EXECUTIVE SUMMARY

for

Malwa Canal Project

(Baseline Monitoring Period- Pre-Monsoon Season (March-May 2025)

(Baseline Monitoring Period- Post-Monsoon Season (Oct-Dec 2025)

(Baseline Monitoring Period- Monsoon Season (June-Sept 2025)

ToR Proposal No.	**SIA/PB/RIV/541958/2025**
File No.	**2025/ToR/F/60**
Cultural Command Area	**86087 Ha.**
Location	**In Ferozepur, Faridkot &Sri Muktsar Sahib District of Punjab.**

APPLICANT

Department of Water Resources,
Government of Punjab

Environment Consultant :

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PRESERVING TOMORROW

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A QCI –NABET Accredited Organization

NABET

1.0 Introduction

The project involves construction of Malwa Canal starting near 8.46Km from Harike Headworks at village Jattanwali of Ferozepur district, spanning length of 141.07 km and ends near village Warring Khera of Sri Muktsar District. This proposed water carrier cum distribution channel will run in the district of Ferozepur, Faridkot and Muktsar of Punjab. Capacity of the canal is 2005.36 cusecs of water with CCA of 86087 Ha. The project is being designed as the malwa canal to the existing canal system and will reduce the stress of Sirhind Canal system.As per the topographical analysis of the area and surveys conducted the Natural Surface Levels (NSL) of the command area are majorly higher or somewhat in level with the proposed Full Supply Level (FSL) of the Malwa Channel. In this scenario, the most suitable and economical method of irrigation, i.e., through gravity flow cannot be applied. Hence, command through lift has been proposed for irrigating this area. Considering the environmental sustainability, it is proposed to provide the solar driven lifting pumps.

The standard ToR was issued by the State Level Environment Impact Assessment Authority, Punjab, on dated 11.07.2025, with identification number TO25B0502PB5318201N.

2.0 Project Proponent

The project is proposed to be developed by the Department of Water Resources Government of Punjab.

Table 1: Project Core Features

Parameter	Specification
Canal Length	141.07 Km
Culturable Command Area (CCA)	86,087 Hectares (ha)

As per various, the proposed Malwa Canal will also benefit water deficit villages in Abohar and Fazilka districts of Punjab state. The proposed channel shall havethe discharge capacity of 2005.36 cusecs, thus irrigating an area of approximately 2 lac hectare and shall be designed to be a reliable and efficient source of water for the area falling on left side of the canal. Thus, there will be increase in the crop yield of the area up to the state average which will favor the farmers of this region of the state, thus, contributing to the development of this region. The scenario of

declining ground water and poor ground water quality will be got improved on completion of this project.

Table 2: Salient Features of the Malwa Canal Project

1. GENERAL		
(a)	Name of the Project	Malwa Canal Project
(b)	Tehsil/District/State	Ferozepur, Faridkot and Sri Muktsar Sahib
(c)	Take Off Point	Harike Waterworks
(d)	Start Point-Latitude & Longitude	31° 4'46.60"N & 74°54'46.30"E
(e)	End Point-Latitude & Longitude	29°58'48.47"N & 74°34'54.04"E
(f)	River/River sub -basin/Basin	Sutlej Sub-basin
(g)	Location of command area	Tehsil Zira, Ferozpur, Faridkot, Kotakpura, Muktsar, Malout and Gidderbaha of District Ferozpur, Faridkot and Sri Muktsar Sahib
(h)	Accessibility	Project site is accessible through various village roads and highways. Some of the major roads are SH 703 A (Ferozepur Makhur Road), SH 20 (Ferozepur Zira Road), SH 5, SH 54, Faridkot Road, SH 754, SH 7 and SH 9. Ferozepur is approx. 16 km from canal in West direction.
(i)	Length of canal	141.07
(j)	Discharge Capacity of canal	2005.36 cusec
2.FINANCIAL ASPECT		
1	Estimated Cost	2528.1 Crores
2	B.C.Ratio	1.915:1
3. PARAMETERS OF MALWA CHANNEL		
(a)	Bed Width (in ft)	16.25
(b)	Full Supply Depth (in ft)	14.00
(c)	Free Board (in ft)	2.46
(d)	Side slope	1.50:1
(e)	Length of Canal	141.07 km
(f)	Thickness of slope pavers	100 mm
(g)	Thickness of HDPE Liners for slope	750 microns
4. ELECTRICAL CONSUMPTION		
(a)	Electrical consumption	16113.06 units
5. SAFETY MEASURES		

(a)	Safety ladder	Provided at every 1000 ft interval
(b)	Distance Marks and Boundary Pillars	Provided at every 500 ft interval

3.0 Location of the Project

The Malwa Irrigation Project is strategically located parallel to Rajasthan Feeder Canal in the State of Punjab. Project will fall underBlocks/Tehsils Zira, Ferozepur and KotKapura, under District Ferozepur; Block/TehsilFaridkot under District Faridkot; and Blocks/Tehsils Sri Muktsar Sahib, Gidderbahaand Malout under District Sri Muktsar Sahib; Punjab respectively

Location is integral to the project's objective of enhancing irrigation capabilities and water management within the region. Water made available after completion of new Malwa Canal will act as alternate source of water that will have the potential to increase considerable amount of water availability in Sirhind Feeder.

- The Railway station at Butewala Railway Station 1.36 Km, West from project site.
- The nearest Airport is Amritsar Airport at about 65.0 km, Northfrom project site.

The geographical coordinates of the site are:

Latitude 31º4'46.83" N,

Longitude 74º54'45.55" E,

Toposheet No. 44J/10,44J/11, 44J/12,44J/13 & 44J/14.

4.0 Baseline Environmental Status

Baseline data was collected across three seasons [Pre-Monsoon Season (March-May 2025), Monsoon Season (June-Sept 2025) & Post-Monsoon Season (Oct-Dec 2025)] across a 10 km radius.

Physical Environment and Land Use

The geological foundation consists of competent bedrock (Deccan Traps/Vindhyan Sandstone). Land use analysis shows that 69.58% of the study area (1261.98 Sq. km) is utilized as cropland, highlighting the high agricultural dependency. The topography includes sloping terrain, categorized from gently sloping plains to steep slopes above 30 degrees in the catchment area.

Water Quality (Critical Baseline Status)

Water quality analysis revealed the following:

- **Groundwater:** Groundwater quality generally complies with IS 10500:2012 standards for drinking water. However, Total Dissolved Solids (TDS) and Alkalinity exceeded the Acceptable Limits (AL) but remained within the Permissible Limits (PL) in several locations.
- **Surface Water (Pollution Indicators):** Surface water quality presents a pre-existing environmental vulnerability. While physical parameters (pH, DO) are adequate, critical pollution indicators frequently breached regulatory criteria for bathing and fishing:
    - **Biochemical Oxygen Demand (BOD):** Max BOD reached 13.0 mg/l, significantly exceeding the CPCB Class B (Outdoor Bathing) standard of3 mg/l.
    - **Total Coliforms:** Maximum Total Coliforms peaked at 14.8 x 10^3 MPN/100ml, far surpassing the CPCB Class C (Drinking Water after treatment/disinfection) standard of5000 MPN/100ml and CPCB Class B standard of 500 MPN/100ml.
    - This highlights substantial microbial contamination originating from existing domestic and agricultural runoff.

Ambient Air Quality (AAQ) Status

Ambient Air Quality monitoring confirmed that all primary pollutants are within the stipulated National Ambient Air Quality Standards (NAAQS) for Residential/Rural areas across all three seasons monitored.

- The maximum 98thpercentile concentration of Particulate Matterrecorded was 89.2 µg/m^3, remaining below the NAAQS limit of 100 µg/m^3.
- Particulate Matter reached a maximum 98thpercentile of 40.2 µg/m^3, which is well below the NAAQS limit of µg/m^3.
- Gaseous pollutants, Sulphur Dioxide and Oxides of Nitrogen, showed very low levels, peaking at 12.8 µg/m^3 and 28.5 µg/m^3, demonstrating clean baseline air quality far below the 80 µg/ standard for both pollutants.

Ambient Noise Environment

Ambient noise monitoring confirms that the continuous noise levels (Leq) comply with the CPCB limits for Residential/Rural areas (Day: 55 dB(A), Night: 45 dB(A)) in all seasons.

- The average daytime ranged from 49.4 dB(A) to 52.9 dB(A), while nighttime was consistently low, ranging from 36.2 dB(A) to 39.3 dB(A).
- However, analysis of instantaneous peak noise events (Lmax) showed occasional exceedances of the 55 dB(A) daytime standard, particularly during the drier seasons. The highest instantaneous peaks (Lmax) reached up to 57.6 dB(A).

Soil and Biology

- **Soil Quality:** The dominant soil type, Lithic Ustorthents, exhibits "Severe Erosion Vulnerability". Soil testing categorized the soil as having low nitrogen (156 kg/ha to 271 kg/ha) but medium to high levels of organic carbon, phosphorus, and potassium, confirming its high agricultural suitability with proper fertilization.
- **Biological Environment:** The permanent loss of 459.0756 hectares of Dry Deciduous Forest mandates a specific Biodiversity Management Plan (BMP) and substantial Compensatory Afforestation (CA) efforts. Schedule I protected species, including the Pavo cristatus (Indian Peafowl), Naja naja (Indian Cobra), Ptyas mucosa (Rat Snake), Varanus benghalensis (Common Indian Monitor lizard), Urva edwardsii (Common Mongoose), Felis chaus (Jungle Cat), Vulpes bengalensis (Fox) and Hystrix indica (Indian Crested Porcupine), were recorded within the affected area.

5.0 Anticipated Impacts and Mitigation Measures

The potential adverse impacts were analysed for construction and operation phase, confirming that while temporary impacts are manageable, long-term changes require permanent, funded mitigation strategies.

Construction Phase Impacts (Air and Noise)

Fugitive dust emissions from unpaved haul roads were modelled, projecting a peak additional ground level concentration on the site will be an uncontrolled scenario near the road centreline. Mitigation relies heavily on regular water sprinkling (anticipated to achieve up to 70% dust suppression efficiency) and the mandatory use of tarpaulin covers for all material transport vehicles. Predicted noise levels resulting from heavy machinery operation at the nearest receptor villages ranged between 49.9 and 53.6 dB(A), maintaining compliance with the CPCB residential standard of 55 dB(A). The Occupational Health and Safety (OHS) plan mandates

Personal Protective Equipment (PPE), such as earplugs/muffs, for all 200 workers exposed to high-noise environments.

Operational Phase Impacts and Environmental Flow Commitment

Proposed canal is planned to be constructed to put the surplus water which is going unutilized, thus there is no negative impact of proposed canal on the water flow of existing canal or river system. Also there will not be any negative impact on downstream users. The project is planned not only to provide the irrigation facility in CCA but also drinking water supply in the affected villages. The project will reduce the impact on ground water aquifers and will also help in recharging the over exploited aquifers.

Geological and Seismic Risk Management

As the project is situated in Seismic Zone III, structural integrity relies on robust seismic design. The regulatory requirement for asite-specific earthquake parameters study must be fulfilled, and its final results must be submitted to the National Committee on Seismic Design Parameters (NCSDP) of the Central Water Commission (CWC) for mandatory technical approval. This rigorous regulatory oversight ensures the long-term safety of the structure against regional seismic hazards.

Table 3: Impacts and Mitigation Measures

Impact Category	Key Impact	Mitigation Measure
Land/Muck Management	Generation of excavated material	Entire muck generated shall be re-used for embankment filling and compaction
Air Quality (Construction)	Fugitive Dust Emissions	Modelling showed uncontrolled peak Ground Level Concentration (GLC), mitigation includes mandatory water sprinkling (up to 70% efficiency) and tarpaulin covers for the 50 transport vehicles.
Noise Levels	Equipment Noise (76-95 dB(A))	Predicted cumulative noise levels at the nearest receptor villages ranged complying with the CPCB residential limit of 55 dB(A). An Occupational Health and Safety (OHS) plan mandates PPE (earplugs/muffs) for all 200 exposed workers.

Impact Category	Key Impact	Mitigation Measure
Water Regime	Alteration of downstream flow	No impact as the surplus water will be routed to the proposed canal.

6.0 Analysis of Alternatives (Technology & Site)

The final project design is the result of an exhaustive analysis of alternatives (given in chapter 5 EIA/EMP), focusing on optimizing canal and selecting water-efficient technology.

Alternative Site Selection and Design Optimization

WRD, Punjab Govt. has no plansof getting altogether new ambitious Water Heads constructed away from present location ofSirhind and Rajasthan Feeder origin point at Harike Water Heads. The ponding and otherhydrological barrier related issues in Harike Lake is technically or hydrologically notfeasible. Huge budgetary constraints besides technical-legal complexities involved in Inter-State Water projects that prohibit scope of carrying out any re-routing or direction change inpresent design/ layout of Malwa Water Canal project.

Technological Rationale: Pressurized Pipeline Network

As per the topographical analysis of the area and surveys conducted the Natural Surface Levels (NSL) of the command area are majorly higher or somewhat in level with the proposed Full Supply Level (FSL) of the Malwa Channel. In this scenario, the most suitable and economical method of irrigation i.e., through gravity flow cannot be applied. Hence, command through lift has been proposed for irrigating this area.

7.0 Additional Studies & Socio-economic Management

Outcome of Public Consultation and Resettlement Status

The public consultation process confirmed that key community expectations revolve around receiving timely and adequate compensation for acquired land, job assurance for locals (particularly tribal workers), and the provision of social infrastructure and amenities.

The Resettlement and Rehabilitation (R&R) plan is being formulated in compliance with the RFCTLARR Act, 2013, ensuring that Project Affected Families (PAFs) receive fair compensation.

Risk Assessment and Disaster Management Plan (DMP)

A detailed Risk Assessment included the modelling of catastrophic scenarios, such as Overtopping Failure, Piping Failure, and Seismic Failure, to define downstream hazard zones and inform the Disaster Management Plan. The DMP establishes an Emergency Action Plan (EAP) with an Early Warning System (EWS) and defined institutional coordination with State and District Disaster Management Authorities. This risk-mitigation framework is supported by a financial provision of ₹80 Lakh specifically for the installation of alert systems and communication infrastructure. This sequential approachfrom mandatory technical design approval (NCSDP) to hazard modelling and finally to operational response fundingis essential for managing the inherent risks.

9.0 Project Benefits

The project will result in substantial and long-term regional benefits:

- **Agricultural and Economic Benefits:** The primary need for the Project stems from the urgent requirement for reliable irrigation in the region. As reported, the tail area of Sirhind canal system does not get its due canal water supply and people rely on ground water to meet the irrigation water needs. Further as per the DPR, average discharge of 4535 cu.ft per sec is released downstream Harike Headworks, out of which only 773 Cuft/sec is utilized upstream Hussainiwala Headworks for feeding its off taking channels, and the rest surplus quantity of Avg. 3762 Cuft/sec goes unutilized downstream Hussainiwala headworks towards Pakistan. The project will thus help in utilizing this surplus water and meet the irrigation water requirement of the area while reducing the dependency on ground water.
- funds new community infrastructure through dedicated CER and LADP provisions.
- **Environmental Needs**: The project will directly improve the condition of ground water system of the project area as the ground water resources are already over exploited. This canal will provide water for meeting the irrigation requirement while reducing requirement to withdraw the ground water by utilizing the surplus water going downstream the Hussainiwala Headworks. Further it is proposed to provide solar pumps

for lifting the water for supplying into the canal for irrigation purpose which will significantly save the emissions which may result from using electric or fuel based pumps

- **Socio-Economic Needs**: This is public utility project and this scheme has been approved for providing canal water for irrigation needs of various villages such as Makhu, Zira, Talwandi Bhai, Mudki, Kot Kapura, Jaito, Doda, Bhullar, Mandi Barriwala, Badal, Warring Khera indistricts Ferozepur, Faridkot and Sri Muktsar Sahib.As per various, the proposed Malwa Canal will also benefit water deficit villages in Abohar and Fazilka districts of Punjab state. The proposed channel shall havethe capacity of 2005.36 cusecs, thus irrigating an area of approximately 2 lac hectare and shall be designed to be a reliable and efficient source of water for the area falling on left side of the canal. Thus, there will be increase in the crop yield of the area up to the state average which will favor the farmers of this region of the state, thus, contributing to the development of this region. The scenario of declining ground water and poor ground water quality will be got improved on completion of this project. Further the project will provide drinking water to the affected villages

10.0 Environmental Management Plan (EMP)

The total calculated cost for the comprehensive EMP, including contingency provisions, is ₹6.34 Crore, underscoring the substantial financial commitment made by the proponent toward environmental stewardship and compliance.

Table 4: Budgetary Provision for Environmental Management Plan

S. No.	Components	Description	Unit	Quantity	Unit Cost	Total Cost
1	**Mitigation/Enhancement Cost**					
1.1	**Pre-construction Stage**					
1.1.1	Land Acquisition	Submerged Area	Covered in LA Budget			0
1.1.2	Water	Relocation and construction of affected hand pumps, water storage tanks, open wells, water taps, OHT etc.	Covered in Utility Shifting Budget			0

S. No.	Components	Description	Unit	Quantity	Unit Cost	Total Cost
1.2	**Construction Stage**					
1.2.1	Biodiversity Conservation	Compensatory measures under conservation of biodiversity management plan	Lumpsum			₹ 80,00,000
1.2.3	Plantation	Circular tree guard for protection of roadside plantation	Nos.	2000	₹ 500	₹ 10,00,000
1.2.4	Protection of Slope/ Embankment	Turfing of embankment with grasses and herbs/other engineering measures	Covered in Engineering Cost			₹ 0
1.2.5	Flora	Cost of transport and distribution of cooking fuel to construction workers	Covered in Engineering Cost			₹ 0
1.2.6	Air	Dust Management with water sprinkler arrangement	Tanker	1500	₹ 500	₹ 7,50,000
1.2.7	Transportation	Cover for vehicle transporting construction material	Vehicles	50	₹ 5,000	₹ 2,50,000
1.2.8	Solid Waste Disposal	Disposal of Sewage and Other waste in the construction yard and labour camps	Lumpsum			₹ 35,00,000
					Subtotal (a)	**₹ 1,35,00,000**
2	**Monitoring Cost**					
2.1	**Construction Stage**					

S. No.	Components	Description	Unit	Quantity	Unit Cost	Total Cost
2.1.1	Air	Sampling and monitoring of ambient air quality and gaseous pollutants as per CPCB Standards	Nos.	60	Rs. 6,000	Rs. 3,60,000
2.1.2	Water Quality	Collection of grab samples of water quality (Ground water + Surface Water)	Nos.	60	Rs. 5,000	Rs. 3,00,000
2.1.3	Noise	Monitoring Noise level at equipment yards, sensitive area and Settlements	Nos.	60	Rs. 2,000	Rs. 1,20,000
2.1.4	Soil	Sampling of Soil	Nos.	60	Rs. 5,000	Rs. 3,00,000
2.1.5	DG Set	DG Set Monitoring	Nos.	20	Rs. 5,000	Rs. 1,00,000
2.1.6	Plantation	Plantation on the approach road and green development	Covered in EMP			₹ 0
					Subtotal (b)	**₹ 11,80,000**
2.2	**Operation Stage**					
2.2.1	Air	Sampling and Monitoring of Ambient Air Quality and gaseous pollutants as per CPCB Standards of baseline monitoring as per direction by Environmental	Nos.	80	Rs. 6,000	Rs. 4,80,000

S. No.	Components	Description	Unit	Quantity	Unit Cost	Total Cost
		Specialist of the SC/AE for twice in period of 10 year.				
2.2.2	Water Quality	Collection of samples and analysis of water quality (Ground water + Surface Water at location baseline monitoring, Ground water, Surface water at 2 locations twice for 10 years other than monsoon period.	Nos.	120	Rs. 5,000	₹ 6,00,000
2.2.3	Noise	Monitoring Noise level of baseline monitoring as per direction by Environmental Specialist of the SC/AE for twice in period of 10 year.	Nos.	80	Rs. 2,000	₹ 1,60,000
2.2.4	Soil	Soil Sampling where baseline monitoring was done at a frequency of twice a year for 10 years	Nos.	80	Rs. 5,000	₹ 4,00,000
					Subtotal (C)	Rs. **16,40,000**
3	**Miscellaneous Cost**					
3.1	Fisheries Development	Development of Fisheries	Lumpsum			Rs. 42,62,500
3.2	Muck	Disposal of	Covered in Engineering Cost			-

S. No.	Components	Description	Unit	Quantity	Unit Cost	Total Cost
	Management	Muck				
3.3	Labour Safety & Amenities	Establishment of labour camp and providing PPEs	Lumpsum			Rs. 1,12,16,000
3.4	Disaster management Plan	Installation of alert systems, communication system and public information system	Lumpsum			Rs. 10,45,000
3.5	CAT Plan	Habitat Treatment, Soil and Water Conservation etc.	Lumpsum			Rs. 2,03,81,480
3.6	CAD Plan	Budgetary provision of command area (16,375 Ha) development	Lumpsum			Rs. 30,00,000
3.7	Local Area Development Plan	Community welfare development plan	Lumpsum			Rs. 30,00,000
3.8	Training	Training to Site engineer, Supervisor and Construction Workers on quarterly basis	Covered in Labour Safety			-
3.9	Advocacy and Policy Making	Holding meeting for policy planning and subsequent review meetings with revenue department, forest department, local representatives,	Quarterly	8	Rs. 50,000	Rs. 4,00,000

S. No.	Components	Description	Unit	Quantity	Unit Cost	Total Cost
		NGO etc. for 2 years.				
3.10	Administrative & logistics Charges	Organizing awareness program on Environmental Health and Road User safety awareness programme for 2 years	Six Monthly	4	Rs. 50,000	Rs. 2,00,000
3.11	Miscellaneous Items	1 set of Digital Camera, Sound level meter, GPS etc for each camp	Nos.	2	Rs. 1,00,000	Rs. 2,00,000
					Subtotal (d)	Rs. **4,37,04,980**
					Total Cost (a + b + c + d)	Rs. **6,00,24,980**
					Contingency @ 5% on Total Environmental Cost	Rs. **34,74,000**
					Grand Total	Rs. **6,34,98,980**
In Words: - Six crore, thirty four lakh, ninety eight thousand, nine hundred & eighty only.						

Catchment Area Treatment (CAT) Plan

The CAT Plan is prioritized for ensuring the project's longevity and protecting the gross storage capacity. The plan is based on the assessment showing the predominance of Lithic Ustorthents soils, which exhibit "Severe Erosion Vulnerability". The detailed plan budgets Rs. 2.04 Crore to implement biological and engineering measures. This treatment specifically targets high-risk areas falling under the 'Very Severe' and 'Severe' erosion categories (approximately 389.34 ha) identified using the Revised Universal Soil Loss Equation (RUSLE) and Silt Yield Index (SYI) methodologies. Successful implementation must occur to prevent premature siltation.

Muck Management and Utilization

The Muck Management Plan mandates maximum resource utilization. Out of 878,493 cubic meters of total muck generated, an exceptional 97.5% (8,56,835) is designated for immediate reuse in construction components like the access roads, and site reclamation. This resource

efficiency minimizes the environmental impact associated with external disposal sites, leaving only a minor fraction of 11,780 for controlled disposal.

Biodiversity Management Plan (BMP)

The Compensatory Afforestation (CA) at a 1:10 ratio, habitat improvement measures, and specific efforts for the protection of Schedule I species observed in the region. A dedicated activity within the plan targets the eradication of invasive species such as *Lantana camara* and *Parthenium hysterophorus*, which threaten native flora.

Command Area and Fisheries Development

The Command Area Development (CAD) Plan, budgeted at ₹30 Lakh, outlines the institutional framework for managing the efficient transition to the pressurized micro-irrigation system across the 86,087 ha CCA. A complementary Fishery Development Plan is provisioned with Rs. 42.63 Lakh to promote sustainable pisciculture using native species (Catla, Rohu, Mrigal) providing a sustained ancillary economic benefit.

Institutional Accountability and OHS

The EMP implementation will be overseen by the Water Resources Department (WRD) through a dedicated Environmental Management Cell (EMC) led by a designated Member (E&F). is dedicated to the Occupational Health and Safety (OHS) Program and labour amenities, ensuring that all 200 high-exposure construction workers receive mandatory Personal Protective Equipment (PPE) and are protected from excessive noise (85 dB(A) limit).

Table 5: Environmental Management Plan

EMP Component	Purpose and Alignment
Catchment Area Treatment (CAT) Plan	Erosion Control, Reservoir Longevity, Silt Yield Management
Labour Safety & Amenities (OHS)	Worker Health, PPE, Safety Training (85 dB(A) exposure limit)
Disaster Management Plan (DMP)	Early Warning Systems, Communication Infrastructure
Biodiversity Management Plan (BMP)	Compensatory Afforestation, Invasive Species

EMP Component	Purpose and Alignment
	Eradication
Fisheries Development Plan	Reservoir Ecology, Local Livelihood Enhancement
Environmental Monitoring Program	Air, Water, Noise, Soil Monitoring (Construction Phase)
Local Area Development (LADP)/CER	Community Welfare Initiatives, Skill Development

Source: Environmental Management Plan

11.0 Community Welfare Initiatives

The project's commitment extends beyond the physical worksite to encompass the holistic well-being of its labour force and the strategic integration of the project within the local community. This is a critical component for ensuring project stability, mitigating social risks, and building a sustainable legacy. The financial plan explicitly allocates resources for the Cultural Restoration of Tribals, a crucial detail that acknowledges the presence of indigenous populations who may have traditional rights or dependencies on forest resources. This proactive engagement is a strategic measure to mitigate potential social conflicts and secure the project's long-term acceptance.

Table 6: Community Welfare Initiatives Plan

S. No.	Description	Amount
1	**Skill Development and Training (Construction Period)**	
(i)	Training for goat rearing, poultry rearing, nursery raising, horticulture, kitchen garden, etc.	Rs. 10,00,000
(ii)	Women empowerment training (kitchen garden, sewing, kits)	Rs. 10,00,000
2	**Cultural Restoration of Tribals (Construction Period)**	
(i)	Workshop for local groups	Rs. 5,00,000
(ii)	Local support for cultural activities	Rs. 5,00,000
Total		Rs. **30,00,000**

The community initiatives are structured to create a powerful feedback loop that transforms a potential negative impact into a positive social legacy:

1. **Initial Challenge:** The project's development, including the acquisition of forest land, could disrupt traditional livelihoods or dependencies on local resources for tribal communities. This presents a risk of social friction and potential project delays.

2. **Strategic Intervention:** The project invests a total of ₹30,00,000 in targeted community initiatives. These initiatives are not generic charitable acts but are strategically aligned with the project's agricultural purpose. For example, the Skill Development and Training program allocates Rs. 10,00,000 for 5 training sessions in goat rearing, poultry rearing, nursery raising, horticulture training, kitchen garden etc. This creates new, diversified, and sustainable livelihoods for local communities, directly compensating for any potential disruption. The additional Rs. 10,00,000 for 5 training seasons of Women empowerment further diversifies the economic opportunities available to local households.
3. **Positive Outcome:** This proactive approach fosters goodwill and secures a "social licence to operate" from the community. By demonstrating deep respect for the cultural identity of local tribal populations through workshops and support for cultural activities, the project mitigates the risk of reputational damage and builds a foundation of trust. This strategic investment positions the project as a partner in local development, not just a developer, ensuring a smoother and more cooperative operational environment.

12.0 Conclusion

The Malwa Canal Irrigation Project, having undergone exhaustive environmental impact assessment is deemed technically sound, socio-economically beneficial, and environmentally manageable. All predicted adverse impacts, particularly fugitive dust and construction noise (predicted maximum 53.6 dB (A) at nearest receptors), are controllable through the stringent implementation of the Environmental Management Plan (EMP).

The project guarantees a positive long-term regional impact, notably securing 100% irrigation intensity across 86,087hectares and committing to provide drinking water supply to the affected villages. The total financial outlay for environmental compliance, including the dedicated EMP budget of Rs. 6.34 Crore, and adherence to the site-specific seismic study requirement for Seismic Zone III approval by the NCSDP, confirms the proponent's commitment to sustainable development. Therefore, based on the effectiveness of the proposed mitigation measures and the significant regional benefits of enhanced water security and agricultural productivity, the project is recommended for Environmental Clearance, subject to the strict adherence to the environmental conditions stipulated herein.

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