



# **Punjab State Road Sector Project**

## **Walking through the Environment Management Plan and Links with Contract Management**

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# EMP - Contents and Examples

# **EMP Contains ...**

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- **Summary of Identified impacts**
- **Appropriate mitigation measures**
- **Supported by Cost or Budget**
- **Institutional responsibility**
- **Time-frame**



# **Environment Management is ...**

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**Avoidance**

**Minimization**

**Management**

**Mitigation**

**Enhancement**



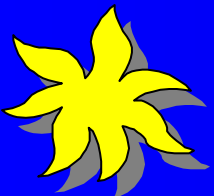
# Stages - Environment Management

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Pre-construction

Construction

Operation



# Pre-construction Phase

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- **Prevent / minimize tree loss**
- **Siting and selection of camps**
- **Location of Material Sources**
- **Location of Water Sources**

# Construction Phase

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- **Management of construction wastes**
- **Dust and Noise Control**
- **Drainage and Erosion Control**
- **Preservation of Trees**
- **Quarry, Borrow area**
- **Traffic Management and Safety**
- **Health and Safety**

# Operation Phase

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- **Air Pollution, Dust and Noise Monitoring**
- **Protection against erosion**
- **Drainage Maintenance**
- **Accidents Prevention and Safety**
- **Road side plantation management**



# Construction Zone Management



# Construction Camps

- **Location**
- **Lay-out**
- **Sanitation**
- **Drainage**
- **Garbage Disposal**
- **Vehicle Mvt. Paths**
- **Parking**
- **Workshop**
- **Stores**



# Resulting Benefits .....

- **Better Living Conditions**
- **Improved Health, Sanitation and Drainage**
- **Safer Living and Working Environment**
- **Increase in work efficiency and productivity**
  
- **Minimization of Surface and Ground Water Contamination**
- **Avoidance of Soil/Land Contamination**
- **Minimization of Soil Compaction**
- **Reduction in Top-soil Loss**



# Plant Sites

Use of PPE ??



Dust Control ??

Site  
Management ??



**Water Being Sprayed Over  
Crusher Belt for Dust Control**



# Resulting Benefits .....

- **Reduction in Health Risks for all**
- **Safer Working Environment for Workers**
- **Enhances equipment, machinery and vehicle life**
- **Reduces risk of equipment and machinery loss**
- **Prevents Cost and Time Over-runs**
- **Meets all regulatory requirements**
  
- **Minimization of Air and Noise Pollution**
- **Lesser chances of Water and Soil Contamination**
- **Minimization of Soil Compaction**
- **Reduction in Top-soil Loss**
- **Improvement in over-all environment**

# **Integration of EMP into Contract Documents**

# EMP and Contract Management

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- **Management and Mitigation Measures**  
**Civil works contract**
- **Mitigation/Enhancement Drawings**  
**Design Drawings**
- **Environment Budget**  
**Line Items in BoQs**





- **Linked with specifications in the contract document**
- **Binding on the Contractor**



# **Role of CMU/PWD and EMP effectiveness**

# What We Expect of You

- We don't expect you to become environment or social specialists.
- We do want you to understand the key principles and purpose.
- We want you to know whom to contact for help and advice, because **you are accountable!!!**

# Role of CMU/PWD ...

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- **Regulatory/Statutory Clearances**
- **Tree Cutting and Preservation**
- **Utility Relocation**
- **Supervision and Monitoring of Consultant's and Contractor's Activities**
- **Regular reporting to Nodal Office**
- **Facilitating Public Consultation Forums**
- **Ensuring implementation of the EMPs in spirit**

# Success of EA/EMP lies in its continuous application & implementation

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- Institutional Capacity and Training
- Supervision and Monitoring Quality
- Reporting and Documentation
- Co-ordination Mechanism
- Timing of Actions

## Remember

**EMP implementation quality will not only affect environmental management, mitigation and enhancement measures but also the over-all quality of road**



# Pillars of Environment Management

**What**

**Environment  
Assessment**

**How and When**

**Environment  
Management Plan**

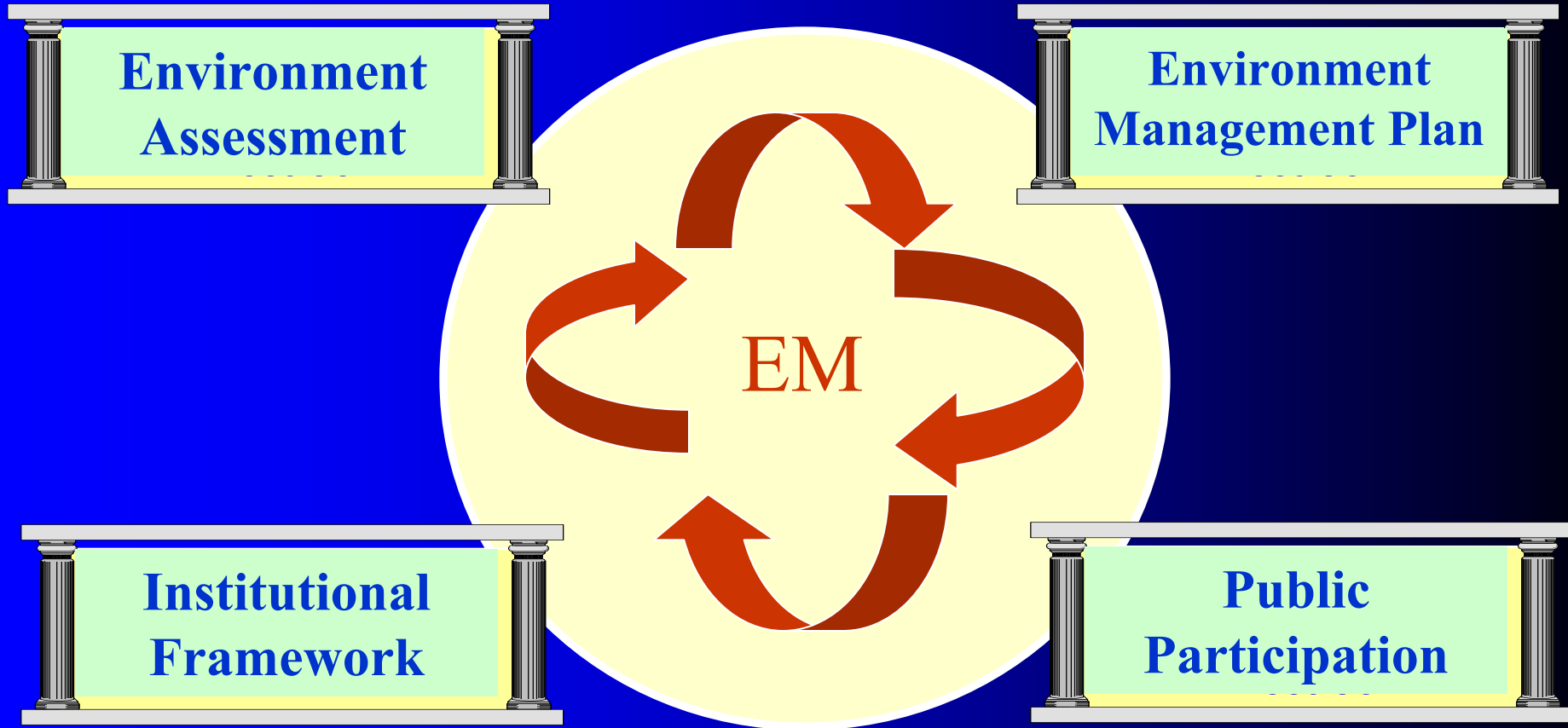
**EM**

**Institutional  
Framework**

**Public  
Participation**

**Who**

**Transparency**



*"Ideas are dime a dozen.  
People who put them into practice are  
priceless"*

(Albert Einstein)

**THANK YOU**