

World Bank-UNDP-GEF Assisted SUT Project for Pune

ESMF Annexure filed by Pune Municipal Corporation

Annex – 2: Checklist of Environmental Provisions in the DPR

(A) Environmental Concerns to be addressed while preparing DPR

Sl. No.	Activity	Items to consider	Measures to address	Observations of the Design Consultant
1	Preliminary Project Information	Trees	(i) Inventorisation of environmental features	Tree inventory is completed & included in DPR.
		Forests	(ii) Avoidance, design modifications to minimize adverse environmental impacts	Project area does not include notified or other forest area. The question of avoidance, design modifications to minimize adverse environmental impacts does not arise.
		Drainage lines / Rivers / water crossings	(iii) Incorporating community concerns into finalizing designs	Project does not include river & does not interfere with drainage lines or water crossings.
		Water bodies		No water bodies except nallas exist in Project area. Project does not interfere with nallas.
		Cultural properties		Cultural properties are not being disturbed in Project area.
		Utilities		Except for feeder poles or electric poles that substantially affect passage of footpath or cycle track, utilities are not disturbed in the Project.
		Community facilities		No community facilities are being disturbed in the Project.
		Major junctions		Raised crosswalk like feature as a solution for junction crossing is being used in the Project to improve conspicuity & status of NMT & to lower speeds of auto vehicles for safety of NMT.
Air Quality	(i) Establish baseline air quality of the project area	Baseline air quality data been obtained at eight sample locations on feeder roads in Project area.		
2	Detailed Surveys	Noise Quality	(i) Establish baseline noise quality of the project area	The Project will achieve only marginal improvement in noise environment (that too in counterfactual terms) because it will hardly stem the noise generated by absolute increase in auto vehicle traffic over the horizon of next 20 years. As such, no noise quality baseline data is proposed to be established for the Project.
		Water Quality	(i) Establish baseline water quality of the project area	The Project will not influence water quality in any way & hence no water quality baseline data is proposed to be established for the Project..
		3	Identification of material sources	Borrow material
(ii) Minimize requirements through design modifications	Requirement of material has been minimised by limiting the height of NMT facilities.			
(iii) Location criteria to be applied for selection of borrow areas.	Use of borrow pits for procuring material is not expected. Contractor will procure material from market.			
Quarry material	(i) Use of alternative materials to be encouraged		Reuse of dismantled material usable for sub-base of footpath & of cycle track is to be made.	
	(ii) Material extraction from existing quarries	Contractors are expected to procure quarry material from market.		

SI. No.	Activity	Items to consider	Measures to address	Observations of the Design Consultant
		Water availability	(i) Identification of perennial/community/private sources	Contractors are expected to procure water from private water tankers.
			(ii) Scheduling construction to suit water availability in case of water scarce areas	Area does not have water scarcity.
			(iii) Utilizing community water sources without conflict of uses	Community water sources do not exist in Project area. No tap water is allowed to be used for construction by ULB.
4	Assessment of environmental impacts	Climatic factors	(i) Scheduling construction considering the special weather phenomena	Work to be done mainly in fair-weather season.
		Water bodies	(i) Provision of silt fencing	Water bodies are absent in Project area except for natural drainage streams (nallas). These are non-perennial & do not carry fresh water except during months of monsoon season. Cross drainage works already exist for full width of the roads. As the construction process does not involve copious use of water & is to be carried out during fair-weather season, there is no need for silt fencing during construction.
			(ii) Rehabilitation of water bodies	Project does not disturb water bodies.
		Land use changes	(i) Land use control measures adjacent to the road	Project does not involve construction of any new road & therefore it is unlikely to lead to significant land use changes.
			(ii) Development regulations to avoid unplanned developments induced by implementation of the project interventions	Statutory Development Plan & Development Control Regulations exist.
		Cultural properties	(i) Avoidance through design modifications	Project design leaves cultural properties undisturbed through design modifications.
			(ii) Planning for Relocation & rehabilitation	Question of relocation & rehabilitation of cultural properties will not arise.
		Common Property Resources	(i) Avoidance through design modification	No Common Property Resources are being disturbed by project, except for roads themselves.
			(ii) Planning for Relocation of consultation with community	As Common Property Resources are not being disturbed, the question of consultation with community on this score does not arise.
		Drainage	(i) Provision of adequate number of CD Structures	CD Structures already exist.
		Trees	(ii) Compensatory plantation	Where smaller trees obstruct pedestrian or cyclist passage, they will be transplanted nearby to overcome obstruction. Larger trees will be left undisturbed by suitable deviation in passage of pedestrian or cyclist.
		Forest areas	(i) Avoidance through design modifications	Project area does not include forest area.
(ii) Environment Management measures during construction	As Project area does not include forest area, the question of avoidance of forest area through design modification or formulating additional measures for avoiding impacts does not arise.			
Natural Habitats	(iii) Avoidance through design modification or formulating additional measures for avoiding impacts	No Natural Habitats of any interest exist in Project area.		
5	Construction sites	(i) Provision of pollution control measures	Responsibility of provision of pollution control measures will be shared by Contractors & Project Management Consultant.	
		(ii) All measures to ensure public & worker's health/safety	Responsibility of public & worker's health/safety will be shared by Contractor & Project Management Consultant.	
		(iii) Water Management	Responsibility of Water Management will be shared by Contractors & Project Management Consultant.	
	Construction camps	(i) Criteria for identification of sites and Infrastructure arrangements	No construction camps are envisaged as the site is within urban area.	

SI. No.	Activity	Items to consider	Measures to address	Observations of the Design Consultant
			(ii) Safe disposal of all wastes	As no construction camps are envisaged, the question of safe disposal of any wastes from construction camps does not arise.
			(iii) Enforcement of pollution control measures	As no construction camps are envisaged, the question of enforcement of pollution control measures in construction camps does not arise.
			Borrow areas	(i) Arrangements with land owners to include redevelopment
		Quarry areas	(ii) Rehabilitation of quarry areas if new quarries are opened	Material to be procured from market.
		Public/workers health & safety	(i) Personal Protective Equipment to be provided	Responsibility shared by Contractor & Project Management Consultant.
			(ii) Public safety at construction sites to be undertaken	Responsibility shared by Contractor & Project Management Consultant.
			(iii) Measures for worker's health & hygiene at construction camps	No construction camps are envisaged as the site is within urban area.
6	Consultations with community	Land for borrowing	(i) Agreement to include borrow area rehabilitation	Material to be procured from market.
		Water for construction	(i) Agreements with owners/community for utilizing water	Water to be procured from private water tankers.
		Site for construction camps	(i) Rehabilitation of the land after construction	No construction camps are envisaged as the site is within urban area.
		Removal of trees	(i) Compensation for the trees cut	No private trees are envisaged to be removed.
		Cultural properties	(i) Avoidance through design modifications	Project design seeks to leave cultural properties, where they exist, undisturbed.
			(ii) Relocation costs to be covered in the project, if needs relocation	Question does not arise.
		Common property resources	(i) Avoidance through design modifications	No Common Property Resources are being disturbed by project, except for roads.
(ii) Relocation costs to be covered in the project, if needs relocation	Question does not arise.			
Traffic during construction	(iii) Provision of alternate routes or prior notice to the users	Traffic Management Plan catering to these needs will be prepared.		
7	Finalization of alignment	Concerns of community	(i) Community concerns to be incorporated	Project seeks to improve condition for pedestrians & cyclists on existing roads. This aligns well with community concerns. Only those feeder roads that link the surrounding area to BRT corridor are being improved. Those which are wide enough will incorporate segregated cycle tracks. No land acquisition is being resorted to for incorporating improvements. Existing shops, temples, utilities & facilities along roads are being preserved by deviating footpaths / cycle tracks. Trees are being preserved by realignment of improvement proposal & where unavoidable, trees are being transplanted nearby.
		Environmental impacts identified	(ii) Impacts identified are to be mitigated by incorporation of provisions as per ESMF and EMP for subprojects in SUTP	No adverse environmental impacts are expected from project. Care to mitigate adverse impacts during construction phase is being proposed.
		Design aspects	(iii) Impacts that can be mitigated through design modifications should be incorporated	Only beneficial environmental impacts are designed to flow from project. Care to mitigate any adverse impacts during construction phase is being ensured.
8	Preparation of detailed drawings	All concerns/impacts identified	(i) Designs for enhancements and mitigation measures including cost provisions	All measures & costs accounted for in detailed designs.

Sl. No.	Activity	Items to consider	Measures to address	Observations of the Design Consultant
9	Monitoring of Progress	All environmental aspects identified	(i) Monitoring implementation of Environmental measures	Project Management Consultant will ensure monitoring of environmental measures

(B) Environmental Concerns during project implementation – to be identified in DPR

Sl. No	Activity and Sub Activity	Impact/s	Measures	Observations of the Design Consultant
A	Pre – Construction Activities			
A1.0	Project site identification	-Nil-	(i) Co-ordination with Revenue Department	Project seeks to improve condition for pedestrians & cyclists on existing public roads of Pune Municipal Corporation. The question, therefore, of co-ordination with Revenue Department does not arise.
A2.0	Relocation of utilities	Impact on current usage	(i) Identification of relocation site in advance	Detailed drawings will show the location for relocation of utilities like electricity distribution poles, where required.
			(ii) Scheduling the activity in consonance with the community usage pattern	Community usage pattern will not be disturbed.
A3.0	Tree Felling	Compliance with Forest Act in case trees are on forest land	(i) Prior clearance from Forest Department	Project area does not include forest land.
		Loss of canopy	(ii) Compensatory plantations & landscape designs	Any trees that cannot be bypassed will be transplanted nearby..
A4.0	Clearance of land	Affect on livelihood	(i) As per project provisions	Project does not envisage any clearance of land & will not affect livelihood.
		Affect on cultural properties	(ii) Design modifications or Relocation of the cultural properties	Design seeks to bypass cultural properties.
		Affect on natural habitats	(iii) Constraining construction activities to construction site only with adequate physical barriers while constructing close to natural habitats	Project area does not encompass any natural habitats.
A5.0	Diversion of forest land	Compliance with Forest Act	(i) Activity scheduling to avoid delays, conformance to legal requirements	Project area does not include forest land.
		Affect on flora	(ii) Constraining construction activities to construction site only with adequate physical barriers while constructing close to natural habitats	Project area does not include forest land.
		Pollution from construction activities	(iii) Precautions while operating equipment/machinery	Project area does not include forest land.
A6.0	Transfer of land ownership	Grievances from community	(i) Addressal through Grievance Redressal Mechanisms & Consultations	Project does not seek to transfer any land ownership.
		Affect on livelihood	(ii) Provision of entitlements as per resettlement framework	Project does not seek to transfer any land ownership.
A7.0	Location of Storage Yards, labour camps, and construction sites	Pollution from construction camps, storage yards & labour camps	(i) Location criteria to be adopted	Project consists of improvement of existing roads in developed parts of the city & therefore no large storage yards or construction camps will be set up.

Sl. No	Activity and Sub Activity	Impact/s	Measures	Observations of the Design Consultant
			(ii) Obtain clearances from SPCB	As no Storage Yards or labour camps are to be established, the question of obtaining clearance from SPCB does not arise.
		Pressure on local infrastructure	(iii) Contractor has to arrange for infrastructure required as per requirements of the construction activity himself to avoid pressure on local resources	Contractor will arrange for infrastructure required as per requirements of the construction activity himself to avoid pressure on local resources
A8.0	Procurement of equipments and machinery	Machinery likely to cause pollution at settlements and natural habitats	(i) Machinery to be procured shall be in conformance with emission standards of CPCB	The improvement contemplated does not need any heavy machinery. It is mainly a labour intensive work as footpaths are to be finished with interlocking blocks which need to be hand laid. Cycle tracks are to be finished with mastic asphalt surface which again involves hand laying process. Whatever machinery that may be required will be conforming to CPCB norms.
		Safety concerns in machinery operation	(ii) Safety equipment for workers	Workers will be provided with safety equipment for machinery operation.
A9.0	Identification and Selection of Material Sources	Conflict of uses in case of water	(i) Consultations and arrangements at contractor-individual levels, documentation of agreement	Water quantity required is minimal & is to be procured from private water tankers
		Borrowing causes depressed lands	(ii) Consultations and arrangements at contractor-individual levels, documentation of agreement	As the Project is situated in developed urban area, borrow pits are not expected. Material is to be procured through market.
		Pollution due to material extraction from borrow and quarry areas to surrounding environment	(iii) Precautionary measures during siting of borrow areas and quarry areas	As the Project is situated in developed urban area, borrow pits or quarrying is not expected. Material is to be procured through market.
		Disturbance to Natural Habitats	(iv) Avoidance of location of material sources in Natural Habitats	Project area is situated in developed urban area & does not encompass any natural habitats.
A10.0	Waste disposal	Pollution due to location close to settlements, water bodies & other sensitive areas	(i) Waste to be disposed off at predesignated disposal sites and should be located away from habitation, natural habitats, catchment areas of waterbodies and arrangements should be made to avoid leachate entering ground water.	Waste is to be disposed off at predesignated disposal sites of the Pune Municipal Corporation.
B	Construction Activities			
B1.0	Site Clearance			
B1.1	Clearing and Grubbing	Effect on vegetation	(i) Restricting movement of machinery/equipment	Project area is situated in developed urban area & will not entail any adverse effect on vegetation due to movement of machinery or equipment. Project is not expected to make any significant use of machinery or equipment.
		Debris generation creating unsightly conditions	(ii) Disposal / storage of grubbing waste and possible reuse	To the extent possible, reuse of grubbing waste is to be made within the Project. Disposal will be made to appointed sites.
B1.2	Dismantling of existing facilities / structures	Generation of Debris creating unsightly conditions	(i) Disposal of waste and likely reuse	To the extent possible, reuse of debris generated in dismantling process will be made.
		Flooding due to interception to drainage paths	(ii) Provision of diversion channels and/or scheduling construction of culverts in dry months	No serious flooding is expected during construction process. CD works already exist to full width on all roads in the Project.

Sl. No	Activity and Sub Activity	Impact/s	Measures	Observations of the Design Consultant
B2.0	Planning Traffic diversions and Detours	Inconvenience to public	(i) Activity scheduling, identification of alternative track	As the roads identified are feeder type roads with alternatives & cross connections, no special traffic diversions will be needed. Activity is scheduled to proceed in two stages & will cause minimal disturbance to daily life.
B3.0	Material Procurement	Formation of stagnant water pools due to borrowing/quarrying	(i) Rehabilitation plan for borrow areas & quarry areas	Formation of stagnant water pools due to borrowing/quarrying will not happen in the Project area as these materials are to be procured through market.
		Illegal quarrying / sand mining	(ii) Conformance of quarries selected to the SPCB requirements, including quarry rehabilitation plans	Project area is situated in developed urban area. As the materials are to be procured through market, Project does not envisage quarrying or mining in Project area.
		Uncontrolled blasting at quarries	(iii) Controlled blasting to the extent required. Conformance to blasting rules as per the Indian Explosives Act	No blasting is to be done in the Project area.
B4.0	Materials handling at site			
B4.1	Storage of materials	Contamination to water sources, leaching into ground water	(i) Provision of impervious base to storage areas	Storage of materials will use impervious base.
B4.2	Handling of earth	Dust rising and increase in particulate concentration in ambient air	(i) Use of dust suppressants	Use of dust suppressants will be ensured in the Project.
B4.3	Handling of fly ash	Increase of particulate concentration and contamination of nearby areas	(i) Use of dust suppressants	Project does not envisage handling & use of fly ash.
B4.4	Handling of granular material	Risk of injury to workers	(i) Use of Personal Protective Equipment	Use of personal protective equipment for handling of granular material will be ensured to avoid risk of injury to workers.
B4.5	Handling of bituminous materials	Leaching of materials, contamination of water sources	(i) Provision of impervious base at bitumen storage areas	Provision of impervious base at bitumen storage areas will be ensured to avoid possibilities of leaching & contamination of ground water.
		Air pollution	(ii) Control of emissions from mixing	Control of emissions from handling of bituminous materials causing of air pollution will be ensured.
B4.6	Handling of oil/diesel	Contamination from accidental spills	(i) Prevention of accidental spills, affecting cleaning immediately after spill	Careful handling of oil/diesel to avoid contamination from accidental spills will be ensured. Immediate cleaning of any accidental spill will be ensured.
		Pollution due to incomplete burning	(ii) Ensure complete combustion of fuel through regular maintenance of equipment	Equipment will be kept in regular maintenance to ensure complete combustion of fuel for avoiding pollution due to incomplete burning.
B4.7	Waste management	Littering of debris at construction site	(i) Waste to be disposed at disposal locations only	Waste will be disposed only at disposal locations identified by the Pune Municipal Corporation.
		Contamination of surroundings due to runoff from construction site	(ii) Prevention of runoff from entering water bodies	Prevention of runoff from entering water bodies will be ensured on site.
B4.8	Operation of construction equipments and machinery	Air & Noise pollution	(i) Conformance to Emission standards and norms	Conformance to emission standards and norms of construction equipments and machinery will be ensured to prevent undue noise & air pollution.

Sl. No	Activity and Sub Activity	Impact/s	Measures	Observations of the Design Consultant
		Operational safety of workers	(ii) Conformance to Safety concerns of the road users and workers in operation, first aid provision and mandatory provision of Personal Protective Equipment	Conformance to safety concerns of the road users and workers in operation, first aid provision and provision of personal protective equipment will be made mandatory.
B4.9	Movement of Machinery	Trampling of vegetation	(i) Restriction of movement to construction site	Construction site consists of .entirely developed urban roads, nevertheless restriction of movement of machinery on & to construction site will be ensured for avoiding trampling of any vegetation.
		Damage to flora & natural habitats	(ii) Minimizing impact on vegetation	Project area is situated in developed urban area & is devoid of any flora or natural habitats. Nevertheless, effort will be made to minimise impact on local vegetation.
		Damage to road side properties	(iii) Minimizing impacts on private and common properties, including religious structures	Project does not envisage causing any impact on private and common properties, including religious structures.
B5.0	Earthworks	Waste generation	(i) Safe disposal of waste & possible reuse	Effort will be made to the extent possible to reuse waste material from earthwork & safe disposal of unused material.
		Dust Rising	(i) Dust suppression with water	Dust suppression with water will be achieved to the extent possible.
		Contamination of water bodies/ water courses	(i) Control measures as silt fencing, vegetative barriers etc	Contamination of water bodies/ water courses will be avoided with control measures such as silt fencing, vegetative barriers etc
			(ii) Avoiding disposal of liquid wastes into natural water courses	Disposal of liquid wastes into natural water courses will be avoided to wean out possibility of contamination of water bodies/ water courses.
B5.1	Maintenance at construction camp	Collection of rainwater in construction camps	(i) Temporary drains during construction	No construction camp is expected to be set up in the Project area as it is right within a developed urban area.
		Waste water from labour camps	(i) Disposal of waste water into soak pits	No construction camp is expected to be set up in the Project area as it is right within a developed urban area.
		Contamination of soil	(i) Removal of oil / other chemical spills & wastes	No construction camp is expected to be set up in the Project area as it is right within a developed urban area.
B6.0	Construction Material Use	Extensive extraction of quarry materials	(i) Use of locally available materials	Materials available from local market will be used in the Project. No quarry is being set up in the Project area for the purpose.
		Extensive water requirement	(i) Scheduling the activity in wet months	Project does not have extensive water requirement & the demand will not adversely impinge on local needs as water will be procured from market source of water tankers.
			(ii) Avoiding conflict of uses due to water extraction from construction	No water will be extracted from ground for construction purposes.
		Pollution of water channels during construction	(i) Control of sediment runoff	Control of sediment runoff for prevention of pollution of water channels during construction will be ensured.
B7.0	Bitumen works	Safety of Workers	(i) Mandatory use of Personal Protective Equipment	Mandatory use of personal protective equipment will be enforced during use of construction material for safety of workers
		Worker's safety during handling of hot mix	(i) Mandatory use of Personal Protective Equipment	Mandatory use of personal protective equipment will be enforced in bitumen works for worker's safety during handling of hot mix
			Damage to vegetation (burning/ cutting)	(ii) Avoiding use of wood as fuel for heating bitumen
			(iii) Hot mix plant location on waste lands	No large scale hotmix plant is required for the Project.

Sl. No	Activity and Sub Activity	Impact/s	Measures	Observations of the Design Consultant
		Contamination due to bituminous wastes	(iv) Reuse or Land filling of bituminous wastes	Bituminous wastes will be reused or used for land filling in order to remove possibility of contamination.
		Impacts on Air quality	(v) Ensuring compliance of hotmix plants with the CPCB emission standards	Compliance of hotmix plants with the CPCB emission standards will be ensured to reduce impacts on air quality.
B8.0	Concrete works	Contamination of surroundings due to concrete mixing	(vi) Mixing concrete at designated locations away from habitation and agriculture lands	The Project does not envisage use of concrete for construction.
B9.0	Enhancements	-Nil-	(i) To be included in DPR	All the possible enhancements for construction activities will be included in DPR
B10.0	Monitoring environmental conditions	-Nil-	(i) To be as per the codes of environmental practice	Project Management Consultant will ensure monitoring of environmental measures as per the codes of environmental practice.
C	Post Construction Activities			
C1.0	Clearing of construction camps			No construction camps are expected to be erected for the Project.
C1.1	Campsite restoration	Change of landuse due to setting up of construction camp	(i) Campsite to be restored to its original condition as per the rehabilitation plan	No construction camps are expected to be erected for the Project.
C1.2	Dismantling of campsite	Waste generation at the construction site	(iii) Disposal of waste at designated locations	No construction camps are expected to be erected for the Project.
C2.0	Clearing of Water Channels, side drains and culverts	Generation of debris & silt	(i) Removal of Debris and disposal	Debris & silt generated will be removed by clearing of water channels, side drains and culverts.
C3.0	Rehabilitation of borrow areas	-Nil-	(i) Top soil restoration, revegetation	There will not be any borrow areas in the Project.
C4.0	Clearing of encroachments	Loss of livelihood	(i) Precautionary measures to avoid encroachments	Precautionary measures to avoid encroachments to overcome loss of livelihood has been incorporated in the Project

(C) Social Concerns in DPR Preparation

S. No	Activity	Items to consider	S. No	Measures to Address	Observations of the Design Consultant
1	Preliminary Project Information	Land Acquisition	(i)	Estimation of land requirement by ownership for the project	Project does not envisage land acquisition.
		Structures Lost	(i)	Estimate likely number of loss	All structures are saved by design.
		Assets Lost			No assets will be lost.
		Cultural properties			No cultural properties are being affected.
		Community facilities			No Community facilities are being affected.
2	Detailed Surveys	Census Survey	(i)	Conduct census and socio-economic survey to identify number of PAPs, structures, assets lost, vulnerable groups	Project does not seek to affect any properties & hence no census survey necessary. However, baseline can be inferred from secondary data.

S. No	Activity	Items to consider	S. No	Measures to Address	Observations of the Design Consultant
		Socio-Economic Survey		impacted, squatters and encroachers.	Project does not seek to affect any properties, squatters or encroachers & hence no socio-economic survey necessary. However, a sample survey conducted in experimental & control areas to establish pre-test baseline for evaluation purposes.
		Cultural property surveys	(i)	Inventory of cultural property impacted	Project does not seek to affect any cultural properties.
		Common property resources	(i)	Inventory of common property resources impacted	Project does not seek to affect any common property resources.
4	Assessment of Social Impacts	Loss of land	(i)	Estimate extent of loss of land by PAPs	No occupied land is being affected in the Project.
		Loss of property	(i)	Estimate number of structures impacted including partial and total impacts	Project does not affect any property.
		Loss of livelihood	(i)	Estimate number of livelihoods lost including employees/workers in commercial/industrial establishments	No livelihoods will be lost (including employees/workers in commercial/industrial establishments) due to Project.
		Impacts on squatters	(i)	Number of squatters and encroachers to be identified	No squatters and encroachers are to be affected by the Project.
		Impacts on encroachers	(ii)	Separate lists for mobile/ambulatory vendors to be compiled	Mobile / ambulatory vendors are not affected by the Project, hence no need to compile lists for them.
		Impacts on vulnerable groups	(i)	Estimate number of vulnerable groups impacted	No vulnerable groups will be adversely impacted by the Project.
		Impacts on cultural properties	(i)	Estimate number of cultural properties impacted	No cultural properties are being impacted in the Project.
		Impacts on community properties	(i)	Estimate number of community properties impacted	No community properties are being impacted in the Project.
6	Consultations with community	Socio-Economic Survey	(i)	Conduct consultations with community informing survey timings and purpose	A sample survey has been conducted in experimental & control areas to establish pre-test baseline for evaluation purposes.
		Census Survey			Project does not seek to affect any properties & hence no census survey necessary. However, baseline can be inferred from secondary data.
		Cultural properties	(i)	Avoidance through design modifications	Cultural properties are being saved through design modifications.
			(ii)	Relocation costs to be covered in the project, if needs relocation	No relocation of Cultural properties is involved in the Project.
		Common property resources	(i)	Avoidance through design modifications	Common property resources are not being affected by design.
			(ii)	Relocation costs to be covered in the project, if needs relocation	Common property resources are not being affected by design & hence no relocation costs are involved.
		Compensation and Assistance	(i)	Information dissemination on entitlement matrix and the provisions for compensation and assistance	As the Project neither envisages any land acquisition nor will it affect any livelihood, the question of payment of compensation does not arise.
Grievance Redressal	(i)	Sort grievances related to compensation amount for land, valuation of structure and payment of compensation and assistances	As the Project neither envisages any land acquisition nor will it affect any livelihood, the question of any grievances about compensation will not arise.		
7	Finalization of alignment	Concerns of community	(i)	Identify concerns of community regarding project outcomes	Only existing major feeder roads connecting communities with the BRT have been included in the Project for improving conditions for pedestrians & cyclists on them. The question of further finalising the alignment, therefore, does not arise. Opinion survey on a small sample of households within Project area has been conducted.

S. No	Activity	Items to consider	S. No	Measures to Address	Observations of the Design Consultant
		Social Impacts	(i)	Consultations to identify any other social impacts as seen by the community	As the Project seeks to improve conditions for pedestrians & cyclists, no adverse impacts on vulnerable sections of the community are expected. In fact, the Project seeks to improve their lot.
		Design aspects	(i)	Explore possible changes in design in order to reduce social impacts to minimum	Design mandate is sensitive to the needs of the weaker lot. social impacts have been reduced to minimum in the design.
8	Preparation of detailed drawings	All concerns/impacts identified	(i)	Designs for enhancements and mitigation measures including cost provisions	Project design includes enhancements & mitigation measures. Suitable locations for cycle parking, bus queue shelters, street furniture, and tree shade are incorporated in the design & cost of the Project.
9	Monitoring of Progress	All social aspects identified	(i)	Monitoring implementation of social measures	Project has identified all social aspects for monitoring.

(D) Social Concerns in Implementation – to be identified in DPR

Sl.No.	Activity and Sub Activity	Impact/s		Measure/s	Observations of the Design Consultant
A	Pre – Construction Activities				
A1.0	Project site identification	-Nil-	(i)	Co-ordination with Revenue Department	The Project envisages improvement in existing Right of Way of Municipal roads & as such the question of co-ordination with Revenue Department does not arise.
A2.0	Relocation of utilities	Impact on current usage	(i)	Identification of relocation site in advance	Utilities are not sought to be relocated away from existing Right of Way of Municipal roads.
			(ii)	Scheduling the activity in consonance with the community usage pattern	No disturbance to community usage pattern of utilities is expected in the Project.
A3.0	Clearance of land	Loss of Land	(i)	As per provisions in Entitlement Framework	No loss of land is envisaged in the Project.
		Loss of Structure and Assets	(i)	As per provisions in Entitlement Framework	No loss of structures or assets is envisaged in the Project.
		Affect on livelihood	(i)	As per provisions in Entitlement Framework	No loss of livelihood is envisaged in the Project.
		Affect on cultural properties	(i)	Design modifications or Relocation of the cultural properties	Design modifications have been incorporated to avoid affect on cultural properties.
		Affect on community properties	(i)	Design modifications or Relocation of the community properties	Design modifications have been incorporated to avoid affect on community properties.
B	Construction Activities				
B1.0	Site Clearance	Affect on assets	(i)	A 2 months notice shall be given for the removal of structures (Included as part of provisions in Entitlement Framework).	Design modifications have been incorporated to avoid affect on assets.
			(ii)	The owner/tenant (in cases where a tenant occupies the structure) shall be given the right to salvage material from the structure (Included as part of provisions in Entitlement Framework).	Design modifications have been incorporated to avoid affect on assets.
		Affect on Squatters (including mobile and ambulatory vendors)	(i)	Benefits and assistances to be provided as per the Entitlement Framework	Squatters (including mobile and ambulatory vendors) are not sought to be affected by the Project.

SI.No.	Activity and Sub Activity	Impact/s		Measure/s	Observations of the Design Consultant
		Affect on Encroachers	(i)	Encroachers will be notified a time in which to remove their assets (Included as part of provisions in Entitlement Framework).	Design modifications have been incorporated to avoid affect on encroachers.
			(ii)	Right to salvage materials from the demolished structure (Included as part of provisions in Entitlement Framework).	Design modifications have been incorporated to avoid affect on encroachers.
		Affect on agricultural crops	(i)	A four months advance notice shall be given to salvage crops.	No agricultural crops are grown in the Project area.
		Affect on perennial crops such as fruit trees	(i)	Compensation as per Entitlement Framework	No perennial crops are grown in the Project area.
		Temporary loss of access	(i)	Alternative access to be provided	Temporary loss of access will be overcome by alternative access to be provided.
B2.0	Dismantling of existing facilities / structures	Temporary loss of usage of facilities	(i)	Scheduling the activity in consonance with the community usage pattern	No temporary loss of usage of community facilities is envisaged in the Project.
B3.0	Planning Traffic diversions and Detours	Inconvenience to public	(i)	Activity scheduling, identification of alternative track	Activity scheduling has been designed to minimise inconvenience to public. Identification of alternative track for pedestrians will be signed & marked. No traffic diversions are needed as the Project does not close carriageways.
		Temporary loss of access	(i)	Alternative access to be provided	Temporary loss of access will be overcome by alternative access to be provided.
B4.0	Materials handling at site	Construction workers health impacts	(i)	Provision of first aid facilities in construction camp	Project does not envisage erection of construction camp. However, provision of first aid facilities on construction site will be mandated.
			(ii)	Emergency health care in the form of ambulances to be made available	Project does not envisage erection of construction camp. However, as the Project is situated in the developed parts of a metropolitan city, ambulance services are only a telephone call away.
		Construction workers and host population health concerns	(i)	Awareness programmes on HIV/STDs	The Project size will not influence local labour market or host population significantly to warrant inception of a special awareness programme on HIV/STDs.
			(ii)	Free health check ups and distribution of condoms	The Project size will not influence local labour market or host population significantly to warrant inception of a special drive of free health check ups and distribution of condoms programme.
			(iii)	Periodic checking of drinking water quality, sanitation and waste disposal mechanism	Contractor to make arrangement for drinking water for labour. However, labour will make use of Municipal sanitation facilities & waste disposal mechanism.
B5.0	Operation of construction equipments and machinery	Operational safety of workers	(i)	Conformance to Safety concerns of the road users and workers in operation, first aid provision and mandatory provision of Personal Protective Equipment	Contractor will ensure conformance to safety concerns of the road users and workers in operation, first aid provision and mandatory provision of personal protective equipment.
B6.0	Construction Material Use	Safety of Workers	(i)	Mandatory use of Personal Protective Equipment	Contractor will make available personal protective equipment for use by workers handling construction material. .

Sl.No.	Activity and Sub Activity	Impact/s		Measure/s	Observations of the Design Consultant
C	Post Construction Activities				
C1.0	Rehabilitation activities	Relocation site	(i)	Ensure compliance with Entitlement Framework provisions	Project does not envisage affecting existing activities & hence no rehabilitation of activities is needed.

Annex – 6: Environmental Management Framework

Project Stage	Impact	Type of Project Intervention / GEF OP 11 Priority	Pune	Management Measure	Responsibility	Contract Clause	Observations of the Design Consultant
Location / Design / Pre-construction	Social / Resettlement Aspects						
	Acquisition of land for the facilities causes – R&R issues as loss of livelihood, loss of shelter, severance of community & social ties	Pedestrian / NMT Infrastructure Improvement	✓	Conducting Social Assessment (SA) and prepare a Resettlement Action Plan (RAP) to address these issues in accordance with the ESMF. All R&R activities shall be completed prior to start of civil works and the contractor will be provided project area that is free from encumbrances	PIU / Design consultant	Provisions for conduct of SA and RAP will be covered as part of the ToR provisions for Design Consultant. RAP implementation is to be carried out by the PIU with the help of Revenue Department and / or an external consultant whose ToR would cover the R&R implementation provisions with necessary time frame.	The Project design has consciously desisted from acquisition of extra land for the project. In fact, even informal development on streets is also not being touched. No R&R issues exist.
	Relocation of road appurtenances and utility lines	Pedestrian / NMT Infrastructure Improvement	✓	Prepare a Utility Relocation Plan in accordance with the clear land requirements for the project	PIU / Design Consultant / Supervision Consultant / Contractor	(i) Utility relocation plan is to be prepared by the Design Consultant. (this is to be covered as part of the ToR for Design Consultant) (ii) The contractor shall carry out relocation of utilities with in the project area and areas that are likely to be temporarily impacted. This relocation shall be in accordance with the Utility Relocation Plan and with the approval of the Engineer under the Supervision Consultant. All relocation works should be completed prior to start of civil works	The contract document will include the requisite clause.

Project Stage	Impact	Type of Project Intervention / GEF OP 11 Priority	Pune	Management Measure	Responsibility	Contract Clause	Observations of the Design Consultant
	Use of existing pavement widths that are encroached will cause removal of squatters and encroachments from roadsides causing loss of livelihood and loss of shelter	Pedestrian / NMT Infrastructure Improvement	✓	Appropriate measures as per the Resettlement Action Plan / Entitlement Matrix are to be undertaken	PIU / Supervision Consultant	Entitlements as per the RAP and entitlement matrix shall be calculated and disbursed as per the schedule provided in RAP	The contract document will include the requisite clause.
Construction Stage	Environmental Impacts						
	Temporary interruption to traffic and increase of emissions from vehicles due to higher idling times	Pedestrian / NMT Infrastructure Improvement	✓	A traffic management plan to address the traffic congestion issues that are likely to be encountered during the construction time is to be implemented	Supervision Consultant / Contractor	Necessary arrangements for diversion of traffic in the project areas shall be completed prior to initiation of civil works as per the Traffic Management Plan with prior approval of the Engineer of Supervision Consultant	The contract document will include the requisite clause.
	Temporary increase of noise levels due to idling and traffic snarls	Pedestrian / NMT Infrastructure Improvement	✓	Traffic management measures to be undertaken in accordance with the traffic management plan will avoid traffic snarls as well as idling traffic during construction	Supervision Consultant / Contractor	Necessary arrangements for diversion of traffic in the project areas shall be completed prior to initiation of civil works as per the Traffic Management Plan with prior approval of the Engineer of Supervision Consultant	The contract document will include the requisite clause.
	Air and noise pollution from construction activities	Pedestrian / NMT Infrastructure Improvement	✓	All construction machinery shall be complaint with the air and noise pollution norms of CPCB for construction equipment. Construction activities causing high ambient noise during night time will be avoided and such activities will be restricted to day time. All vehicles plying for construction activities will strictly adhere to emission norms prevailing in the country. Dust suppression measures as watering of construction site shall be carried out to	Supervision Consultant / Contractor	The contractor shall ensure compliance of all construction machinery and equipment with the emission standards of CPCB. All vehicle shall regularly be checked for emissions and ensured that they have a PUC Certificate	The contract document will include the requisite clause.

Project Stage	Impact	Type of Project Intervention / GEF OP 11 Priority	Pune	Management Measure	Responsibility	Contract Clause	Observations of the Design Consultant
				reduce dust pollution.			
	Alternate traffic diversion routes increasing route length and consequently emissions	Pedestrian / NMT Infrastructure Improvement	✓	A traffic management plan to divert and / or manage the traffic flow along the project roads or circumvent project sites shall be notified to the residents through display signs as well as newspaper advertisements	Supervision Consultant / Contractor	The contractor shall notify the residents through appropriate medium in vernacular on the traffic diversions undertaken prior to implementation	The contract document will include the requisite clause.
	<p>Construction / reconstruction / improvement will result in minor construction issues as:</p> <p>(i) Generation of noxious gases during construction – increasing air pollution</p> <p>(ii) Temporary increase in noise pollution during construction</p> <p>(iii) Contamination of road runoff with construction material stacked on road side</p> <p>(iv) Traffic safety during construction</p> <p>(v) Traffic diversions causing lengthening of routes increasing air emissions and exposing previously unexposed</p>	Pedestrian / NMT Infrastructure Improvement	✓	The environmental management plan will offset any construction issues that may arise with the implementation of the EMP.	Supervision Consultant / Contractor	The contractor shall implement the EMP in its spirit of offsetting any environmental impacts that may arise from implementation of the project	The contract document will include the requisite clause.

Project Stage	Impact	Type of Project Intervention / GEF OP 11 Priority	Pune	Management Measure	Responsibility	Contract Clause	Observations of the Design Consultant
	neighbourhoods' to noise (vi) Formation of mud puddles and depressions will cause to spread vector borne diseases						
	Indiscriminate disposal of construction debris in and around construction sites will cause unhygienic conditions in the area	Pedestrian / NMT Infrastructure Improvement	✓	Disposal sites are to be identified prior to start of dismantling or construction activities in the project area. The sites are to be located away from environmentally sensitive areas and ground water recharge areas. The disposal site should be prepared for collection of leachate in case of disposal of hazardous material as bitumen wastes to avoid contamination of ground and surface water sources. The selected sites should be approved by the supervision consultant and consent to dispose should be provided in writing. Necessary permissions and clearances from the local government and the public should be obtained by the contractor and scrutinised subsequently by the Supervision Consultant.	Supervision Consultant / Contractor	The contractor shall prior to start of construction and dismantling operations identify potential sites for disposal of hazardous construction debris, sites for general construction wastes and domestic wastes from construction camps. The contractor has to obtain approval on identified sites from the Engineer of Supervision Consultant and disposal shall be only after consent letter from the Engineer	The contract document will include the requisite clause.
	Alternate traffic diversion routes exposing previously low traffic routes to higher urban traffic and increasing air / noise pollution	Pedestrian / NMT Infrastructure Improvement	✓	A traffic management plan to address the traffic congestion issues that are likely to be encountered during the construction time needs to be prepared. All construction machinery shall be complaint with the air and noise pollution norms of CPCB for construction equipment. Construction activities	Supervision Consultant / Contractor	Contractor shall adhere to the provisions of the EMP and the traffic management plan.	The contract document will include the requisite clause.

Project Stage	Impact	Type of Project Intervention / GEF OP 11 Priority	Pune	Management Measure	Responsibility	Contract Clause	Observations of the Design Consultant
				causing high ambient noise during night time will be avoided and such activities will be restricted to day time. All vehicles plying for construction activities will strictly adhere to emission norms prevailing in the country. Dust suppression measures as watering of construction site shall be carried out to reduce dust pollution.			
Social / Resettlement Aspects							
	Accidental spillage of construction activities to adjacent lands result in temporary relocation and loss of access	Pedestrian / NMT Infrastructure Improvement	✓	Accidental spillages to adjacent lands shall be prevented by barricading the construction site to avoid visual blight. Adequate care as to provide bunds and silt fencing to avoid contaminated flows entering the adjacent lands. Any accidental spillages and trampling shall be made good by the contractor. Adjacent lands required for ease of construction or for facilitating construction during the construction period would be temporarily acquired and compensation as per entitlement matrix is to be paid to the owner / occupant as the case may be. Return of the site to the owner / occupant should be in condition prior to its temporary acquisition or in a condition that is to the satisfaction of the owner / occupant	Supervision Consultant / Contractor	Contractor shall undertake necessary precautionary measures for avoidance of accidental spillage of construction material and debris outside the construction site. Any accidental spillages and impacts on the adjacent lands shall be made good by the contractor. Any temporary acquisitions shall be returned to the owner in its original condition or to the satisfaction of the owner	The contract document will include the requisite clause.
	Construction activities may cause accidental damages to utilities in the project area	Pedestrian / NMT Infrastructure Improvement	✓	Necessary and adequate care shall be taken by the contractor to avoid accidental impacts on the nearby utilities. Any potential utility that is likely to be	Supervision Consultant / Contractor	The contractor shall take necessary and adequate care to avoid accidental impacts to nearby utilities. Any accidental impacts shall be made good	The contract document will include the requisite clause.

Project Stage	Impact	Type of Project Intervention / GEF OP 11 Priority	Pune	Management Measure	Responsibility	Contract Clause	Observations of the Design Consultant
				damaged or impacted during the construction period should be shifted / relocated prior to start of construction or necessary alternate arrangements in consultation with the community is to be undertaken		by the contractor.	
	Influx of construction workers in the project areas has the potential to increase spread of HIV/AIDS and other STDs	Pedestrian / NMT Infrastructure Improvement	✓	Adequate HIV / AIDS and STD awareness campaigns are to be conducted regularly in the construction camps to educate the construction workers on the transmission of the disease and precautionary measures towards prevention.	Supervision Consultant / Contractor	The Contractor shall organise HIV / AIDS and STD awareness campaigns in the construction camps. The contractor shall as necessary and as directed by the Supervision Consultant provide for Condom Vending machines in the construction camps. All necessary provisions for hygiene of the workers shall be taken in the construction camps	The contract document will include the requisite clause. However, the project does not expect to increase influx of workers. It will draw on the existing pool of daily workers in the city. No construction camps are envisaged.
Operation Stage	Improvement in safety of pedestrians	Pedestrian / NMT Infrastructure Improvement	✓	No measures required. This is a positive impact			No action required.
	Increase in signal time for red causing increase in idling and emissions from vehicles / noise	Pedestrian / NMT Infrastructure Improvement	✓	Display of signal times will be considered to inform road users and encourage switching off engines if waiting time is longer	PIU / PMU		No new signal installations are being planned as the roads are of feeder type. However, wherever required, signal times will be posted.
	Loss of usual transport routes due to delineation of pedestrian routes to NMT – bicycles / cycle rickshaws forcing them onto other roads increasing risk of accidents	Pedestrian / NMT Infrastructure Improvement	✓	Planning of the NMT / pedestrian routes will take necessary care to avoid such encroachments.	PIU / PMU		Roads are of feeder type & care is being taken to leave enough width for MV.

Project Stage	Impact	Type of Project Intervention / GEF OP 11 Priority	Pune	Management Measure	Responsibility	Contract Clause	Observations of the Design Consultant
	Loss of adequate frontage to commercial / residential establishments	Pedestrian / NMT Infrastructure Improvement	✓	Planning of the NMT infrastructure will take necessary care to avoid such situations	PIU / PMU		No loss of frontage is expected.
	Reduction of additional lane width for motorized vehicular traffic if existing road width is used for demarcating the cycle lanes	Pedestrian / NMT Infrastructure Improvement	✓	Planning of the NMT infrastructure will take necessary care to avoid such situations	PIU / PMU		Traffic calming is required for reducing speeds on feeder roads through reduction of lane widths for MV.