

Land Acquisition and Resettlement Due Diligence Report

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Project number: 42266-026
July 2018

IND: Kolkata Environmental Improvement
Investment Program (Tranche 3) – Sewage
Treatment Plant (SD30)

Package No. SD30/2017-18: Construction of Rajpur
Sonarpur Sewage Treatment Plant

CURRENCY EQUIVALENTS

(as of 20 July 2018)

Currency unit = Indian rupee (₹)
₹1.00 = \$0.014
\$1.00 = ₹68.94

ABBREVIATIONS

ADB	- Asian Development Bank
DDR	- due diligence report
DWF	- dry weather flow
KEIP	- Kolkata Environmental Improvement Project
KEIIP	- Kolkata Environmental Improvement Investment Program
KMC	- Kolkata Municipal Corporation
NOC	- no objection certificate
PMU	- program management unit
S&D	- sewerage and drainage
STP	- sewage treatment plant
WBSETCL	- West Bengal State Electricity Transmission Company Limited

NOTE

In this report, "\$" refers to United States dollars.

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I. INTRODUCTION

A. Background

1. On 26 September 2013, the Asian Development Bank (ADB) approved the provision of loans under a multitranches financing facility for the Kolkata Environmental Improvement Investment Program (KEIIP or the Investment Program) for an aggregate amount not to exceed \$400 million. The impact of the Investment Program will be improved access to water supply and sanitation in Kolkata Municipal Corporation (KMC) area. The outcome will be improved water supply, sewerage and drainage service quality and operational sustainability in selected areas of KMC. KEIIP has three outputs: (i) inefficient water supply assets rehabilitated; (ii) sewerage extension to peripheral areas continued;1 and (iii) financial and project management capacity further developed. KMC is KEIIP's executing agency. A program management unit (PMU) created under KMC is implementing KEIIP

2. The first loan, Tranche 1 or Loan 3053-IND, amounting to \$100 million, was approved by ADB on 22 October 2013, signed on 3 March 2014 and made effective on 30 May 2014. Project 1, supported by tranche 1, included subprojects for improvement of infrastructure, operations and sustainability in sewerage, drainage and water supply in KMC.

3. The proposed Project 2, supported by the tranche 2 of KEIIP, included physical and non-physical investments in water supply and sanitation improvement in KMC. Project 2 is aligned with improved access to water supply and sanitation in KMC as defined by the Investment Program.

4. A total of eight sewerage and drainage (S&D) subprojects are proposed under Project 3. The details of the Project 3 subprojects are given in the table below (Table 1).

5. The proposed Project 3 supported under Tranche 3 of KEIIP includes S&D works with sewage treatment plants (STPs). Many of the S&D subprojects will become functional within next 2 years and it would be mandatory to treat the sewage (dry weather flow) conforming to the latest Central Pollution Control Board (CPCB) guidelines before discharging it into the water bodies. In this context, four STPs have been proposed to be constructed under Tranche 3.

Table 1: Sewerage and Drainage Packages under Tranche 3

Package Number	General Description
SD27/2017-18	Improvement of S&D Network and construction of a pumping station in Alipore body guard line premises in ward 74 and laying of sewer line along Diamond Harbour Road by Microtunneling method and Cut & Cover method
SD28/2017-18	Construction of WBSETCL Sewage Treatment Plant (45 MLD)
SD29/2017-18	Construction of Sewage Treatment Plant at Bank Plot (40 MLD)
SD30/2017-18	Construction of Rajpur – Sonarpur Sewage Treatment Plant 30 MLD)
SD31/2017-18	Development of S&D Network in Churial Extension Pumping Station catchment and Diamond Park Catchment and Construction of Churial Extension pumping station (annexed) in borough XVI (Part of Ward 124, 143 and 144)
SD32/2017-18	Improvement of S&D system in Mukundapur Area (Part of Ward 109) including construction of pumping station and improvement of drainage system in Rajdanga Area (Part of ward 107)
SD34/2017-18	Construction of pumping station at Lalababu Nikashi and upgradation of existing pumping station at Shakuntala Park
SD22/2016-17	Development of sewerage and drainage networks in Churial extension canal sub basin

Package Number	General Description
	in Borough XIII & XVI (Part of Ward no. 122,123, 124) including laying of trunk sewer by microtunnelling method and construction of Churial extension pumping station

MLD = million liters per day, S&D = sewerage and drainage, WBSETCL = West Bengal State Electricity Transmission Company Limited.

B. Scope of this Report

6. This land acquisition and resettlement due diligence report is prepared for the proposed construction work of sewage treatment plant located in ward 144, (next to WBSETCL sub-station) which has been planned to treat the DWF generated from S&D systems in parts of Borough XVI and parts of Borough XIV of south Kolkata. The specific objectives of this subproject are (i) to select appropriate and suitable wastewater treatment technology adhering to latest discharge norms by CPCB; (ii) to ensure that the technology selected can be executed within the land area available for treating the command area's dry weather flow (DWF); (iii) design of the selected wastewater treatment technology for the expected flow, (iv) To provide a wastewater discharge in the canals and water bodies of Kolkata which will ensure amelioration of its water quality (v) to reduce environmental impact/ health problems that is caused by open discharge of domestic wastewater; and (vi) to ensure that river Ganga is not polluted which is a priority of the state and national government.

7. A due diligence process was conducted to examine the land acquisition and resettlement issues in detail, in line with ADB Statement Policy Statement (SPS), 2009. This report describes the findings and provides copies of relevant documents, resolutions, minutes of meetings and photographs. This land acquisition and resettlement due diligence report needs to be considered along with the Resettlement Framework prepared for KEIIP.

8. Upon project implementation, the Officer designated for Social Safeguards at PMU will be required to undertake a review of this due diligence, prepare a confirmation letter or report documenting any modifications for the subproject and submit to ADB; and receive a 'no objection' confirmation from ADB prior to start of construction of the subproject.

II. SUBPROJECT DESCRIPTION

9. Jiadagote STP serves not only the KMC area but a small part of Sonarpur Rajpur Municipality area as well. The total catchment area for the accumulated dry weather flow of Jiadagote STP is 1088.96 hectares (ha). The project horizon for this project is 2030, and future expansion for population up to year 2045, a provision for augmentation is also within the project scope. The command area of the Jiadagote STP has a projected population about 201885 for the year 2030, and average design is about 29.67 million liters per day (MLD) and for the year 2045, projected population is 255,171 and average design flow is about 36.07 MLD. The command area of Jiadagote STP covers the part of ward No 111,112,113,114,142 and 143 also a part of Sonarpur Rajpur municipality comprising an area of 17.33 ha. The population projection and calculation for design flow is appended in Table 2.

Table 2: Planned Plant Capacity for Jiadagote Sewage Treatment Plant

Year	Population	Design Flow (MLD)	Planned Capacity (MLD)
2015	136,569	21.83	22.00
2030	201,885	29.67	30.00
2045	255,171	36.07	40.00

10. The basic design criteria for the STP is total quantity of the influent, in this case the total flow for this STP is conceptualized as 30 MLD and a redundancy for the next 15 years; a proposal for extra 10 MLD is added. The other basic design criteria for the STP is the characteristics of the influent water like biochemical oxygen demand (BOD), total suspended solid, total nitrogen, total phosphate and the design purpose the design temperature or the operating temperature for the STP is stated at table below.

Table 3: Influent Characteristics for Jiadagote Sewage Treatment Plant

Criteria Name	Description	Unit
Design capacity	40,000	m ³ /d
Influent BOD ₅	250	mg/l
Influent COD	425	mg/l
Influent SS	300	mg/l
Influent TN	45	mg/l
Influent TP	7	mg/l
Design temperature	20	°C

m³/d = cubic meter per day, °C = degree Celsius, mg/l = milligram per liter.

Source: Municipal Raw Sewage Characteristics as per CPHEEO manual for Indian cities.

11. The projects cover parts of wards 111,112,113 and 114 of Borough XI, Ward 115 of Borough XII and parts of ward 142 of Borough XVI of KMC. In addition to that some adjoining areas of Rajpur Sonarpur municipality are also included in the command area since the STP is located there. The population of the catchment for the design horizon (2030) is 166,152 and its total catchment is approximately 617 ha, which will serve as the command area for the proposed STP.

12. The command area is bound by Keorapukur Canal in the west and extends towards east with KMC south boundary in wards 142, 114, 113,112 and 111. The command area is relatively flat with Western Canal passing through it. The command area extends till east of Risi raj Narayan Road south in ward 111. The northern and western part of the command area adjoining Rania Canal is relatively more densely populated. Currently it does not have organized S&D system or any sewage treatment plant serving it.

13. The site of the proposed STP itself is located off the Rania Road in Rajpur Sonarpur Municipality Rajpur Sonarpur STP.

14. The following is the rationale for taking up this project:

- (i) To ensure that the command area has a fully functioning S&D network of which STP is a crucial component;
- (ii) To improve public health, for population living on the banks of the canals as well as areas around it; and
- (iii) To improve water quality of River Ganga by treating waste water before discharging for fulfilling Government Policy and one of the objectives of cleaning river Ganga.

III. PROPOSED CIVIL WORKS UNDER SUBPROJECT

15. Based on the objective and need of the subproject, the following scope of work is proposed, including all the required activities to make the STP functional.

- (i) Installation of DWF pumps and coarse screen at Vivekananda Pumping Station;
- (ii) Laying of DWF pumping main from Vivekananda Pumping Station to Rajpur Sonarpur STP;
- (iii) Design, Supply, Installation, testing and commissioning of sewage treatment plant;
- (iv) Laying of effluent discharge line to Rania Canal; and
- (v) Project facilities for the Rajpur-Sonarpur STP site including storm water drainage, area lighting, plantation of trees/green belt.

IV. FIELD WORK AND PUBLIC CONSULTATION

A. Outline of Field Work

16. In June 2017, field inspections were carried out at the proposed sub-project site location for sewerage and drainage subproject and its adjoining areas. Stakeholder consultations were also conducted. Inspections and transect walks were carried out in the sub project areas.

B. Public Consultation

17. Consultations were undertaken with key stakeholders in line with ADB's requirements pertaining to environmental and social considerations. The tool used for consultation was stakeholder meetings. These consultations helped to identify the felt needs/concerns and apprehensions of the communities related to the project and priorities of concerned stakeholders. Discussions were held with people residing at/near and/or having businesses at/near the proposed subproject locations. The community people are willing to cooperate for the proposed project. The local community people willingly cooperated for the construction of the sub-project which they understand is for their own betterment and better civic facilities. Summary of stakeholder consultation is provided in Table 4 and the stakeholder consultations report and list of participants is provided in Appendix 2.

Table 4: Summary of Community Consultation

Date	Location	Number of Participants	Participant Details	Key Discussions
30 June 2017	Jiadagote	15	Local residents, shop owners, housewives, businessmen, Service men, representatives of KEIIP and Contractors	<ul style="list-style-type: none"> (i) Suitable wastewater treatment technology will be selected adhering to latest discharge norms by CPCB; (ii) It will be ensured that the technology selected can be executed within the land area available for treating the command area's dry weather flow (DWF); (iii) The subproject will provide a wastewater discharge in the Rania Canal which will ensure amelioration of its water quality; (iv) The project work will reduce environmental impact/ health problems that is caused by open discharge of domestic wastewater; and (v) It will be ensured that river Ganga is not polluted which is a priority of the state and national government.

CPCB = Central Pollution Control Board, DWF = dry weather flow, KEIIP = Kolkata Environmental Improvement Investment Program.

V. LAND AVAILABILITY

18. The proposed construction work will be done on land parcels owned by Government of West Bengal. The 1.19 acres of land, schedule of which is given as Rania, J.L. No. 62, P.S. - Sonarpur, Dist-South 24 Parganas is vested area in Appendix 3.

19. The details of land are appended below:

Table 5: Details of Proposed Land of Rania

Pumping Station District	Mouza	J.L. No.	R.S. Plot No.	Full / Part	Area (acres)
Pumping Station - Sonarpur Dist. - South 24 Parganas	Rania	62	237	Full	1.19

20. Construction work in the subproject area has been carefully planned to minimize any disturbance to adjacent community people and pedestrians (if any). The proposed site is a vacant plot and assessed to have no resettlement impact. In the command area of the proposed STP, development of the trunk S&D network for the part of the areas has been considered under Tranche 2 and remaining part will be implemented under Tranche 3. The network will collect the dry weather flow (DWF) at the Vivekananda pumping station. The DWF collected will be then pumped to the proposed STP for treatment.

21. Laying of pumping mains for carrying DWF from Vivekananda Pumping Station to STP and effluent discharge from STP to Rania Canal will be through open cut method. The effluent discharge pipeline will be laid through Rania Road to Rania Canal. The following Table 6 provides details of the pipelines to be laid.

Table 6: Details of Dry Weather Flow Pipelines and Effluent Discharge Pipelines

Component	Length of Pipeline (m)	Dia of Pipe (mm)	Road Width (m)	Trench Width (m)	Land Ownership
Laying of pipeline for carrying DWF from Vivekananda Road P.S. to STP	1300	700 - 800	4 m wide road	1.5	Rajpur Sonarpur Municipality
Laying of Effluent Discharge Pipeline from STP to Rania Canal	400	600 - 700	4 m wide road	1.5	Rajpur Sonarpur Municipality

DWF = dry weather flow, m = meter, mm = millimeter, STP = sewage treatment plant.

Figure 1 : Google Earth Map of Subproject Area



Figure 2 : Google Earth Map of Sub Project Area



VI. CONCLUSION

A. Summary and Conclusion

22. No involuntary resettlement impacts are anticipated. The identified sites for the proposed civil works are government owned. Temporary disruptions during construction have been mitigated by the contractor through a traffic management plan and simple measures such as proper stacking/storing of construction materials, provision of planks to ensure that pedestrian access to shops and residences is maintained.

B. Next Steps

23. ADB approval of the updated due diligence report (DDR) based on the final assessment at detailed measurement survey stage needs to be obtained by the PMU.

24. No objection certificate (NOC) to be sought from Sonarpur-Rajpur Municipality and added to the updated DDR. Preliminary NOC is appended to this report.

25. NOC obtained from Irrigation Department for execution of subproject activity to be appended to the due diligence report

PHOTO GALLERY - JIADAGOTE SEWAGE TREATMENT PLANT



Pipe Alignment for Influent line from Vivekananda Road PS



Community Consultation at Jiadagote Sewage Treatment Plant Plot

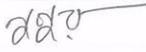
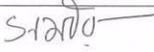
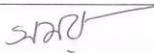
LIST OF PARTICIPANTS

KOLKATA ENVIRONMENTAL IMPROVEMENT INVESTMENT PROGRAMME

List Of Participants In Community Consultation

Date: 30.6.17.

Place: JIADAGHOT.

Sl. No.	Name	Signature
1.	সোমনাথ বিদ্যায়	S.B
2.	সদ্যধিব- স্যামাল	G.P.
3.	সুগনাথ সায়ন্ত	
4.	Soumay Gupta	Saut
5.	Sandipan Koley	S. K.
6.	গোবিন্দ দাস	G.D.
7.	অভয় গুপ্ত	Abay Das
8.	ইন্দ্রনীল ভদ্র	Indranil phadra
9.	সোমেন্দ্র মিত্র	G. Mitra
10.	সিদ্ধান্ত সায়ন্ত	S. Sanyal
11.	সদ্যধিব গুপ্ত	J. Ghosh
12.	সুধাংশু বসু	
13.	সুধাংশু সায়ন্ত	
14.	সুধাংশু সায়ন্ত	
15.	সুধাংশু সায়ন্ত	

REQUEST LETTER FOR TRANSFER/HAND OVER OF VESTED LAND TO KOLKATA MUNICIPAL CORPORATION FOR DEVELOPMENT WORK

Khalil Ahmed, I. A. S.
Municipal Commissioner



The Kolkata Municipal Corporation
Central Municipal Office
5, S.N. Banerjee Road
Kolkata-700 013
Phone- 2286-1234
Fax- 2286-1334
Date: 02/12/2016

No. Con / Com / 514 /2016-17

To
The Secretary,
Municipal Affairs Department
Govt. of West Bengal
Poura Prashasan Bhawan, DD-1, Sector-1,
Salt Lake City,
Kolkata- 700 064

Subject:- Transfer / hand over of vested land to KMC for development project

Sir,
This is to inform that Plot No. 237 of Mouza- Rania, J.L. No. 62, P.S. – Sonarpur measuring area of 1.19 acres is reported by the B.L.& L.R.O, Sonarpur as vested to the state. Pursuant to decision taken in the meeting with the Hon'ble Mayor, said plot of land has been inspected on 01.12.2016 by a team of officials of KMC, KEIP, Engineering Cell of KEIP, in presence of the B.L.&L.R.O, Councillor of 35 Ward of Sonarpur- Rajpur Municipality. The said land has been selected for construction of a water treatment plant/ drainage pumping station etc. which is urgently required for the project.

You are requested to kindly arrange for transfer / hand over the said land to KMC at the earliest for its use for the purpose mentioned above. Pending formalities possession of the said plot of land be given immediately.

This may kindly be treated as most urgent.

Thanking you.

Yours faithfully,

Khalil Ahmed, I. A. S.
Municipal Commissioner



Encl: As stated

No. Con / Com / 514 /2016-17

Dated 02/12/2016

Copy to :

1. The Land Reforms Commissioner and Principal Secretary to the Govt. of West Bengal, Nabanna, 325, Sarat Chatterjee Road, Howrah – 711 102 for kind information and necessary action
2. the District Magistrate & Collector, South 24-Parganas.
3. The Addl. District Magistrate and District Land & land Reforms Officer, South 24-Parganas for information and necessary action.
4. The Project Director, KEIP for follow up action
5. O.S.D. to the Hon'ble Mayor

Khalil Ahmed, I. A. S.
Municipal Commissioner

LAND RECORD COPY

2018 Khatian & Plot Information

**DIRECTORATE OF LAND RECORDS AND SURVEYS,
WEST BENGAL**
ভূমি তথ্য ও পরিমাপ অধিদপ্তর, পশ্চিমবঙ্গ সরকার

খতিয়ান ও দাগের তথ্য
Khatian & Plot Information

LEGACY

খতিয়ান পরিচিতি (Mouza Identification): Must See

জেলা (District): পশ্চিম 24 বঙ্গল

ব্লক (Block): সোনারপুর

মোজা (Mouza): রানিয়া

দেখুন করুন (Options):
 খতিয়ান দ্বারা অনুসন্ধান (Search By Khatian)
 দাগ নং অনুসন্ধান (Search by Plot)

দাগ নং (Plot No.): 237 /

(Legacy Data As On 16/04/2012)
জে.এল.নং (J.L.No.): 62 দাগ (P.S.): সোনারপুর

দাগ নং	শ্রেণী	মোট আয়তন(একর)	দাগের মানচিত্র
Plot No.	Classification	Total Area of the Plot(Acre)	Plot Map
237	নিম্ন	1.19	Click Here

খতিয়ান নং	স্বত্বকারীর নাম	পিতা/স্বামী	অংশ	অংশের পরিমাণ(একর)	মন্তব্য
Khatian No.	Owner Name	Father/HusbandShare	Share	Area(Acre)	Remarks
1	পশ্চিমবঙ্গ সরকারের দ্বারা কেন্দ্রীয়		1.0000	1.19	Nil

Content of this page is for public scrutiny only and L&LR Deptt. accepts no liability for any factual error in the content. Viewers are advised to contact concerned BL&LRO office for authentication.

Land Record Copy of the proposed plot by L&R Deptt. Govt. of West Bengal:
 District: 24 PG(S), Block: Sonarpur, Mouza: Rania
 Dag No.: 237, Classification: Low Land, Total Area: 1.19 Acres
 Type of Ownership: Govt. of West Bengal

NO OBJECTION CERTIFICATE FROM RAJPUR - SONARPUR MUNICIPALITY

Phone No. : 2477 9245

RAJPUR-SONARPUR MUNICIPALITY
VILL & P.O-HARINAVI, SOUTH 24-PARGANAS

Ref no..... 62 | R. S.M. | 16.

Date..... 15.01.16.



To
Shri Soumya Ganguly,
Director General (Project),
Kolkata Environmental Improvement Investment Program,
206, A.J.C. Bose Road, Kolkata - 700 017.

Sub: Approval of laying of Trunk Sewer in Rajpur-Sonarpur Municipality along Rania Main Road, Rania Ramkrishna Sarani and Rania Vidyasagar Sarani, Wards Nos. 34 and 35 under Kolkata Environmental Improvement Investment Program (KEIP).

Ref.: Your Letter No. PMU/573/2015-16 , dated 04.01.2016.

Sir,

With reference to your above mentioned letter and subsequent discussion at my Chamber on 06/01/2016, I am on behalf of this Municipality glad to inform you that your proposal is being accepted and you may go forward with the project.

You are requested to intimate this office after finalization of this project and before commencement of work.

Thanking you,

Yours faithfully,

(Dr. Pallab Das)
Chairman

Rajpur-Sonarpur Municipality