



SPAD GUIDELINE

RAILWAY SCHEME APPROVAL

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1.0 INTRODUCTION

This document is to provide guidelines on the process of handling the submission of railway scheme in compliance with Section 83 and 84 of Land Public Transport Act 2010.

2.0 RAILWAY SCHEME APPROVAL PROCESS

The process and requirements for Railway Scheme Approval is stipulated under APPENDIX A and APPENDIX B.

3.0 FORMS & OTHER RELATED DOCUMENTS

This guideline must be read together with the following documents:

- i. **APPENDIX A - Railway Scheme Approval Process**
- ii. **APPENDIX B - Railway Scheme Document Checklist**



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APPENDIX A – RAILWAY SCHEME APPROVAL PROCESS

Person In Charge	Process Flow	Description	Duration
RPU	<p style="text-align: center;">4.1 Receive application</p> <p style="text-align: center;">↓</p>	<ul style="list-style-type: none"> Receive submission of railway scheme from LRO/applicant. 	
RPU	<p style="text-align: center;">4.2 Review railway scheme. Meeting/ discussion with LRO/applicant</p> <p style="text-align: center;">↓</p>	<ul style="list-style-type: none"> Review the railway scheme by using APPENDIX A- Railway Scheme Document Checklist to ensure all issues are closed. 	1 month
RPU	<p style="text-align: center;">4.3 Memorandum to Minister for conditional approval</p> <p style="text-align: center;">↓</p>	<ul style="list-style-type: none"> Seek consideration and approval from Licensing Committee (LC) / Members of Commission (MOC) for recommendation to Minister to grant the conditional approval. 	1 month
RPU	<p style="text-align: center;">4.4 Public inspection</p> <p style="text-align: center;">↓</p>	<ul style="list-style-type: none"> Inform LRO/applicant to conduct public inspection for three (3) months. Detail requirements are as per SOP/RD/RAIL/021/Rev0-Public Inspection 	3 months
RPU	<p style="text-align: center;">4.5 Engagement with affected residents and stakeholders</p> <p style="text-align: center;">↓</p>	<ul style="list-style-type: none"> Review of Public Inspection feedback and engagement with public/ authorities to address issue raised during public inspection. 	*1-2 month
RPU	<p style="text-align: center;">4.6 Memorandum to Minister for railway scheme final approval</p> <p style="text-align: center;">↓</p>	<ul style="list-style-type: none"> Seek consideration and approval from Licensing Committee (LC) / Members of Commission (MOC) for recommendation to Minister to approve the final railway scheme. 	1-2 month
RPU	<p style="text-align: center;">4.7 Inform LRO/ Applicant</p>	<ul style="list-style-type: none"> Inform LRO/Applicant of the Minister's decision 	
Estimated time required for Railway Scheme Approval			*7-9 month

(* Note: Depending on the complexity/any issue arise during the engagement session with stakeholders)



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APPENDIX B – RAILWAY SCHEME DOCUMENT CHECKLIST

GUIDELINE FOR RAILWAY SCHEME APPROVAL	
1. APPLICATION LETTER	
1.1	Application letter for railway scheme approval
2. GENERAL	
2.1	Background & description of project
2.2	Project needs, justification & alternatives
2.3	Project approval
2.4	Operational objectives
2.5	Scope of works
2.6	Project Programme
3. PLANNING	
3.1	Corridor descriptions & route selection
3.2	Connectivity & accessibility plan
3.3	Network & terminal integration
3.4	Environmental Impact Assessment (EIA) & Social Impact Assessment (SIA)
3.5	Traffic management plan
3.6	Heritage Impact Assessment (HIA)
3.7	Infrastructure interfacing & migration plan
4. PROJECT DEMAND	
4.1	Town planning & land use study
4.2	Ridership forecast
4.3	Methodology & basis for forecast
4.4	Catchment areas
4.5	Population & employment projection
5. FINANCIAL	
5.1	Project Cost
5.2	Operational Cost
5.3	Financial Analysis
5.4	Sensitivity Analysis
5.5	Cost Benefit Analysis
5.6	Financing Plan
5.7	Concession/ Franchise Agreement
5.8	Fare Structure
5.9	Conditions of Carriage
5.10	Project Risk Management



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6. OPERATION & MAINTENANCE	
6.1	Description of the strategy to operate and maintain the railway such as trains, maintenance facilities and vehicles etc.
6.2	Train operation plan (type of service, minimum service to be provided)
6.3	Information of railway operator
6.4	Service frequency and pphpd
6.5	Estimation length including duration between each station
6.6	Proposed fare structure including justification of fare calculation
7. STANDARDS & CODES	
7.1	List of standards applicable for infrastructure and system
8. RAILWAY SYSTEM TECHNICAL DESCRIPTIONS	
8.1	Description of technical aspects of the project including alignment, station, depot, rolling stock etc.
8.2	Trackwork <ul style="list-style-type: none"> • Description of the design and rail components • Layer and height of formation • Type of rail, rail length, type of sleeper • Turnout • Track gauge • Maximum design speed • Maximum operation speed • Axle Load on Maximum Operation • Maximum gradient vertically <ul style="list-style-type: none"> o At the station o The Main Line o In Yard / Depot • Minimum radius vertical curve • Minimum radius horizontal curve • Maximum cant • Maximum cant deficiency • Emergency siding and pocket track • Track cross section (at grade and elevated)
8.2	Tunnel <ul style="list-style-type: none"> • Location, length • Design features and safety requirement • Fire protection system • Emergency equipment • Ventilation system and lighting • Signaling and communications systems • Cross section drawings
8.3	Level crossing <ul style="list-style-type: none"> • Location of crossing • Safety features • Gate control system



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	<ul style="list-style-type: none"> Facilities
8.4	Station <ul style="list-style-type: none"> Location, size, type of platform, station facilities Design features and safety requirement Number of parking (car, motorcycle) Bus access/stop/parking Cross section drawings
8.5	Automated Fare Collection System <ul style="list-style-type: none"> Description of the system including design features, functions / capabilities of the main component Interfacing with TnGO and ticketing systems of other rail operators
8.6	Passenger Information Display System (PIDS) <ul style="list-style-type: none"> Description of the system including design features, functions / capabilities of the main component Type of information to be displayed automatically Show the time train arrival
8.7	CCTV system <ul style="list-style-type: none"> Description of the system including design features, functions / capabilities of the main component The location and type of camera to be installed The location and ability to keep records
8.8	Passenger Address (PA) System <ul style="list-style-type: none"> Description of the system including design features, functions / capabilities of the main component Integration/broadcast within station and control centre by manually and automatically
8.9	Communication System <ul style="list-style-type: none"> Description of the system including design features, functions / capabilities of the main component Communication equipment at train control center, station, depot and inside the train Ability to record the conversation in the control center / train/ driver
8.10	Signalling & Telecommunication (S&T) System <ul style="list-style-type: none"> Location, size, type of platform, station facilities Description of the system including design features, functions / capabilities of the main component The components of the signalling system at the central train control, track, stations, depots and inside the train Protection system of signaling key components from damage caused by lightning / overcurrent Uninterruptible Power Supply (Uninterrupted Power Supply)
8.11	Train operation control center <ul style="list-style-type: none"> The location of operations control center Design features, functions / capabilities of the main components
8.12	Electric power supply system <ul style="list-style-type: none"> The location of operations control center Description of the power supply system for traction power, Supervisory Control and Data Acquisition (SCADA) and station Features designed including redundancy and protection system to protect major



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	<ul style="list-style-type: none"> components train Schematic diagram of the electric power supply system
8.13	Rolling stock <ul style="list-style-type: none"> Design features include among others but not limited to:- <ul style="list-style-type: none"> Capacity (sitting, standing) Traction power system Power acceleration, maximum speed Weight train (minimum, maximum) Axle load (minimum, maximum) Size of the wheel Braking system Type gangway / coupler Facilities in train <ul style="list-style-type: none"> Automatic Train Operation (ATO) Safety devices including ATP, deadman switch, the train radio system)
8.14	Depot and maintenance facilities <ul style="list-style-type: none"> Washing plant Details of the depot, including location, size and type of maintenance work Design features and safety requirement
9. SAFETY & SECURITY	
9.1	Description of the safety and security aspects of the project at stations, inside rolling stock or at permanent way, during construction and operation
10. LAND ACQUISITION & STAKEHOLDERS MANAGEMENT	
10.1	Acquisition plan
10.2	List of buildings to be demolished or relocated
10.3	Land matters i.e. co-existence
10.4	Community and Stakeholders Engagement
10.5	Public Inspection
11. LEGAL	
11.1	List of approval required
11.2	Cross border consideration
11.3	Accident/incident reporting
11.4	Train driver's vocational licensing
11.5	Operator's license
11.6	Limits of deviation
12. TRAINING	
12.1	Training Needs Analysis
12.2	Transfer of Technology
13. INDEPENDENT CHECKING ENGINEER	
13.1	Responsibilities of ICE



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13.2	Scope of works of ICE
14. TESTING & COMMISSIONING	
14.1	Test & Commissioning Strategy
14.2	Test Procedures
15. SYSTEM SAFETY CERTIFICATION	
15.1	Certification Strategy
15.2	Scope of works
15.3	Certification programme
15.4	Safety assessment
15.5	Safety/technical audits
15.6	Reporting
16. RAMS	
16.1	Reliability, Availability, Maintainability And Safety Certification Strategy
17. ANCILLARY ACTIVITIES	
17.1	Ancillary activities and locations
17.2	Revenue Forecast from Ancillary Activities
18. PLAN & DRAWINGS	
18.1	Map of the proposed route and station
18.2	Plans & sections
18.3	Station & Depot Layout
18.4	Signaling Layout
18.5	Electrification Layout
18.6	Track Formation Layout
18.7	Vehicle Dynamic Envelope
18.8	Cross section of track
19. REFERENCE AND DATA SOURCES	
19.1	The information of which the references are made
20. APPENDICES	
20.1	Book of reference (Land acquisition details)
20.2	List of design standards

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