

Land Acquisition and Resettlement Due Diligence Report

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IND: Kolkata Environmental Improvement Investment Program (Tranche 3) – Sewerage and Drainage Network (SD27)

Package No. SD27/2017-18: Improvement of Sewerage and Drainage 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 and Cover Method

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
PWD	-	Public Works Department
S&D	-	sewerage and drainage
STP	-	sewage treatment plant
SWF	-	storm water flow

NOTE

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

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I. INTRODUCTION

A. Background

1. The Kolkata Environmental Improvement Project Phase 1 (KEIP 1) was a multi-agency endeavour to arrest environmental degradation and improve the quality of life in Kolkata. The aim of KEIP was to provide affordable access to basic urban services, revamp and upgrade the sewerage and drainage system, make the solid waste management system efficient, restore the city's drainage canals, and improve outdoor recreation facilities in parks and water bodies. It also had a stakeholder consultation program and a capacity building component to raise the standards of delivery of municipal services by the Kolkata Municipal Corporation (KMC). Financing was from the KMC, the Government of West Bengal and the Asian Development Bank (ADB). In addition, there was grant financing from the UK Department for International Development (DFID) for the KMC capacity building component of the Project.

2. The works under the KEIP Phase 1 was completed in 30 June 2012, the closing date of the ADB loans. Both KMC and ADB wished to continue their combined efforts to improve the urban environment and living conditions in Kolkata, building on results achieved and experience gained. Therefore, a continuation of the KEIP was proposed, which was named as the Kolkata Environmental Improvement Investment Program (KEIIP) consisting of three projects, or tranches. KMC is the executing agency of the proposed investment program.

3. The KEIIP has been conceptualised as a multitranche financing facility - consisting of three projects or tranches. A total of 8 subprojects prioritizing sewerage and drainage (S&D) work are prioritized under Tranche 3.

4. In continuation to the Tranche 2, different subprojects under KEIIP Tranche 3 have been proposed to be taken up for the areas which are not covered under KEIP and KEIIP – Tranches 1 and 2. The details of the subprojects are given in the table below in Table 1.

Table 1: Sewerage and Drainage Packages under Tranche 3

No.	Package Name	Package No.
1	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	SD27/2017-18
2	Construction of WBSETCL Sewage Treatment Plant (45 MLD)	SD28/2017-18
3	Construction of Sewage Treatment Plant at Bank Plot (40 MLD)	SD29/2017-18
4	Construction of Rajpur – Sonarpur Sewage Treatment Plant 30 MLD)	SD30/2017-18
5	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)	SD31/2017-18
6	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)	SD32/2017-18
7	Construction of pumping station at Lalababu Nikashi and upgradation of existing pumping station at Shakuntala Park	SD34/2017-18
8	Development of sewerage and drainage networks in Churial extension canal sub basin in Borough XIII and XVI (Part of Ward no. 122,123, 124) including laying of trunk sewer by microtunnelling method and construction of Churial extension pumping station	SD22/2016-17

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

B. Scope of this Report

5. This due diligence report is prepared for the proposed S&D subproject SD 27 that will involve construction of a pumping station and development of S&D system within Alipore Body Guard Lines located in KMC ward number 74.

6. A due diligence process was conducted to examine the land acquisition and resettlement issues in detail, in line with ADB 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.

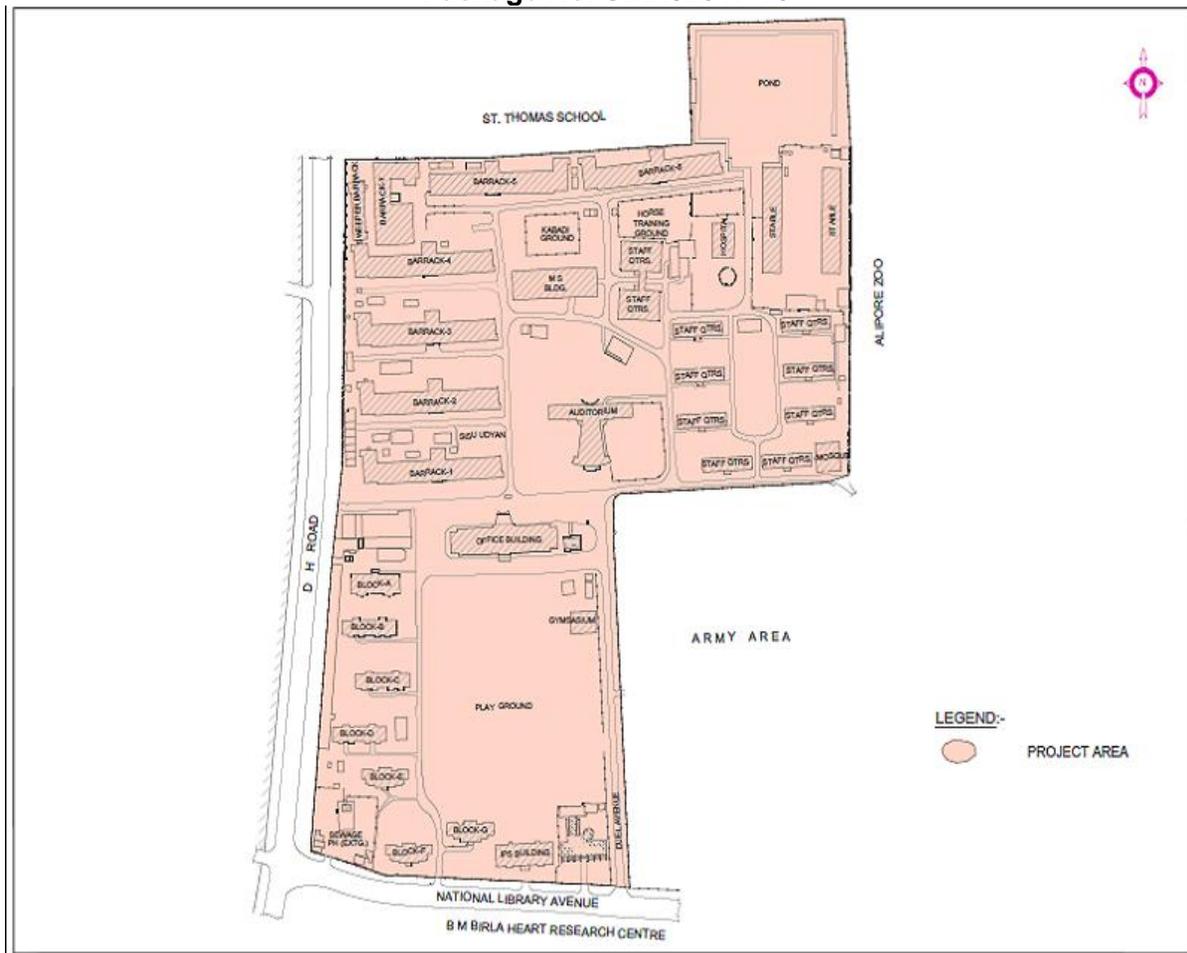
7. Upon project implementation, the officer designated for social safeguards at PMU will be required to undertake a review of this due diligence, prepare a confirmation letter or report documenting any design modifications for the subproject and submit to ADB; and receive a 'no objection' confirmation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

II. SUBPROJECT DESCRIPTION

A. Background of Subproject Area

8. The subproject is located in ward number 74 under Borough IX, in Alipore Body Guard Lines. The premises of Alipore Body Guard Lines (BGL) which is the headquarter of the Kolkata Armed Police Force is located near the Ekbalpore crossing, intersection of National Library Avenue and Diamond Harbour Road. It is bounded by St. Thomas School and Mary Cooper House in the north, Alipore Zoo, Alipore Regional Meteorological Centre (Observatory) and Army area in the east, National Library Avenue and Diamond Harbour Road in the south and west respectively. The total area of the campus is around 10 ha. Figure 1 shows the area considered for development of S&D system under Package No. SD27/2017-18.

Figure 1: Area Considered for Development of Sewerage and Drainage System under Package No. SD27/2017-18



9. Although the Body Guard Lines campus enjoys a prime location within the municipal corporation limits, it is beleaguered with acute water logging problems during and after moderate to heavy rainfall, causing great hindrances to day to day activities during such incidences and posing as a serious threat to the health and safety of the residents of the campus. Several field visits were undertaken to the BGL campus by the project team and discussions held with the residents and officials and Public Works Department (PWD) engineers. The study of the topography and existing sewerage and drainage system of the area revealed that due to the apparent saucer like topography of the area, the storm water once accumulated does not get easily drained out of the area. A major part of the campus is about 600 mm lower than the surrounding areas with the lowest point being the road in front of the office building which is about 900 mm lower than the surrounding areas. Besides, surface runoff from the adjoining relatively higher areas finds access to the low-lying Body Guard Line Campus causing additional water accumulation problem. It has been learnt that a moderate rainfall of 15 minutes duration is sufficient to cause water logging for half a day while a heavier rainfall causes the inundation to remain for at least 2 to 3 days.

10. The subproject area has an existing S&D network (Figure 2). The existing S&D network present within the area is combined in nature, carrying both storm water flow (SWF) and dry weather flow (DWF) with a total network length of approximately 8 km. Both pipes and drains

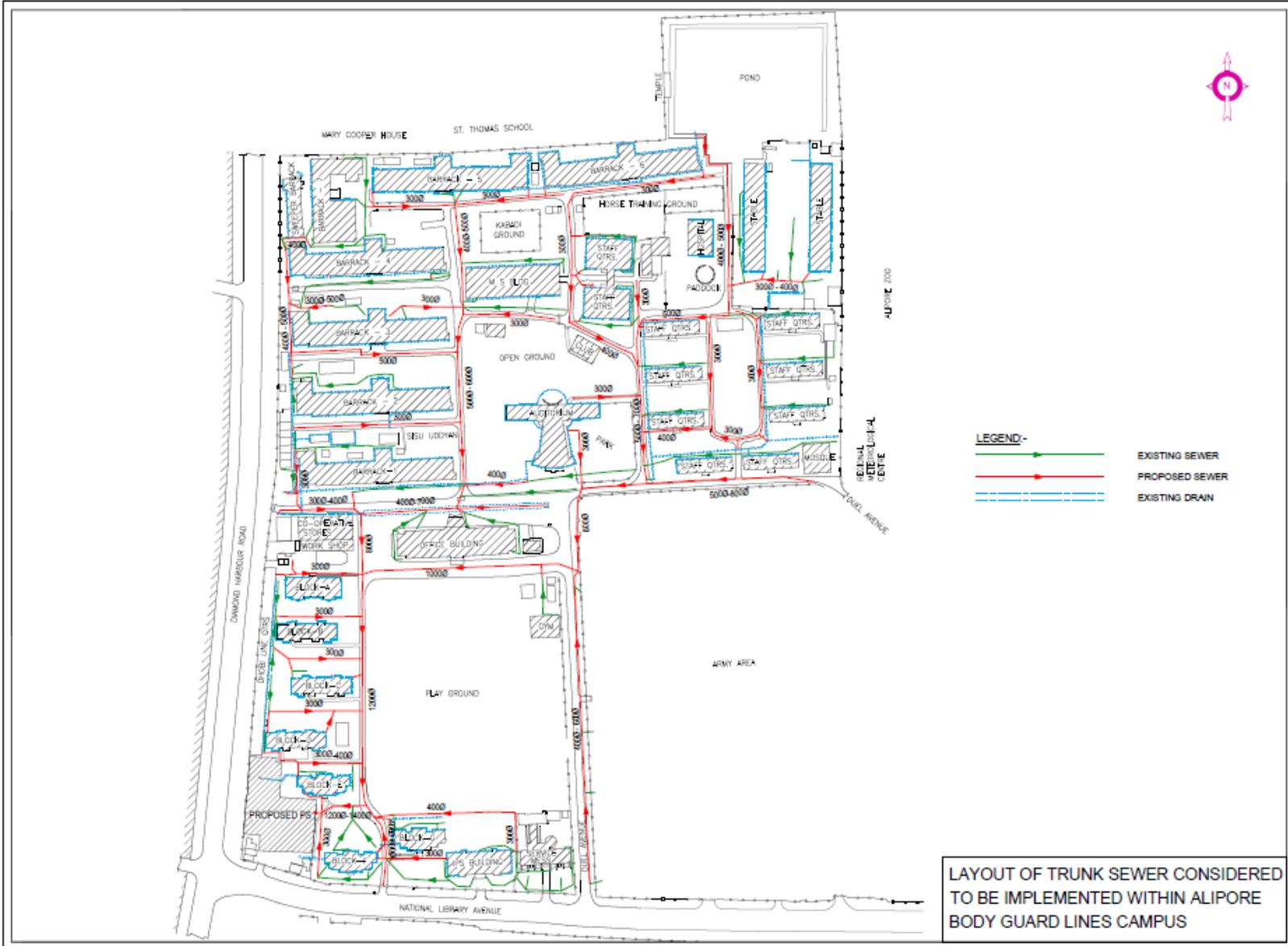
were laid inside the campus, with a number of interconnections. These conduits convey a part of the flow to an existing pumping station and a part to Diamond Harbour road sewer through existing outfalls. In many instances, the pipes cross the drains, thereby reducing the capacity of drains. Substantial portion of the sewers and drains is silted up, greatly reducing their carrying capacities. A number of drains present within the campus are almost totally blocked with silt and as a result do not serve the purpose of disposal of storm water. In addition, the storm water finds entry into the BGL campus through access entry gates.

B. Subproject Description

11. The main project component under the program (KEIIP) is to develop adequate sewerage and drainage system in all wards within the municipal corporation limits of KMC. This particular subproject is located in ward number 74 under Borough IX, in Alipore Body Guard Lines. The subproject focuses on the development of sewerage and drainage (S&D) system in Alipore BGL area along with a pumping station within the Body Guard Lines and pumping mains passing through National Library Avenue and Belvedere Road. The objective of the subproject is to develop S&D network facilities to improve the environmental conditions and water logging conditions within the sub-project area.

12. The subproject area of BGL is part of Borough IX and falls under a major drainage basin, the Tolly's Nullah Basin. The entire combined flow generated from the BGL campus area is proposed to be conveyed to the pumping station proposed to be constructed within BGL campus area. The SWF from the proposed subproject area will be discharged to Tolly's Nullah, while the DWF will be discharged from BGL pumping station to the existing Diamond Harbour road brick sewer within the core Kolkata S&D system.

Figure 2: Existing and Proposed Sewerage and Drainage System and Pumping Station



13. Table 2 provides an outline of the proposed subproject, including S&D pipelines, laying of pumping main pipelines construction of pumping station within the BGL campus, under package SD27/2017-18.

Table 2: Components of SD27/2017-18

Package No. SD27/2017-18: Improvement of S&D Network and Construction of a Pumping Station in Alipore Body Guard Line Premises in Ward 74 under package no. SD27/2017-18	
Major Project Components	<ul style="list-style-type: none"> • Development of S&D Network within BGL campus, ward 74 –3.0 km • Construction of Combined Cycle Pumping Station within BGL campus –SWF – 3 working + 1 standby + 1 future, capacity 300 lps each, DWF – 2 working + 2 standby, capacity 16 lps each • Laying of SWF Pumping Main (1016 mm outer diameter) through National Library Avenue and Belvedere Road –1.2 km (Part to be laid by Micro tunneling method for 0.3 km and part to be laid by cut and cover method for 0.85 km and part to be laid by Jack pushing method for 0.05 km) and laying of DWF pumping main (200 mm dia.) – 30 m
Coverage	Subproject will cover part of Ward 74 of Borough IX - partly within the BGL campus and partly outside the BGL campus (National Library Avenue and Belvedere Road)

BGL = body guard line, DWF = dry weather flow, km = kilometer, lps = liter per second, m= meter, mm = millimeter, S&D = sewerage and drainage, SWF = storm water flow.

III. FIELD WORK AND PUBLIC CONSULTATION

A. Outline of Field Work

14. In May and June 2017, field inspections were carried out at the proposed sub -project site location for its adjoining areas. Stakeholder consultations were also conducted. Inspections and transect walks were carried out along the entire stretch of the BGL campus and along the pressure mains in adjoining area and also along the Diamond Harbour Road.

B. Public Consultation

15. Consultations were undertaken with key stakeholders in the Body Guard Lines as per 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 the proposed subproject locations. The community people are willing to cooperate for the proposed project as water logging in Alipore Body Guard Lines is a long-standing problem faced by them. Summary of stakeholder consultation is provided in Table 3 and the stakeholder consultations report and list of participants is provided in Appendix.

Table 3: Summary of Stakeholder Consultation

Date	Location	No. of Participants	Topics Discussed	Issues Raised	Issues Addressed
3 June 2017	Auditorium at Alipore Body Guard Line	44	<ul style="list-style-type: none"> • Explaining about KEIIP as an initiative of the Kolkata Municipal Corporation funded by the Asian Development Bank, and its role for improving the sewerage and drainage and water supply services in Kolkata and its adjoining areas. • Need for and scope of work and tentative commencement date for this package was elucidated. • No adverse impacts on structures, livelihoods anticipated. • Importance of public participation and public awareness was emphasized. • Potential impact of the project on environment, health etc. • Technical information i.e. total length of work, diameter of pipes to be laid along the road, flow of water etc. was shared 	<ul style="list-style-type: none"> • The commencement of the project work and duration. Expected timeline to resolve the waterlogging problem. • Availability of funding for uninterrupted work • Existing water logging during heavy showers, backflow of water from adjoining area happens to be a persistent issue. • Choking of drains, latrines etc. during heavy showers. • Provision of rain water harvesting. • Request to think about a long-term plan to resolve the abovementioned issue. • Time frame for project completion 	<ul style="list-style-type: none"> • Regarding the time span for the completion of the project, Mr. K.S. Ghosh assured the participants that any and every ADB funded project has a fixed time span. Thus, the project performance is strictly governed by ADB on a periodic basis in order to ensure that the project is completed within the stipulated time frame provided by ADB. • This project is funded by the ADB. Hence there should be no paucity of funds. • Water logging will be abated by ensuring discharge of water at Tolly's Nullah. • Technical information was shared in detail by Mr. Sourya Chowdhury (Junior Engineer, DSC) • Beneficial impacts were explained in detail by DSC officials present • It was shared with the community people that project implementation will require 24 months.

IV. LAND AVAILABILITY

16. Implementation of the subproject will not cause any land acquisition or resettlement impact. Under the S&D project there is no major construction which will involve significant land requirement.

A. Sewerage and Drainage Network

17. The Body Guard Lines area consists of a substantial existing sewerage and drainage (S&D) network, effort has been made to retain the existing assets to the extent possible. However, the existing sewer network does not include a trunk sewer and has been proposed to act only as lateral sewers. Considering its age and inadequate hydraulic carrying capacity, the need for the subproject is evident. Proper interconnections will be provided between the existing and proposed sewers. Existing sewers which do not have sufficient carrying capacity to cater the large storm flows have been proposed to be replaced with larger and deeper sewers as per the hydraulic design of the proposed S&D network of the area. Hence, the proposed S&D network will be along the existing S&D network alignment within the Body Guard Lines Campus, which is government land. The rights of way of the proposed pipes are vacant and unused for any other purpose. No involuntary resettlement impacts are anticipated.

18. For laying of the sewerage and drainage pipelines in the subproject area the roads have been numbered for implementation of the subproject. Details are provided in Table 4.

Table 4: Roads where Sewer Lines are Being Laid under SD27/2017-18

Road Name	Road Width (m)	Dia of Pipe (mm)	Trench Width with Shoring (mm)	Road Name	Road Width (m)	Dia of Pipe (mm)	Trench Width with Shoring (mm)
Road 1	6.0	300	850	Road 13	6.5 – 13.0	300 – 400	850 – 1000
Road 2	6.5 – 15.5	400 – 1200	1000 – 2200	Road 14	6.5 – 8.0	500 – 600	1150 – 1300
Road 3	10.0	300 – 1000	850 – 1900	Road 15	9.0	300	850
Road 4	7.5 – 8.0	400 – 600	1000 – 1300	Road 16	9.0	500	1150
Road 5	13.0	800	1600	Road 17	4.0 – 11.5	300	850
Road 6	10.0	300 – 700	850 – 1450	Road 18	8.5 – 14.0	300	850
Road 7	6.0 – 7.0	500 – 800	1150 – 1600	Road 19	8.0 – 9.5	300	850
Road 8	5.0 – 10.5	400 – 500	1000 – 1150	Road 20	6.0 – 7.5	300 – 500	850 – 1150
Road 9	5.0 – 6.5	300	850	Road 21	10.0	1200 – 1400	2200 – 2500
Road 10	3.0 – 7.0	300 – 400	850 – 1000	Vacant land		300 – 500	850 – 1150
Road 11	6.5 – 8.5	300 – 700	850 – 1450				
Road 12	5.0	300	850				

Figure 3: Google Earth Image Showing the Roads within the Body Guard Line Campus



Source: Google Earth.

B. Pumping Station

19. The SWF and DWF generated are proposed to be discharged through a newly constructed combined flow pumping station from BGL campus. The SWF generated in the subproject area will be discharged to Tolly's Nullah through dedicated pumping mains and dry weather flow (DWF) generated will be discharged to the Diamond Harbour Road sewer. The pumping station will be located within the BGL campus. The site for proposed pumping station in Alipore Body Guard Line has an existing pumping station in dilapidated condition, which is proposed to be demolished and the new pumping station constructed in its place. The PWD, Government of West Bengal runs the existing pumping station. The existing pump operator of PWD is not likely to be affected as he is a permanent government employee and will be deployed elsewhere by PWD once KMC constructs the proposed facility at the location. No involuntary resettlement impacts are anticipated.

Table 5: Details of Combined Pumping Station

Pumping Station	Type of Pumping Station	Proposed Capacity (lps)	No. of Pumps to be Installed	Land
BGL pumping station	Combined	SWF: 900 lps DWF: 32 lps	SWF: 4 (3 W + 1 S + 1 F), each having capacity 300 lps. 4 pumps to be installed now. DWF: 4 (2 W + 2 S), each having capacity 16 lps	The combined pumping station will be constructed within the BGL campus, in PWD land

BGL = Body Guard Line, DWF = dry weather flow, lps = liter per second, SWF = storm water flow, PWD = Public Works Department.

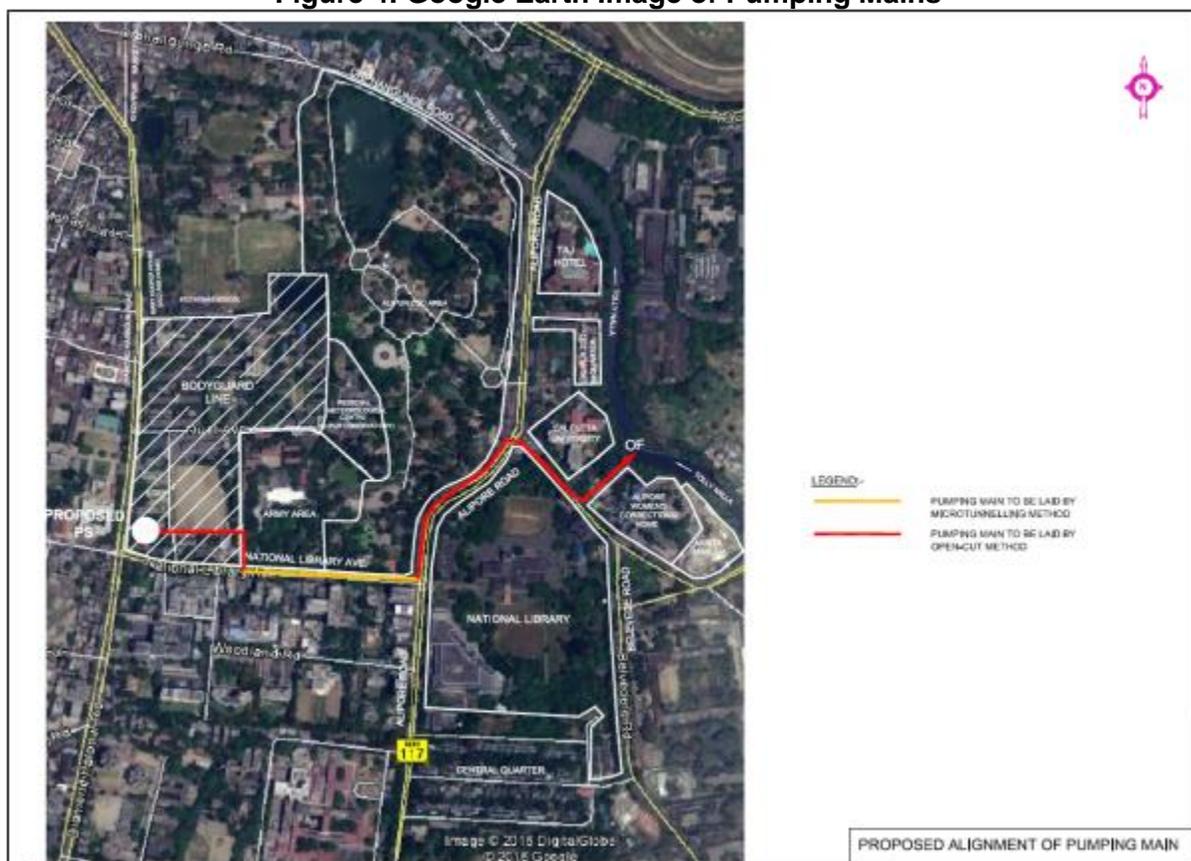
C. Pumping Main

20. The SWF from the proposed BGL pumping station will be discharged to Tolly's Nullah through a 1016 mm outer diameter mm dia pipe. The pumping mains will be laid through National Library Avenue, Alipore Road, Belvedere Road and Road beside Alipore Women's Correctional Home and the pipelines will be laid for 1.2 km. Ownership of the roads is with PWD Alipore Division. No involuntary resettlement impact is anticipated because the identified alignments for proposed civil works are proposed along government road rights of way.

Table 6: Roads where Pumping Mains are Being Laid under SD27/2017-18

Road Name	Road Width (m)	Dia of Pipe (mm)	Trench Width with Shoring (mm)	Road Name	Road Width (m)	Dia of Pipe (mm)	Trench Width with Shoring (mm)
National Library Avenue	17.0 – 25.5	1016	1900	Alipore Road	18.5 – 40	1016	1900
Belvedere Road	13.5 - 19.5	1016	1900	Road beside Alipore Women's Correctional Home	2.5 – 7.5	1016	1900

Figure 4: Google Earth Image of Pumping Mains



Source: Google Earth.

V. CONCLUSION

A. Summary and Conclusion

21. The subproject is not envisaged to cause any involuntary resettlement impacts. The identified sites for the proposed civil works at all pipe laying zones is proposed along government road rights of way. The public and the local community will be intimated before start of civil work and will again be informed about the project implementation period and estimated project completion date. Temporary disruptions during construction will be 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 residences is maintained. The mitigation measures will include the installation of signages and warning signs to minimize inconvenience and traffic disturbances during construction.

B. Next Steps

22. The due diligence report (DDR) needs to be updated with the following information:
- (i) No objection certificate (NOC) must be obtained from PWD Alipore Division for execution of sub-project activity (laying of pumping mains and construction of pumping station) and to be appended to the due diligence report.
 - (ii) NOC from Project Director for execution of subproject activity (S&D network and Pumping Stations) and to be appended to the due diligence report.

- (iii) ADB approval of the updated DDR based on the final assessment at detailed measurement survey stage needs to be obtained by the PMU.
- (iv) NOC from PWD for construction of pumping station to be obtained and appended to the updated DDR.

Photographs of Road Alignment of Body Guard Line Campus



Community Consultation at Alipore Body Guard Line, Held on 8 June 2017



Location of the Existing Pumping Station in dilapidated condition at Alipore Body Guard Line (proposed for demolition). This is also the site for the proposed Pumping Station under package SD27/2017-18.

LIST OF PARTICIPANTS

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KEIIP – Community Consultation Programme

Package No.

Participants List

Name of the place (Ward No.):

Date: 08.06.2017

Venue: Auditorium

Sl. No.	Name of the participants	Contact No. (if any)	Signature
1.	Arabinda jana		
2.	Santanu Chakraborty		S. Chakraborty
3.	Rabindranath Das.		Rabindranath Das.
4.	Lakshman Barmom		L. Barmom.
5.	Trailokhya Chhosi.		
6.	Sanjib Goswami	9133465439	
7.	Lopesh Bahadur Thapa.	9051218055	
8.	Dipankar Pal.		D.P.M.
9.	Narayan Singh		
10.	Bholanath parui		
11.	Anjil Mondal	9932060715	

12.	Amitava Chosh Roy	9433373802	A Roy
13.	Mr. Ashur Rehman	9438899553	Ashur
14.	Joni Hossain Mallik	9836108088	J.H. Mallik
15.	Prasanto Barman	9869019889	Prasanto Barman
16.	Subha Barman.	8325036570	S. Barman
17.	Nilkan Das.	8509169112	Nilkan Das.
18.	Rajib SK	9563930670	Rajib SK
19.	Prasanto Sikder	7389895599	P. Sikder
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21.	Balun das.	9475994500	B. das.
22.	Suman Rajbanshi	9831254583	S. Rajbanshi
23.	Uday Bhanu Karanika	9679205852	U. Karanika
24.	Rajin Karanga	8585094944	R. Karanga
25.	Gabru Morzoda	9735923949	G. Morzoda
26.	Sandip Debanshi	9614681145	S. Debanshi
27.	Bishupada Roy	9775369882	B Roy

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KEIP – Community Consultation Programme

Package No.

Participants List

Name of the place (Ward No.):

Date:

Venue:

Sl. No.	Name of the participants	Contact No. (if any)	Signature
28	Rishi Barmen	9563065788	R. Barmen
29	Maitri Sai Gani	9749506871	M. Sai
30	Sanzit Rakshit	9674539821	S. Rakshit
31	Durlob Sarkar	7478197432	D. Sarkar
32	Biswajit Bora	5002359820	B. Bora
33	Kartick chandrajy Talukdar	8585046146	Kartick ch. by Talukdar
34	Somit kr. Mahato	8926541113	S.K. Mahato
35	Rajun Ray	9585046267	R. Ray
36	Deba n. Dami	9932778987	D. Dami
37	Ashis Ghosh	908862021	A. Ghosh
38	Ajay Barmen	858502559	A. Barmen

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KEIP – Community Consultation Programme

Package No.

Participants List

Name of the place (Ward No.):

Date:

Venue:

Sl. No.	Name of the participants	Contact No. (if any)	Signature
39	Jindrajit Mondal	8016268188	Jindrajit Mondal
40.	Tripur K. Roy	9775592338	T. K. Roy
41.	Nirmal Singh	8670972126	N. Singh
42.	Shankar Das	8585046850	Das
43	Deepak K. Bhatta	9874630693	Bhatta
44	Susmit Saha.	7699630336	Saha