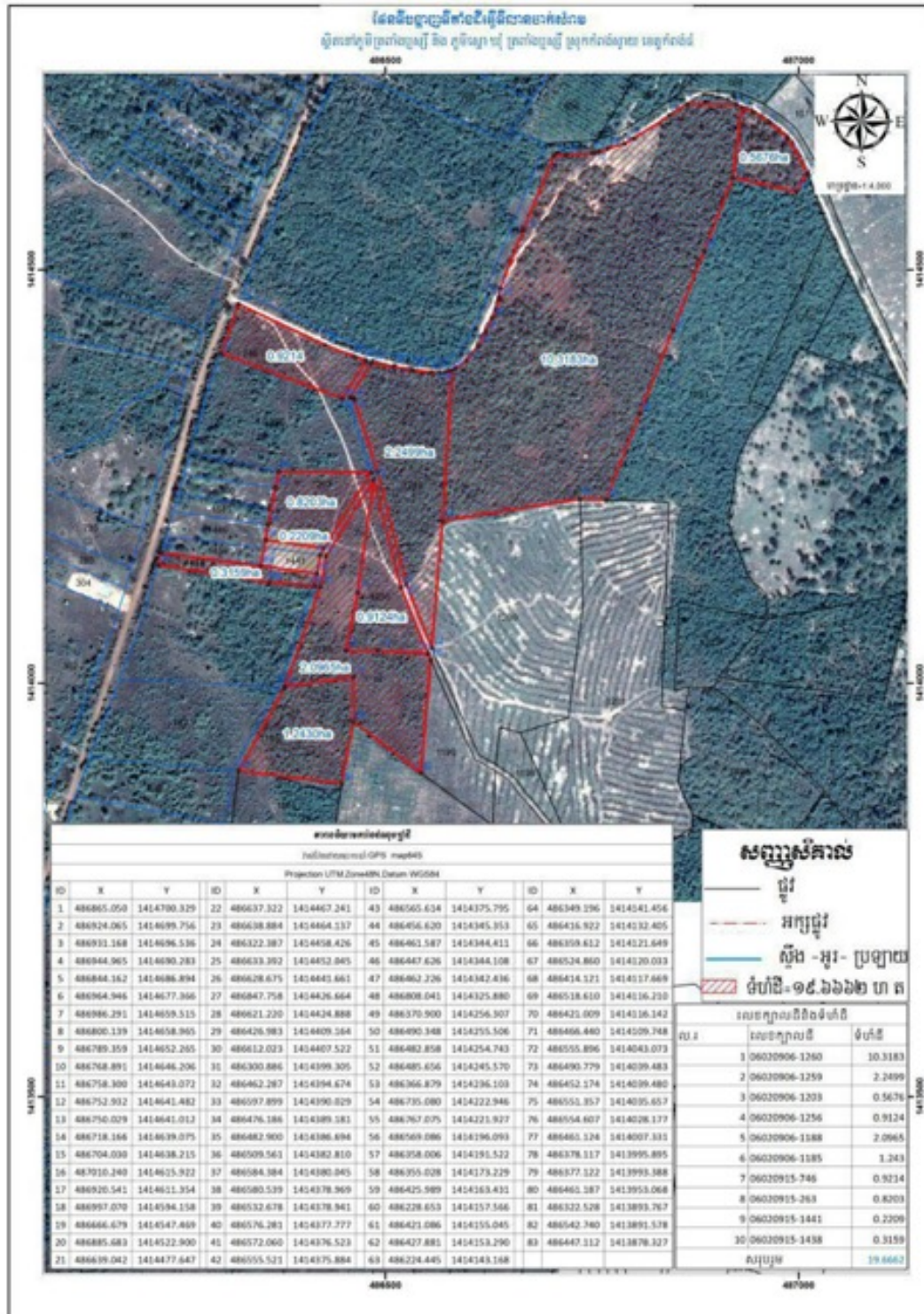
Probable Involuntary Resettlement Effects	Yes	No	Not Known	Remarks
Involuntary Acquisition of Land				
1. Will there be land acquisition?	Y			Willing buyer - willing seller with private owner for 19.66 ha. Pre-purchase agreement has been signed.
2. Is the site for land acquisition known?	Y			Site has been demarcated in the field. Cadastral index map attached (Annex B)
3. Is the ownership status and current usage of land to be acquired known?	Y			Private land, used for a plantation.
4. Will easement be utilized within an existing Right of Way (ROW)?	Y			Access road (2.5 km) to the site will be improved without need to widen it. ROW has no encroachment and COI is clear for construction.
5. Will there be loss of shelter and residential land use due to land acquisition?		N		New landfill site has no residential land or shelters.
6. Will there be loss of agriculture and other productive assets due to land acquisition?	Y			Impact on plantation trees at the site are included in the willing buyer willing seller arrangement.
7. Will there be losses of crops, trees, and fixed assets due to land acquisition?	Y			Two main type of tree namely are grown in the area: (i) Thlong, Tbaeng and Trach ⁴ and (ii) cashew (2.5 to 3 ha). The other trees growing in area are cassava, sour fruit (krasaing), June Phum (Mkak), Ampel Teuk and Tamarind. Impact on plantation trees at the site are included in the willing buyer willing seller arrangement.
8. Will there be loss of businesses or enterprises due to land acquisition?		N		Only to land owner, since no people working at site. Compensation to owner included in willing buyer - willing seller arrangement.
9. Will there be loss of income sources and means of livelihoods due to land acquisition?	Y			Compensation for land owner is included in willing buyer - willing seller agreement. Waste pickers (13Hs / 56 APs) are working at the current landfill located on State-owned land. The site is to be closed by the Project. Compensation to loss of livelihoods is included under an Income Restoration Plan (IRP) of Stueng Saen WWTP DRP.
Involuntary restrictions on land use or on access to legally designated parks and protected areas				
10. Will people lose access to natural resources, communal facilities		N		Privately owned land, and no public natural resources and communal facilities, and services.

⁴ Tree types mainly used for supporting formwork installation for construction.

and services?				
11. If land use is changed, will it have an adverse impact on social and economic activities?		N		No other business or livelihood activities besides those of the privately-owned plantation.
12. Will access to land and resources owned communally or by the state be restricted?		N		Privately-owned land.
Information on Displaced Persons:				
Any estimates of the likely number of persons that will be displaced by the Project? <i>If yes, approximately how many?</i>	☐ No ☒ Yes 13AHs / 56 APs of waste pickers			
Are any of them poor, female-heads of households, or vulnerable to poverty risks?	☐ No ☒ Yes 5 AHs / 21 APs vulnerable			
Are any displaced persons from indigenous or ethnic minority groups?	☒ No ☐ Yes			

Involuntary Resettlement Category Based on Field Assessment			
☒ New ☐ Recategorization — Previous Category ☐			
Category A ☐	Category B ☒	Category C ☐	Category FI ☐

Annex B: Cadastral Map of Public Land at the New Landfill Site



Annex C: Detailed Images of COI for Access Road

















Annex D: Access Road Classification and ROW

KINGDOM OF CAMBODIA

NATION RELIGION KING



Ministry of Land Management, Urban Planning and Construction
Department of Land Management, Urban Planning Construction
and Cadastre, Kampong Thom Province

No. 172/20 DNSS/KT

Respect To

Project Implement Unit Chairman (PIU) of Kampong Thom Province

Objective: Provide the report confirmation about access road condition size

Base on: Letter No.1240 SK. KT dated on 22 December 2020

According to the objective and base on the letter-number above, I would like to inform the chairman of PIU as details below

- This access road has been registered in 2010 along the distant 7km
- This is the graded road with a total size of 30 meter
- The access road crosses to Trapeang Ruessei and Snao in Trapeang Ruessei commune
- This access road is the commune road

Base on the information above, please the PIU chairman as be known

Please the PIU chairman accept my highest consideration

Monday, Date 14 Kert, Month Bush, Year Chuod Torsak P.S 2564

Kampong Thom dated 28 December 2020

Department of Director of PDLMUPCC

EUM SODINA



**ព្រះរាជាណាចក្រកម្ពុជា
ជាតិ សាសនា ព្រះមហាក្សត្រ**

**ក្រសួងរៀបចំដែនដី នគរូបនីយកម្ម និង សំណង់
មន្ទីររៀបចំដែនដី នគរូបនីយកម្ម សំណង់
និង សូរិយាដីខេត្តកំពង់ធំ
លេខ: ១២៤០/២០២០ បណស/កធ**

គោរពជូន

លោកប្រធានអនុម័តគម្រោង (PIU) ខេត្តកំពង់ធំ

កម្មវត្ថុ : ជូនរបាយការណ៍បំភ្លឺអំពីស្ថានភាពទំហំផ្លូវ
យោង : លិខិតលេខ: ១២៤០ សក.កធ ចុះថ្ងៃទី២២ ខែធ្នូ ឆ្នាំ២០២០
តាមកម្មវត្ថុ និងយោងខាងលើខ្ញុំសូមជម្រាបជូនលោកប្រធានជ្រាបដូចខាងក្រោម៖
- ផ្លូវនេះបានចុះបញ្ជីក្នុងឆ្នាំ ២០១០ ប្រវែង ៧ គីឡូម៉ែត្រ
- ជាប្រភេទផ្លូវក្រសួងក្រហម ទំហំ ៣០ ម៉ែត្រ
- ឆ្លងកាត់ភូមិត្រពាំងឫស្សី និងភូមិស្នោ ក្នុងឃុំត្រពាំងឫស្សី
- ជាប្រភេទផ្លូវឃុំ
អាស្រ័យដូចបានជម្រាបជូនខាងលើ សូមលោកប្រធានមេត្តាជ្រាប
សូមលោកប្រធានទទួលនូវការរាប់អានអំពីខ្ញុំ ។

ថ្ងៃទី ១៤ ខែ កក្កដា ឆ្នាំ ២០២០ រដ្ឋ ទោស័ក ព.ស២៥៦៤
កំពង់ធំ ថ្ងៃទី ២២ ខែ ធ្នូ ឆ្នាំ ២០២០



ស្រីម សុធីណា

Translation:

Map Show the New Landfill Location

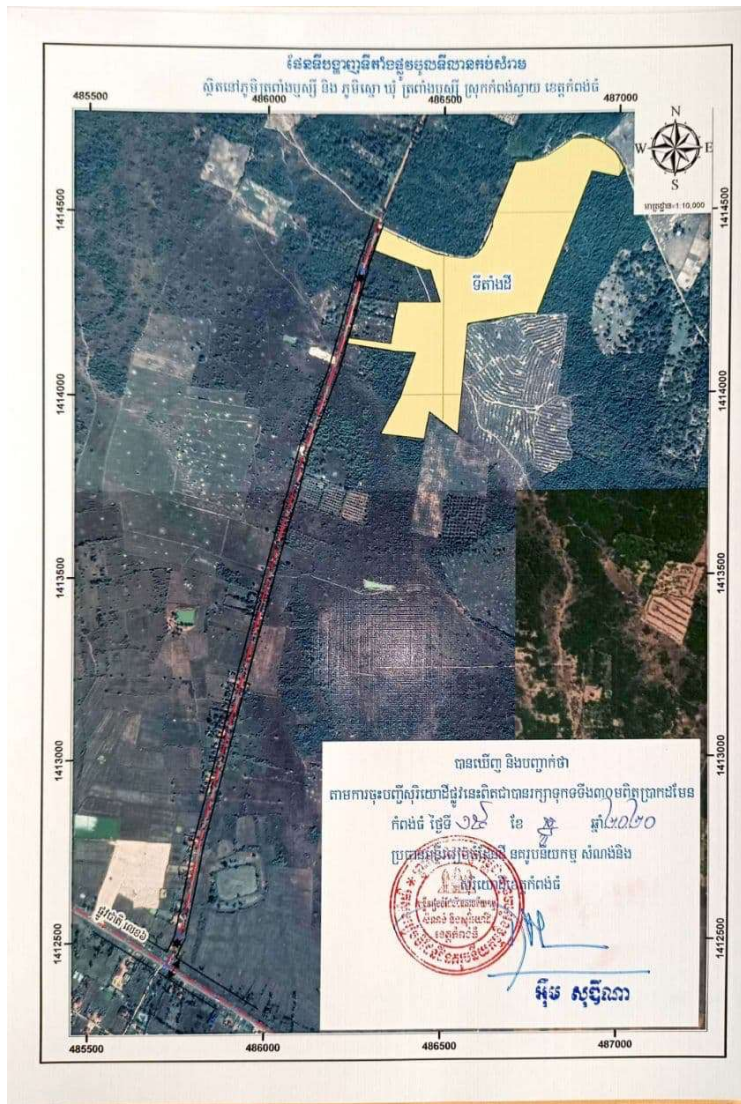
Located at Trapeang Ruessei village and Snao village, Trapeang Ruessei commune, Kampong Svay district, Kampong Thom province

Seen and Confirmed that, Base on the cadastral registration this land is actually kept 30m width for ROW Kampong Thom dated 15th December 2020 Director of Department Land Management, Urban Planning Construction and Cadastral

Kampong Thom

EM Sodina

ROW Letter from Kampong Thom CADASTRAL Office (PDLMUPCC)



Annex E: Historical Situation

Google Earth 2019



GoogleEarth 2017

