



Preparatory Survey on Patna Metro Rail Project

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Japan International Cooperation Agency

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Abbreviations and Acronyms

AAGR	Annual Average Growth Rate
AC	Alternating Current
ACDB	AC Distribution Board
ADB	Asian Development Bank
AF	Audio Frequency
AFC	Automatic Fare Collection
AFG	Automatic Fare Gate
AHU	Air Handling Unit
AI	Artificial Intelligence
AMS	Auxiliary Main Substation
App	Application
ASI	Archaeological Survey of India
ASS	Auxiliary Substation
ATD	Auto-Tensioning Device
ATM	Automated Teller Machine
ATO	Automatic Train Operation
ATP	Automatic Train Protection
ATS	Automatic Train supervision
B/C	Benefit over Cost
BCC	Backup Control Center
BERC	Bihar Electricity Regulatory Commission
BSPTCL	Bihar State Power Transmission Company Limited
BT	Existing Bus Terminal
CBD	Central Business District
CBI	Computer-based Interlocking

CBM	Condition-Based Maintenance
CBTC	Continuous Automatic Train Control System
CCHS	Central Clearing House System
CCTV	Close Circuit TeleVision
CDAC	Centre for Development of Advanced Computing
CE	Conformité Européenne
CENELEC	Comité Européen de Normalisation ELECTrotechnique
CFRS	Central Fault Reporting System
CIBE	Commercial, industrial and business enterprise
CMP2018	Comprehensive Mobility Plan Patna in 2018
CP	Counterpart
CVC	Central Vigilance Commission
CVRS	Central Voice Recording System
DC	Direct Current
DCC	Depot Control Center
DF/R	Draft Final Report
DG	Diesel Generator
DISCOM	Distribution company
DMRC	Delhi Metro Rail Corporation
DoT	Department of Telecommunications
DPR	Updated Detailed Project Report for Metro Rail System in Patna
DTG	Distance To Go
DTO	Driverless Train Operation
DVRS	Digital Voice Recording System
DX	Digital Transformation
E&M	Electrical & Mechanical

EB	Emergency Break
EC	Environmental Clearance
EDC	External Development Charge
EFO	Excess Fare Office
EHV	Extra High Voltage
EIA	Environmental Impact Assessment
EIRR	Economic Internal Rate of Return
EMI	Electro Magnetic Interference
EMP	Environmental Management Plan
EMV	Europay Master Visa
EN	European Norm
ESIA	Environment and Social Impact Assessment
EV	Electric Vehicle
F/R	Final Report
FAR	Floor-Area Ratio
FCC	Federal Communications Commission
FCU	Fan Coil Unit
FGD	Focus Group Discussion
FIRR	Financial Internal Rate of Return
FOTS	Fiber Optics Transmission System
FRBM	Fiscal Responsibility and Budget Management
FS	Feasibility Study
FSB	Full Service Brake
GDP	Gross Domestic Product
GE	Gigabit Ethernet
GFCF	Gross Fixed Capital Formation

GHG	Greenhouse Gases
GNSS	Global Navigation Satellite System
GoB	Government of Bihar
GoI	Government of India
GPS	Global Positioning System
GSDP	Gross State Domestic Product
GSS	Grid Substation
HH	Household
HH rail	Head Hardened rail
HT	High voltage
IDA	International Development Association
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers
IETF	the Internet Engineering Task Force
IP	Internet Protocol
IPP	Indigenous Peoples Plan
IRR	Internal Rate of Return
IRS	Indian Railway Standard
ISM	Industrial, Scientific and Medical
ISO	International Organization for Standardization
IT/R	Interim Report
ITU-T	International Telecommunication Union Telecommunication
JST	JICA Study Team
LAP	Land Acquisition Plan
LARRA	Right to Fair Compensation and Transparency in Land Acquisition,
LCD	Liquid Crystal Display

LED	Light-Emitting Diode
LILO	Line In Line Out
LT	Low voltage
LVC	Land Value Capture
MaaS	Mobility as a Service
MCCB	Molded Case Circuit Breaker
MMI	Man Machine Interface
MoEFCC	Ministry of Environment, Forest and Climate Change
MoHUA	Ministry of Housing and Urban Affairs
MPI	Multidimensional Poverty Index
MPLS	Multi-Protocol Label Switching
NBC	National Building Code
NCMC	National Common Mobility Card
NFC	Near Field Communication
NFPA	National Fire Protection Association
NMS	Network Management System
NPCI	National Payment Corporation of India
O&M	Operation and Maintenance
OCC	Operation Control Center
OHE	Overhead Equipment
ONVIF	Open Network Video Interface Forum
PA	Passenger Address system
PAH	Project Affected Households
PAP	Project Affected Person
PBX	Private Branch eXchange
PCs	Public Consultations

PIDS	Passenger Information Display System
PMP2031	Patna Master Plan 2031
PMRCL	Patna Metro Rail Corporation Limited
POM	Passenger Operated Machine
PPP	Public Private Partnership
PSD	Platform Screen Door
PSTM	Procedure for Safety Certification and Technical Clearance of Metro
QOL	Quality of Life
QR	Quick Response
qSparc	Quick Specification for Payment Application of Rupay Chip
RAP	Resettlement Action Plan
RC	Return Conductor
RDSO	Research Designs & Standards Organisation
RFC	Request for Comments
ROCS	Rigid Overhead Conductor System
RPO	Renewable Purchase Obligation
RSS	Receiving Substation
SC	Scheduled Caste
SBPDCL	South Bihar Power Distribution Company Limited
SCR	Station Control Room
SD	Subordinate Debt
SGB Park	Sanjay Gandhi Botanical Park
SIA	Social Impact Assessment
SIL	Safety Integrity Level
SIP	Session Initiation Protocol
ST	Scheduled Tribe

STU	State Transmission Utility
SUICA	Super Urban Intelligent Card
TBM	Tunnel Boring Machine
TEC	Telecommunication Engineer Center
TES	Track Exhaust System
TETRA	TERrestrial Trunked RADio
TOD	Transit Oriented Development
TOM	Ticket Office Machine
TR	Ticket Reader
TRAI	Telecom Regulatory Authority of India
TSS	Traction Substation
TTC	Travel Time Cost
TVM	Ticket Vending Machine
TVS	Tunnel Ventilation System
UL	Underwriters Laboratories (Limited Liability Company)
UPS	Uninterruptible Power Supply
UTO	Unattended Train Operation
VAC	Ventilation and Air Conditioning
VCF	Value Capture Finance
VOC	Vehicle Operating Cost
VRV	Variable Refrigerant Volume
VVVF	Variable Voltage Variable Frequency
WPC	Wireless Planning & Coordination wing
XLPE	Cross-linked Polyethylene
JSSS	JICA Standard Safety Specification
ROD	Revenue Operation Date

SBD	Standard Bidding Documents
ICB	International Competitive Bidding
LCB	Local Competitive Bidding
JPG	JICA Procurement Guideline
QCBS	Quality- and Cost-Based Selection
PQ	Prequalification
MPW	Manual for Procurement of Works
SPD	Standard Prequalification Document
LOA	Letter of Acceptance
GC	General Consultant
E/N	Exchange of Notes
CMRC	Commissioner of Railway Safety