Environmental Assessment and Review Framework

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CURRENCY EQUIVALENTS

(as of 8 May 2017)

Currency Unit	=	Indian rupee/s (Rs)
Rs1.00	=	$0.0155
$1.00	=	Rs 64.32

ABBREVIATIONS

AC	–	asbestos cement
AP	–	affected person
ADB	–	Asian Development Bank
BOQ	–	bill of quantity
BPLE	–	Bihar Public Land Encroachment Act
BSPCB	–	Bihar State Pollution Control Board
BUDIP	–	Bihar Urban Development Investment Program
BUIDCo	–	Bihar Urban Infrastructure Development Corporation
CBO	–	community-based organization
CBD	–	central business district
CFE	–	consent for establishment
CFO	–	consent for operation
CGWB	–	Central Ground Water Board
CITES	–	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	–	Convention on Migratory Species of Wild Animals
CWR	–	clear water reservoirs
DFO	–	Divisional Forest Officer
DSC	–	design and supervision consultants
EAC	–	Expert Appraisal Committee
EARF	–	environmental assessment resettlement framework
EIA	–	environmental impact assessment
EMP	–	environmental management plan
EPA	–	Environmental Protection Agency
FAM	–	facility administration memorandum
GRC	–	grievance redress committee
H&S	–	health and safety
IEE	–	initial environmental examination
IPP	–	indigenous peoples plan
IPPF	–	indigenous peoples planning framework
IUCN	–	International Union for Conservation of Nature and Natural Resources
JNNURM	–	Jawaharlal Nehru National Urban Renewal Mission
MFF	–	multitranche financing facility
MoEFCC	–	Ministry of Environment, Forests and Climate Change
NAAQS	–	National Ambient Air Quality Standards
NGO	–	nongovernment organization

NOC	–	no objection certificate
NRRP	–	National Resettlement and Rehabilitation Policy
NRW	–	nonrevenue water
O&M	–	operation and maintenance
OHSA	–	Occupational Health and Safety Administration
OHSR	–	overhead storage reservoir
OMC	–	operations and maintenance contractors
PHED	–	Public Health Engineering Department
PIU	–	project implementation unit
PMU	–	project management unit
RF	–	resettlement framework
ROW	–	right of way
RP	–	resettlement plan
SEAC	–	State Environment Assessment Committee
SEIAA	–	State Environment Impact Assessment Authority
SPS	–	Safeguard Policy Statement
STP	–	sewage treatment plant
TDS	–	total dissolved solids
TOR	–	terms of reference
UDHD	–	Urban Development and Housing Department
UFW	–	unaccounted for water
UIDSSMT	–	Urban Infrastructure Development Scheme for Small and Medium Towns
ULB	–	urban local body
USEPA	–	United States Environmental Protection Agency
WTP	–	water treatment plant

WEIGHTS AND MEASURES

lakh	–	100 thousand = 100,000
crore	–	100 lakhs = 10,000,000
$\mu g/m^3$	–	micrograms per cubic meter
km	–	kilometer
lpd	–	liters per day
m	–	meter
mg/l	–	milligrams per liter
MLD	–	million liters per day
mm	–	millimeter
ppm	–	parts per million

NOTES

(i) In this report, "$" refers to US dollars.
(ii) “INR” and “Rs” refer to Indian rupees.

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APPENDIXES

I. INTRODUCTION

A. Overview

1. The first loan under the program, Tranche 1 or Loan 2861-IND, amounting to $65 million, was signed on 25 March 2013 and became effective on 6 June 2013.[1] Project 1, supported by Tranche 1 of Bihar Urban Development Investment Program (BUDIP), included subprojects for improvement of infrastructure, operations and sustainability of water supply in Bhagalpur. The project has four outputs: (i) water supply infrastructure rehabilitated and newly constructed in Bhagalpur, (ii) staffing and skills for water supply operations improved in Bhagalpur, (iii) systems for water supply service delivery management improved in Bhagalpur, and (iv) sub-project implemented on time within the budget in a transparent manner.

2. The proposed Project 2, supported by the proposed tranche 2 of BUDIP, will include physical and non-physical investments in water supply improvements in Bhagalpur and Gaya. Bhagalpur and Gaya were selected for financing under Project 2 based on the implementation capacity, project readiness and sector priorities of the Government, in accordance with the agreed framework financing agreement (FFA) for BUDIP. Project 2 is aligned with improved environment and well-being of residents in the program cities as defined by the Investment Program. It aims to improve access to sustainable water supply services in Gaya and Bhagalpur.

B. Impact and Outcome

3. The impact will be increased access to better quality and sustainable urban infrastructure and services by the people, especially vulnerable households, in Bhagalpur and Gaya The expected outcome will be water supply infrastructure operations and sustainability in improved in Bhagalpur and Gaya.

C. Outputs

4. Project 2 will have three outputs: (i) water supply infrastructure constructed and rehabilitated; (ii) staffing and skills for water supply operations improved; and (iii) systems for water supply service delivery management improved.

1. Water Supply Infrastructure Constructed and Rehabilitated

5. Under Output 1, Project 2 includes the following works packages: (i) Gaya Water Supply Project, 1 (GWSP1); (ii) Gaya Water Supply Project, Package 2 (GWSP2); and (iii) Bhagalpur Water Supply Project 2 (BWSP2). GWSP1 and GWSP2 comprise the two separate packages under the Gaya Water Supply Project, which aims to deliver a continuous, pressurized supply of safe water to the entire population of Gaya. Whereas, BWSP2 is bulk water supply scheme for Bhagalpur to complement the ongoing BWSP1 under Project 1 of BUDIP.

6. Summary of packages and components of Project 2 is in Table 1 below:

[1] Upon request from Government of Bihar and Government of India, savings from Tranche 1 of $8 million were cancelled from Tranche 1 in December 2014.

Table 1. Packages and Components of Project 2

Package	Description	Components
GWSP1	Rehabilitation of the existing water source works and construction of water distribution system including transmission mains and distribution network, storage reservoirs, standpipes and metered household connections	(i) refurbishment of 29 tube wells, with 68 MLD combined capacity; (ii) installation of around 37 flow meters; (iii) construction of 16.5 km transmission/ rising mains; (iv) construction of 447.8 km of distribution network; (v) demolition of 5 pump houses and construction of 9 new pump houses; (vi) connection and metering of around 75,000 households (HHs); (vii) provision of 200 stand posts; (viii) construction of 32 monitoring stations; (ix) construction of 6 new overhead storage tanks of 10.95 ML capacity and 3 ground level storage reservoirs of total 11.88 ML; (x) refurbishment of water storage reservoirs – seven ground level and one overhead; and (xi) construction and management of 5 customer service centers.
GWSP2	New water source works and transmission mains for the supply of bulk water to the Gaya water distribution system.	(i) construction of 24 tube wells, with 58 MLD combined capacity; (ii) installation of around 24 flow meters; (iii) laying of around 17.06 km of rising main; (iv) construction of pump house and 5 control rooms; (v) construction of water storage reservoirs of around 3.7 ML capacity; (vi) construction of one clear water reservoir of 4ML capacity; and (vii) construction of one

Package	Description	Components
		operator office cum customer service center.
BWSP2	Bulk water supply scheme for Bhagalpur to supplement the ongoing BWSP1 under Project 1 of BUDIP.	(i) construction of new twin D type intake; (ii) one Jack well and pump house; (iii) installation of 6 raw water pumps and 13 clear water pumps; (iv) construction of 2.55 km of raw water transmission mains and 28.7 km clear water transmission mains; (v) construction of a water treatment plant of around 90 MLD capacity; (vi) construction of clear water reservoir of around 9.1 ML; and (vii) installation of SCADA system.

7. The construction periods of GWSP1 and GWSP2 are expected to be coterminous, such that bulk water extracted from the new water source works under GWSP2 will be supplied to the water supply system developed under GWSP1. As a part of the GWSP1 works, certain supply points are identified to connect to the GWSP2 transmission. Similarly, BWSP2 will supplement BWSP1 which is the ongoing overall distribution network rehabilitation and expansion, including rehabilitation of the existing water treatment facilities, construction of overhead tanks and distribution networks, bulk water metering and house connections in Bhagalpur.

2. Staffing and Skills for Water Supply Operations Improved

8. Project 2 will engage the contractors in Gaya for preparation of O&M manuals for the Gaya water supply works; development of georeferenced cadastral maps with thematic layers on a geographic information system domain,[2] an integrated water supply and consumer database[3] and a water supply utility management system;[4]supervisory control and data acquisition with programmable logic controllers; and four and half year O&M of the renewed water supply system at the national service standards in Gaya. These items are already included in the scope of works for the DBO contractor engaged in Bhagalpur under BWSP1 (ongoing tranche 1).

[2] Through digital and visual analysis of aerial photography and satellite data, georeferenced cadastral maps will be generated with the following thematic layers: land use and land cover, landform, transport network, surface water bodies, urban micro watershed, agglomerated settlement areas, and important landmarks. The maps will form the base for integrating WSS asset and consumer information for the town.

[3] Through an asset condition survey, asset attributes including age, material, asset condition, and other relevant technical specifications will be assigned to the system and mapped as a thematic layer on the geospatial domain. Also, through a consumer survey, information on consumers (residential, commercial, industrial), technical specifications on meters, daily water consumption data, technical specifications on sewer connections, and revenue information (tariffs and charges) will be created and linked to the geospatial domain.

[4] The system is a web-based software application to assist in making informed decisions on future WSS planning, maintenance and management activities across the town.

3. Systems for Water Supply Service Delivery Management Improved

9. Project 2 will improve technical and financial management skills of the water supply operations in Gaya and Bhagalpur. Under this output the consultancy firm will work specifically with the water operations/ utility to (i) improve financial management in order to issue utility financial statements every year; (ii) implement user charges for water supply, incorporating special concessionary arrangements for vulnerable and/or women-headed households; (iii) operationalize a new accounting system (accrual-based double entry accounting) with a demand-collection-balance module for user charge billing; and (iv) make arrangements for the external skill upgrading programs for the water operations staff who belongs to the municipal cadre in the municipal corporations.

10. Training and institutional capacity building for the ULB staff forms an important part of this output. A consultancy firm will be engaged to support the improvement of urban governance, municipal finance and preparation of service delivery action plan. The consultants will support with: (i) improving urban governance and accelerating resource mobilization through implementing municipal finance reforms and ushering of e-governance systems for both ULBs; (ii) training and capacity building of ULB staff to develop capacities in areas of procurement, project development, project management, O&M, financial management, budgeting and accounts, urban planning and e-governance; (iii) training of ULB elected officials in urban administration and provision of municipal services; (iv) supporting the ULB to undertake water utility reforms including governance reforms and tariff rationalization; (v) Preparing tariff schedules for achieving an appropriate internal reserve level and full O&M recovery in Bhagalpur and Gaya; and (vi) Preparing draft legal proposals for enabling the urban service providers to take necessary actions for non-payers of water supply services, and mandatory connections in the service areas. The terms of reference for this consultancy are provided in Appendix 1 of the Project Administration Manual.

D. Purpose of the Environmental Assessment and Review Framework

11. An environmental assessment and review framework (EARF) has been prepared for the MFF prior to Project 1 implementation[5] based on (i) ADB Safeguard Policy Statement (SPS), 2009, and (ii) national and State of Bihar environmental acts, rules, regulations, and standards for the MFF. The EARF (i) describes the proposed subprojects; (ii) explains the anticipated environmental impacts of the subprojects to be financed under the program; (iii) specifies the requirements that will be followed in relation to subproject screening and categorization, assessment, and planning, including arrangements for meaningful consultation with affected people and other stakeholders and information disclosure requirements and, where applicable, safeguard criteria that are to be used in selecting subprojects and/or components; (iv) assesses the adequacy of the client's capacity to implement national laws and ADB's requirements and identify needs for capacity building; (v) specifies implementation procedures, including the budget, institutional arrangements, and capacity development requirements; (vi) specifies monitoring and reporting requirements; and (vii) describes the responsibilities of the client and of ADB in relation to the preparation, implementation, and progress review of safeguard documents of subprojects.

[5] The EARF was disclosed on ADB website (https://www.adb.org/sites/default/files/project-document/61295/41603-013-ind-earf-draft.pdf) and project website.

12. The EARF has been updated for Project 2 to reflect requirements of ADB SPS for environmental assessment of subprojects or components to be prepared after ADB Board approval.

13. Project 2 is categorized as category B in accordance with ADB SPS, 2009. During project preparation, three draft initial environmental examinations (IEEs) were prepared for subprojects based on preliminary designs. The draft IEEs concluded that the subprojects will only have small-scale, localized impacts on the environment which are readily mitigated. The potential adverse environmental impacts are mainly related to the construction period, which can be minimized by the mitigating measures and environmentally sound engineering and construction practices. Mitigation measures and monitoring plans were proposed in the environmental management plan (EMP), which forms part of the IEE. No category A subproject will be considered for funding under Project 2.

II. ASSESSMENT OF LEGAL FRAMEWORK AND INSTITUTIONAL CAPACITY

A. Applicable Legislation

14. The implementation of the subprojects will be governed by Government of India and State of Bihar environmental acts, rules, regulations, and standards. These regulations impose restrictions on the activities to minimize or mitigate likely impacts on the environment. It is the responsibility of the project executing and implementing agencies to ensure subprojects are consistent with the legal framework, whether national, state or municipal or local. Key standards include those related to drinking water quality, air quality, effluent discharge, and protected areas. Compliance is required in all stages of the subprojects including design, construction, and operation and maintenance.

B. Environmental Assessment Requirements

15. The Government's Environmental Impact Assessment (EIA) Notification of 2006 requires environmental clearance for certain defined activities/projects[6]. This Notification classifies the projects or activities that require environmental clearance into 'A' and 'B' categories depending on the impact potential and/or scale of project. For both category projects, prior environmental clearance is mandatory before any construction work, or preparation of land except for securing the land, is started. Clearance provisions per EIA Notification of 2006 are as follows:

(i) Category 'A' projects require prior environmental clearance from the Ministry of Environment Forest and Climate Change (MoEFCC)[7]; and
(ii) Category 'B' projects require prior environmental clearance from the State Environmental Impact Assessment Authority (SEIAA)[8].

16. This Notification provides that, any project or activity specified in Category 'B' will be treated as Category A, if located in whole or in part within 10 km from the boundary of: (i)

[6] EIA Notification of 2006 —Schedule of Projects Requiring Prior Environmental Clearance

[7] Category A projects - based on preliminary details provided by the project proponent, the MoEFCC Expert Appraisal Committee (EAC) will determine comprehensive terms of reference (TOR) for the EIA studies. This TOR will be finalized within 60 days. On the recommendation of the EAC based on EIA studies, MoEFCC provides the environmental clearance.

[8] Category B projects – to be further divided by State Level Expert Appraisal Committee (SEAC) into B1 (require EIA studies) and B2 (do not require EIA studies). The SEAC will determine TOR for EIA studies for B1 projects within 60 days. On the recommendation of the SEAC based on EIA studies, SEIAA provides the environmental clearance.

protected areas notified under the Wild Life (Protection) Act, 1972, (ii) critically polluted areas as notified by the CPCB from time to time, (iii) notified eco-sensitive areas, (iv) inter-state boundaries and international boundaries. In the case where an SEIAA does not exist, Category B project will be reviewed by the MoEFCC and reclassified as Category A.

C. Other National Legal Requirements

17. **Water (Prevention and Control of Pollution) Act of 1974, Rules of 1975, and amendments.** This Act covers any component of the subprojects having the potential to generate sewage or trade effluent. Under Section 25 of the Act, such subprojects have to obtain from State Pollution Control Board (SPCB) (i) Consent for Establishment (CFE) before starting implementation, and (ii) Consent for Operation (CFO) before commissioning the facility. The Water Act also requires the occupier of such subprojects to adopt measures for abating any possible pollution of receiving water bodies. Application for CFE and CFO can be done online through the website[9] of SPCB after necessary registration. The following types of projects require CFE and CFO from SPCB:

(i) New or augmentation of water treatment plants;
(ii) New or augmentation of sewage treatment plants.

18. **Air (Prevention and Control of Pollution) Act of 1981, Rules of 1982 and amendments.** This Act covers any component of the subprojects having potential to emit air pollutants into the atmosphere. Under Section 21 of the Act, such subprojects have to obtain from SPCB (i) CFE before starting implementation, and (ii) CFO before commissioning the facility. The Air Act also requires the occupier of the project or facility to adopt necessary air pollution control measures for abating air pollution. Application for CFE and CFO can be done online through the website[10] of SPCB. The following types of emission sources require CFE and CFO from SPCB:

(i) Diesel generators; and
(ii) Hot mix plants, wet mix plants, stone crushers etc, if installed for construction.

19. Emissions and discharges shall comply with standards notified by the CPCB. Appendix 1 provides applicable standards for effluents, receiving water bodies, air quality, water quality and noise levels.

20. **Noise Pollution (Regulation and Control) Rules, 2000.** This Rules states that the State Government shall take measures for abatement of noise including noise emanating from vehicular movements and ensure that the existing noise levels do not exceed the ambient air quality standards specified under the Rules. All development authorities, local bodies, and other concerned authorities, while planning developmental activity or carrying out functions relating to town/city and country planning, shall take into consideration all aspects of noise pollution as a parameter of quality of life to avoid noise menace and to achieve the objective of maintaining the ambient air quality standards in respect of noise. Based on the Rules, an area comprising not less than 100 meters around hospitals, educational institutions and courts may be declared as silence areas/zones.

[9] http://bhocmms.nic.in/
[10] http://bhocmms.nic.in/.

21. **Indian Forest Act of 1927.** This Act empowers State of Bihar to declare any forest land or waste-land, which is the property of government or over which the government has proprietary rights or to the whole or any part of the forest produce of which the government is entitled, a reserved forest or protected forest. State of Bihar may assign to any village-community the rights of the government over a reserved forest - called the village-forest. The Forest Act also allows government control over forests and lands not owned by the government.

22. For reserved forests and village-forests, activities like clearing or breaking up of any land for cultivation or for any other purpose, damage to vegetation/trees and quarrying or removing any forest produce are prohibited. For protected forests, State of Bihar makes rules to regulate activities like cutting of trees and removal of forest produce; clearing or breaking up of land for cultivation or any other purpose; and for protection and management of any portion of protected forest.

23. **Forest (Conservation) Act of 1980 (amended in 1988).** This Act restricts the deforestation of forests for use for non-forest purposes. Accordingly, State of Bihar requires prior approval of MoEFCC for the use of forest land for non-forest purposes (which means the breaking up or clearing of any forest land) or for assigning lease to any private person or agency not controlled by government. The Forest (Conservation) Rules of 2003 issued under this Act provides specific procedures to be followed for conversion of forest land for non-forest purposes.

24. Conversion of forest lands that are part of National Parks or Sanctuaries and Tiger Reserve areas (notified under Indian Wildlife [Protection] Act of 1972) is not permitted. In exceptional case, State of Bihar requires consent of the Indian Board of Wildlife for obtaining approval of the State Legislature for de-notification of the area as a sanctuary. The State or National Wildlife Board under MoEFCC is the authority which will grant a No Objection Certificate (NOC) for any construction within a sensitive area. Every user agency, which proposes to use any forest land for non-forest purposes and use buffer zone of the wildlife protected areas for other purposes, must apply for forest and/or wildlife clearance using the application form attached as Appendix 2. The flow chart of forest and/or wildlife clearance process is shown in Appendix 3.

25. Cutting of trees in non-forest land, irrespective of land ownership, also requires permission from the State Forest and Environment Department. Afforestation to the extent of two trees per one tree felled is mandatory.

26. **Ancient Monuments and Archaeological Sites and Remains Rules, 1959.** This Rules designates areas within a radius of 100 meters and 300 meters from a “protected property” as “protected area” and “controlled area”, respectively. No development activity (including mining operations and construction) is permitted in the “protected area” and all development activities likely to damage the protected property are not permitted in the “controlled area” without prior permission of the Archaeological Survey of India (ASI). Protected property includes the site, remains, and monuments protected by ASI or the State Department of Archaeology.

27. **Wild Life (Protection) Act 1972, Amendment Act, 1993 and 2002 and Wildlife (Protection) Rules, 1995.** This Act aims to control poaching and illegal trade in wildlife and its derivatives. This was amended with more stringent punishments and penalties for offenses under the Act.

28. The Act provides for the protection of wild animals, birds and plants; and for matters connected therewith or ancillary or incidental thereto. It extends to the whole of India, except the State of Jammu and Kashmir which has its own wildlife act. It has six schedules which give varying degrees of protection. These are:

(i) Schedule I and part II of Schedule II include species that are provided absolute protection and offenses of which are prescribed the highest penalties.
(ii) Schedule III and Schedule IV include species that are also protected, but the degrees of penalties are lower.
(iii) Schedule V includes the animals which may be hunted.
(iv) Schedule VI includes plants that are prohibited for cultivation and planting, and enforcement authorities have the power to compound offenses under this Schedule**.**

29. Any projects or construction activities to be implemented within a Wildlife Sanctuary or National Park will require clearance as mandated by the Wildlife Protection Act. The State or National Wildlife Board under MoEFCC is the authority that grants NOC for any construction within a sensitive area.

30. **Solid Waste Management Rules, 2016**. This Rules explains duties of individual waste generator and different department including Central and State Pollution Control Board, local authorities and village Panchayats of census towns and urban agglomerations. The Rules also clarify the criteria for (i) setting up solid waste processing and treatment facility, (ii) solid waste management in hilly areas and the actions that need to be taken, and (iii) waste to energy process.

31. **The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013[11].** This Act came into force on 1 January 2014 as notified by the Central Government. It ensures a humane, participative, informed and transparent process for land acquisition for industrialization, development of essential infrastructural facilities and urbanization with the least disturbance to the owners of the land and other affected families. It also provides just and fair compensation to the affected families whose land has been acquired or proposed to be acquired or are affected by such acquisition, including adequate provisions for such affected persons for their rehabilitation and resettlement when needed. The Act replaced the Land Acquisition Act, 1894, a nearly 120-year-old law enacted during the British rule.

32. The Act also applies when the government acquires land for its own use, hold and control, including for public sector undertakings and for public purpose. The District Collector or any other officer designated will function as the Land Acquisition Officer on behalf of the government. The Act provides for consent award to reduce the time for processing if the land owners are willing to agree on the price fixed by the Land Acquisition Officer. The option of acquiring lands through private negotiations is also available.

D. **State Laws and Regulations**

33. **Bihar Municipal Act of 2007.** Pursuant to the 74th (Constitution Amendment) Act, 1992, the state government enacted the Bihar Municipal Act in 2007. This Act is comprehensive and covers three levels of ULBs, namely Nagar Panchayat, the Municipality, and the

[11] http://indiacode.nic.in/acts-in-pdf/302013.pdf

Corporation. The following are the salient features of the Act with respect to water supply component that defines and regulates all civic services, amenities and facilities within the domain of the ULB:

(i) Water supply to the municipal area: Municipality either itself or through any agency (including a government department) shall supply water for the use of its inhabitants.
(ii) Vesting of public work: All public tanks, reservoirs, cistern, well, tube wells, aqueducts, conduits, tunnels, pipes, tapes and other water works that are either made or laid or created from Municipal funds shall be vested with Municipality.
(iii) Right of underground water: All rights over the sub-soil water resources within the municipal area shall be vested with the Municipality.
(iv) Construction of water works: Within the municipal area, the Municipality, and if necessary in collaboration with or through other local bodies or agencies, will undertake construction of water works and operate, manage or maintain any water works intended to serve the inhabitants of the municipal area.
(v) The Municipality may, in exceptional circumstances, either on its or through other agency, provide, free of cost, supply water to the public within the municipal area and may for the said purpose, construct public hydrants or stand posts or other conveniences.
(vi) No building, private street, digging of well, tube well, pond and cistern or fountain will be constructed without any written permission from the Municipality.

34. **The Bihar Forest (Amended) Act, 1990 and Bihar Public Land Encroachment Act, 1956.** This Act provides that encroachment of forest land is a cognizable and non-bailable offense. If any Forest Officer, not below the rank of the Divisional Forest Officer (DFO), has reasons to believe that forest land has been encroached, the Officer can evict the encroachers and can use all power conferred on a Magistrate under the Bihar Public Land Encroachment Act, 1956. The Indian Forest Act, 1927 provides realization of royalty and compensation for damages of forest produce and forest land from the encroachers.

35. **The Bihar Ancient Monuments and Archaeological Sites, Remains and Art Treasures Act, 1976[12].** This Act provides for preservation of ancient monuments and archaeological sites and remains, other than those declared by or under law made by parliament to be of national importance, for the regulation of archaeological excavation and for the protection of antiquities in the state of Bihar.

36. The Act states that no person, including the owner or occupier of a protected area, shall construct any building within protected area or carry on any mining, quarrying excavating, blasting or any operation of a like nature in such area, or utilize such area or any part thereof in any other manner without the permission of the State Government.

37. **Draft {S.O. 3030(E) dated 9th November 2015 from MoEFCC} and Final Notification of Eco-Sensitive Zone of Vikramshila Gangetic Dolphin Sanctuary**. Under this draft notification, regulated activities include the extraction of surface water and ground water which shall be allowed only for bona fide agricultural use and domestic consumption of the occupier of the land. The draft notification also states that no new construction of any kind shall be allowed within one kilometer from the boundary of the Protected Area.

[12] http://asi.nic.in/nmma/nmma_bihar01.pdf

38. The summary of national and state environmental regulations and mandatory requirements for the proposed subproject is shown in Table 2.

Table 2: Applicable Environmental Regulations

	Law/Act	Requirements and Status for Project 2
(i)	Environmental (Protection) Act of 1986, its rules and amendments	
(ii)	EIA Notification, 2006 and 2009	The proposed components of the water supply subprojects are not listed in the EIA Notification's "Schedule of Projects Requiring Prior Environmental Clearance". Thus environmental clearance is not required for any of the subprojects under Project 2.
(iii)	Water (Prevention and Control of Pollution) Act of 1974, its rules and amendments	Subproject involving WTP will require CFE and CFO from Bihar State Pollution Control Board. These consents should be secured prior to contract award.
(iv)	Air (Prevention and Control of Pollution) Act of 1981, its rules and amendments	Subprojects with the following components will require CFE and CFO from Bihar State Pollution Control Board: (i) diesel generators, and (ii) hot mix plants, wet mix plants, stone crushers, etc. if installed for construction. These consents should be secured prior to contract award.
(v)	Noise Pollution (Regulation and Control) Rules of 2000 as amended up to 2011	Subprojects should comply with applicable CPCB noise level standards.
(vi)	Central Pollution Control Board (CPCB) Environmental Standards	Subprojects should comply with applicable standards for ambient air, air emission, effluents, receiving water bodies, and drinking water at the consumer end.
(vii)	The Indian Forest Act, 1927; Forest (Conservation) Act, 1980, amended 1988; Forest (Conservation) Rules, 1981 amended 1992 and 2003; The Bihar Forest (Amended) Act, 1990 and Bihar Public Land Encroachment Act, 1956 (BPLE).	Under Project 2, subprojects may require use of forest lands for the WTP and/or water reservoir components. The water supply transmission mains may traverse forest lands as well. In such case, the forest land conversion will have to follow the Guidelines for Diversion of Forest Lands for Non-Forest Purposes under the Forest (Conservation) Act, 1980. Under the guidelines, compensatory afforestation is one of the most important conditions stipulated for diversion of a forest land. The following proposals for conversion will be forwarded by State of Bihar to MoEFCC: (i) Forest land involving up to 5 hectares (ha) will be cleared by the Regional Office of the MoEFCC; (ii) Forest land involving more than 5 ha and up to 20 ha will be cleared by the Regional Office after referring the case to MoEFCC; (iii) Conversion of forest land (a) having density above 0.4 irrespective of the area involved, and (b) of more than 20 ha in the plains and 10 ha in the hilly region, irrespective of density, will be cleared by MoEFCC; (iv) Compensatory afforestation is compulsory for conversion; (v) Afforestation will be done over an equivalent area of non-forest land; (vi) As far as possible, the non-forest land for compensatory afforestation shall be identified contiguous to or in the proximity of a Reserved Forest or Protected Forest. If non-forest lands are not available in the same district, other non-forest land may be identified elsewhere in the state; and

	Law/Act	Requirements and Status for Project 2
		(vii) Where non-forest lands are not available, compensatory afforestation may be carried out over degraded forest twice in extent to the area being diverted. Subprojects and components covered by the Forest Acts are as follows: (a) Gaya Water Supply Subproject: (i) Construction of water reservoirs. A forest land was diverted for use in the construction of water reservoirs. On 24 August 2015, Conditional NOC was obtained from Forest Department (**Appendix 4**). (ii) Renovation of water storage reservoirs. Water storage reservoirs located at Ramshilla Hill, Bramayoni Hill, and Murli Hill will be renovated. NOC needs to be obtained from the Forest Department prior to implementation. (b) Bhagalpur Bulk Water Supply Subproject: (i) Construction of water intake facility. The water intake facility will be located within the eco-sensitive zone of Vikramshila Gangetic Dolphin Sanctuary (VGDS). Hence, clearance from State Forest and Environment Department is required prior to its implementation. On 6 March 2017, NOC was obtained from Chief Wildlife Warden of Bihar for the construction of water intake structures within the eco-sensitive zone of VGDS (**Appendix 5).** It is anticipated that no other components of the subprojects will be located within sensitive areas, and subproject selection criteria specifies avoidance of sensitive areas.
(viii)	Wild Life (Protection) Act 1972, Amendment Act, 1993 and 2002 and Wildlife (Protection) Rules, 1995. Draft {S.O. 3030(E) dated 9th November 2015 from MoEFCC} and Final Notification of Eco-Sensitive Zone of Vikramshila Gangetic Dolphin Sanctuary	The final notification of ESZ of VGDS has not yet been published. However, based on the recommendation from the Government of Bihar, the Government of Bihar Environment and Forest Department will include following statements in the final notification: • The extraction of surface water and ground water shall be allowed only for bona fide agricultural use and domestic consumption of the occupier of the land and *public sector domestic water supply projects in Bhagalpur and other urban areas in and adjoining the Eco – Sensitive zone.* • *Constructions and installations related to public sector domestic water supply projects for Bhagalpur and other urban areas in and adjoining the Eco-Sensitive zone shall be permitted.* Further, the 18th Expert Committee for "Declaration of Eco-Sensitive Zone (ESZ) Around Wildlife Sanctuaries/National Parks" under MoEFCC recommended for the reduction of boundary limit for ESZ of VGDS to 50 meters at Barari Ghat area and instructed for final notification. Under Project 2, the BBWS2 subproject is covered by the Wildlife Protection Act on the following work:

	Law/Act	Requirements and Status for Project 2
		(i) Dredging within River Ganges and VGDS. The dredging required to bring water up to the water intake section needs NOC from Principal Chief Conservator of Forest (Wildlife) / Chief Wildlife Warden (i.e. from State Wildlife Board). On 6 March 2017, NOC was obtained from Chief Wildlife Warden of Bihar for the dredging operation within the VGDS and other construction (intake) within the eco-sensitive zone of VGDS (Appendix 6).
(ix)	Ancient Monuments and Archaeological Sites and Remains Rules of 1959 Bihar Ancient Monuments and Archaeological Sites, remains And Art Treasures Act, 1976	For the subprojects under Project 2, activities within Archaeologically Protected Areas will be avoided. If activities are to be done in the controlled area of protected properties, the executing and implementing agencies and the line department will obtain the necessary NOC from ASI. GWSP1 and GWSP2 subprojects will construct water reservoirs and excavate for pipe laying activities near a protected temple. Hence, NOC from the Government of Bihar is required. On 1 September 2015, an NOC was obtained from State Museum & Archaeological Directorate under the Art, Culture and Youth Department of the Government of Bihar. The NOC covers the construction/renovation works near the protected area of Vishnupad Temple, Ramshilla hills and Brahmayoni hill. In case of chance finds, the protocol and mitigation measures described in the EMP should be followed.
(x)	Solid Waste Management Rules, 2016	Under Project 2 of the program, any subprojects that have components requiring disposal of excess earth will comply with the Rules.
(xi)	Hazardous Wastes (Management, Handling and Trans-boundary Movement) Rules 2016	If during excavation works, the excavated material is analyzed to be hazardous, they are to be stored and disposed of only in such facilities as may be authorized by the PCB for the purpose. The contractors will be required to follow a protocol as defined in the EMP.
	The Right To Fair Compensation and Transparency In Land Acquisition, Rehabilitation and Resettlement Act, 2013	Under Project 2 of the program, temporary disruption of household activities and businesses may occur during pipe laying work. A Resettlement Plan has been prepared in accordance with the Act and ADB SPS 2009.
(xii)	Bihar Municipal Act of 2007	To secure written permission from the municipality.
	The Inland Waterways Authority Of India Act, 1985. Jurisdiction of Ganges River waterway	NOC from Inland Waterways Authority of India (IWAI) for regular dredging activity within River Ganges to carry water up to intake (intake proposed at the bank of the river) needs to be obtained. NOC obtained from IWAI on 13 April 2017 (56).
(xiii)	National Institute of Occupational Safety and Health Criteria for a Recommended Standard: Occupational Noise Exposure, NIOSH Publication No. 98-126	Subprojects will comply with applicable NIOSH occupational noise standards.
(xiv)	Indian Standard Drinking Water – Specification, IS 10500, 2012:	During the operation phase, the supplied water to consumer should comply with the standards.

	Law/Act	Requirements and Status for Project 2
	Bureau of Indian Standards	
(xv)	Manufacture, Storage, and Import of Hazardous Chemical Rules, 1989	For subprojects involving WTPs, approval of BSPCB is required.
(xvi)	The Child Labour (Prohibition and Regulation) Act, 1986	All subprojects should comply with this Act. No children between the ages of 14 and 18 will work under hazardous conditions.
(xvii)	Public Liability and Insurance Act 1991	Applicable During Construction. Subprojects should comply with the set requirements.
(xviii)	Explosive Act 1984	Respective Authorization shall be obtained from Chief Controller of Explosives (CCE) by contractor.
(xix)	Central Motor Vehicle Act 1988 and Central Motor Vehicle Rules1989	All vehicles in use shall obtain Pollution Control Check certificate from BSPCB. All subprojects should comply with this Rules.

BSPCB-Bihar State Pollution Control Board, CFE-Consent for Establishment, CFO-Consent for Operation, MoEFCC-Ministry of Environment Forest and Climate change, STP-Sewage Treatment Plant, WTP-Water Treatment Plant

E. Applicable International Environmental Agreements

39. In addition to national and state rules and regulations, international conventions such as the International Union for Conservation of Nature and Natural Resources, Convention on Migratory Species of Wild Animals, Convention on International Trade in Endangered Species of Wild Fauna and Flora, and Ramsar Convention on Wetlands of International Importance are applicable in the selection and screening of subprojects under restricted/sensitive areas. India is a party to these conventions.

40. **International Union for Conservation of Nature and Natural Resources.** The International Union for Conservation of Nature and Natural Resources (IUCN) Red List of Threatened Species (also known as the IUCN Red List or Red Data List), founded in 1963, is a comprehensive inventory of the global conservation status of plant and animal species. The IUCN is an authority on the conservation status of species. A series of Regional Red Lists are produced by countries or organizations, which assess the risk of extinction to species within a political management unit. The IUCN Red List is set upon precise criteria to evaluate the extinction risk of thousands of species and subspecies. These criteria are relevant to all species and all regions of the world. The aim is to convey the urgency of conservation issues to the public and policy makers, as well as help the international community to try to reduce species extinction.

41. **Convention on Migratory Species of Wild Animals.** The Convention on Migratory Species of Wild Animals (CMS) was adopted in 1979 and entered into force on 1 November 1983. CMS, also known as the Bonn Convention, recognizes that states must be the protectors of migratory species that live within or pass through their national jurisdictions, and aims to conserve terrestrial, marine and avian migratory species throughout their ranges. Migratory species threatened with extinction are listed on Appendix I of the Convention. CMS Parties strive towards strictly protecting these species, conserving or restoring the places where they live, mitigating obstacles to migration and controlling other factors that might endanger them. Migratory species that need or would significantly benefit from international cooperation are listed in Appendix II, and CMS encourages the Range States to conclude global or regional agreements.

42. **Convention on International Trade in Endangered Species of Wild Fauna and Flora.** The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. CITES were first formed, in the 1960s. Annually, international wildlife trade is estimated to be worth billions of dollars and to include hundreds of millions of plant and animal specimens. The trade is diverse, ranging from live animals and plants to a vast array of wildlife products derived from them, including food products, exotic leather goods, wooden musical instruments, timber, tourist curios and medicines. Levels of exploitation of some animal and plant species are high and the trade in them, together with other factors, such as habitat loss, is capable of heavily depleting their populations and even bringing some species close to extinction. Many wildlife species in trade are not endangered, but the existence of an agreement to ensure the sustainability of the trade is important in order to safeguard these resources for the future. Because the trade in wild animals and plants crosses borders between countries, the effort to regulate it requires international cooperation to safeguard certain species from over-exploitation.

43. The BWSP2 subproject sources water from the River Ganges. The location is within the designated Vikramshila Gangetic River Dolphin Sanctuary. The Ganges Dolphin, *platanista gangetica gangetica*, is categorized as endangered on the IUCN Red List. It is also included in: (i) Appendix I of the CITES, (ii) Appendix II of the CMS, and (iii) Schedule I of the Indian Wildlife (Protection) Act 1972. Hence, it is necessary to study the impact of the subproject on biodiversity particularly on the Ganges Dolphins and develop mitigation measures/protection strategy against all specific impacts during construction and operation of the subproject components.

44. Based on the design of BWSP2 subproject, no permanent structure will be constructed within the river (i.e. within the VGDS). Only de-silting and dredging activities will be conducted within the river. Biodiversity impact study will also be undertaken for assessing the impact of the subproject on endangered species, including Ganges Dolphin. Subsequently, mitigation measures will be developed as per NOC condition.

45. **Ramsar Convention on Wetlands of International Importance 1971.** The Convention on Wetlands of International Importance, called the Ramsar Convention, is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. The Ramsar Convention is an international treaty for the conservation and sustainable utilization of wetlands. The Ramsar Convention is the only global environmental treaty that deals with a particular ecosystem.

46. According to the Ramsar list of Wetlands of International Importance, there are 25 designated wetlands in India which are required to be protected. Activities undertaken in the proximity of these wetlands should follow the guidelines of the convention. There are no Ramsar designated wetlands reported within subproject areas. Hence, restriction of subproject activities within a Ramsar site is not applicable.

F. ADB Policy

47. ADB requires the consideration of environmental issues in all aspects of ADB's operations, and the requirements for environmental assessment are described in ADB SPS, 2009. This states that ADB requires environmental assessment of all ADB investments.

48. **Screening and categorization.** The nature of the environmental assessment required for a project depends on the significance of its environmental impacts, which are related to the type and location of the project; the sensitivity, scale, nature, and magnitude of its potential impacts; and the availability of cost-effective mitigation measures. Projects are screened for their expected environmental impacts, and are assigned to one of the following four categories:

(i) **Category A.** Projects could have significant adverse environmental impacts. An EIA is required to address significant impacts.
(ii) **Category B**. Projects could have some adverse environmental impacts, but of lesser degree or significance than those in category A. An IEE is required to determine whether significant environmental impacts warranting an EIA are likely. If an EIA is not needed, the IEE is regarded as the final environmental assessment report.
(iii) **Category C**. Projects are unlikely to have adverse environmental impacts. No EIA or IEE is required, although environmental implications are reviewed.
(iv) **Category FI**. Projects involve a credit line through a financial intermediary or an equity investment in a financial intermediary. The financial intermediary must apply an environmental management system, unless all projects will result in insignificant impacts.

49. **Environmental management plan.** An EMP, which addresses the potential impacts and risks identified by the environmental assessment, shall be prepared. The level of detail and complexity of the EMP and the priority of the identified measures and actions will be commensurate with the project's impact and risks.

50. **Public disclosure**. ADB will post the safeguard documents on its website as well as disclose relevant information in accessible manner in local communities:

(i) for environmental category A projects, draft EIA report at least 120 days before Board consideration;
(ii) final or updated EIA and/or IEE upon receipt; and
(iii) environmental monitoring reports submitted by the implementing agency during project implementation upon receipt.

51. **ADB SPS Additional Requirements on Pollution Control, Health & Safety**. During the design, construction, and operation of the project the PMU and PIUs will apply pollution prevention and control technologies and practices consistent with international good practice, as reflected in internationally recognized standards such as the World Bank Group's Environment, Health and Safety Guidelines. These standards contain performance levels and measures that are normally acceptable and applicable to projects. When Government of India regulations differ from these levels and measures, the PMU and PIUs will achieve whichever is more stringent. If less stringent levels or measures are appropriate in view of specific project circumstances, the PMU and PIUs will provide full and detailed justification for any proposed alternatives that are consistent with the requirements presented in ADB SPS.

III. OVERVIEW OF THE SUB-PROJECT COMPONENTS AND ANTICIPATED ENVIRONMENTAL IMPACTS

A. Environmental Guidelines for Subproject Selection

52. The subprojects are designed to improve the existing urban environmental conditions once they are accomplished and in operation. For selection of any future subprojects or components, the guidelines are enumerated in Table 3 below. These guidelines provide further guidance to avoid or minimize adverse impacts during the identification and finalization of subprojects.

Table 3: Environmental Criteria for Subproject Selection

S.N.	Components	Environmental Selection Guidelines	Remarks
1	**Overall Selection Guideline (applicable to all components)**	Comply with all requirements of relevant national and state requirements (see Section II)	
		Site selection process will avoid involuntary resettlement and impacts on vulnerable persons including indigenous peoples (see Resettlement Framework (RF) and Indigenous Peoples Framework (IPF). If unavoidable the extent of impacts will be minimized.	
		Comply with ADB SPS, the EARF, RF and IPF.	
		Site selection will not result in destruction and avoid being sited in protected areas, including notified reserved forests or biodiversity conservation hotspots (sanctuary/national park etc.)	Approval (NOC) from concerned authority if absolutely necessary
		Sub-project location should not result in destruction/disturbance to historical and cultural places/values	
		There should be no social conflicts for site selection	
		It will reflect inputs from public consultation and disclosure for site selection	
		If work is proposed with the aim of improving conservation or management of designated sites this must be undertaken: (i) after a comprehensive study and development of management plans and criteria; and (ii) with the direct involvement and approval of national and local bodies responsible for the site	
2	**Water Supply**	Comply with all requirements of relevant national and state law, including the Water (Prevention and Control of Pollution) Act 1974	
		Avoid environmentally sensitive locations including sites with national or international designation (e.g. for ecological/biological conservation i.e. reserved and protected forest, historical or cultural importance sites,	

S.N.	Components	Environmental Selection Guidelines	Remarks
		etc.)	
		Site selection will not result in excessive abstraction of water affecting downstream water uses and other beneficial water uses for surface and ground water Utilize water sources at sustainable levels of abstraction only (i.e. without significant reductions in the quantity or quality of the source overall)	For this, water availability data/water reserve status of the subproject area is required
		Not to utilize raw water of very poor quality evidenced by presence of high levels of pathogens/mineral contents	
		Avoid using water sources that may be polluted by upstream users	In the case of planned water withdrawal from river/stream and if water pollution sources like sewage channel, thermal power plant discharge or other industrial discharge exist upstream the proposed intake site, that source should be avoided. Review of surface water quality data of intake point is necessary for designing and undertaking environmental assessment
		Avoid water-use conflicts by not abstracting water that is used for other purposes (e.g. irrigation)	
		Locate all new facilities (WTP, PS etc.) at least 100m from houses, shops or any other premises used by people, thus establishing a buffer zone to reduce the effects of noise, dust and the visual appearance of the site	Distance restriction may be reviewed depending on the technology adopted, land availability and buffer zone planning.
		Ensure location of water treatment plant will consider the present and future demands, direction and rate of growth of the service area and potential deterioration of source quality in the future.	
		Locate WTP at sites where there is no risk of flooding or other hazards that might impair functioning of the plant or present a risk of damage to the plant or its environs	Flood statistics data of the project area needs to be reviewed.
		Consult the relevant national/local archaeological agencies regarding the archaeological potential of proposed sites of WTP, reservoir, TW and primary mains, to ensure that these are in areas where there is a low risk of chance finds.	In case of location within protected area necessary NOC needs to be obtained from concerned department.
		Locate pipelines within ROW of other linear structures (roads, irrigation canals), to reduce the acquisition of new land	Minimize land acquisition
		Ensure that pipeline routes do not require the acquisition of land from individual	

S.N.	Components	Environmental Selection Guidelines	Remarks
		farmers in amounts that are a significant proportion of their total land holding (>10%).	
		Ensure that improvements in the water supply system are combined with improvements in sewerage and drainage to deal with the increased discharge of domestic wastewater	
		Does not involve use or handling Asbestos Cement (AC) pipes. Existing AC pipes, if any, will be left as they are, but project team will ensure that pipes will be marked appropriately	
		Ensure occupational safety measures for the safe handling of chlorine, including wash area, as well as proper handling so as not to result in inadequate/poor treatment and chlorination.	
		Include treatment of all backwash and sludge resulting from water treatment plants and acceptable to discharge standards of the BSPCB before disposal to designated/ approved sites.	

AC-asbestos cement, EIA-Environmental Impact Assessment, NOC-No Objection Certificate, PS-pumping station, ROW-right of way, STP-sewage treatment plant, TW-tube well, WTP- Water Treatment Plant

53. Preliminary designs for Project 2 subprojects were completed and environmental impact assessment were undertaken. Results of the assessment show that Project 2 subprojects are unlikely to cause significant adverse impact. Thus Project 2 is environment category B as per ADB SPS, 2009. Table 4 provides the potential environmental impacts and mitigation measures to ensure environmentally sound implementation of the subprojects. The details are discussed in each subproject's IEE.

Table 4: Potential Project 2 Environmental Impacts and Mitigation Measures

Field	Anticipated Impact	Mitigation Measures
Pre-construction / Design Phase		
Environmental clearances	CFE and CFO are required from the BSPCB to implement the project particularly construction of Water Treatment Plant	Pursue all clearances and follow up with relevant authorities
Water Supply	Health risk due to closure of water supply	• Plan the construction program to keep the cessation of water supplies to the minimum possible • In coordination with line agency, provide alternative potable water to affected households and businesses for the duration of the shut-down; and • Liaise with affected persons to inform them of any cessation in advance
Utilities	Impact/ shifting of telephone lines, electric poles and wires, water lines within proposed project area	• Identify and include locations and operators of these utilities in the detailed design documents to prevent unnecessary disruption of services during construction phase; and

Field	Anticipated Impact	Mitigation Measures
		• Require construction contractors to prepare a contingency plan to include actions to be done in case of unintentional interruption of services.
Erosion control	Erosion of bank near construction site	• Develop an erosion control and re-vegetation plan to minimize soil loss and reduce sedimentation to protect water quality. • Development Bank Protection plan. • Minimize the potential for erosion by balancing cuts and fills to the extent feasible. • Identify and avoid areas with unstable slopes and local factors that can cause slope instability (groundwater conditions, precipitation, seismic activity, slope angles, and geologic structure). • Minimize the amount of land disturbed as much as possible.
Social and Cultural Resources	Ground disturbance can uncover and damage archaeological and historical remains	• Consult Archaeological Survey of India (ASI) or concerned dept. of Govt. of Bihar to obtain an expert assessment of the archaeological potential of the site; • Consider alternatives if the site is found to be of medium or high risk; • Develop a protocol for use by the construction contractors in conducting any excavation work, to ensure that any chance finds are recognized and measures are taken to ensure they are protected and conserved.
Construction work camps, hot mix plants, stockpile areas, storage areas, and disposal areas.	Disruption to traffic flow and sensitive receptors	• Prioritize areas within or nearest possible vacant space in the subproject location without destruction of property, vegetation, irrigation, and drinking water supply systems • Avoid residential areas; • The camp must be properly fenced and secured • Bins shall be provided at convenient intervals for disposal of waste within the construction camp. • Avoid direct disposal of waste/ effluent to water body which will inconvenience the community.
Core Labour Standard (CLS)-safety and compliance	Safety	• Monitoring compliance with national labor laws and regulations, if these national laws are consistent with CLS. DSC will ensure that bidding and contract documents include specific provisions requiring contractors to comply with all: (i) applicable labor laws and core labor standards on: (a) prohibition of child labor as defined in national legislation for construction and maintenance activities; (b) equal pay for equal work of equal value regardless of gender, ethnicity or caste; and (c) elimination of forced labor; and (ii) the

Field	Anticipated Impact	Mitigation Measures
		requirement to disseminate information on sexually transmitted diseases including HIV/AIDS to employees and local communities surrounding the project sites.
Construction Phase		
Climatic impact	Construction Impact during rainy season will be occur	• Seasonal climatic variations will be considered during scheduling of construction activities in the area. • Consideration of suitable season (non- monsoon /lien period) for major construction activity • Excavations and other clearing activities will only be done during agreed working times and permitted weather conditions. • Storm water control (through drainage, diversion) during construction phase as per the method approved by the Engineer.
Sources of Materials	Extraction of rocks and material may cause ground instability	• Use quarry sites and sources permitted by government; • Verify suitability of all material sources and obtain approval of Project Implementation Authority
Education of site staff on general and environmental conduct[13]	Impact on project activity	• Ensure that all site personnel have a basic level of environmental awareness training. • Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task • All employees must undergo safety training and wear the necessary protective equipment (e.g. helmets, gloves, gumboots, nose mask, ear plugs as per type of work) and clothing. • no fires permitted on site; • other than pre-approved security staff, no workers shall be permitted to live on the construction site; and • no worker may be forced to do work that is potentially dangerous or that he/she is not trained to do.
Air Quality	Emissions from construction vehicles, equipment, and machinery used for excavation and construction resulting to dusts and increase in concentration of vehicle-related pollutants such as carbon monoxide, sulfur oxides, particulate matter, nitrous oxides, and hydrocarbons	• Consultation with PMU/ PIU on the designated areas for stockpiling of clay, soils, gravel, and other construction materials; • Damp down exposed soil and any stockpiled on-site by spraying with water when necessary during dry weather; • Use tarpaulins to cover sand and other loose material when transported by trucks; and • Fit all heavy equipment and

[13] These points need to be made clear to all staff on site before the subproject begins.

Field	Anticipated Impact	Mitigation Measures
		machinery with air pollution control devices which are operating correctly. • Carry out air quality monitoring as per Environmental Management Plan (EMP)
Surface water quality	Mobilization of settled silt materials, run-off from stockpiled materials, and chemical contamination from fuels and lubricants during construction works can contaminate nearby surface water quality.	• Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets; • Prioritize re-use of excess spoils and materials in the construction works. • Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; • Place storage areas for fuels and lubricants away from any drainage leading to water bodies; • Dispose any wastes generated by construction activities in designated sites; and • Conduct surface quality inspection according to the Environmental Management Plan (EMP).
Noise Levels	Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	• Plan activities in consultation with PIU/ DSC so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance; • Require horns not be used unless it is necessary • Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and portable street barriers the sound impact to surrounding sensitive receptor; and • (Maintain maximum sound levels not exceeding 80 decibels (dbA) when measured at 10 m or more from the vehicle/s.
Installation of new transformers – safety	Safety	• Adequate caution should be taken to carry out installation works by personnel at elevated height • Following standard safety protocols while erecting poles and stretching cables • Taking appropriate protective measures against accidental fall from elevated height (e.g. using body harness, waist belts, secured climbing devices, etc.) as specified • Only allowing trained and certified workers to install, maintain, or repair electrical equipment;
Waste water (i.e. extracted ground water during re-development)	Improper disposal of waste water causing water pollution	▪ Adequate arrangement shall be made for disposal of waste-water during development of tube well so that it is discharged in nearest *Nala*/drain.
Generated Muck	Improper disposal of muck causing environmental pollution	▪ The muck generated due to excavations/ tubewell sinking, etc. shall be disposed of at selected site approved by the engineer.

Field	Anticipated Impact	Mitigation Measures
Ecological resources	Felling of the trees – affect terrestrial ecological balance and affect aquatic flora and fauna	• Not to dispose any construction materials in river which may pollute the river water and impact on aquatic fauna, • Planning on arrangement of net at water intake point so that it will not affect the Dolphin habitation/movement (In case of Bhagalpur), • Consultation with Dolphin expert during implementation stage is absolutely required for the protection of endangered species, • Minimize removal of vegetation and disallow cutting of trees; • If tree-removal will be required, obtain tree-cutting permit from Municipality, • Require to plant three (3) native trees for every one (1) that is removed; • Prohibit employees from poaching wildlife, bird hunting, and cutting of trees for firewood. • Prevent access to areas located beyond the construction zone. • Limit activities within the work area. • Prohibit workers from disturbing biodiversity within the direct impact zones. • Provide to workers or post in conspicuous areas, illustrations or pictures of protected, endangered, threatened, and/or near-threatened species potential which can be found in the work area or its immediate surroundings. • Monitor biodiversity for changes over time during construction period and compare results to baseline data (seasonal and annual trends established during pre-construction). The objective of the biodiversity monitoring program is to record changes as a result of conservation management works. • Educating affected local fishing community, raising awareness of stakeholders, and developing capacity building programs for wildlife enthusiasts, government officials and conservationists on river conservation research and related issues.
Existing Infrastructure and Facilities	Disruption of service and damage to existing infrastructure at specified project location	• Obtain from PIU/ DSC the list of affected utilities and operators if any; and • Prepare a contingency plan to include actions to be done in case of unintentional interruption of service
Landscape and Aesthetics	Solid wastes as well as excess construction materials	• Prepare and implement Waste Management Plan; • Avoid stockpiling of excess excavated soils;

Field	Anticipated Impact	Mitigation Measures
		• Use tarpaulins to cover dry soil when carried on trucks; • Coordinate with ULB for beneficial uses of excess excavated soils or immediately dispose to designated areas; • Recover used oil and lubricants and reuse or remove from the sites; • Manage solid waste per the following preference hierarchy: reuse, recycling and disposal to designated areas; • Remove all wreckage, rubbish; and • Timely restoration work
Accessibility	Traffic problems and conflicts near project locations and haul road	• Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites; • Schedule transport and hauling activities during non-peak hours; • Locate entry and exit points in areas where there is low potential for traffic congestion; • Keep the site free from all unnecessary obstructions; • Drive vehicles in a considerate manner; • Coordinate with Traffic Dept. for temporary road diversions and with for provision of traffic aids if transportation activities cannot be avoided during peak hours; and • Notify affected sensitive receptors by providing sign boards informing nature and duration of construction works and contact numbers for concerns/complaints.
Socio-Economic – Income.	Impede the access of residents and customers to nearby shops	• Leave spaces for access between mounds of soil; • Provide walkways and metal sheets where required for people and vehicles; • Increase workforce in front of critical receptors such as institutions, place of worship, business establishment, hospitals, and schools; • Consult businesses and institutions regarding operating hours and factoring this in work schedules; and • Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints.
Socio-Economic - Employment	Generation of contractual employment and increase in local revenue	• Employ at least 50% of the labour force, or to the maximum extent, local persons within the 2-km immediate area if manpower is available; and

Field	Anticipated Impact	Mitigation Measures
		• Secure construction materials from local market.
Occupational Health and Safety	Occupational hazards which can arise during work	• Develop and implement site-specific Health and Safety (H and S) Plan which will include measures such as: (a) excluding public from the site; (b) ensuring all workers are provided with and use Personal Protective Equipment (PPE); (c) H&S Training for all site personnel; (d) documented procedures to be followed for all site activities; and (e) documentation of work-related accidents; • Ensure availability of First-aid box and equipment at working sites; • Provide medical insurance coverage for workers; • Provide supplies of potable drinking water; • Provide clean eating areas where workers are not exposed to hazardous or noxious substances; • Provide H and S orientation training (including process of transmission of HIV/AIDS) to all new workers to ensure that they are apprised of the basic site rules of work at the site, personal protective protection, and preventing injuring to fellow workers; • Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted; • Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; • Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. Signage shall be in accordance with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate; and • Disallow worker exposure to noise level greater than 85 dBA for duration of more than 8 hours per day without hearing protection.
Asbestos Cement (AC) Pipes	Health risk	• Train all personnel (including manual laborer) to enable them to understand the dangers of AC pipes and to be able to recognize them in situ; • Report to management immediately if AC pipes are encountered;

Field	Anticipated Impact	Mitigation Measures
		• Develop and apply AC Management Plan.
Community Health and Safety.	Traffic accidents and vehicle collision with pedestrians during material and waste transportation	• Plan routes to avoid times of peak-pedestrian activities. • Liaise with PIU/DSC in identifying high-risk areas on route cards/maps. • Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure. • Provide road signs and flag persons to warn. • Use of caution tape, safety ribbon at excavated area
Work Camps	Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants	• Consult with PMU before locating project offices, sheds, and construction plants; • Minimize removal of vegetation and disallow cutting of trees; • Provide water and sanitation facilities for employees; • Prohibit employees from poaching wildlife and cutting of trees for firewood; • Train employees in the storage and handling of materials which can potentially cause soil contamination; • Recover used oil and lubricants and reuse or remove from the site; • Manage solid waste per the following preference hierarchy: reuse, recycling and disposal to designated areas; • Remove all wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; and • Ensure restoration of camp site to pre-project conditions just after completion of work.
Social and Cultural Resources	Risk of archaeological chance finds Sites of social/cultural importance (schools, hospitals, religious place, tourism sites) may be disturbed by noise, dust, vibration and impeded access Trenching on concrete roads using pneumatic drills will cause noise and air pollution	• Strictly follow the protocol for chance finds in any excavation work; • Request PIU or any authorized person with archaeological field training to observe excavation; • Stop work immediately to allow further investigation if any finds are suspected; and • Inform project implementation authority if a find is suspected, and take any action they require ensuring its removal or protection in situ. • Avoid any impact on sensitive receptors through selection of alternative alignments/ locations • Identify buildings at risk from vibration

Field	Anticipated Impact	Mitigation Measures
		damage and avoid using pneumatic drills or heavy vehicles nearby • Provide alternative walkways and maintaining safety
Clean-up Operations, Restoration and Rehabilitation	Social obligation	▪ The clean-up and restoration operations are to be implemented by the contractor prior to demobilization. ▪ The contractor will clear all temporary structures (and structure which need to be remove) ▪ All construction zones used/affected by the project will be left clean and tidy, at the contractor's expense, to the entire satisfaction to the Supervisor Engineer.
Operation Phase		
Occupational Health and Safety	Adverse impacts on the appearance of surrounding environment and exposure of workers to hazardous debris	• Ensure persons employed will be provided with suitable equipment (such as shovels and wheelbarrows); and • Ensure all removed material will be deposited in the municipal waste storage bins.
Electro-Magnetic Field (EMF) generation	Electrical Safety	All the equipment of the substation (transformer, dis-connector, circuit breaker, surge-arrester, current transformer, voltage transformer etc.) will be taken according to the International Electro-technical Commission (IEC) and other international standards and the controls and maintenance (strengthening by renewal) will be done in accordance with IEC. The substation will be surrounded by the wall and fence. Therefore, entrance, approach, settlement and, thus, possible negative impact would be avoided. Rubber mats shall be provided in front of all L T switchgear throughout the length of the switchgear. • A set of3 3 kV grade hand gloves and earthling rods to be provided
General	General impact	• Refill and re-compact trenches soil and backfilled sand will be removed to expose the leaking junction or pipe; • Conduct work during non-monsoon period; and • Cover or wet excavated material to prevent dusts
Solid Wastes-Sludge	Environmental pollution - Potential impact on soil, groundwater, and surface water nearby the disposal site	• Minimize the quantity of solids generated by the water treatment process; • Disposal of sludge as per recommendation of regulatory authority; • Disposal of lime sludge by land application, • Limiting application rates of sludge to minimize the potential for mobilization of

Field	Anticipated Impact	Mitigation Measures
		metals into plant tissue and groundwater, • Disposal of ferric and alum sludge by controlled land application not near water body, • Testing of sludge before disposal
Wastewater	Discharge into water causing water pollution	• Land application of wastes with high dissolved solids concentrations; • Recycle filter backwash into the process; and • Treat and dispose of reject streams as per CPHEEO norm
Hazardous Chemicals	Release to nature causing air, water and soil pollution	• Store sodium/calcium hypochlorite in cool, dry, and dark conditions for no more than one month, • Use equipment constructed of corrosion-resistant materials, • Store calcium hypochlorite away from any organic materials and protect from moisture, • Isolate ammonia storage and feed areas from hypochlorite, • Minimize the amount of chlorination chemicals stored on site, • Develop and implement a prevention program that includes identification of potential hazards, written operating procedures, training, maintenance, and accident investigation procedures; • Develop emergency plan for responding to accidental releases
de-silting of intake wells	Impact on river water quality due to de-silting of intake wells	• Discharge de-silted materials at some distance downstream of the intake wells to avoid backflow into the wells. • Ensure discharge of de-silted materials will not cause increased turbidity within the direct impact zones. • Dispose in designated areas if de-silted materials will be disposed on land. • Consider reuse in case de-silted materials cannot be transported off-site (e.g., strengthening of the river bank, formation of embankments, etc. If the materials are to be reused, then these should be timely used, so that detrimental effects to the direct impact zones (impacts on surface water due to stockpiling, dust arising from silt removal, minor wind erosion of open site and stockpiling areas, etc.) are eliminated.
During dredging dredger will spill of oil and lubricant	Impact of oil and lubricant pollution	• Educate workers about the plan, and have the necessary materials on site prior to and during maintenance. • Dispose waste oil and lubricants generated as per provisions of Hazardous and

Field	Anticipated Impact	Mitigation Measures
		Other Wastes (Management and Transboundary Movement) Rules, 2016 • Clean equipment that is used for in-water work prior to maintenance activities and prevent wash and rinse water from discharging into the river. • Refuel equipment within the designated refueling containment area away from the river bank. • Inspect maintenance vehicles daily for fluid leaks before leaving the vehicle staging area, and repair any leaks before the vehicle resumes operation.
Air Emissions	Air pollution from gaseous or volatile chemicals used for disinfection processes	Proper storage and scientific utilization of chemicals utilized in treatment process
Economic Development	Impediments to residents and businesses	• Inform all residents and businesses about the nature and duration of any work well in advance so that they can prepare if necessary; • Conduct these works to provide wooden walkways across trenches for pedestrians and metal sheets where vehicle access is required; and • Consult the local police regarding any such work so that it can be planned to avoid traffic disruption as far as possible, and road diversions can be organized if necessary.
Social and Cultural Resources	Temporary disruption of activities	• Consult the city authorities to identify any buildings at risk from vibration damage and avoiding any use of pneumatic drills or heavy vehicles in the vicinity; • Complete work in sensitive areas quickly; • Consult municipal authorities, custodians of important buildings, cultural and tourism authorities and local communities in advance of the work to identify and address key issues, and avoid working at sensitive times, such as religious and cultural festivals.
Supply of treated water	Health Impact	• Continue testing of supply water quality as per drinking water standard.

CFE: Consent for Establishment, CFO: Consent for Operation, BSPCB: Bihar State Pollution Control Board, EMP: Environmental Management Plan, ASI: Archaeological Survey of India, PPE: Personal Protective Equipment, PMU: Project Management Unit, PIU: Project Implementation Unit, DSC: Design & Supervision Consultant, PMC: Project Management Consultant, CPHEEO: Central Public Health and Environmental Engineering Organization, ULB: Urban Local Body, AC: Asbestos Cement, dB(A): Decibel, HIV: Human immunodeficiency virus, AIDS: Acquired immune deficiency syndrome, H & S: Health & Safety

IV. ENVIRONMENTAL ASSESSMENT FOR SUBPROJECTS AND COMPONENTS

1. Screening and Classification/Categorization

54. Subproject screening and categorization is done at the earliest stage of project preparation when sufficient information is available for this purpose. Screening and categorization is undertaken to (i) reflect the significance of potential impacts or risks that a project might present; (ii) identify the level of assessment and institutional resources required for the safeguard measures; and (iii) determine disclosure requirements. The consultant environment specialist will conduct screening by completing ADB's rapid environmental assessment (REA) checklists (see Appendix 7) and submitting this for review to the project management unit (PMU), which will determine if the subproject or component would require environmental assessment and/or environmental clearance as per national requirements. If required, PMU will contact SEIAA for necessary endorsement and issuance of terms of reference for the environmental assessment study.

55. PMU will submit completed REA checklist to ADB for review as part of the semiannual monitoring reports. To ensure that the subproject meets ADB's environmental safeguards requirements, as stipulated in the SPS 2009, subprojects will be reviewed, and the level of environmental assessment required is determined (IEE or Due Diligence Report). It is anticipated that eligible projects will fall under either category B or C, as subprojects and their components will be of small scale and often involve improvement or rehabilitation of the existing system/facilities. While category C projects will not require and environmental assessment, environmental implications will be reviewed and due diligence report will be prepared.

2. Preparation of Environmental Assessment Report

56. Environmental assessment documents prepared for the subprojects under Project 2 will meet the government and ADB requirements to streamline the environmental procedures required by both.

57. For subprojects with some adverse environmental impacts, but which are expected to be less significant than those of category A subprojects, an IEE is required. Appendix 1 of ADB SPS 2009 provides the specific outlines and contents to be followed while preparing IEEs. Appendix 8 provides the outline of an ADB IEE report. Also, the sample IEEs prepared during project preparation provide a good sample which can be followed for preparation of environmental assessments in subsequent subprojects.

58. ADB requires that an EMP must be developed as part of the IEEs of Category B projects. EMPs describe the environmental management measures that will be carried out to mitigate negative impacts or enhance the environment during implementation of a project, and the environmental monitoring to be conducted to ensure that mitigation is provided and is effective in reducing impacts, or to determine the long-term impacts of a project. EMPs should outline specific mitigation measures, environmental monitoring requirements, and related institutional arrangements, including budget requirements.

59. The EMP will include the proposed mitigation measures, environmental monitoring and reporting requirements, emergency response procedures, related institutional or organizational arrangements, capacity development and training measures, implementation schedule, cost estimates, and performance indicators. Where impacts and risks cannot be avoided or prevented, mitigation measures and actions will be identified so that the project is designed,

constructed, and operated in compliance with applicable laws and regulations and meets the requirements specified in this document. The level of detail and complexity of the environmental planning documents and the priority of the identified measures and actions will be commensurate with the project's impacts and risks. Key considerations include mitigation of potential adverse impacts to the level of "no significant harm to third parties", the polluter pays principle, the precautionary approach, and adaptive management.

60. If some residual impacts are likely to remain significant after mitigation, the EMP will also include appropriate compensatory measures (offset) that aim to ensure that the project does not cause significant net degradation to the environment. Such measures may relate, for instance, to conservation of habitat and biodiversity, preservation of ambient conditions, and greenhouse gas emissions. Monetary compensation in lieu of offset is acceptable in exceptional circumstances, if the compensation is used to provide environmental benefits of the same nature and is commensurate with the project's residual impact. Format and scope of an EMP on the website (www.adb.org/safeguards/default.asp).

61. After documentation of IEE report, the project approval follows the procedure as shown in Table 5. All IEEs will be conducted and EMPs prepared prior to the award of construction contracts. The bid documents will include the requirement to incorporate necessary resources to implement the EMP. The EMP will form part of the contract document, and, if required, will need to be further updated during the construction phase of a subproject.

3. Review of Environmental Assessment Reports

62. IEEs will be reviewed initially by the PMU. In case an environmental clearance is required, the IEEs are to be forwarded to the SEIAA for approval.

63. The borrower or the executing agency is primarily responsible for identifying, prioritizing, formulating, appraising, approving, and implementing subprojects in accordance with technical, financial, and economic appraisal criteria, including social and environmental criteria, mutually agreed upon between ADB and the borrower/executing agency. ADB will be minimally involved in processing subprojects, except that in the initial phase. If deemed necessary, a few subprojects may be appraised by ADB to serve as models. ADB will review the IEEs of first two subprojects of each subsector (feasibility studies, if necessary detailed design too) of each subsector (water supply only in the case of Project 2).

64. ADB will review the final reports of: (i) IEEs for the subprojects, and (ii) review of environmental implications in form of a due diligence report of any new subproject classified as category C.

65. Processing for approval of subproject should comply with the government environmental requirements and ADB SPS, 2009. Table 5 below outlines the steps to be followed at every stage of subproject processing.

4. Updating of Initial Environmental Examination reports

66. The draft IEEs prepared during project processing and/or based on preliminary design will be updated once detailed design is completed, or if there are any change in location/alignment, design or components. The final/updated IEE/s will be submitted to ADB for review and disclosure on its website. The PMU and PIU will be responsible to communicate to the contractors and stakeholders any update or revision in the IEE.

Table 5: Environmental Procedures for Subproject Processing

Project Stage	ADB Procedure	Government Procedure
Sub-project Identification	REA checklist	Categorization (A or B) according to Schedule and General/Specific Conditions in EIA Notification, 2006
	Categorization (A/B/C)	Application for Prior Environmental Clearance (EC) after the identification of the prospective site, or before commencing any construction, or land preparation. Category A requires EC from MoEFCC. Category B requires EC from SEIAA. In the absence of SEIAA or SEAC, Category B treated as Category A and will be cleared by MoEFCC.
	Meets subproject selection criteria	Screening (for Category B) subject by SEAC. Categorized as B1 (requires full EIA) or B2 (does not require full EIA).
Detailed Design	IEE/EIA (with EMP)	Scoping and TOR for EIA (A or B1) with scrutiny by EAC. TOR (or rejection of EC) finalized by EAC or SEAC within 60 days. Approved TOR posted on MoEFCC or concerned SEIAA website.
	Public Consultation: Meaningful consultation will be carried out in a manner commensurate with the impacts of affected communities. The consultation process and its results are to be documented and reflected in the environmental assessment report.	Public Consultation for Category A and B1 projects and consists of two components: (i) public hearing conducted by SPCB or UTPCC within 45 days of a request from the applicant, and (ii) Obtain written responses. Draft EIA publicized widely before hearing. Notice of public hearing within 7 days of date. 30 days for public responses. Incorporate concerns expressed into the draft EIA and EMP.
	Disclosure: For Category B: Disclosure on ADB website of the final IEE; updated IEEs and corrective action plans; and environmental monitoring reports. In addition, environmental information should be available in an accessible place and in a form or language understandable to affected people and other	Draft EIA publicized widely before hearing. Notice of public hearing within 7 days of date. 30 days for public responses. Incorporate concerns expressed into the draft EIA and EMP.

Project Stage	ADB Procedure	Government Procedure
	stakeholders. For illiterate people, other suitable communication methods will be used.	
	Mitigation measures specified in IEE study incorporated in project design.	
	Identify and incorporate environmental mitigation and monitoring measures (including the EMP) into bid/contract documents.	
Appraisal	EMP and other environmental covenants are incorporated into the Facility Framework Agreement, Loan/Project Agreement, and Facility Administration Memorandum (FAM)	Appraisal of application completed by EAC or SEAC within 60 days of receipt of final EIA report.
Approval	GoI and the State to ensure that the design, construction, operation and implementation of all sub-project facilities is carried out in accordance with the environmental assessment and review framework (EARF) and environmental assessments agreed upon between the Government and ADB, and complies with the Government's environmental laws and regulations and ADB SPS 2009. The Government will ensure ADB approval based on IEE compliance with ADB guidelines and procedures, and subproject selection guidelines. ADB to review and clear IEE prior to approval and issuance of tender documents during detailed design stage. Complete IEE disclosed to public.	PMU/ BUIDCo to review the REA checklists and reconfirm the categorization EC Decision within 60 days of the receipt of the recommendations of the EAC or SEAC or within 120 days of the receipt of the final EIA. Where EIA is not required, within 120 days of the receipt of the complete application and requisite documents
Contract Award	Obtain necessary environmental clearances, consents, and NOCs prior to contract award. Contractors submit Environmental Implementation Plans (EIP) based on IEE findings to be incorporated into bidding documents and civil award contracts.	Necessary EC obtained prior to commencing any construction, or land preparation. NOCs, CFE and CFO from BSPCB; and Forest clearances (if any) from DFO
Implementation	EMP implementation reflected in FAM. Periodic monitoring reports. Periodic monitoring report from	Project must submit half-yearly compliance monitoring reports on 1st July and 1st January. All

Project Stage	ADB Procedure	Government Procedure
	PMU/BUIDCo IEEs to be updated based on detailed design, any change in design, location/alignment or component. Final/updated IEE to be submitted to ADB for review and disclosure on its website.	compliance reports are public documents and displayed on website of concerned regulatory authority

BSPCB-Bihar State Pollution Control Board, BUIDCo-Bihar Urban Infrastructure Development Corporation, CFE-Consent for Establishment, CFO-Consent for Operation, DFO-Divisional Forest Officer, DSC-Design and Supervision Consultant, EAC- Environmental Appraisal Committee, EARF-Environmental Assessment and Review Framework, EC-Environmental Clearance, EIA-Environmental Impact Assessment, EMP- Environmental Management Plan, FAM-Facility Administration Memorandum, IEE-Initial Environmental Examination, MoEFCC- Ministry of Environment , Forest and Climate Change, NOC-No Objection Certificate, PMC-Project Management Consultant, PMU-Project Management Unit, REA-Rapid Environmental Assessment, SEAC-State Environment Assessment Committee, SEIAA-State Environment Impact Assessment Authority, STP-sewage treatment plant, TOR-Terms of Reference, ULB- Urban Local Body, UTPCC- Union Territory Pollution Control Board, WTP-water treatment plant

V. CONSULTATION, INFORMATION DISCLOSURE, AND GRIEVANCE REDRESS MECHANISM

A. Public Consultation and Information Disclosure

67. Stakeholder consultation and participation is part of the project preparation and implementation strategy. A consultation and participation plan has been prepared for the Project 2.

68. Stakeholders contributed to subproject selection and prioritization and their contribution will be continuously solicited at the detailed design, planning, implementation, and post-implementation phases.

69. The consultation process so far has solicited inputs from a wide range of stakeholders; including state and ULB level government officials, experts and researchers[14] including gender specialists, NGOs, elected representatives, residents of sample towns, marginalized/vulnerable beneficiary groups, and project affected persons[15].

70. Affected persons will be consulted at various stages in the project cycle to ensure: (i) incorporation of views/concerns of Affected Persons (APs) on compensation/resettlement assistance and environmental mitigation measures; (ii) inclusion of vulnerable in project benefits; (iii) identification of help required by APs during rehabilitation, if any; and (iv) avoidance of potential conflicts/smooth project implementation. It will also provide adequate opportunities for consultation/participation to all stakeholders and inclusion of the poor/vulnerable/marginalized and project-affected persons in the project process. Relevant information about any major changes to project scope shall be shared with beneficiaries, affected persons, vulnerable groups, and other stakeholders.

[14] For example, consultations were held with academicians and researchers in Bhagalpur University, involved in research on environmental issues and Gangetic dolphin conservation, on potential impacts of the proposed Bhagalpur water supply sub-project on the ecology, river ecosystem and endangered species found in the same.

[15] For example, discussions with potential APs during transect walks in Bhagalpur helped understand their concerns related to disruption of economic activities during festival seasons, when they have their highest sales. This has been incorporated in the RP for Bhagalpur Water Supply sub-project.

71. A variety of approaches will be adopted. At minimum, stakeholders will be consulted regarding the scope of the environmental and social impact study before work is commenced and they should be informed of the likely impacts of the subproject and proposed mitigation once the draft IEE, RP, and IPP reports are prepared. The reports should record the views of stakeholders and indicate how these have been considered in project development. Consultations will be held with a special focus on vulnerable groups.

72. Information is disclosed through public consultation and making relevant documents public locations. UDHD/BUIDCo will submit to ADB the following documents for disclosure on ADB website:

(i) draft IEEs;
(ii) final IEEs;
(iii) a new or updated IEE and corrective action plan prepared during project implementation, if any;
(iv) for category C subprojects, a due diligence report which reviews the environmental implications of the subproject and confirms that the subprojects are likely to have minimal or no adverse environmental impact.
(v) semi-annual environmental monitoring reports.

73. The executing agency will provide relevant environmental/resettlement information in a timely manner, in an accessible place and in a form and language(s) understandable to affected people and other stakeholders. For illiterate people, other suitable communication methods will be used.

B. **Grievance Redress Mechanism**

74. The Grievance Redress Mechanism (GRM) provides an accessible platform for receiving and facilitating resolution of affected persons' grievances related to the Program. A common GRM will be in place for social, environmental or any other project/subproject-related grievances. Each Resettlement Plan (RP), Indigenous Peoples Plan (IPP), and Initial Environmental Examination (IEE)/ Environmental Impact Assessment (EIA) will follow the grievance redress mechanism described below.

75. **Grievance Redress Process.** Grievances/suggestions of APs can be dropped in suggestion boxes of conveyed through phone or mail (Sample Format attached). The Community Liaison Officer (CLO) of the implementing NGO or Safeguards Officer of PIU (who deals with social issues and RP implementation) will be responsible for conducting periodic community meetings with affected communities to understand their concerns and help them through the process of grievance redressal (including translation from local dialect or language, recording and registering grievances of non-literate APs and explaining the process of grievance redressal.

76. Grievances will first be registered at the Complaints Cell[16] of the implementing NGO or PIU, who will resolve smaller issues. In case of unresolved issues, it will go to PMU Safeguards Officer. For larger issues, consult or seek the assistance of BUIDCo. Grievances not redressed through this process within one month from registration will be brought to the notice of Town Level Committees (TLCs) or City Level Committees (CLCs) set up to monitor project

[16] Complaints Cells to be established at the ULB/PIU office or in a location easily accessible to affected communities (e.g. fishing community, riverbank community)

implementation in each town or city, respectively. As a Grievance Redressal Committee (GRC), the town level committee will meet to discuss pending issues (if there are pending registered grievances), determine the merit of each grievance, and resolve grievances within a month from receipt of the complaint, failing which the grievance will be addressed by the state-level Program Steering Committee (PSC)[17]. Further grievances will be referred by APs to the appropriate courts of law. The grievance redress process is shown in Figure 1. The GRCs will continue to fundtion throughout the project duration.

77. **Composition of GRC and PSC:** The TLCs or CLCs and PSC formed for ADB project will act in accordance with the GRM on resolving issues at the town level and state level, respectively. The PSC members are: (i) Development Commissioner; (ii) Principal Secretary, Finance; (iii) Principal Secretary, Planning and Development; and (iv) Principal Secretary, Urban Development and Housing and Managing Director, BUIDCo.

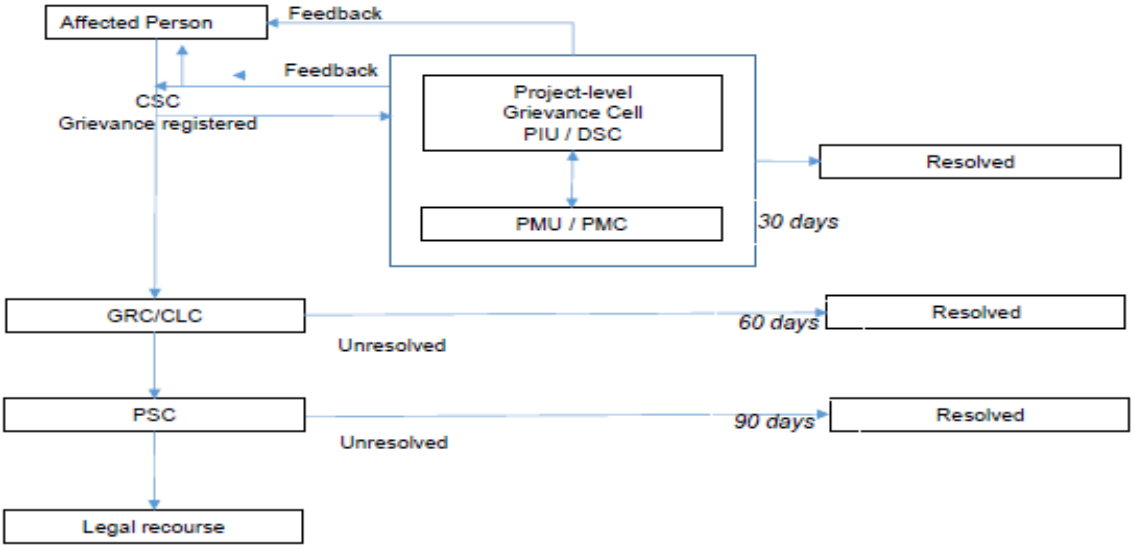
78. **Areas of Jurisdiction:** The areas of jurisdiction of the GRC headed by the District Magistrate will be (a) all locations/sites within the district where subproject facilities are proposed, or (b) their areas of influence within the District.

79. The PSC shall have jurisdictional authority across the State (i.e., areas of influence of subproject facilities beyond district boundaries, if any).

80. A maximum time period of 30 days is allocated to redress project level grievance, 60 days for GRC/CLC level and 90 days for PSC level. This is stipulated in BUIDCo's resolution on project grievance redress process dated 27 May 2015. The maximum time period of 30 days of redressing grievances at the project level will include the following specific actions and timeframes based on the date of receipt of the complaint or grievance: (i) acknowledge the letter of complaint or grievance within 5 days; (ii) issue a notice of meeting to the GRM panel within 10 days; (iii) hold GRM panel meeting and agree on a decision within 15 days; (iv) issue the decision within 20 days; (v) meet with the complainant to deliver the decision within 27 days; and (vi) allow complainant to respond within 3 days from receipt of the decision.

[17] Grievances received at the city level Complaints Cell but pertain to broader concerns related to the program/subproject (i.e. those not necessarily confined to the city/district) shall be forwarded to the PSC. A Grievance Registration/Complaints Cell at PMU office (state level) will be established as well, which will evaluate the area of jurisdiction of a particular grievance and either advise the NGO/PIU on resolution or forward it to GRC for resolution.

Figure 1: Grievance Redress Mechanism Process



CLC = City Level Committee, CSC = Customer Service Center, DSC = Design and Supervision Consultant, GRC = Grievance Redress Committee; GRM = Grievance Redress Mechanism, PIU = Project Implementation Unit, PMC = Program Management Consultant, PMU = Project Management Unit, PSC = Project Steering Committee

81. **Consultation Arrangements:** This will include: (a) group meetings and discussions with APs to address general and common grievances. These meetings and discussions will be announced in advance, conducted at the time of day agreed on with APs (based on their availability), and facilitated by the CLO of the implementing NGO and PIU-PMU at least quarterly in the first year and half-yearly in subsequent years of RP implementation; and (b) availability of CLO of Implementing NGO and Environment and Social Management Coordinator of PMU on a fixed day of every fortnight (as required, based on the number of grievances) for one-to-one consultations. The Implementing NGO will be responsible for ensuring that non-literate APs or vulnerable APs are assisted to understand the grievance redress process, to register complaints and with follow-up actions at different stages in the process. Records will be kept by the PIU/PMU of all grievances received including contact details of complainant, date when the complaint was received, nature of grievance, agreed corrective actions and the date when these were effected, and final outcome.

82. **Information Dissemination Methods of the GRM:** The Implementing NGO and PIU shall be responsible for information dissemination to APs on grievance redressal procedure, who to contact, and when, where and how to register grievance, the various stages of grievance redress process, the time likely to be taken for redressal of minor and major grievances, etc. A Sample Grievance Registration Form is attached in Appendix 9.

83. **Costs:** All costs involved in resolving the complaints (meetings, consultations, communication and reporting, and information dissemination) will be borne by the PMU.

84. Summary statement of community members is show below:

Level of GRM		Members	Action
1st Tier	***First level (PIU level)***	**1.Project director-PIU, 2.Safeguard officer and 3.Hired NGO**(if issues are related	Attending Grievances/suggestions of APs and local level smaller environmental/ social issues

Level of GRM		Members	Action
		to implementation of Resettlement Plan	related to project.
	Second level (PMU level)	**1.Environment & Social Management Coordinator (ESMC),** **2.Resettlement Officer and** **3.Environmental Engineer**	1.Grievances related to Environmental & Social issues if remain unresolved at PIU level. 2.Members will conduct quarterly meeting at PIU to resolve the issues. 3. Grievances not redressed by ESMC within one month of registration, case will be placed at third level means BUIDCo.
	Third level (BUIDCo level)	1.**MD BUIDCo** (Programme director ADB Project) 2.**Nodal Officer ADB project** (Joint Programme director)	1.Grievances related to larger Environmental & Social issues and need special attention and policy level decision. 2. Grievances not redressed by BUIDCo within one month of registration, case will be placed in Town Committee/CLC/ GRC
2nd Tier		**Town Committee/City Level Committees (CLC)/ Grievance Redress committee (GRC) in each project town** – Town Committee is already formed under ADB project act as CLC/GRC and members are as follows for town committee:- 1.**District Magistrate**(Respective district)-Chairmain 2.**Municipal Commissioner/Executive Officer** (Respective ULBs)-Member Secretary 3**.Executive Engineer**(Respective ULBs) 4.**Line agencies representative**(Respective district) 5.**NGOs/Civil Society** of respective district.	1.Town committee formed for ADB Project will work as City Level Committee or GRC for addressing grievances related to project. 2.Whenever meeting of town committee shall be conducted, pending issues of GRC will be addressed. 3.Letter of Town Committee formed for ADB project is attached as Annexure-1.
3rd Tier		**Steering Committee (SC)** – Members include 1.**Development Commissione, Bihar**-Chairmain; 2.**Principal Secretary, Finance**-Member; 3.**Principal Secretary, Planning and Development**-Member; 4.**Principal Secretary, Urban Development and Housing**-Member Secretary,and 5.**MD,BUIDCo** (Programme Director,ADB Project)-Member	1.Steering Committee is already formed for ADB project (Annexure-2). 2.Grievance will be addressed in the state-level Steering Committee (SC) in case of strong grievances and not resolved in Town Committee/CLC/ GRC.

VI. INSTITUTIONAL ARRANGEMENT AND RESPONSIBILITIES

A. Implementation Arrangements

85. **Executing and implementing agencies**. The Urban Development and Housing Department (UDHD), Government of Bihar is the executing agency for Project 2 under the program, which will receive strategic directions from the state-level Program Steering Committee (PSC)[18]. The PSC assists UDHD in providing policy guidance and coordination across all towns and subprojects.

86. UDHD is responsible for management, coordination, and execution of all activities funded under the loan. UDHD will implement the institutional reform component under the investment program and coordinate with (i) national and state agencies to resolve any inter-departmental issues, and (ii) BUIDCo and city ULBs for implementation of physical investment activities.

87. **Project Management Unit and Project Implementation Unit**. During implementation of the program, ADB and BUIDCo agreed to change the PMU from UDHD to BUIDCo and to merge Project Management Unit (PMU) and Project Impelmentation Unit (PIU) since BUIDCo is currently the single window for all national and external assistance to Bihar's urban sector, and manages various urban sector projects. PMU is headed by Managing Director of BUIDCo, who works closely with and reports to the Principal Secretary of UDHD. PMU is responsible for coordinating construction of subprojects across all towns, and for ensuring consistency of approach and performance. City/Town Level Committees[19] have also been established in each program town/city to monitor project implementation in the town and provide recommendations to the PIU where necessary.

88. **PMU's Role in Safeguards.** The PMU within BUIDCo has an Environmental and Social Management Coordinator (ESMC) who addresses environmental and social safeguards issues with assistance from Program Management Consultants (PMC). The PMC includes an Environmental Specialist and a Social Safeguards Specialist engaged. The ESMC will ensure that the EARF, RF, and IPPF are followed during subproject implementation as well as the environmental management plan and resettlement plan prepared for different Tranches.

89. The ESMC will:

(i) coordinate with PIUs' Safeguards Officers for the day-to-day monitoring of subproject implementation
(ii) ensure overall compliance with all government rules and regulations regarding site and environmental clearances, as well as any other environmental requirements (e.g., location clearance certificates, environmental clearance certificates, etc.), as relevant;

[18] PSC: The PSC will include the Minister for Urban Development (Chairperson), State Chief Secretary (Vice Chairperson), and Ministers, Directors and/or representatives of other relevant government ministries and departments, e.g., Finance, Planning, PHED, Roads, BRJP,etc., Mayors of respective municipal corporations and the project director (Member Secretary and Convener) as members.

[19] CLC: The CLC, acting as a Grievance Redress Committee (GRC) will have District Magistrate (Chairman), Municipal Commissioner\Executive Officer (Member Secretary),Executive Engineer(Respective ULB),Line Agencies representative(Respective district) and NGO\civil society of respective district.

(iii) confirm existing IEEs are updated based on detailed designs and that new IEEs/EMPs are prepared in accordance with the EARF and subproject selection criteria related to safeguards;
(iv) confirm IEEs are included in bidding documents and civil works contracts;
(v) for DBO contract/s, coordinate with contractor/s in the updating of the draft IEE once detailed design is available;
(vi) provide oversight on environmental management aspects of subprojects and ensure EMPs are implemented by the contractors;
(vii) establish a system to monitor environmental safeguards of the project including monitoring the indicators set out in the monitoring plan of the EMP;
(viii) facilitate and confirm overall compliance with all Government rules and regulations regarding site and environmental clearances as well as any other environmental requirements (e.g., No Objection Certificates, Consent for Establishment, Forest Clearance, Consent for Operations, etc.), as relevant; All necessary environmental clearances should be obtained prior to contract awards to avoid delay in physical progress of relevant subprojects;
(ix) approve contractor's including subcontractor/s site environmental plans (SEPs);[20]
(x) supervise and provide guidance to the contractors to properly carry out the environmental monitoring and assessments as per approved IEEs, EMPs and SEPs;
(xi) review, monitor and evaluate the effectiveness with which the EMPs and SEPs are implemented, and recommend necessary corrective actions to be taken as necessary;
(xii) consolidate monthly environmental monitoring reports from contractors and submit semi-annual monitoring reports to ADB;
(xiii) ensure timely disclosure of final IEEs in locations and form and language accessible to the public and local communities; and
(xiv) address any grievances brought about through the Grievance Redress Mechanism (GRM) in a timely manner;
(xv) ensure adequate measures for climate change adaption and mitigation are incorporated in the detailed engineering design and implementation;
(xvi) coordinate with Chief Wildlife Warden for activities relevant to the Vikramshila Gangetic Dolphin Sanctuary (VGDS) Dolphin Management plan;
(xvii) ensure environmental considerations are incorporated in design of BWSP2 are in accordance with the recommendations specified in the IEE to avoid impacts on identified biodiversity in VGDS; and
(xviii) organize an induction course for the contractors covering, including among others, EMP implementation, health and safety, grievance redressal, and community protection.

90. One biodiversity expert will be included (specifically for BWSP2) in the monitoring team for carry out biodiversity study and liaison with Forest / Wildlife Dept. for necessary compliance as per NOC.

[20]The contractor will be required to submit to PIU, for review and approval, a site environmental plan (SEP) including (i) proposed sites/locations for construction work camps, storage areas, hauling roads, lay down areas, disposal areas for solid and hazardous wastes; (ii) specific mitigation measures following the approved EMP; (iii) monitoring program as per SEP; and (iv) budget for SEP implementation. No works are allowed to commence prior to approval of SEP. A copy of the EMP/approved SEP will be kept on site during the construction period at all times. The EMP included in the bid and contract documents. Non-compliance with, or any deviation from, the conditions set out in this document constitutes a failure in compliance.

91. **PIU's Role in Safeguards**. The PIU is primarily tasked with the day-to-day implementation of safeguards plans. PIU field offices will have a Safeguard Officer who will be responsible for data collection for IEE and implementation. PIU field offices will obtain right of way clearances and prepare progress reports with respect to IEE. PIU will be responsible for obtaining statutory clearances and obtaining NOCs from government agencies and other entities, and entering into agreements with them for use of their land. It will also coordinate for obtaining right of way clearances with related State and National agencies. The Safeguards Officers will:

(i) oversee day-to-day implementation of SEPs by contractors, including contractors' compliance with all government rules and regulations;
(ii) take necessary action for obtaining right of ways;
(iii) approve contractors and subcontractors SEPs;
(iv) supervise implementation of SEPs including environmental monitoring by contractors;
(v) take corrective actions when necessary to ensure no environmental impacts;
(vi) conduct continuous public consultation and awareness;
(vii) address any grievances brought about through the GRM in a timely manner;
(viii) ensure contractors attend safeguards induction course prior to mobilization;
(ix) organize workshops/seminars on EMP implementation, environmental monitoring requirements related to mitigation measures, and on taking immediate action to remedy unexpected adverse impacts or ineffective mitigation measures found during the course of implementation;
(x) consolidate monthly environmental monitoring reports; and
(xi) Ensure timely disclosure of final IEEs in locations and form accessible to the public.

92. The PMC has an Environmental Specialist and Resettlement/Social Development Specialist who are responsible for the preparation/ updating of IEE and RP/IPP reports, respectively. The Environment Specialist and Resettlement/Social Development Specialist will review and finalize all reports in consultation with the ESMC of PMU. The Environmental Specialist and Resettlement/Social Development Specialist will submit periodic monitoring and implementation reports to PMU, who will take follow-up actions, if necessary.

93. **The Contractor.** The contractor will have the following roles and responsibilities:

(i) complies with all applicable legislation, is conversant with the requirements of the EMP, and briefs staff about the requirements of same;
(ii) ensures any sub-contractors/ suppliers, who are utilized within the context of the contract, comply with the environmental requirements of the EMP. The Contractor will be held responsible for non-compliance on their behalf;
(iii) supplies method statements for all activities requiring special attention as specified and/or requested by the Engineer or Environmental Specialist during the duration of the Contract;
(iv) provides environmental awareness training to staff;
(v) bears the costs of any damages/ compensation resulting from non-adherence to the EMP or written site instructions;
(vi) conducts all activities in a manner that minimizes disturbance to directly affected residents and the public in general, and foreseeable impacts on the environment;
(vii) ensures that the Engineer is informed in a timely manner of any foreseeable activities that will require input from the Environmental Specialist;

(viii) appoints one full time Environment & Safety Officer for implementation of EMP, community liaising, reporting and grievance redressal on day to day basis; and

(ix) receives complaints/grievances from the public, immediately implements the remedial measures and reports to the Engineer (DSC) and PIU within 48 hours.

94. Safeguard implementation arrangement for the program is shown below. Table 6 gives the summary of institutional roles and responsibilities for preparation and implementation of IEE and other environmental documents.

Figure 2: Safeguards Implementation Arrangement

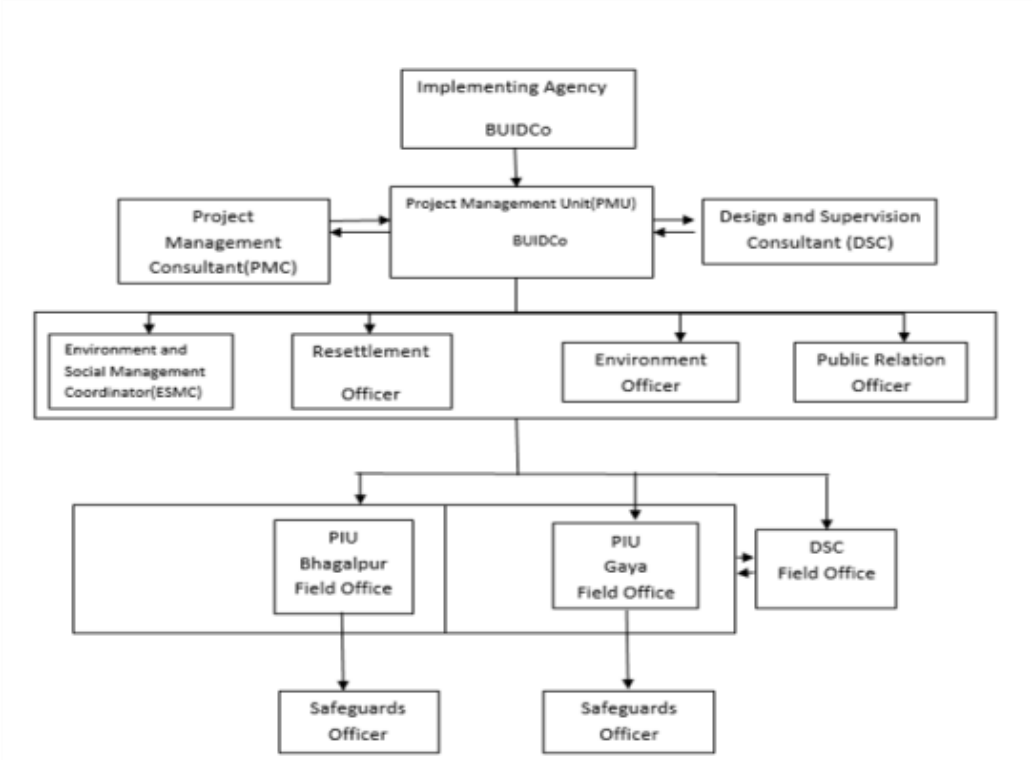


Table 6: Institutional Roles and Responsibilities: Environmental Safeguard

PMU/PIU/PMC	ADB
Subproject Identification Stage	
Environmental and Social Management Coordinator in PMU screens subprojects with inputs from PIU based on the Environment Assessment and Review Framework (EARF) subproject selection guidelines with assistance from PMC.	
Detailed Design Stage	
PMU to review design changes and if these warrant classification of the change, initiate the Environment Assessment (EA) process in accordance with the EARF, and revise the IEE//EMP in accordance with detailed design changes as warranted	
Pre-construction stage	
• PMU (through PMC) to conduct Rapid	• ADB (and BUIDCo/PMU) to review the

PMU/PIU/PMC	ADB
Environmental Assessment (REA) for each subproject using checklists Based on the REA, categorize the subproject on the basis of ADB's Guidelines • To fulfill ADB requirements PMC will assist the PMU in conducting IEEs for Category B subprojects. For Category C subprojects no IEE is required, but the PMU to provide due diligence report containing review of environmental implications and generic mitigation measures, if any, to be implemented. • PIU will be responsible for data management for IEE and supply these to PMC/PMU • PMU/PIU (through PMC) to fulfill GoI and State environmental requirements including: CFE and CFO for water treatment plant (WTP), diesel generators, hot mix plant etc. from BSPCB; and Forest/Wildlife Clearances if any. • PMU (through PIU/PMC) to conduct public consultation and disclosure during IEE process and comments shall be reflected in the IEE report. • PMC to monitor the disclosure and public consultation. • PMU with the help of PIU will apply for any CFO renewals if required.	REA checklists and reconfirm the categorization. The ADB will review and approve IEE reports of all subprojects. Notwithstanding these thresholds, in each tranche ADB will review at least one subproject of each sectors (say water supply, waste water) being implemented under respective tranche. In addition, the updated and finalized IEE reports of all tranche subprojects will be reviewed and cleared by ADB prior to approval and issuance of tender documents.
After confirmation of approval of IEEs, PMU with the assistance of Project Consultants to disclose the IEE and EMP to the public as required by ADB Guidelines. All IEEs are uploaded in ADB and Project website	
Project Consultants (PMC), on behalf of PMU, to incorporate mitigation measures in project design, specified in IEE study.	
PMU with the assistance of Project Consultants (PMC/DSC) to identify and incorporate environmental mitigation and monitoring measures into contract documents.	
Construction Stage	
• PIU and DSC to monitor the implementation of mitigation measures by Contractor. • PMC to prepare monthly/quarterly progress reports including a section on implementation of the mitigation measures (application of EMP and monitoring plan) and submit to PMU for review • PMU to review the progress reports to ensure that all mitigation measures are properly implemented. • PMC consolidate the monthly reports and submit quarterly reports to PMU and after finalization through PMU will be submitted to ADB for review. • PMC (as per EMP) will conduct environmental quality monitoring during construction stage (ambient air and noise, and water quality). • PMU/PMC to assist BUIDCo to prepare the	ADB and PMC to review the reports and provide necessary advice as needed to the PMU ADB to review the monitoring report and post on ADB website

PMU/PIU/PMC	ADB
semi-annual monitoring report on environment by focusing on the progress in implementation of the EMP and EARF and issues encountered and measures adopted, follow-up actions required, if any. PMU will submit semi-annual monitoring report and will include in the report, the status of Project compliance with subproject selection criteria, and with relevant loan covenants. PMU will seek clearance for submission and disclosure of the semi-annual environmental monitoring report to ADB.	
Operation Stage	
• ULB/PMU to conduct monitoring, as specified in the environmental monitoring plan. • The Bihar State Pollution Control Board (BSPCB) to monitor the compliance of the standards regarding drinking water quality, ground water, ambient air, effluent quality from treatment plant, if applicable.	

BSPCB-Bihar State Pollution Control Board, BUIDCo-Bihar Urban Infrastructure Development Corporation, CFE-Consent for Establishment, CFO-Consent for Operation, DSC-Design and Supervision Consultant, EA- Environment Assessment, EARF-Environmental Assessment and Review Framework, EARP-Environmental Assessment and Review Procedure, EIA-Environmental Impact Assessment, EMP-Environmental Management Plan, IEE-Initial Environmental Examination, PMC- Project Management Consultant, PMU- Project Management Unit REA-Rapid Environmental Assessment, STP-Sewage Treatment Plant, ULB-Urban Local Body, WTP-Water Treatment Plant

B. Institutional Capacity Development Program

95. Since no externally-aided urban infrastructure projects requiring capacity for environmental management planning, resettlement planning, implementation and monitoring in accordance with internationally accepted guidelines/safeguards frameworks have been implemented in Bihar yet and presently, entities such as BUIDCo and ULBs do not have environmental/social safeguards personnel, capacity to handle environmental/IR/IP impacts, gender and vulnerability issues etc. needs to be built. The project management consultants (PMC) will be responsible for training of PMU and PIU staff on aspects such as environmental planning/resettlement planning/implementation, social protection and gender, including the specific recording, reporting and disclosure requirements.

96. Owing to the complexity of projects with IP issues, there will be a special focus on capacity building of government agencies and PMU/PIU staff on social (distinct social, economic and cultural traits and traditions of indigenous peoples and the importance of preserving the same, including indigenous knowledge systems, etc.), legal (traditional rights over land and land tenure issues) and technical aspects in such projects, with an adequate budgetary provision for the same.

97. Additional measures to enhance institutional capacity include exposure visits of PMU, PIU to other Indian states that have successfully implemented ADB funded projects; costs for exposure visits (including those related to safeguards) are included in Detailed Cost Estimates for the Project.

C. Staffing Requirement and Budget

98. Costs required for ensuring environmental safeguards cover the following activities:

(i) conducting IEE studies, preparing and submitting reports and public consultation and disclosure;
(ii) application for Consent for Establishment and Consent for Operation where required for WTP; and
(iii) implementation of EMP (including long-term surveys/monitoring/ data generation etc.).

99. Generally, an IEE relies on the collection of existing data to describe environmental conditions in the project area, and it is not expected that new surveys would be conducted. The work thus involves the collection and analysis of data on the existing environment and the proposed project, assessment and mitigation of impacts, preparation of the EMP and budget, public consultation, and preparation of the IEE report. An average IEE for this type of subproject requires two month of effort by one expert and one support staff (specializing in the natural environment and social issues). Other expenses are the cost of public consultation meetings, and the cost of document disclosure.

100. Tentative capacity building and training workshop detail is shown in **Appendix 10**. The costs of these various inputs are shown in **Table 7**.

Table 7: Staffing and Cost of EARF Implementation

Item	Quantity	Unit Cost (INR)	Total Cost (INR)	Sub-total (INR)
1. BUIDCo- PMU (Bihar Urban Infrastructure Development Corporation- Project Management Unit)				
Environment and Social Management Coordinator	Considered under Project TOR and Project cost			
2.Project Management Consultant (PMC)				
Environment Specialist	Considered under Project TOR and Project cost of Consultant			
3. Other Expenses				
Consent to Establish by BUIDCo	Lump sum	1,00,000.00	100,000.00	1,00,000.00
Consent to Operate by BUIDCo	Lump sum	2,00,000.00	2,00,000.00	2,00,000.00
Forest clearance and acquisition	Lump sum	8,00,000.00	8,00,000.00	8,00,000.00
Monitoring Expenses during implementation	As per requirement- Tr 2	-		
	(i) Air, noise and water quality, sludge and dredging material monitoring	Quarterly for 36 months total construction @ 4,50,000 per quarter	54,00,000.00	54,00,000.00
	(ii) Biodiversity mitigation monitoring and conditional survey as per NOC Including hiring of biodiversity expert	As per requirement during 24 months construction of intake structure and dredging operation	2,20,000,00.00	2,20,000,00.00
Public consultations	Tranches- 1,2	Tranche 1: 2,00,000.00	7,00,000.00	7,00,000.00

Item	Quantity	Unit Cost (INR)	Total Cost (INR)	Sub-total (INR)
		Project 2: 5,00,000.00		
TOTAL				**2,92,000,00.00**

BUIDCo-Bihar Urban Infrastructure Development Corporation, INR-Indian Rupees, PMC-Project Management Consultant, PMU-Project Management Unit

VII. MONITORING AND REPORTING

101. The PMU will monitor and measure the progress of EMP implementation. The monitoring activities will be corresponding with the project's risks and impacts and will be identified in the environmental assessment for the subproject. In addition to recording information like progress of the work, deviation of work components from original scope, the executing agency will undertake site inspections and document review to verify compliance with the EMP and progress toward the final outcome. The executing agency will document monitoring results, identify the necessary corrective actions, and reflect them in a corrective action plan. The executing agency in each quarter will study the compliance with the action plan developed in the previous quarter. Compliance with loan covenants will be screened by the EA.

102. PMU with the help of PMC will prepare periodic monitoring reports that describe progress with implementation of the EMP and compliance issues and corrective actions, if any. They will submit quarterly and semi-annual monitoring reports during construction for projects likely to have significant adverse environmental impacts. For projects likely to have significant adverse environmental impacts during operation, reporting will continue at the minimum on an annual basis. Such periodic reports will be posted in a location accessible to the public. The suggested monitoring report format is in Appendix 11. Project budgets will reflect the costs of monitoring and reporting requirements.

Appendix 1: Applicable Environmental Standards of the Central Pollution Control Board

General Standards for Discharge of Environmental Pollutants: Effluents

	Parameter	Standards			
		Inland surface water	Public sewers	Land of irrigation	Marine/coastal areas
1.	Colour and odour	remove as far as practicable			
2.	Suspended solids mg/l. max.	100	600	200	(a) For process waste water100 (b) For cooling water effluent 10% above total suspended matter of influent.
3.	Particle size of suspended solids	shall pass 850 micron IS Sieve			(a) Floatable solids, max. 3mm. (b)Settable solids (max 850 micron)
4.	pH value	5.5. to 9.0	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
5.	Temperature	shall not exceed 5^0C above the receiving water temperature			shall not exceed 5^0C above the receiving water temperature
6.	Oil and grease, mg./l, max.	10	20	10	20
7.	Total residual chlorine, mg/l. max.	1.0			1.0
8.	Ammonical nitrogen (as N.) mg/l max	50	50		50
9.	Total Kjeldahl Nitrogen (as NH_3) mg/l. max	100			100
10.	Free ammonia (as NH_3), mg/l.max	5.0			5.0
11.	Biochemical oxygen demand (3 days at 27^0C), mg/l. max.	30	350	100	100
12.	Chemical oxygen demand, mg/l, max.	250			250
13.	Arsenic (as As) mg/l, max.	0.2	0.2	0.2	0.2
14.	Mercury (As Hg), mg/l, max.	0.01	0.01		0.01
15.	Lead (as Pb) mg/l, max	0.1	1.0		2.0
16.	Cadmium (as Cd) mg/l. max	2.0	1.0		2.0
17.	Hexavalent chro-mium (as Cr. +6). mg/l, max	0.1	2.0		1.0
18.	Total Chromium (as Cr) mg/l, max	2.0	2.0		2.0
19.	Copper (as Cu) mg/l, max	3.0	3.0		3.0
20.	Zinc (as Zn) mg/l,	5.0	15		15

	Parameter	Standards			
		Inland surface water	Public sewers	Land of irrigation	Marine/coastal areas
	max				
21.	Selenium (as Se) mg/l, max	0.05	0.05		0.05
22.	Nickel (as Ni) mg/l, max	3.0	3.0		5.0
23.	Cyanide (as CN) mg/l, max	0.2	2.0	0.2	0.2
24.	Fluoride (as F) mg/l, max	2.0	15		15
25.	Dissolved phosphates (as P) mg/l, max	5.0			
26.	Sulfide (as S) mg/l, max	2.0			5.0
27.	Phenolic compounds (as C_6H_5OH) mg/l, max	1.0	5.0		5.0
28.	Radioactive materials: (a)Alfa emitters microcurie/ml, max. (b)Beta emitters micro curie/ml,max.	10^{-7} 10^{-6}	10^{-7} 10^{-6}	10^{-8} 10^{-7}	10^{-7} 10^{-6}
29.	Bio-assay test	90% Survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent
30.	Manganese (as Mn)	2 mg/l	2 mg/l		2 mg/l
31.	Iron (as Fe)	3 mg/l	3 mg/l		3 mg/l
32.	Vanadium (as V)	0.2 mg/l	0.2 mg/l		0.2 mg/l
33.	Nitrate Nitrogen	10 mg/l			20 mg/l

These standards shall be applicable for industries, operations or process other than those industries operations or process for which standards have been specified in schedule of the Environment Protection Rules, 1989

CPCB Primary Water Quality Criteria

Designated-Best-Use	Class of Water	Criteria
Drinking Water Source without conventional treatment but after disinfection	**A**	❖ Total Coliform Organisms: MPN # 50 per 100Ml ❖ 6.5 # pH # 8.5 ❖ Dissolved Oxygen: ∃6 mg/L ❖ Biochemical Oxygen Demand (5 days @ 20^{o}C): # 2 mg/L
Outdoor bathing (organized)	**B**	❖ Total Coliform Organisms: MPN # 500 per 100mL ❖ 6.5 # pH # 8.5 ❖ Dissolved Oxygen: ∃5 mg/L ❖ Biochemical Oxygen Demand (5

Designated-Best-Use	Class of Water	Criteria
		days @ 20°C): # 3 mg/L
Drinking water sources after conventional treatment and disinfection	**C**	❖ Total Coliform Organisms: MPN # 5000 per 100mL ❖ 6 # pH # 9 ❖ Dissolved Oxygen: ∃4 mg/L ❖ Biochemical Oxygen Demand (5 days @ 20°C): # 3 mg/L
Propagation of wildlife and fisheries	**D**	❖ 6.5 # pH # 8.5 ❖ Dissolved Oxygen: ∃4 mg/L ❖ Free ammonia (as N): # 1.2 mg/L
Irrigation, industrial cooling, controlled waste disposal	**E**	❖ # pH # 8.5 ❖ Electrical conductivity at 25°C: #2250 micro mhos/cm ❖ Sodium absorption ratio: Max 26 ❖ Boron: Max 2 mg/L

Indian Standards for Drinking Water - Specification (BIS 10500: 2012)

Sl.No	Substance or Characteristic	Requirement (Desirable Limit)	Permissible Limit in the absence of Alternate source
Essential characteristics			
1.	Colour, (Hazen units, Max)	5	15
2.	Odour	Agreeable	Agreeable
3.	Taste	Agreeable	Agreeable
4.	Turbidity (NTU, Max)	1	5
5.	pH Value	6.5 to 8.5	No Relaxation
6.	Total Hardness (as $CaCo_3$) mg/lit.,Max	200	600
7.	Iron (as Fe) mg/lit,Max	0.3	No relaxation
8.	Chlorides (as Cl) mg/lit,Max.	250	1000
9.	Residual, free chlorine, mg/lit, Min	0.2	1
Desirable Characteristics			
10.	Dissolved solids mg/lit, Max	500	2000
11.	Calcium (as Ca) mg/lit, Max	75	200
12.	Magnesium (as Mg)mg/lit, Max.	30	100
13.	Copper (as Cu) mg/lit, Max	0.05	1.5
14.	Manganese (as Mn)mg/lit ,Max	0.10	0.3
15.	Sulfate (as SO_4) mg/lit, Max	200	400
16.	Nitrate (as NO_3) mg/lit, Max	45	No relaxation
17.	Fluoride (as F) mg/lit, Max	1.0	1.5
18.	Phenolic Compounds (as C_6H_5OH) mg/lit, Max.	0.001	0.002
19.	Mercury (as Hg)mg/lit, Max	0.001	No relaxation
20.	Cadmiun (as Cd)mg/lit, Max	0.01	No relaxation
21.	Selenium (as Se)mg/lit,Max	0.01	No relaxation
22.	Arsenic (as As) mg/lit, Max	0.05	No relaxation
23.	Cyanide (as CN) mg/lit, Max	0.05	No relaxation
24.	Lead (as Pb) mg/lit, Max	0.05	No relaxation

Sl.No	Substance or Characteristic	Requirement (Desirable Limit)	Permissible Limit in the absence of Alternate source
25.	Zinc (as Zn) mg/lit, Max	5	15
26.	Anionic detergents (as MBAS) mg/lit, Max	0.2	1.0
27.	Chromium (as Cr^{6+}) mg/lit, Max	0.05	No relaxation
28.	Polynuclear aromatic hydro carbons (as PAH) g/lit, Max	--	--
29.	Mineral Oil mg/lit, Max	0.01	0.03
30.	Pesticides mg/l, Max	Absent	0.001
31	Radioactive Materials		
	i. Alpha emitters Bq/l, Max	--	0.1
	ii. Beta emitters pci/l,Max	--	1.0
32	Alkalinity mg/lit. Max	200	600
33	Aluminium (as Al) mg/l,Max	0.03	0.2
34	Boron mg/lit, Max	0.5	1

Ambient Air Quality Standards

Pollutant	Time Weighted Average	Industrial, Residential, Rural and Other Areas	Sensitive Area (Notified by Central Govt.)	Method of Measurement
Sulphur Dioxide (SO_2)	Annual Average * 24 hours Average**	50 µg / m^3 80 µg/m^3	20 µg / m^3 80 µg/m^3	• Improved West & Gaeke method • Ultraviolet Fluorescence
Oxides of Nitrogen (NO_X)	Annual Average * 24 hours Average**	40 µg / m^3 80 µg/m^3	30 µg / m^3 80 µg/m^3	• Jacobs & Hochheiser modified (NaoH – $NaAsO_2$) method • Gas Chemiluminiscence
Particulate Matter (PM_{10}) (Size <10 µm)	Annual Average * 24 hours Average**	60 µg / m^3 100 µg/m^3	60 µg / m^3 100 µg/m^3	• Gravimetric • TOEM • Beta Attenuation
Particulate Matter ($PM_{2.5}$) (Size <2.5 µm)	Annual Average * 24 hours Average**	40 µg / m^3 60 µg/m^3	40 µg / m^3 60 µg/m^3	• Gravimetric • TOEM • Beta Attenuation
Ozone (O_3)	8 hours average ** 1 hour **	100 µg/m^3 180 µg/m^3	100 µg/m^3 180 µg/m^3	• UV photometric • Chemiluminiscence • Chemical method
Lead (Pb)	Annual Average * 24 hours Average**	0.5 µg / m^3 1.0 µg / m^3	0.5 µg/m^3 1.0 µg/m^3	• AAS method after sampling using EPM 2000 or equivalent filter paper
Carbon Monoxide (CO)	8 hours Average** 1 hour **	2.0 mg/ m^3 4.0 mg/ m^3	2.0 mg/ m^3 4.0 mg/ m^3	• Non Dispersive Infrared Spectroscopy
Ammonia (NH_3)	Annual Average *	100 µg / m^3	100 µg / m^3	• Chemiluminiscence • Indophenol blue method

Pollutant	Time Weighted Average	Industrial, Residential, Rural and Other Areas	Sensitive Area (Notified by Central Govt.)	Method of Measurement
	24 hours Average**	400 µg / m^3	400 µg / m^3	
Benzene (C_6H_6)	Annual Average *	5 ng/ m^3	5 ng/ m^3	• Gas Chromatography continuous analyzer • Adsorption & desorption followed by GC analysis
Benzo(o)pyrene particulate phase only	Annual Average *	1 ng/ m^3	1 ng/ m^3	• Solvent extraction followed by GC/HPLC analysis
Arsenic (As)	Annual Average *	6 ng/ m^3	6 ng/ m^3	• AAS/ICP method after sampling using EPM 2000 or equivalent filter paper
Nickel (Ni)	Annual Average *	20 ng/ m^3	20 ng/ m^3	• AAS/ICP method after sampling using EPM 2000 or equivalent filter paper

Source: Central Pollution Control Board, New Delhi, Notification dated 18th November 2009)

Notes:

1. ** Indicate Annual Arithmetic Mean of Minimum 104 measurement in a year measured twice a week, 24 hourly at uniform intervals*
2. *** 24 hourly / 8 hourly/1 hourly values should be met 98% of the time in a year. However, 2% of the time, it may exceed by not on two consecutive days*

Standards for Diesel Generator Sets: Stack Height

The minimum height of stack to be provided with each generator set can be worked out using the following formula:

H = h+0.2x ÖKVA

H = Total height of stack in meter

h = Height of the building in meters where the generator set is installed

KVA = Total generator capacity of the set in KVA

Based on the above formula the minimum stack height to be provided with different range of generator sets may be categorized as follows:

For Generator Sets	Total Height of stack in meter
50 KVA	Ht. of the building + 1.5 meter
50-100 KVA	Ht. of the building + 2.0 meter
100-150 KVA	Ht. of the building + 2.5 meter
150-200 KVA	Ht. of the building + 3.0 meter
200-250 KVA	Ht. of the building + 3.5 meter
250-300 KVA	Ht. of the building + 3.5 meter

Similarly for higher KVA ratings a stack height can be worked out using the above formula.

Noise Standards

Noise limits for domestic appliances and construction equipments at the manufacturing stage in dB(A).

	dB(A)
Window air conditioners of 1 -1.5 tonne	68
Air coolers	60
Refrigerators	46
Diesel generator for domestic purposes	85

Compactors (rollers), front loaders, concentrate mixers, cranes (movable), vibrators and saws	75

National Ambient Noise Standards
The Noise Pollution (Regulation and Control) Rules, 2000

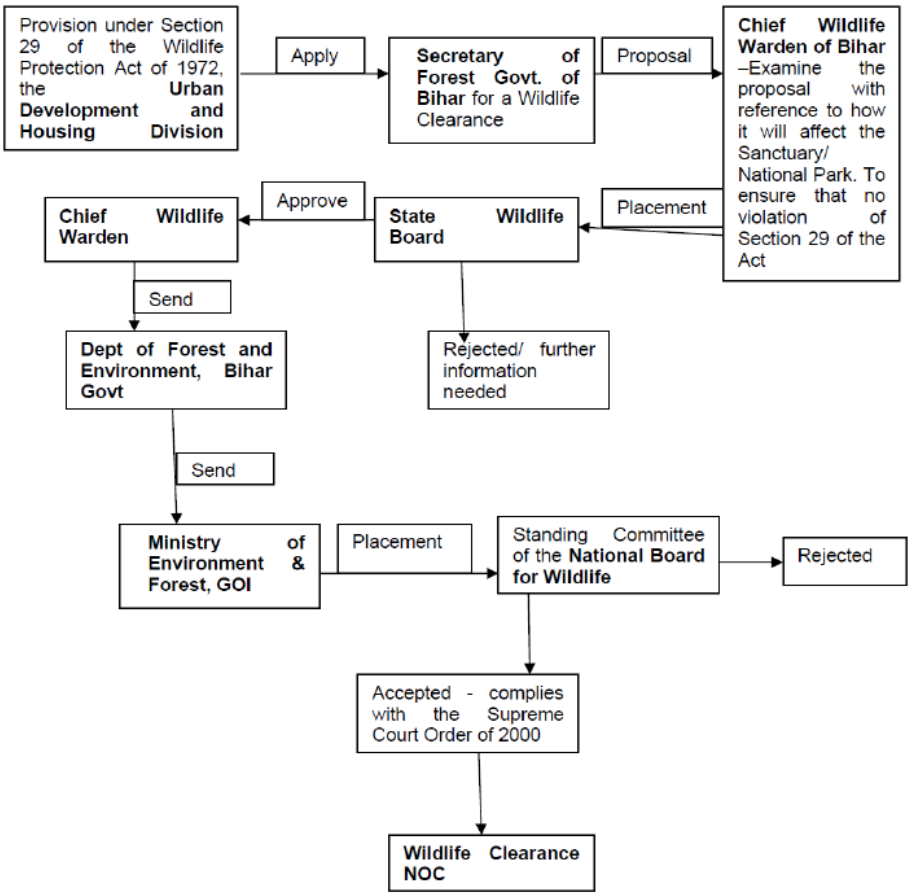
Area Code	Category of Area	Limit in dB(A) Leq*	
		Day Time	Night Time
A.	Industrial area	75	70
B.	Commercial area	65	55
C.	Residential area	55	45
D.	Silence zone	50	40

Note-1 Day time is reckoned in between 6 a.m. and 10 p.m.
Note-2 Night time is reckoned in between 10 p.m. and 6 a.m.
Note-3 Silence zone is an area comprising not less than 100 m around hospitals, educational institutions, courts, religious places or any other area which is declared as such by the competent authority
Note-4 Mixed categories of areas may be declared as one of the four above mentioned categories by the competent authority.
* dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.
A “decibel” is a unit in which noise is measured.
“A”, in dB(A) Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear.
Leq: It is an energy mean of the noise level over a specified period.

Appendix 2: Forest Conservation Rules 2003
Online Submission & Monitoring of Forest and Wildlife Clearance Proposals.

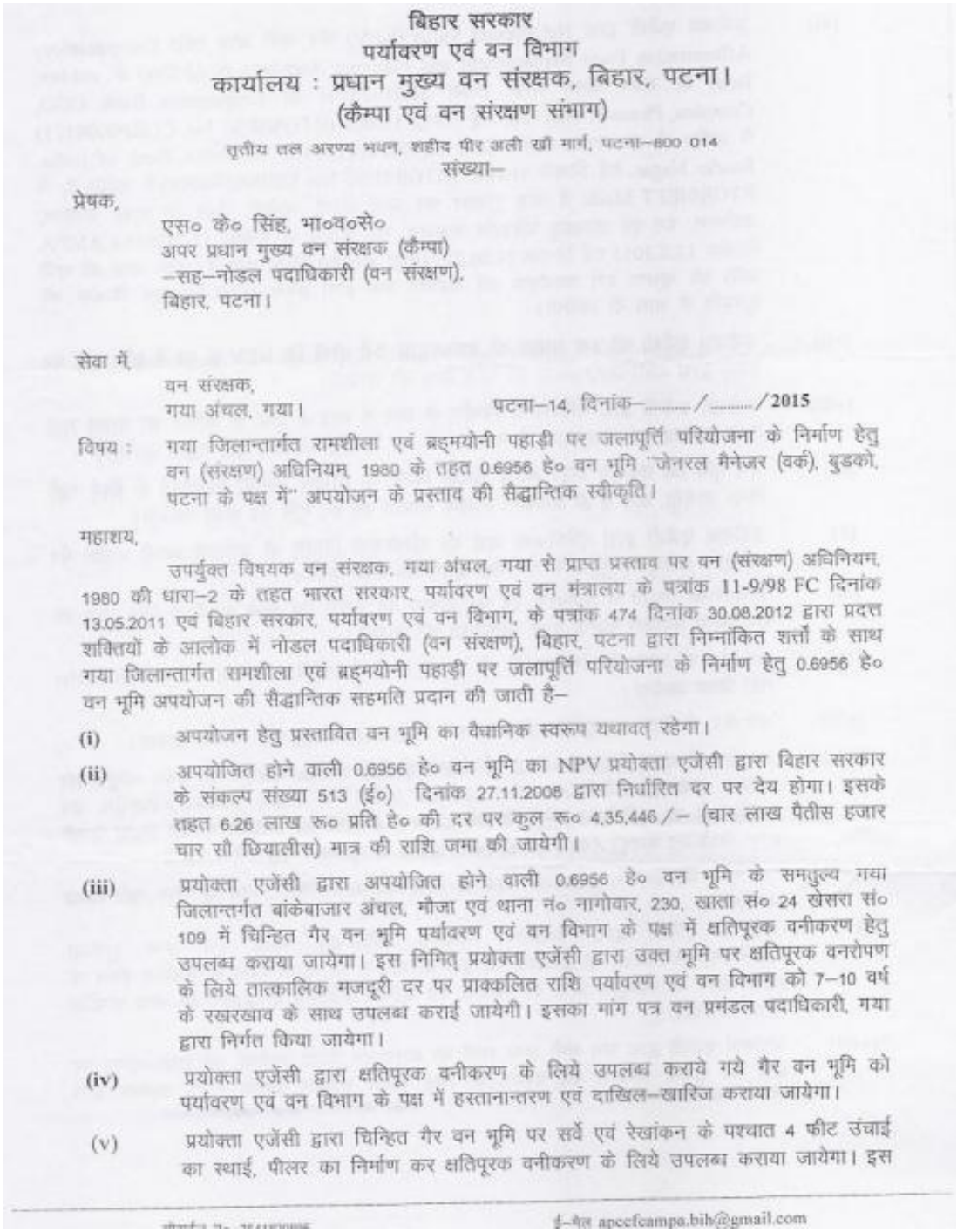
Applications and Forms are available online for download at:
http://forestsclearance.nic.in/Rules.aspx

Appendix 3: Flow Chart (Procedure for Application of Wildlife Clearance)



Source: Government of India, Ministry of Environment and Forest Order No. J-11013/41/2006-IA.II(I)

Appendix 4: Conditional NOC from State Forest Department (GLSR at Ramshilla Hill and Brahmayoni Hill) received on 24-08-2015



बिहार सरकार
पर्यावरण एवं वन विभाग
कार्यालय : प्रधान मुख्य वन संरक्षक, बिहार, पटना।
(कैम्पा एवं वन संरक्षण संभाग)
तृतीय तल अरण्य भवन, शहीद पीर अली खाँ मार्ग, पटना–800 014
संख्या–

प्रेषक,

एस० के० सिंह, भा०व०से०
अपर प्रधान मुख्य वन संरक्षक (कैम्पा)
–सह–नोडल पदाधिकारी (वन संरक्षण),
बिहार, पटना।

सेवा में,

वन संरक्षक,
गया अंचल, गया।

पटना–14, दिनांक–...../...../2015

विषय : गया जिलान्तार्गत रामशीला एवं ब्रह्मयोनी पहाड़ी पर जलापूर्ति परियोजना के निर्माण हेतु वन (संरक्षण) अधिनियम, 1980 के तहत 0.6956 हे० वन भूमि "जेनरल मैनेजर (वर्क), बुडको, पटना के पक्ष में" अपयोजन के प्रस्ताव की सैद्धान्तिक स्वीकृति।

महाशय,

उपर्युक्त विषयक वन संरक्षक, गया अंचल, गया से प्राप्त प्रस्ताव पर वन (संरक्षण) अधिनियम, 1980 की धारा–2 के तहत भारत सरकार, पर्यावरण एवं वन मंत्रालय के पत्रांक 11-9/98 FC दिनांक 13.05.2011 एवं बिहार सरकार, पर्यावरण एवं वन विभाग, के पत्रांक 474 दिनांक 30.08.2012 द्वारा प्रदत्त शक्तियों के आलोक में नोडल पदाधिकारी (वन संरक्षण), बिहार, पटना द्वारा निम्नांकित शर्तों के साथ गया जिलान्तार्गत रामशीला एवं ब्रह्मयोनी पहाड़ी पर जलापूर्ति परियोजना के निर्माण हेतु 0.6956 हे० वन भूमि अपयोजन की सैद्धान्तिक सहमति प्रदान की जाती है–

(i) अपयोजन हेतु प्रस्तावित वन भूमि का वैधानिक स्वरूप यथावत् रहेगा।

(ii) अपयोजित होने वाली 0.6956 हे० वन भूमि का NPV प्रयोक्ता एजेंसी द्वारा बिहार सरकार के संकल्प संख्या 513 (ई०) दिनांक 27.11.2008 द्वारा निर्धारित दर पर देय होगा। इसके तहत 6.26 लाख रू० प्रति हे० की दर पर कुल रू० 4,35,446/– (चार लाख पैंतीस हजार चार सौ छियालीस) मात्र की राशि जमा की जायेगी।

(iii) प्रयोक्ता एजेंसी द्वारा अपयोजित होने वाली 0.6956 हे० वन भूमि के समतुल्य गया जिलान्तर्गत बांकेबाजार अंचल, मौजा एवं थाना नं० नागोवार, 230, खाता सं० 24 खेसरा सं० 109 में चिन्हित गैर वन भूमि पर्यावरण एवं वन विभाग के पक्ष में क्षतिपूरक वनीकरण हेतु उपलब्ध कराया जायेगा। इस निमित् प्रयोक्ता एजेंसी द्वारा उक्त भूमि पर क्षतिपूरक वनरोपण के लिये तात्कालिक मजदूरी दर पर प्राक्कलित राशि पर्यावरण एवं वन विभाग को 7–10 वर्ष के रखरखाव के साथ उपलब्ध कराई जायेगी। इसका मांग पत्र वन प्रमंडल पदाधिकारी, गया द्वारा निर्गत किया जायेगा।

(iv) प्रयोक्ता एजेंसी द्वारा क्षतिपूरक वनीकरण के लिये उपलब्ध कराये गये गैर वन भूमि को पर्यावरण एवं वन विभाग के पक्ष में हस्तानान्तरण एवं दाखिल–खारिज कराया जायेगा।

(v) प्रयोक्ता एजेंसी द्वारा चिन्हित गैर वन भूमि पर सर्वे एवं रेखांकन के पश्चात 4 फीट उंचाई का स्थाई, पीलर का निर्माण कर क्षतिपूरक वनीकरण के लिये उपलब्ध कराया जायेगा। इस

ई–मेल apccfcampa.bih@gmail.com

भूमि को 1:50,000 स्केल के मानचित्र में UTM/GPS कोर्डिनेट दर्शाते हुए मार्क कराकर सत्यापित किया जायेगा।

(vi) प्रयोक्ता एजेंसी द्वारा Net Present Value (NPV) और सभी अन्य राशि Compensatory Afforestation Fund Management and Planning Authority (CAMPA) के Ad-hoc Body के बचत खाता लेखा संख्या SB01025201 जो Corporation Bank CGO, Complex, Phase-1, लोदी रोड, नई दिल्ली 110003 (RTGS/IFSC No. CORP0000371) में धारित है या बचत खाता संख्या 344902010105410 जो Union Bank of India, Sunder Nagar, नई दिल्ली 110003, (RTGS/IFSC No. UBIN0534498) में धारित है, में RTGS/NEFT Mode से फंड ट्रांस्फर कर जमा कराई जायेगी, जैसा कि भारत सरकार, पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, नई दिल्ली के पत्रांक 12-2/2010-CAMPA दिनांक 13.5.2011 एवं दिनांक 24.06.2011द्वारा संसूचित किया गया है। उक्त जमा की गयी राशि की सूचना इस कार्यालय को संबंधित बैंक द्वारा प्रदत्त UTR No. एवं दिनांक की मूलप्रति के साथ दी जायेगी।

(vii) प्रयोक्ता एजेंसी को इस आशय की वचनबद्धता देनी होगी कि NPV के दर में वृद्धि होने पर उनके द्वारा अतिरिक्त/अन्तर की राशि जमा की जायेगी।

(viii) प्रयोक्ता एजेंसी द्वारा परियोजना निर्माण के क्रम में मात्र 4 वृक्षों से अधिक का पातन नहीं किया जायेगा एवं आस–पास के वन क्षेत्र के वन विकास को क्षति नहीं पहुँचा जायेगा।

(ix) वन भूमि का उपयोग मिट्टी कटाई अथवा किसी भी निर्माण सामग्री निकालने के लिये नहीं किया जायेगा, और न ही अपशिष्ट निर्माण सामग्री को वन भूमि पर फेंका जायेगा।

(x) प्रयोक्ता एजेंसी द्वारा परियोजना खर्च पर परियोजना निर्माण के उपरान्त खाली जगहों पर क्षतिपूरक वनीकरण के अतिरिक्त पौधा रोपण का कार्य करेंगे।

(xi) आकस्मिक स्थिति में पर्यावरण एवं वन विभाग को नर्सरी एवं अन्य कार्यों के लिये जल की उपलब्धता प्रयोक्ता एजेंसी द्वारा सुनिश्चित की जायेगी।

(xii) वन क्षेत्र के अन्दर निर्माण सामग्री की ढुलाई के लिये अतिरिक्त अथवा नये पथ का निर्माण नहीं किया जायेगा।

(xiii) वन क्षेत्र के भीतर मजदूरों का निवास स्थान (Labour Camp) नहीं बनाया जायेगा।

(xiv) वन क्षेत्र से बाहर निवास कर रहे परियोजना कार्य में शामिल मजदूरों को ईंधन आपूर्ति का दायित्व प्रयोक्ता एजेंसी का होगा प्रयोक्ता एजेंसी के क्षेत्रीय निरीक्षक/स्थानीय वन पदाधिकारी यह सुनिश्चित करेंगें कि वन एवं वन्य प्राणियों को प्रयोक्ता एजेंसी अथवा उनके द्वारा नियोजित मजदूर/कार्य एजेंसी किसी प्रकार से नुकसान नहीं पहुँचा रहें हैं।

(xv) वन भूमि का उपयोग प्रस्तावित कार्य के अतिरिक्त अन्य किसी कार्य के लिए नहीं किया जायेगा।

(xvi) प्रयोक्ता एजेंसी द्वारा पर्यावरण (संरक्षण) अधिनियम, 1986 एवं अन्य सुसंगत अधिनियम/नियमावली के प्रावधान जो इस परियोजना के कार्यान्वयन से संबंधित होगा के तहत अलग से स्वीकृति प्राप्त की जायेगी एवं अन्तिम स्वीकृति के प्रस्ताव के साथ समर्पित किया जायेगा।

(xvii) प्रयोक्ता एजेंसी द्वारा उन सभी अन्य शर्तों का अनुपालन किया जायेगा, जो समय–समय पर वनों की सुरक्षा, संरक्षण एवं प्रबंधन के लिये भारत सरकार अथवा राज्य सरकार द्वारा

(xviii) उपर्युक्त शर्त्तों में से किसी एक का भी अनुपालन नहीं होने की स्थिति में संबंधित वन प्रमंडल पदाधिकारी इस कार्यालय को प्रतिवेदित करेंगे।

(xix) यदि इस विषय पर पर्यावरण सुरक्षा के हित में कोई अन्य शर्त्त आवश्यक होगी तो कालान्तर में इसे अधिरोपित किया जा सकेगा एवं प्रयोक्ता एजेंसी के लिये यह बाध्यकारी होगा।

(xx) उपभोक्ता अभिकरण [इस मामले में जेनरल मैनेजर (वर्क), बुडको, पटना] अपयोजित वन भूमि, किसी भी अन्य व्यक्ति, प्राधिकार विभाग आदि को किसी भी प्रकार से आवंटन/हस्तान्तरण/अभ्यर्पण (assignment) नहीं करेगी।

अपयोजन स्वीकृति का यह आदेश राज्य के वामपंथी उग्रवाद प्रभावित जिलों के लिये भारत सरकार द्वारा 5.00 (पाँच) हे० वन भूमि के अपयोजन की शक्ति राज्य सरकार को देने तथा इस क्रम में राज्य सरकार द्वारा नोडल पदाधिकारी (वन संरक्षण) को यह शक्ति प्रत्योजित करने के आलोक में निर्गत किया जाता है।

उपर्युक्त शर्त्तों का अनुपालन प्रतिवेदन वन संरक्षक, गया के माध्यम से प्राप्त होने के पश्चात विषयांकित परियोजना के लिये वन (संरक्षण) अधिनियम 1980 की धारा–2 के तहत अन्तिम स्वीकृति प्रदान की जायेगी। नोडल पदधिकारी (वन संरक्षण), बिहार द्वारा वन भूमि अपयोजन की अन्तिम स्वीकृति आदेश निर्गत करने के पश्चात ही उक्त वन भूमि पर गैर वानिकी कार्य किया जायेगा।

विश्वासभाजन,

ह०/–

(एस० के० सिंह)

अपर मुख्य वन संरक्षक (कैम्पा)

–सह–नोडल पदाधिकारी (वन संरक्षण),

बिहार, पटना।

ज्ञापांक– (F.C) ..... दिनांक .....

प्रतिलिपि: अपर प्रधान मुख्य वन संरक्षक (केन्द्रीय), भारत सरकार, पर्यावरण एवं वन मंत्रालय, क्षेत्रीय कार्यालय, राँची/वन महानिरीक्षक–सह–मुख्य कार्यकारी पदाधिकारी, एड–हॉक कैंपा, भारत सरकार, पर्यावरण एवं वन मंत्रालय, नई दिल्ली को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।

ह०/–

(एस० के० सिंह)

अपर मुख्य वन संरक्षक (कैम्पा)

–सह–नोडल पदाधिकारी (वन संरक्षण),

बिहार, पटना।

ज्ञापांक– (F.C) 168 दिनांक 24/08/2015

प्रतिलिपि: प्रधान सचिव, पर्यावरण एवं वन विभाग, बिहार सरकार, पटना/वन प्रमंडल पदाधिकारी, गया/जेनरल मैनेजर (वर्क), बुडको, पटना को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।

24/8/15

(एस० के० सिंह)

अपर मुख्य वन संरक्षक (कैम्पा)

–सह–नोडल पदाधिकारी (वन संरक्षण),

बिहार, पटना।

English Translation

Government of Bihar
Environment and Forest Department
(Office of the Chief forest conservator, Bihar, Patna)
[Campa and forest conservation segment]
Third floor, Arnay Bhawan, Peer Ali Khan Marg, Patna-800014

Letter No…… dated …….

From,

S.K. Singh, I.F.S.
Additional Chief Forest Conservator (Campa)
-cum-Nodal Officer (forest conservation),
Bihar, Patna.

To,

The Forest Officer,
Gaya Circle, Gaya.

Subject :- Formal approval of 0.6956 Hectare of forest land under forest conservation Act, 1980 in favour of General Manager Work, B.U.D.C.O., Patna on the Ramshila and Brahamyoni hill in Gaya District for the purpose of Water Supply Scheme.

Sir,

With reference to proposal received through D.F.O., Gaya, the formal consent has been given by Nodal Officer Forest Conservation, Patna with following conditions for utilization of 0.6956 hectare forest land for construction of Water Supply Scheme on the Ramshila and Brahamyoni hill of Gaya District under the forest conservation Act, 1980 and in the light of power conferred vide letter No. 11-9-90 FC dated 13.05.2011 of Ministry of Environment and Forest, Government of India and letter No. 474 dated 30.08.2012 of the Environment and Forest Department of the Government of Bihar.

(i) The legal status of forest land proposed for utilization will remain unchanged.

(ii) The N.P.V. of 0.6956 of the forest land proposed to be utilized will be given by executive agency at the rate prescribed by Resolution No. 353 (E) dated 27.11.2008 of Bihar Government and for the same the executive agency will pay Rs. 4,35,466/- at the rate of 6.26 lacs per hectare.

(iii) The Executive Agency will provide non-forest land equivalent to the proposed 0.6956 hectare land in favour of Environment and
Forest Department located in Bankey Bazar, Mauza and Thana Nagovar, Khata No. 24, Khesra No. 109 in the Gaya District for compensatory afforestation. For the same Executive Agency will provide required amount with current labour rate to the Department of Environment and Forest for the period of 7-10 years with maintenance cost. The letter of demand for the same will be issued by Divisional Forest Officer, Gaya.

(iv) The Executive Agency will transfer non-forest land to the Department of Environment and Forest, Government of Bihar, for compensatory afforestation after proper process of transfer of land and mutation.

(v) The Executive Agency will construct a permanent pillar of 4 fit height on the non-forest land after survey and maping and will be handed over for compensatory afforestation. The same will be displayed on the map of land scale 1:50,000 after showing the DGPS coordinates.

(vi) The fund transfer related to N.P.V. and all the amounts related to compensatory afforestation fund management and planning authority (Campa) will be deposited in the saving A/C No. SB 01025201 which is maintained in the Corporation Bank, CGO Complex, Phase No.-1, Lodi Road, New Delhi-11003 [RTGS/IFSC No.-CORP0000371] or in the saving A/C of Union Bank of India, Sundar Nagar, New Delhi-11003 [RTGS/IFSC No.-UBI No.-534498 through RTGS/NEFT mode as communicated by letter No. 12-2/2010-Campa dated 13.05.2011 and 24.06.2011 by the Ministry of Environment and Forest, New Delhi. The information regarding fund transfer will be given to this office with original copy of UTR No. with date of the concerned Bank.

(vii) The executing authority will have to promise that when the rate of NPV will increase, the additional amount or differences amount will be deposited by him.

(viii) The executive authority will not cut more than four trees during construction of the scheme and also will not harm the development of forest area surrounding to the scheme.

(ix) The utilization of forest area will neither be used for excavation of the soil or any thing nor any construction and also the useless materials will not be thrown out on the forest land.

(x) The executing agency after the completion of the scheme in addition to compensatory afforestation, will do plantation on the residual land at the scheme cost.

(xi) The executing agency will ensure to make available water to meet out the exigency for the nursery and other works of the Environment and Forest Department.

(xii) No new roads will be constructed in the forest area for carrying the materials for construction.

(xiii) There shall be no labour camp in side the forest area.

(xiv) The liability to provide cooking fuel to the labour residing out side the forest area will lie on the executing agency. The regional inspector/local forest officer will ensure that the forest or the wild animals are not being harmed either by executing agency or the labour appointed by him.

(xv) No forest land will be used other than the proposed work.

(xvi) The executing authority will get approval under the Act, 1986 and relevant Act/Rules of Environment protection Act, 1986 which will relate for the executing of the scheme and the same will be furnished with the final approval of the scheme.

(xvii) The executing authority will have to follow all the terms and conditions which are fixed either by the Government of India or the State Government time to time.

(xviii) If the aforesaid terms and conditions are not being compliedwith, the Divisional Forest Officer will send report in this regard.

(xix) That if some terms and conditions will be essentially required for the protection of environment, it will be imposed in the space of time and it will be obligatory for the executing agency.

(xx) The consumer authority, [General Manager (work), BUDCO in this case] will not allot/transfer/assign the utilized forest land to any other person, authorities and departments by any mode.

This utilization order is issued under the power conferred by Government of India to the State Government and thereupon power delegated to the Nodal Officer (forest conservation) for the utilization of 5 hectare forest land to the nuxalite terrorist affected Districts of the State.

That after getting the compliance report on the above conditions from the forest conservator, Gaya the final approval will be given for the project in reference under section 2 of the forest conservation Act, 1980.

That after issuing final approval order by Nodal Officer (forest conservation), Bihar, the non-forest work will be done on the same land.

faithfully,
Sd/-
S.K.Singh
Additional Chief forest conservator
(Campa)-cum-Nodal Officer (forest conservator), Bihar, Patna.

Memo (FC) ……. dated ……..

Copy forwarded Additional Chief Forest Conservator (Central), Government of India, Ministry of Environment and Forest/Regional Office, Ranchi/Inspector General forest cum Chief officiating officer ad-hoc campa, Government of India environment and forest Ministry, New Delhi for information and necessary action.

Sd/-
Additional Chief forest conservator
(Campa)-cum-Nodal Officer (forest conservator), Bihar, Patna.

Memo (FC) 168 dated 24.08.2015

Copy forwarded to the Principal Secretary, Environment and Forest Department, Government of Bihar, Patna/Forest Divisional Officer, Gaya/General Manager (work) BUDCO Patna for information and necessary action.

Sd/-
Additional Chief forest conservator
(Campa)-cum-Nodal Officer (forest conservator), Bihar, Patna.

Stage 1 Clearance- District Forest Officer (DFO) sent a conditional NOC Letter to BUIDCo

कार्यालयः वन प्रमण्डल पदाधिकारी, गया वन प्रमण्डल, गया।

सैयानगर, न्यू करीमगंज, गया (फोन/फैक्स नं0.0631-2220406,मो0-7541820902,ई-मेल: gayadfo@gmail.com)

पत्रांक– गया–823001, दिनांक–

प्रेषक

डा0वैसामणि के0,भा0व0से0
वन प्रमण्डल पदाधिकारी,
गया वन प्रमण्डल, गया

सेवा में,

जेनरल मैनेजर(वर्क),
बिहार शहरी आधारभूत संरचना विकास निगम लि0
(बुडको),303 तीसरा तल्ला, मौर्या टावर, मौर्यालोक कम्पलेक्स,
बुद्धमार्ग, पटना–800001

विषय– गया जिलान्तर्गत रामशीला एवं ब्रह्मयोनि पहाड़ी पर जलापूर्ति परियोजना के निर्माण हेतु वन(संरक्षण) अधिनियम 1980 के तहत 0.6956 हेक्टर वन भूमि आपके पक्ष में अपयोजन के प्रस्ताव की सैद्धान्तिक स्वीकृति।

प्रसंग– अपर प्रधान मुख्य वन संरक्षक(कैम्पा)–सह–नोडल पदाधिकारी(वन संरक्षण) बिहार पटना का ज्ञापांक–FC 168 दिनांक 24.08.2015

महाशय,

उपर्युक्त विषय के संबंध में सूचित करना है कि गया जिलान्तर्गत रामशीला एवं ब्रह्मयोनि पहाड़ी पर जलापूर्ति परियोजना निर्माण हेतु वन(संरक्षण) अधिनियम 1980 के तहत 0.6956 हेक्टर वन भूमि का अपयोजन के प्रस्ताव की सैद्धान्तिक स्वीकृति प्रासंगिक पत्र द्वारा प्रदान की गयी है। उक्त पत्र की छाया प्रति पुनः संलग्न कर भेजते हुए अनुपालन आपसे अपेक्षित की जा रही है।

1. कण्डिका–2 के अनुपालन हेतु NPV मद में 4,36,448/–रू0 एवं कण्डिका–3 के अनुपालन में अपयोजित होने वाले वन भूमि के बदले समतुल्य गया जिलान्तर्गत बांकेबाजार अंचल मौजा एवं थाना–नागोवार, थाना नं0 230 खाता संख्या–24 खेसरा संख्या–109 में चयनित गैर वन भूमि में पर्यावरण एवं वन विभाग के मद में क्षतिपूरक वनरोपण हेतु उपलब्ध किये जाने के क्रम में उक्त भूमि पर क्षतिपूरक वनरोपण हेतु तत्कालीन मजदूरी दर पर प्राक्कलित कुल राशि 13,33,881/–रू0 (छाया प्रति संलग्न)मात्र प्रसंगाधीन पत्र के कण्डिका–6 में दिये गये शर्तों के अनुसार आपके द्वारा अलग–अलग Ad-hoc Body of Compensatory afforestation fund Management and Planning Authority (CAMPA) in A/C Name CAF Bihar of A/C No. SBO1025201 in Corporation Bank CGO, Complex, Phase-1 Lodi Road, New Delhi 11003 (RTGS/IFSC No. CORP0000371) अथवा SB A/c No. 344902010105410 of Union Bank of India, Sunder Nagar, New Delhi 110003 (RTGS/IFSC No. UBIN0534498) के द्वारा RTGS/NEFT Mode द्वारा फण्ड ट्रान्सफर कर जमा कराया जाय तथा उक्त जमा की गयी राशि की सूचना अपर प्रधान मुख्य वन संरक्षक(कैम्पा)–सह–नोडल पदाधिकारी(वन संरक्षण) बिहार पटना को संबंधित बैंक द्वारा प्रदत्त UTR No. एवं दिनांक की मूल प्रति देते हुए उसकी प्रति एवं सूचना इस कार्यालय को दिया जाय।
2. कण्डिका–4 के अनुपालन में प्रयोक्ता एजेन्सी के द्वारा क्षतिपूरक वनीकरण के लिए उपलब्ध करायी गयी गैर वन भूमि को पर्यावरण एवं वन विभाग के पक्ष में हस्तान्तरण एवं दाखिल खारिज कराकर इसकी प्रति मूल रूप में उपलब्ध कराया जाय।
3. कण्डिका–5 के अनुपालन में चयनित गैर वन भूमि पर सर्वे एवं रेखांकन के पश्चात चार फिट ऊंचाई का स्थाई पिलर का निर्माण कर क्षतिपूरक वनीकरण के उपलब्ध कराया जायेगा। इस भूमि को 1:50000 के स्केल पर मानचित्र पर जी0पी0एस0 कॉर्डिनेट दर्शाते हुए मार्क कराकर समर्पित किया जायेगा।
4. कण्डिका–8 के अनुपालन में आपके द्वारा निर्माण के क्रम में प्रस्तावित चार वृक्षों का पातन के उपरान्त पुनः मापी, लॉट निर्माण अभिलेख संधारण, निलामी एवं सुरक्षा कार्य हेतु अलग से विभाग द्वारा मांग नहीं करने के कारण औसत 2 घनमीटर का प्रति घनमीटर 600/–रू0 के दर से कुल 1200/–रू0 मात्र वन प्रमण्डल पदाधिकारी, गया वन प्रमण्डल,गया के पदनाम से बैंक ड्राफ्ट बनाकर इस कार्यालय में समर्पित किया जाय।

अतः अनुरोध है कि अविलम्ब 20 शर्तों का अनुपालन करते हुए प्रतिवेदन शीघ्र भेजने की कृपा की जाय। ताकि अन्तिम स्वीकृति हेतु अग्रेत्तर कार्रवाई किया जा सकें।

उपरोक्त शर्तों के अनुपालन प्रतिवेदन प्राप्त होने के उपरान्त विषयांकित परियोजना के लिए वन संरक्षण अधिनियम 1980 की धारा–2 के तहत अन्तिम स्वीकृति प्रदान की जायेगी। नोडल पदाधिकारी(वन संरक्षण) बिहार द्वारा वन भूमि की अपयोजन हेतु अन्तिम स्वीकृति आदेश निर्गत करने के पश्चात ही उक्त वन भूमि पर गैर वानिकी कार्य किया जायेगा।

अनुलग्नक–यथोक्त।

विश्वासभाजन,
ह0
वन प्रमण्डल पदाधिकारी
गया वन प्रमण्डल,गया

ज्ञापांक– दिनांक–

प्रतिलिपि वन संरक्षक, गया अंचल,गया को प्राक्कलन की एक प्रति के साथ सूचनार्थ एवं आवश्यक कार्रवाई हेतु समर्पित।

80
वन प्रमण्डल पदाधिकारी
गया वन प्रमण्डल,गया।

ज्ञापांक–5497 दिनांक– 01/09/15

प्रतिलिपि समाहर्ता, गया को सैद्धान्तिक स्वीकृति की एक छाया प्रति संलग्न करते हुए अनुरोध है कि अधिसूचना प्रयोजना एजेन्सी को अनुपालन प्रतिवेदन समर्पित करने हेतु अपने स्तर से निर्देशित करना चाहेंगे तथा कण्डिका–3 एवं 4 के अनुपालन में अपयोजित होने वाले वन भूमि के बदले समतुल्य गैर वन भूमि आपके पत्रांक–2218/एफ0 दिनांक 07.07.2015ई0 के माध्यम से गया जिलान्तर्गत बांकेबाजार अंचल नौजा एवं थाना–नागोवार, खाता नं0 230 खाता संख्या–24 खेसरा संख्या–109 रकबा– 1.74 एकड़ में चयनित प्रस्तावित गैर वन भूमि को पर्यावरण एवं वन विभाग के पक्ष में क्षतिपूरक वनरोपण हेतु हस्तान्तरण एवं दाखिल खारीज कराकर इसकी प्रति मूल रूप में उपलब्ध कराने की कृपा की जाय।

वन प्रमण्डल पदाधिकारी
गया वन प्रमण्डल,गया।

English Translation

Office of the Divisional forest Officer, Gaya Forest Division, Gaya

Seva Nagar new Karimganj, Gaya Phone/Fax No.-0631-2220406, Mobile-7541820902 E.mail-gayadfo@gmail.com

Letter No…… Gaya-823001 dated …….

From,

Dr. Nesha Mani K, I.F.S.
Regional Forest Officer,
Gaya Forest Division, Gaya.

To,

The General Manager (works)
Bihar Urban Infrastructure Development
Corporation Ltd.
BUD Co, 303 3rd floor, Mourya Tower,
Mourya lok Complex, Budh Marg, Patna-800001.

Subject :- Formal approval of proposal of utilization 0.6956 Hectare forest land in favour of yourself for the construction of Water Supply Project located at Ramshila and Brahamyoni hill of Gaya District under the forest conservation Act, 1980.

Reference :- Letter Memo No.-FC 168 dated 24.08.2015 of Additional Chief of conservator of forest (campa)-cum-Nodal Officer, Bihar, Patna.

Sir,

With reference to above subject this to inform that the formal approval has been granted for utilization 0.6956 Hectare forest land in favour of yourself for the construction of Water Supply Project located at Ramshila and Brahamyoni hill of Gaya District under the forest conservation Act, 1980 vide letter in reference. The same is being annexed herewith and it is expected for compliance upon your part.

1. That in compliance of Para 2 for deposit Rs. 4,35,446 under N.P.V. fund and in compliance of Para-3, the land utilized in lien of the same deposite estimated wages cost of Rs. 13,33,881/- in favour of the department of Environment and Forest for compensatory afforestation in Bankey Bazar, Anchal, Thana and Mouza Nagobar thana No. 230, Khata No. 24 and Khesra No. 109 separately in

accordance with the terms and conditions referred in para 6 of the letter in reference and the mode of transfer of fund would be through RTGS/NEFT in favour of adhoc body of compensatory afforestation fund management and planning authority (CAMPA) in A/C Name-CAFBIHAR of A/C No.-SBO 1025201 in corporation Bank CGO complex Phase-I, Lodi Road, New Delhi 11003 (RTGS/IFSC No.-CORP0000371) or SB A/C No.-344902010105410 of Union Bank of India, Sundar Nagar, New Delhi-110003 (RTGS/IFSC No.-UBION 0534498). The transfer of fund may be communicated to the Additional Chief Conservator of forest (campa)-cum-Nodal Officer (forest conservation),

Bihar, Patna through the depositing UTR (in original) given by the concerned Bank and a copy of the same can be sent to this office too.

2. In compliance of the Para 4, the Excuting Agency is desired that records related to the transfer of land and mutation of the non forested land provided for compensatory afforestation may be deposited (in original) in favour of the department of Environment and Forest.

3. In compliance of Para 5, after the survey and demarcation on the selected non forested land, the same will be made available for a compensatory afforestation with a permanent pillar of a height of 4 fit. The same will be deposited after displaying D.G.P.S. coordinate on the map of the land scale of 1:50,000/-.

4. In compliance of Para-8 in the process of construction after cutting four proposed trees, in absence of demand regarding re-measurement, lot construction record, auction and safety works, you have to pay total Rs. 1200 as an additional cost at the average rate of Rs. 600/- per two cubic meter in favour of Divisional forest officer, Gaya Division, Gaya through Bank draft, the same would be submitted in this office.

Therefore, it is requested to submit report immediately after complying the 20 points terms and conditions, so that action may be taken for final approval.

After receipt of compliance report, final approval will be given about the project in question under section 2 of the forest conservation Act, 1980.

That after issuance of the final approval of utilization of forest land by Nodal Officer (conservation of forest), Bihar Nonforest work will be done on the said land.

Sd/-
Divisional Forest Officer

Memo No. ……/ dated ……

Copy forwarded to forest conservator Gaya Circle Gaya, with a copy of estimate, for information and necessary action.

Sd/-
Divisional Forest Officer

Memo No.-5477 dated 01.09.2015

Copy forwarded to District Magistrate, Gaya, with a copy of formal approval with request to him to direct the excuting agency by his own level to submit his compliance report with further request to make available in original after due compliance of para 3 and 4 with reference to your letter No. 2218 dated 07.07.2015 through that under Bankey Bazar, Anchal Mauza and Thana-Nagobar, Thana No. 230, Khata No. 24 and Khesra No. 109 Area-1.74 acre of land selected/proposed the non forest land after transfer get mutation of the same land.

Sd/-
Forest Divisional Officer, Gaya
Forest Division, Gaya

Appendix 5: Clearance from Forest and Wildlife Department for dredging operations and construction of intake

U. S. Jha, IFS
Addl. Principal Chief Conservator of Forests
-cum-Chief Wildlife Warden, Bihar, Patna

Government of Bihar
O/o PCCF, Bihar (Wildlife Wing)
4th Floor, Aranya Bhawan,
Riding Road, Sheikhpura,
P.O.-Veterinary College, Patna-800014
email : cwlwbihar@rediffmail.com
Mob. : 08986153130

No.-**Wildlife** 130 Date- 06-03-17

Permission from Wildlife Angle

Bhagalpur Water Supply Project – Formation of Waterway channel and Construction of Intake Well at Barari Ghat, Bhagalpur in the Vikramshila Gangetic Dolphin Sanctuary (VGDS), Ganga River and its proposed Eco-Sensitive Zone.

1. The Urban Development Housing Department, Govt. of Bihar, through Bihar Urban Infrastructure Development Corporation (BUIDCO) is implementing Asian Development Bank assisted Bhagalpur Water Supply Project, in which construction of intake well was proposed in the river Ganga at Barari, Bhagalpur which is situated in **Vikramshila Gangetic Dolphin Sanctuary (VGDS)** which is declared in the segment of Ganga river from Bhagalpur to Kahalgaon in Bhagalpur district.

E-mail

2. The Standing Committee of National Board of Wildlife considered this project in the 30th meeting held on 4.9.2013 and recommended the same with some conditions and stipulations vide letter no. 6-43/2007 WL - I (30th Meeting) dated 7th Nov, 2013 of the MoEF, Government of India. Hon'ble Supreme Court of India in its order in March 2014 in IA No. 3736/2014 in Writ Petition (C) No. 202 of 1995, has also allowed the execution of this project involving sanctuary in accordance with the recommendations made by Standing Committee of National Board of Wildlife.

   This project has also been considered in the 18th meeting of the expert committee of the Ministry of Environment, Forests & Climate Change, Govt. of India for declaration of Eco-sensitive Zones around Wildlife Sanctuaries held on 31st May 2016 wherein the "Final Notification of Eco-Sensitive zone of VGDS in Bihar" was deliberated upon. It was settled in the deliberations therein, that the construction and installation for the domestic water supply projects in Bhagalpur districts in the areas included in the ESZ should be incorporated as permissible operations / development activity.

3. The earlier proposal has been partially modified, at the behest of Inland Waterways Authority, to the extent that the *Intake well, Jack well with pumps* installed therein will be constructed at the bank of the river instead of inside the riverbed, on the same alignment and a *Riverbed channel* will be used for inflow of the river water to the *Intake Well*. For facilitating inflow to the Intake well and mitigate blockage or hindrance due to siltation, an access channel will be dredged in the river course near the river bank. This dredging in river portion will have a length of 40 m from the edge of the river with top width of channel at surface will varying from 47 m. to 5 m. and aggregate top area of dredged portion would be 1040 sq. m. The dredging operations will be mostly undertaken in post monsoon season.

4. It is assessed that with the modification in the project, the disturbing interference would lessened than that in case of the earlier plan as the Intake Well and Pump will now be set up and operated on the river bank instead of inside the river course, as planned earlier. The issues of structural installations of the intake well and the sound due to pump operation inside the river course are no more causes of concern. The only remaining element of adverse factor is the periodic dredging for the access channel. Therefore the overall impact would be substantively reduced.

5. In view of the above facts, the execution of the project in its modified form is permitted subject to the following stipulations / conditions suitably incorporating the relevant stipulations / conditions contained with the recommendation of the Standing Committee of National Board of Wildlife:

I. **Custody of the portion of the river course to be used for the project:**

The Forest & Environment Department, Government of Bihar shall retain the custody in the nature of the sanctuary of the portion of river course in the Vikramshila Gangetic Dolphin Sanctuary to be used for this project viz. access channel and dredging operation for that purpose etc.

II. The project proponent / user agency shall not construct or install any other permanent structure in the sanctuary area and shall not change / obstruct or cause to change the course of flow of the Ganges.

III. **Regulation & Monitoring of project execution and operation:**

a) The work plan and time schedule of the initial dredging operations will be intimated in advance to the Divisional Forest Officer, Bhagalpur who is the Wildlife Warden, and subsequent dredging operations will also be periodically informed in advance to Divisional Forest Officer, Bhagalpur. The Divisional Forest Officer, Bhagalpur will arrange for observation of the dredging operations and take such steps necessary to minimise damage to the habitat of dolphins.

b) The impact of the dredging of the access channel on the dolphins shall be regularly monitored. The project proponent shall make the necessary arrangement for such monitoring in consultation with Divisional Forest Officer, Bhagalpur / Conservator of Forests, Bhagalpur.

c) The project proponent / user agency will ensure that there is no violation of any of the provisions of Wildlife (Protection) Act, 1972 and other related acts, rules framed by the Govt. of India / State Govt. regarding control and management of rivers and aquatic animals.

d) The continuous monitoring of key parameters (on which project is based) will be undertaken by project proponent / user agency throughout the project life cycle and appropriate actions shall be taken by the user agency in consultation with the Chief Wildlife Warden, Bihar.

IV. Supporting the conservation of dolphins and aquatic biodiversity of Vikramshila Gangetic Dolphin Sanctuary (VGDS):

The project proponent (BUIDCO) will provide financial support in the execution of the Management Plan of VGDS (under finalisation) in safeguarding the Dolphin habitats and assist the Environment and Forest department in protecting the Gangetic Dolphins and in conserving the aquatic biodiversity. Such support will, inter alia, specifically include the following components:

(i) Gangetic Dolphin being National Aquatic Animal, the project proponent / user agency shall bear the cost of the studies regarding monitoring of the hydrology and the quality of water at a periodical basis over an appropriate zone covering downstream and upstream areas surrounding the project site as determined by Chief Wildlife Warden, Bihar and the result of such studies should be communicated to the Environment & Forest Department.

(ii) A comprehensive scheme to foster *proactive participation of fishermen community* for dolphin conservation over a stretch of 10 km (about 5 km upstream and downstream each) around the project site will be formulated in consultation with Regional Chief Conservator of Forests, Bhagalpur and implemented through DFO, Bhagalpur for which BUIDCO will bear the expenses till the end of the ADB supported Water Supply Development Project.

V. The project proponent / user agency shall abide by any additional condition or directions imposed by the Chief Wildlife Warden, Bihar, the State Board for Wildlife, or the National Board for Wildlife and other competent authorities as deemed necessary in the interest of conservation of Gangetic dolphin and aquatic biodiversity in the sanctuary landscape based on the factual outcome after the implementation of the project.

06/03/17

Addl. Principal Chief Conservator of Forests
-cum- Chief Wildlife Warden, Bihar, Patna

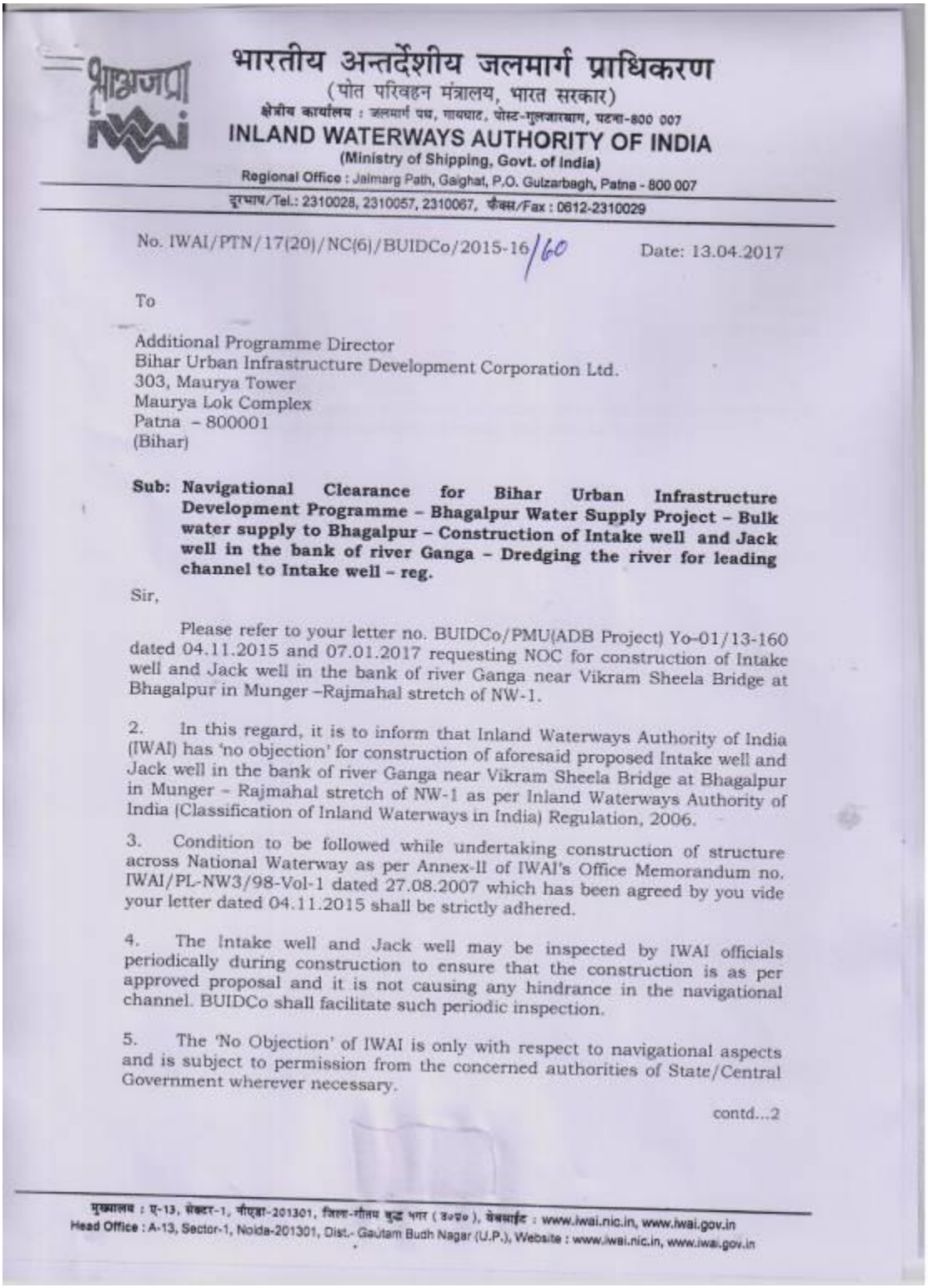
Memo No.-Wildlife 130 Date: 06-03-17

1. Managing Director, BUIDCO, Patna / District Magistrate, Bhagalpur/ Commissioner, Bhagalpur Municipal Corporation.
2. Principal Secretary, Urban Development Department, Govt.of Bihar, Patna/ Principal Secretary, Environment & Forest Department, Govt. of Bihar, Patna.
3. Regional Chief Conservator of Forests, Bhagalpur / Conservator of Forests, Bhagalpur / Divisional Forest Officer, Bhagalpur

06/03/17

Addl. Principal Chief Conservator of Forests
-cum- Chief Wildlife Warden, Bihar, Patna

Appendix 6: No Objection Certificate from Inland Waterways Authority of India



भारतीय अन्तर्देशीय जलमार्ग प्राधिकरण
(पोत परिवहन मंत्रालय, भारत सरकार)
क्षेत्रीय कार्यालय : जलमार्ग पथ, गायघाट, पोस्ट-गुलजारबाग, पटना-800 007
INLAND WATERWAYS AUTHORITY OF INDIA
(Ministry of Shipping, Govt. of India)
Regional Office : Jalmarg Path, Gaighat, P.O. Gulzarbagh, Patna - 800 007
दूरभाष/Tel.: 2310028, 2310057, 2310067, फैक्स/Fax : 0612-2310029

No. IWAI/PTN/17(20)/NC(6)/BUIDCo/2015-16/60 Date: 13.04.2017

To

Additional Programme Director
Bihar Urban Infrastructure Development Corporation Ltd.
303, Maurya Tower
Maurya Lok Complex
Patna – 800001
(Bihar)

Sub: Navigational Clearance for Bihar Urban Infrastructure Development Programme – Bhagalpur Water Supply Project – Bulk water supply to Bhagalpur – Construction of Intake well and Jack well in the bank of river Ganga – Dredging the river for leading channel to Intake well – reg.

Sir,

Please refer to your letter no. BUIDCo/PMU(ADB Project) Yo-01/13-160 dated 04.11.2015 and 07.01.2017 requesting NOC for construction of Intake well and Jack well in the bank of river Ganga near Vikram Sheela Bridge at Bhagalpur in Munger –Rajmahal stretch of NW-1.

2. In this regard, it is to inform that Inland Waterways Authority of India (IWAI) has 'no objection' for construction of aforesaid proposed Intake well and Jack well in the bank of river Ganga near Vikram Sheela Bridge at Bhagalpur in Munger – Rajmahal stretch of NW-1 as per Inland Waterways Authority of India (Classification of Inland Waterways in India) Regulation, 2006.

3. Condition to be followed while undertaking construction of structure across National Waterway as per Annex-II of IWAI's Office Memorandum no. IWAI/PL-NW3/98-Vol-1 dated 27.08.2007 which has been agreed by you vide your letter dated 04.11.2015 shall be strictly adhered.

4. The Intake well and Jack well may be inspected by IWAI officials periodically during construction to ensure that the construction is as per approved proposal and it is not causing any hindrance in the navigational channel. BUIDCo shall facilitate such periodic inspection.

5. The 'No Objection' of IWAI is only with respect to navigational aspects and is subject to permission from the concerned authorities of State/Central Government wherever necessary.

contd...2

मुख्यालय : ए-13, सेक्टर-1, नोएडा-201301, जिला-गौतम बुद्ध नगर (उ०प्र०), वेबसाईट : www.iwai.nic.in, www.iwai.gov.in
Head Office : A-13, Sector-1, Noida-201301, Dist.- Gautam Budh Nagar (U.P.), Website : www.iwai.nic.in, www.iwai.gov.in

6. In the event of any violation, IWAI have right to stop the construction of proposed structure in the bank of river Ganga and any construction in the river. Any such unauthorized construction shall be removed by BUIDCo at their cost promptly.

Yours faithfully,

(Ravi Kant)
Chief Engineer

Copy to:

1. Chief Engineer, IWAI, Noida.
2. OIC, IWAI, Sahibganj – to ensure inspection of navigational clearance as per approval during construction of Intake well and Jack well.

Appendix 7: Rapid Environmental Assessment Checklist

Screening questions	Yes	No	Remarks
a. Project siting Is the project area			
▪ Densely populated?			
▪ Heavy with development activities?			
▪ Adjacent to or within any environmentally sensitive areas?			
• Cultural heritage site			
• Protected area			
• Wetland			
• Mangrove			
• Estuarine			
• Buffer zone of protected area			
• Special area for protecting biodiversity			
• Bay			
b. Potential environmental impacts will the project cause…			
▪ Pollution of raw water supply from upstream wastewater discharge from communities, industries, agriculture, and soil erosion runoff?			
▪ Impairment of historical/cultural monuments/areas and loss/damage to these sites?			
▪ Hazard of land subsidence caused by excessive ground water pumping?			
▪ Social conflicts arising from displacement of communities?			
▪ Conflicts in abstraction of raw water for water supply with other beneficial water uses for surface and ground waters?			
▪ Unsatisfactory raw water supply (e.g. excessive pathogens or mineral			

Screening questions	Yes	No	Remarks
constituents)?			
▪ Delivery of unsafe water to distribution system?			
▪ Inadequate protection of intake works or wells, leading to pollution of water supply?			
▪ Over pumping of ground water, leading to salinization and ground subsidence?			
▪ Excessive algal growth in storage reservoir?			
▪ Increase in production of sewage beyond capabilities of community facilities?			
▪ Inadequate disposal of sludge from water treatment plants?			
▪ Inadequate buffer zone around pumping and treatment plants to alleviate noise and other possible nuisances and protect facilities?			
▪ Impairments associated with transmission lines and access roads?			
▪ Health hazards arising from inadequate design of facilities for receiving, storing, and handling of chlorine and other hazardous chemicals.			
▪ Health and safety hazards to workers from the management of chlorine used for disinfection and other contaminants?			
▪ Dislocation or involuntary resettlement of people			
▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ Noise and dust from construction activities?			

Screening questions	Yes	No	Remarks
▪ Increased road traffic due to interference of construction activities?			
▪ Continuing soil erosion/silt runoff from construction operations?			
▪ Delivery of unsafe water due to poor O&M treatment processes (especially mud accumulations in filters) and inadequate chlorination due to lack of adequate monitoring of chlorine residuals in distribution systems?			
▪ Delivery of water to distribution system, which is corrosive due to inadequate attention to feeding of corrective chemicals?			
▪ Accidental leakage of chlorine gas?			
▪ Excessive abstraction of water affecting downstream water users?			
▪ Competing uses of water?			
▪ Increased sewage flow due to increased water supply			
▪ Increased volume of sullage (wastewater from cooking and washing) and sludge from wastewater treatment plant			
▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ Social conflicts if workers from other regions or countries are hired?			
▪ Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and			

Screening questions	Yes	No	Remarks
other chemicals during operation and construction?			
▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			

A Checklist for Preliminary Climate Risk Screening

Country/Project Title: India/ Bihar Urban Development Investment Program
Sector: Urban Development
Subsector: Water Supply
Division/Department:

Screening Questions		Score	Remarks[21]
Location and Design of project	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?	0	
	Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)?	0	
Materials and Maintenance	Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?	0	Materials as selected for the project will be not affected from extreme climatic condition.
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s) ?	0	
Performance of project outputs	Would weather/climate conditions, and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?	0	

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0

[21] If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High): Low Risk

Appendix 8: Content and Format of Environmental Assessment Documents

I. Introduction

1. EIA is an important tool for incorporating environmental concerns at the project level. EIA should be carried out as early as the project planning stage as part of feasibility thus it can assure that the project will be environmentally feasible. The general objectives of the EIA study are to provide;

(i) baseline information about the environmental, social, and economic conditions in the project area;
(ii) information on potential impacts of the project and the characteristic of the impacts, magnitude, distribution, who will be the affected group, and their duration;
(iii) information on potential mitigation measures to minimize the impact including mitigation costs;
(iv) to assess the best alternative project at most benefits and least costs in terms of financial, social, and environment. In addition to alternative location of the project, project design or project management may also be considered; and
(v) basic information for formulating environmental management plan.

2. EIA requires an in-depth analysis because of the potential significance of environmental impacts from the project. EIAs demand: (i) comprehensive analysis of the potential impacts; (ii) works to be carried out to formulate practical mitigation measures; (iii) in-depth economic valuation of impact to screen and evaluate the best alternative; and (vi) in-depth analysis to prepare an adequate environmental management plan.

3. EIA reports should be presented in certain way to meet the requirements of ADB and the DMC. However, wherever possible, ADB requests that the Borrower follow ADB-prescribed format for EIA. This is to ensure that environmental assessment results are presented in a clear and concise fashion to contribute most effectively to decision-making. However, if several other financial institutions fund the proposed Project in the form of co-financing modality, it is necessary for ADB to come up with an agreement with those institutions on EIA reporting requirement. In this context, it is necessary to ensure that the content of the EIA reports cover all issues required by ADB.

4. An environmental assessment report is required for all environment category A and B projects. Its level of detail and comprehensiveness is commensurate with the significance of potential environmental impacts and risks. A typical EIA report contains the following major elements, and an IEE may have a narrower scope depending on the nature of the project. The substantive aspects of this outline will guide the preparation of environmental impact assessment reports, although not necessarily in the order shown.

a. Executive Summary - This section describes concisely the critical facts, significant findings, and recommended actions.

b. Policy, Legal, and Administrative Framework - This section discusses the national and local legal and institutional framework within which the environmental assessment is carried out. It also identifies project-relevant international environmental agreements to which the country is a party.

c. Description of the Project - This section describes the proposed project; its major components; and its geographic, ecological, social, and temporal context, including any associated facility required by and for the project (for example, access roads, power plants, water supply, quarries and borrow pits, and spoil disposal). It normally includes drawings and maps showing the project's layout and components, the project site, and the project's area of influence.

d. Description of the Environment (Baseline Data) - This section describes relevant physical, biological, and socioeconomic conditions within the study area. It also looks at

current and proposed development activities within the project's area of influence, including those not directly connected to the project. It indicates the accuracy, reliability, and sources of the data.

e. Anticipated Environmental Impacts and Mitigation Measures - This section predicts and assesses the project's likely positive and negative direct and indirect impacts to physical, biological, socioeconomic (including occupational health and safety, community health and safety, vulnerable groups and gender issues, and impacts on livelihoods through environmental media [Appendix 2 of ADB Safeguard Policy, para. 6]), and physical cultural resources in the project's area of influence, in quantitative terms to the extent possible; identifies mitigation measures and any residual negative impacts that cannot be mitigated; explores opportunities for enhancement; identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions and specifies topics that do not require further attention; and examines global, transboundary, and cumulative impacts as appropriate.

f. Analysis of Alternatives - This section examines alternatives to the proposed project site, technology, design, and operation—including the no project alternative—in terms of their potential environmental impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training, and monitoring requirements. It also states the basis for selecting the particular project design proposed and, justifies recommended emission levels and approaches to pollution prevention and abatement.

g. Information Disclosure, Consultation, and Participation - This section:

(i) describes the process undertaken during project design and preparation for engaging stakeholders, including information disclosure and consultation with affected people and other stakeholders;

(ii) summarizes comments and concerns received from affected people and other stakeholders and how these comments have been addressed in project design and mitigation measures, with special attention paid to the needs and concerns of vulnerable groups, including women, the poor, and Indigenous Peoples; and

(iii) describes the planned information disclosure measures (including the type of information to be disseminated and the method of dissemination) and the process for carrying out consultation with affected people and facilitating their participation during project implementation.

h. Grievance Redress Mechanism - This section describes the grievance redress framework (both informal and formal channels), setting out the time frame and mechanisms for resolving complaints about environmental performance.

i. Environmental Management Plan - This section deals with the set of mitigation and management measures to be taken during project implementation to avoid, reduce, mitigate, or compensate for adverse environmental impacts (in that order of priority). It may include multiple management plans and actions. It includes the following key components (with the level of detail commensurate with the project’s impacts and risks):

(i) Mitigation:

(a) identifies and summarizes anticipated significant adverse environmental impacts and risks; (b) describes each mitigation measure with technical details, including the type of impact to which it relates and the conditions under which it is required (for instance, continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate; and (c) provides links to any other mitigation plans (for example, for involuntary resettlement, Indigenous Peoples, or emergency response) required for the project.

(ii) Monitoring:

(a) describes monitoring measures with technical details, including parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits and definition of thresholds that will signal the need for corrective actions; and

(b) describes monitoring and reporting procedures to ensure early detection of conditions that necessitate particular mitigation measures and document the progress and results of mitigation.

(iii) Implementation arrangements:

(a) specifies the implementation schedule showing phasing and coordination with overall project implementation;

(b) describes institutional or organizational arrangements, namely, who is responsible for carrying out the mitigation and monitoring measures, which may include one or more of the following additional topics to strengthen environmental management capability: technical assistance programs, training programs, procurement of equipment and supplies related to environmental management and monitoring, and organizational changes; and

(c) estimates capital and recurrent costs and describes sources of funds for implementing the environmental management plan.

(iv) Performance indicators: describes the desired outcomes as measurable events to the extent possible, such as performance indicators, targets, or acceptance criteria that can be tracked over defined time periods.

j. Conclusion and Recommendation - This section provides the conclusions drawn from the assessment and provides recommendations.

Appendix 9: Grievance Redress Mechanism Complaint Form

(To be available in Hindi and English or local language, if any)
The **Bihar Urban Development Investment Program (BUDIP)**welcomes complaints, suggestions, queries and comments regarding project implementation. We encourage persons with grievance to provide their name and contact information to enable us to get in touch with you for clarification and feedback.
Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing *(CONFIDENTIAL)* above your name. Thank you.

Date	**Place of registration**

Contact Information/Personal Details					
Name		**Gender**	**Male** **Female**	**Age**	
Home Address					
Village / Town					
District					
Phone no.					
E-mail					
Complaint/Suggestion/Comment/Question Please provide the details (who, what, where and how) of your grievance below: **If included as attachment/note/letter, please tick here:**					
How do you want us to reach you for feedback or update on your comment/grievance?					

FOR OFFICIAL USE ONLY

Registered by: (Name of official registering grievance)	
If – then mode: ■ **Note/Letter** ■ **E-mail** ■ **Verbal/Telephonic**	
Reviewed by: (Names/Positions of Official(s) reviewing grievance)	
Action Taken:	
Whether Action Taken Disclosed:	■ **Yes** ■ **No**
Means of Disclosure:	

GRIVENCES RECORD AND ACTION TAKEN

Sr. No.	**Date**	**Name and Contact No. of Complainer**	**Type of Complain**	**Place**	**Status of Redress**	**Remarks**

परिशिष्ट 8: नमूनाशिकायतपंजीकरणफार्म

(हिंदी, उर्दूऔरअंग्रेजीयास्थानीयभाषामेंउपलब्धहो, यदिकोईहो,)

बिहारशहरीविकासनिवेशकार्यक्रम (BUDIP) शिकायतें, सुझाव, प्रश्नोंऔरपरियोजनाकेकार्यान्वयनकेबारेमेंटिप्पणियोंकास्वागतकरताहैं1हमलोगोंकोशिकायतकेसाथउनकेनामऔरसंपर्कजान कारीप्रदानकरनेकेलिएप्रोत्साहितकरतेहैंताकिहमस्पष्टीकरणऔरप्रतिक्रियाकेलिएआपकेसाथसंपर्ककरसकें 1 आपकोअपनेव्यक्तिगतविवरणशामिलकरनेचाहिएलेकिनउसजानकारीकोगोपनीयरखाजायगा1 आपकानामऊपर (गोपनीय) * लेखन / टाइपिंगद्वाराहमेंसूचितकरेंधन्यवाद

तारीख			पंजीकरणकास्थान		
संपर्ककरनेसंबंधीजानकारी / व्यक्तिगतविवरण					
नाम		लिंग	पुरुष महिला	आयु	
घरकापता					
गांव / शहर					
जनपद					
फोननं.					
ईमेल					
शिकायत / सुझाव / टिप्पणी / प्रश्ननीचेअपनीशिकायतकाविवरण (जो, क्या, कहांऔरकैसे) प्रदानकरें: सलगनक / नोट / पत्रकेरूपमें,शामिलहैं,कृपयायहाँटिककरें					
हमआपतकप्रतिक्रियाकेलिएकैसेपहुँचसंकतेहैंयाअपनीटिप्पणी / शिकायतपरनवीनीकरण?					

केवलकार्यालयउपयोगकेलिए

द्वारापंजीकृत:(सरकारीपंजीकरणशिकायतकानाम)	
यदि -फिरविधि:	
⌗ नोट / पत्र ⌗ ईमेल ⌗ मौखिक / टेलीफोन	
सेसमीक्षित:(नाम / अधिकारीकीपोजिशनसमीक्षाशिकायत)	
कीगईकार्रवाई:	
कीगईकार्रवाईकाखुलासा:	⌗ हां ⌗ नहीं
प्रकटीकरणकामतलब:	

शिकायतरिकॉर्डऔरकीगईकार्रवाई

क्रमसंख्या	तारीख	नामऔर complainer कासंपर्कनंबर	शिकायतकेप्रकार	जगह	निवारणकीस्थिति	टिप्पणियाँ

Appendix 10: Capacity Building – Training Program for Environmental Management

Program	Description	Participants	Form of Training	Duration/ Location	Conducting Agency
A. Pre-Construction Stage					
Module 1- Sensitization Workshop	**INTRODUCTION TO ENVIRONMENT ISSUES- Sensitization Workshop** ✓ Basic Concept of Environment & Environmental consideration of development project. Also to cover bio assessment part ✓ Explanation on ADBs SPS 2009 Guidelines, what are the different safeguard documents required to be prepared by the Project – Environment Assessment & Review Framework, EIA/IEE, Environment Management Plan (EMP) ✓ Environmental Regulations and Statutory requirements as per Government of India, Government of Bihar and ADB ✓ Compliance requirement- Environment & Ecology	Secretaries, Chief Engineer, Superintendent Engineers of PHED, ULB, Officer Forest Dept., PMU; Project Manager, ESMC of PMU, Safeguard Officer of PIU, Concerned Engineers of DSC	Workshop	¼ Working Day	PMC /Biodiversity Expert/ ADB Environment Safeguard Specialist
Module 2	**<u>Session 1</u> Environmental Considerations in Urban Development Projects** ✓ Environmental & Ecological components affected by urban development in construction and operation stages- BUDIP case ✓ Rules and Regulations need to comply for implementation of BUDIP ✓ Activities causing pollution during construction and	▪ PIU/PMU ▪ DSC ▪ Concerned Engineers from PHED, ULB and relevant dept. ▪ Forest Dept. officer	Lecture	¼ th Day	Environmental Specialist of PMC, Biodiversity Expert

Program	Description	Participants	Form of Training	Duration/ Location	Conducting Agency
	operation stages – BUDIP case ✓ Environmental and Biodiversity Management Good Practices in Urban Infrastructure Projects – BUDIP case				
	<u>Session 2</u> **Review of EIA/ IEE and its Integration into Designs** ✓ EIA/ IEE Methodology ✓ Environmental Provisions in the EMPs ✓ Identification of mitigation measures and study of alternatives. ✓ Implementation Arrangements ✓ Methodology of Assessment of Pollution Monitoring ✓ Methodology for assessment of biodiversity impact ✓ Methodology for site selection of borrow areas, waste disposal areas etc. ✓ Incorporation of mitigating measures in the project design and contracts, co-ordination between the safeguard specialists and the design team, to ensure site visits are conducted by the design team and safeguard specialists.	▪ PIU/PMU ▪ DSC ▪ Concerned Engineers from ULB and relevant dept. ▪ Forest Dept.	Lecture	¼ th Day	Environmental Specialist of PMC, Biodiversity Expert
	<u>Session 3</u> **Improved Coordination with other Departments** ✓ Overview of the Project ✓ Environmental Impacts ✓ Statutory Permissions ✓ Procedural	▪ PIU/PMU ▪ DSC ▪ Concerned Engineers from PHED, ULB and relevant dept. ▪ Forest Dept.	Lecture	¼ th Day	Environmental Specialist of PMC

Program	Description	Participants	Form of Training	Duration/ Location	Conducting Agency
	Requirements ✓ Cooperation and Coordination with other Departments				
	<u>Session 4</u> **Special Issues in the Project** ✓ Bio-Diversity Assessment and Conservation ✓ Statutory Permissions (specifically for the project)– Procedural Requirements ✓ Consultation and Counseling- Public consultation – sharing the project details and getting the opinion of the people especially in the case of displacement, incorporating the suggestions of the people in design as feasible and minimization of environmental impact. ✓ Grievance redressal mechanism – institutional arrangements	▪ PIU/PMU ▪ DSC ▪ Concerned Engineers from PHED, ULB and relevant dept. ▪ Forest Dept.	Lecture	¼ th Day	Environmental Specialist of PMC Biodiversity Expert
Module 3	**Role during Construction** ✓ Roles and Responsibilities of officials/ contractors/ consultants towards protection of ecology and environment ✓ Implementation Arrangements	1. PIU/PMU 2. DSC 3. Construction contractor	¼ th Day	Lecture	Environmental Specialist of PMC
	If a half day site visit can be organized to a site where good practice has been adopted by the project to avoid impact, it will be a case study for the participants		½ Day	Field visit	Environmental Specialist of PMC, ESMC PMU Biodiversity Expert
	Group Exercise – to discuss the issues		¼ th Day	Group Discussio	Environmental Specialist of

Program	Description	Participants	Form of Training	Duration/ Location	Conducting Agency
	identified during the field visit and how to address it, followed by an open house for questions			n	PMC, Biodiversity Expert, ESMC PMU, Safeguard officer of PIU, Engineer of DSC, Construction contractor
	Monitoring and Reporting System		¼ th Day	Lecture	Environmental Specialist of PMC Biodiversity Expert

Appendix 11: Environmental Monitoring Format

INTRODUCTION

- Overall project description and objectives
- Environmental category as per ADB Safeguard Policy Statement, 2009
- Environmental category of each subproject as per national laws and regulations
- Project Safeguards Team

Name	Designation/Office	Email Address	Contact Number	Roles
1. PMU				
2. PIUs				
3. Consultants				

- Overall project and sub-project progress and status
- Description of subprojects (package-wise) and status of implementation (preliminary, detailed design, on-going construction, completed, and/or O&M stage)

Package Number	Components/List of Works	Contract Status (specify if under bidding or contract awarded)	Status of Implementation (Preliminary Design/Detailed Design/On-going Construction/Completed/O&M)[22]	If On-going Construction	
				%Physical Progress	Expected Completion Date

COMPLIANCE STATUS WITH NATIONAL/STATE/LOCAL STATUTORY ENVIRONMENTAL

[22] If on-going construction, include %physical progress and expected date of completion

REQUIREMENTS[23]

Package No.	Subproject Name	Statutory Environmental Requirements[24]	Status of Compliance[25]	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish[26]

COMPLIANCE STATUS WITH ENVIRONMENTAL LOAN COVENANTS

No. (List schedule and paragraph number of Loan Agreement)	Covenant	Status of Compliance	Action Required

COMPLIANCE STATUS WITH THE ENVIRONMENTAL MANAGEMENT PLAN (REFER TO EMP TABLES IN APPROVED IEE/S)

- Confirm if IEE/s require Contractors to submit site-specific EMP/construction EMPs. If not, describe the methodology of monitoring each package under implementation.

Package-wise IEE Documentation Status

Package Number	Final IEE based on Detailed Design				Site-specific EMP (or Construction EMP) approved by Project Director? (Yes/No)	Remarks
	Not yet due (detailed design not yet completed)	Submitted to ADB (Provide Date of Submission)	Disclosed on project website (Provide Link)	Final IEE provided to Contractor/s (Yes/No)		

- For each package, provide name/s and contact details of Contractor/s' nodal person/s for environmental safeguards.

[23] All statutory clearance/s, no-objection certificates, permit/s, etc. should be obtained prior to award of contract/s. Attach as appendix all clearance obtained during the reporting period. If already reported, specify in the "remarks" column.
[24] Specify (environmental clearance? Permit/consent to establish? Forest clearance? Etc.)
[25] Specify if obtained, submitted and awaiting approval, application not yet submitted
[26] Example: Environmental Clearance requires ambient air quality monitoring, Forest Clearance/Tree-cutting Permit requires 2 trees for every tree, etc.

Package-wise Contractor/s' Nodal Persons for Environmental Safeguards

Package Name	Contractor	Nodal Person	Email Address	Contact Number

- With reference to approved EMP/site-specific EMP/construction EMP, complete the table below

Summary of Environmental Monitoring Activities (for the Reporting Period)[27]

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Design Phase						
Pre-Construction Phase						
Construction Phase						
Operational Phase						

[27] Attach Laboratory Results and Sampling Map/Locations

Overall Compliance with CEMP/ EMP

No.	Sub-Project Name	EMP/ CEMP Part of Contract Documents (Y/N)	CEMP/ EMP Being Implemented (Y/N)	Status of Implementation (Excellent/ Satisfactory/ Partially Satisfactory/ Below Satisfactory)	Action Proposed and Additional Measures Required

APPROACH AND METHODOLOGY FOR ENVIRONMENTAL MONITORING OF THE PROJECT

- Briefly describe the approach and methodology used for environmental monitoring of each sub-project.

MONITORING OF ENVIRONMENTAL IMPACTS ON PROJECT SURROUNDINGS (AMBIENT AIR, WATER QUALITY AND NOISE LEVELS)

- Discuss the general condition of surroundings at the project site, with consideration of the following, whichever are applicable:
    - Confirm if any dust was noted to escape the site boundaries and identify dust suppression techniques followed for site/s.
    - Identify if muddy water is escaping site boundaries or if muddy tracks are seen on adjacent roads.
    - Identify type of erosion and sediment control measures installed on site/s, condition of erosion and sediment control measures including if these are intact following heavy rain;
    - Identify designated areas for concrete works, chemical storage, construction materials, and refueling. Attach photographs of each area in the Appendix.
    - Confirm spill kits on site and site procedure for handling emergencies.
    - Identify any chemical stored on site and provide information on storage condition. Attach photograph.
    - Describe management of stockpiles (construction materials, excavated soils, spoils, etc.). Provide photographs.
    - Describe management of solid and liquid wastes on-site (quantity generated, transport, storage and disposal). Provide photographs.
    - Provide information on barricades, signages, and on-site boards. Provide photographs in the Appendix.
    - Indicate if there are any activities being under taken out of working hours and how that is being managed.

- Briefly discuss the basis for environmental parameters monitoring.

- Indicate type of environmental parameters to be monitored and identify the location.
- Indicate the method of monitoring and equipment used.
- Provide monitoring results and an analysis of results in relation to baseline data and statutory requirements.

As a minimum the results should be presented as per the tables below.

Air Quality Results

Site No.	Date of Testing	Site Location	Parameters (Government Standards)		
			PM10 µg/m3	SO2 µg/m3	NO2 µg/m3

Site No.	Date of Testing	Site Location	Parameters (Monitoring Results)		
			PM10 µg/m3	SO2 µg/m3	NO2 µg/m3

Water Quality Results

Site No.	Date of Sampling	Site Location	Parameters (Government Standards)					
			pH	Conductivity µS/cm	BOD mg/L	TSS mg/L	TN mg/L	TP mg/L

Site No.	Date of Sampling	Site Location	Parameters (Monitoring Results)					
			pH	Conductivity µS/cm	BOD mg/L	TSS mg/L	TN mg/L	TP mg/L

Noise Quality Results

Site No.	Date of Testing	Site Location	LA_{eq} (dBA) (Government Standard)	
			Day Time	Night Time

Site No.	Date of Testing	Site Location	LA_{eq} (dBA) (Monitoring Results)	
			Day Time	Night Time

GRIEVANCE REDRESS MECHANISM

- Provide information on establishment of grievance redress mechanism and capacity of grievance redress committee to address project-related issues/complaints. Include as appendix Notification of the GRM (town-wise if applicable).

COMPLAINTS RECEIVED DURING THE REPORTING PERIOD

- Provide information on number, nature, and resolution of complaints received during reporting period. Attach records as per GRM in the approved IEE. Identify safeguards team member/s involved in the GRM process. Attach minutes of meetings (ensure English translation is provided).

SUMMARY OF KEY ISSUES AND REMEDIAL ACTIONS

- Summary of follow up time-bound actions to be taken within a set timeframe.

APPENDIXES

- Photos
- Summary of consultations
- Copies of environmental clearances and permits
- Sample of environmental site inspection report
- all supporting documents including **signed** monthly environmental site inspection reports prepared by consultants and/or Contractors
- Others

SAMPLE ENVIRONMENTAL SITE INSPECTION REPORT

Project Name
Contract Number

NAME: _____ DATE: _____
TITLE: _____ DMA: _____
LOCATION: _____ GROUP: _____

WEATHER CONDITION:
_____

INITIAL SITE CONDITION: _____

CONCLUDING SITE CONDITION:

Satisfactory _____ Unsatisfactory _____ Incident _____ Resolved _____ Unresolved _____

INCIDENT:
Nature of incident:
_____

Intervention Steps:
_____

Incident Issues

Resolution

Project Activity Stage	Survey	
	Design	
	Implementation	
	Pre-Commissioning	
	Guarantee Period	

Inspection

Emissions	Waste Minimization			
Air Quality	Reuse and Recycling			
Noise pollution	Dust and Litter Control			
Hazardous Substances	Trees and Vegetation			
Site Restored to Original Condition	Yes		No	

Signature
_____

Sign off

_____ _____

Name **Name**
Position **Position**