

# **LABOR-BASED ROUTINE/PREVENTATIVE ROAD MAINTENANCE**

**(BARANGAY ROADS)**

**DEVELOPING A SUSTAINABLE AND REPLICABLE SYSTEM**



## **METHODOLOGY**

**November 2006**

# **LABOR-BASED ROUTINE ROAD MAINTENANCE (LBRRM)**

## **WHAT IS A GOOD ROAD**

**ONE THAT IS WELL DESIGNED AND WELL CONSTRUCTED SO THAT IT CAN WITHSTAND ADVERSE WEATHER SUCH AS STORMS WITHOUT BEING WASHED AWAY.**

**- IN THE UPLANDS THE CONDITIONS ARE MORE EXTREME SO FOR THE ROAD TO BE PROPERLY BUILT IS EVEN MORE IMPORTANT.**

**- A WELL BUILT ROAD IS EASIER TO MAINTAIN**

**- ROADS MUST STILL RECEIVE REGULAR MAINTENANCE TO ENSURE THEY STAY IN GOOD CONDITIONS. Eg:**

- Keeping the side drains and turnouts open.**
- Clearing debris from the culverts.**

**A ROAD THAT IS NOT PROPERLY DESIGNED AND BUILT CANNOT WITHSTAND THE ELEMENTS AND IS VIRTUALLY IMPOSSIBLE TO MAINTAIN.**

**LABOR-BASED ROUTINE ROAD MAINTENANCE  
(LBRRM)**

**WHY WE NEED GOOD ROADS**

- **BETTER ACCESS FOR FARM PRODUCE. -**  
Farmers can market their crop more easily, cheaply and timely with less damage
- **BETTER ACCESS FOR PEOPLE –** People can travel more easily, regularly and in more comfort.
- **BETTER ACCESS FOR SOCIAL SERVICES. –**  
Easier for people to reach services such as clinics, as well as the services to come to them.
- **BETTER ACCESS FOR CONSUMER GOODS.**  
Goods for the sari sari stores can come in more easily and more cheaply.



# LABOR-BASED ROUTINE ROAD MAINTENANCE (LBRRM)

## THE PROBLEM

**BARANGAY LEVEL ROADS ARE ALLOWED TO DETERIORATE DUE TO INADEQUATE, IRREGULAR MAINTENANCE. REPAIRS ARE CARRIED OUT ONLY IN EMERGENCIES, ie MAJOR LANDSLIPS .**

**STRUCTURES SUCH AS CULVERT CROSSINGS ARE NOT MAINTAINED ON A REGULAR BASIS AND ARE ALLOWED TO BLOCK UP, LEADING TO FAILURE OF THE ROAD IN THE VICINITY.**

**RESULT: FOR LONG PERIODS, PASSAGE ON THE ROAD IS RESTRICTED AND DIFFICULT AND EXPENSIVE REHAB IS REQUIRED.**



# LABOR-BASED ROUTINE ROAD MAINTENANCE (LBRRM)

## THE SOLUTION

**ROAD MAINTENANCE SHOULD BE CARRIED OUT ON A CONTINUOUS REGULAR BASIS, SO THAT THE ROAD STAYS IN GOOD CONDITION,**

**i.e. THAT THE CRITICAL COMPONENTS OF THE ROAD, SUCH AS SIDE DRAINS, TURNOUTS AND CULVERTS ARE MAINTAINED IN WORKING ORDER SO THAT THERE IS NO MAJOR DAMAGE TO THE ROAD AFTER EACH STORM.**

**THIS IS CALLED ROUTINE/PREVENTATIVE MAINTENANCE**



# **LABOR-BASED ROUTINE ROAD MAINTENANCE (LBRRM)**

## **THE IMPORTANCE OF DRAINAGE**

- **Keep water off the running surface and clear of the road by:**
- **Preventing water getting on to the road (CATCHWATER DRAINS)**
- **Getting water off the road (SUITABLE CROWN OR DIVERSION HUMPS)**
- **Getting water away from the road (SIDE DRAINS & TURNOUTS)**
- **Getting water across the road (CROSS DRAINAGE eg CULVERTS)**
- **Control erosion:**
  - of the road (eg SPEED CONTROL- speed bumps);
  - of the ditches (eg SCOUR CHECKS);
  - of culverts and adjacent land (eg VEGETATION).
- **Control siltation in ditches and culverts (MAINTENANCE).**

# LABOR-BASED ROUTINE ROAD MAINTENANCE (LBRRM)

## COMPONENTS IN ENSURING A GOOD ROAD

THERE ARE 3 MANAGEMENT COMPONENTS:-

- **REGULAR MANAGEMENT:** *Controlling/regulating the use of the road*
- **ROUTINE/PREVENTATIVE MAINTENANCE:** *Daily maintenance of the road, usually labor-based carrying out routine tasks*
- **PERIODIC/EMERGENCY MAINTENANCE:** *Irregular, more substantial maintenance and repair, usually equipment based*

EFFECTIVE IMPLEMENTATION OF THE 1ST 2  
REDUCES THE REQUIREMENTS FOR THE 3RD

ALL REQUIRE EFFECTIVE PLANNING AND  
MANAGEMENT

THEY ALSO ENTAIL COSTS, THEREFORE THE NEED  
FOR FUNDING

## **REGULAR MANAGEMENT**

*(Regulating the use of the road)*

**Much damage is done to the surface by vehicles in wet weather**

- **Certain practices can cause significant damage to the surface, ie wheel chains and carabao sleds**
- **Cultivating right up to the road side can cause severe erosion, esp at the turn-outs.**
- **Reduced speeds reduce damage to the surface**

**REGULAR MANAGEMENT CAN HELP PREVENT UNNECESSARY DAMAGE TO THE ROAD EG-**

**REGULATIONS/ORDINANCES PREPARED BY THE BARANGAY COUNCIL OUTLINING CERTAIN PRACTICES:  
EG:-**

- **IN BAD WEATHER, CLOSING THE ROAD OR IMPOSING FINES ON VEHICLES.**
- **DISCOURAGING DAMAGING PRACTICES, IE CARABAO SLEDS, WHEEL CHAINS – IMPOSING FINES.**
- **PROHIBITING CULTIVATION WITHIN 2 m OF THE ROADSIDE**

**INSTALLING SPEED BUMPS TO SLOW VEHICLE SPEED.**



# LABOR-BASED ROUTINE ROAD MAINTENANCE (LBRRM)

## Road Management Ordinance (Example)

Republic of the Philippines  
Province of Davao del Sur  
Municipality of Nagsaysay  
Barangay of Tagaytay  
-000-

Introduced by: Kagawad Cristita G. Constantino  
Seconded by: Kagawad Dorrillo T. Luguison

ORDINANSA KABAHIN SA PAGMINTINAR SA DALAN MGA GITATAG UG  
LABOR BASE OF ROAD MAINTENANCE (LBRRM) DIIN ANG BARANGAY TAGAYTAY MAOY PI-  
LOT AREA SA PROJECT SA UPLAND DEVELOPMENT PROGRAM ( UDS ).

BARANGAY ORDINANCE NO.05  
SERIES OF 2003

Ang tanan nga membro sa Purok 1 hangtud sa Purok 6 maoy ma-  
mintenar sa dalan o B arangay Road.

Section 1. Ang kada purok adunay perimeters nga ilang pagamintinahan, ang pu-  
rok 1 ug 2 adunay 1,100 meters ang ilang mintenon, ug ang purok  
3 hangtud sa purok 6 adunay 250 meters nga pagamintinon.

Section 2. Pakyas sa pagtuman sa maong ordinance adunay penalty ang mga dem-  
bro sa maong purok ug ang district kagawad aduna po'y multa nga  
100.00 ug ang purok leader pagamultahan ug 75.00, didto kubaon  
sa ilang hon.

Section 3. Alang sa mga dakong hayop, sama sa Karabaw, Kabayo, Baka kinahang-  
lan nga dili moagi sa dakong dalan, kon dili didto paagiwon sa tag-  
iya sa maong hayop sa gigahin nga dalan para sa mga hayop.

Section 4. Kinsa kadtong mapakyas sa pagtuman nini, adunay multa: primero  
P20.00, ikaduha P 50.00 ug sa ikatulong opensa P 100.00 ug ipa-  
tawag sa Barangay Captain.

Section 5. Pagdili sa pag-agi sa mga dakong sakyanan panahon sa ting-ulan  
key makadaut sa karsada, ang mosupak nini ipatawag sa Barangay  
Kapitan unang opensa multa 20.00, ikaduhang opensa 50.00 ug ang  
ikatulong opensa 100.00 ug sa gihapon ipatawag sa Barangay Ka-  
pitan.

Prepared by:

*Hilary A. Aragon*  
BARANGAY SECRETARY

APPROVED BY:  
*[Signature]*  
CESARITO BALLE  
BARANGAY CAPTAIN

# **LABOR-BASED ROUTINE ROAD MAINTENANCE (LBRRM)**

## **PERIODIC/EMERGENCY MAINTENANCE**

*THIS IS THE NOT SO REGULAR TASKS, EG-*

*- REPAIR/MAINTENANCE OF LARGER  
STRUCTURES, EG BRIDGES*

*-REMOVAL OF LARGE LANDSLIPS,*

*-REPAIR OF RUNNING SURFACE AFTER A  
PERIOD OF WEAR AND DAMAGE. EG GRADING*

*IT IS USUALLY EQUIPMENT BASED.*

*SOURCE OF EQUIPMENT- MLGU, PLGU*

*BASIS- FULL RENTAL OR BARANGAY SUPPLYING  
ONLY FUEL/OIL & DRIVER ALLOWANCE*

*The disadvantages are that suitable  
equipment may not be available when  
needed and there can be a heavy cost*

# **LABOR-BASED ROUTINE ROAD MAINTENANCE (LBRRM)**

## **ROUTINE/PREVENTATIVE MAINTENANCE**

***THIS IS THE REGULAR ON-GOING WORK AIMED AT MAINTAINING THE DESIGN ARRANGEMENTS IN WORKING ORDER SO THAT THE EFFECTS OF ADVERSE WEATHER ARE MINIMISED.***

***IT IS PREDOMINANTLY LABOR-BASED.***

***EXAMPLES:- MAINTAINING SIDE DITCHES & TURNOUTS,  
FILLING POTHOLES,  
CLEANING CULVERTS,  
CUTTING BACK VEGETATION***

***IF EFFECTIVELY DONE, IT CAN:-***

- KEEP THE ROAD IN A PASSABLE CONDITION, REDUCING THE NEED FOR EQUIPMENT BASED PERIODIC MAINTENANCE.***
- REDUCE THE LIKELIHOOD OF MAJOR DAMAGE & THEREFORE THE NEED FOR OUTSIDE ASSISTANCE IN THE FORM OF MACHINERY.***
- ALLOWS THE UPKEEP TO BE WITHIN THE CAPACITY OF THE BARANGAY.***
- ASSISTS THE LOCAL ECONOMY BY SPENDING THE FUNDS LOCALLY.***

**LABOR-BASED ROUTINE ROAD MAINTENANCE  
(LBRRM)**

**TASKS INVOLVED IN ROUTINE/PREVENTATIVE  
ROAD MAINTENANCE):-**

**CONTROLLING SIDE VEGETATION [*MONTHLY*]**

**FILLING RUTS AND POTHoles & MAINTAINING  
ROAD SURFACE [*BI-MONTHLY OR AFTER HEAVY  
RAIN*]**

**CLEARING AND REPAIRING SIDE DITCHES [*BI-  
MONTHLY OR AFTER HEAVY RAIN*]**

**CLEANING AND MAINTAINING CULVERTS [*BI-  
MONTHLY OR AFTER HEAVY RAIN*]**

**MAINTENANCE OF EROSION PREVENTIVE  
MEASURES (VEGETATIVE/SIMPLE STRUCTURES)  
[*MONTHLY OR WHEN NECESSARY*]**

**FOR ROUTINE/PREVENTATIVE MAINTENANCE TO  
WORK PROPERLY IT REQUIRES:-**

**i. COMPETENT WORKERS,**

- properly supervised and trained  
(Foreman/Kapatas)
- properly equipped (tools)
- working on a regular (daily) basis.

**ii. THE WORK IS PROPERLY PLANNED**



# LABOR-BASED ROUTINE ROAD MAINTENANCE (LBRRM)

## TYPES OF WORK ARRANGEMENT: eg-

- **SMALL TEAMS (4/5 Men but depending on the length of road network), working on a regular daily basis. They will usually be receiving a daily wage as part of a group contract (pakyaw).**
- ***This is the most recommended as it is a more efficient and practical arrangement.***
- **In certain circumstances, for example where the network is very large, larger groups may also be used, ie a representative from each family in a sitio, operating on a bayanihan basis, eg once per month or when required. It is common that Food-for-Work is provided as an incentive.**
- ***[Eg large group (bayanihan) being used for the simpler tasks such as vegetation control, while paid labor for others such as drainage maintenance or clearing landslips]***

**LABOR-BASED ROUTINE ROAD MAINTENANCE  
(LBRRM)**

# **TOOLS REQUIRED**

## **ITEMS TO BE ISSUED PER TEAM (4/5 WORKERS):-**

<b>BOLO/SCYTHE</b>	<b>(x 5 – privately owned)</b>
<b>AXE</b>	<b>(x 5 - “ “ )</b>
<b>SPADE/SHOVEL</b>	<b>(x 4)</b>
<b>PICK MATTOCK</b>	<b>(x 2)</b>
<b>DIGGING BAR</b>	<b>(x 2)</b>
<b>RAKE</b>	<b>(x 2)</b>
<b>TAMPERS (USUALLY HOME-MADE WOODEN)</b>	<b>(x 2)</b>
<b>WHEEL BARROW(OPTIONAL)</b>	<b>(x 1)</b>
<b>ROPE/ROD/BUCKET (FOR CLEANING CULVERTS)</b>	

***The Barangay Council would procure and issue them to CBO or workers, but they remain the property of the Barangay Council]***

# **LABOR-BASED ROUTINE ROAD MAINTENANCE (LBRRM)**

## **Implementation**

It is possible for a Barangay to implement a routine road maintenance programme for the roads within their boundaries.

However, it is likely to need support from other sources (MLGU, PLGU), both financially and technically

The MLGU Engineering office can organise the relevant training and institutional support in setting up the programme

## **(LBRRM)**

### **THE LIKELY COST**

**A rule of thumb is 1 man/km**

**If daily wage is P125/day**

**= P2500/month**

**= P30,000/year/km**

**The number of men/km may vary according to the situation. Possibly more taken on in wet periods & for specific tasks eg clearing landslides.**

**Cost of capatas/foreman :-**

**P150-200/day**

**Set of tools per team (5 men) Average:-**

**P3,700**

**Where the road network within the barangay is large, potential high cost can be reduced by combination with Bayanihan,**

*ie permanent workers carrying out more critical tasks, with occasional tasks such as vegetation control carried out by bayanihan.*

**Can also be combined with regular periodic mechanised work such as annual grading.**

### **FUNDING**

#### **POSSIBLE FUNDING SOURCES:-**

- BARANGAY IRA (20% DEVELOPMENT FUND)**
- MUNICIPAL & PROVINCIAL GRANTS/CONGRESSMAN'S FUNDS**
- TOLL FEES**
- OTHER FUNDS, *ie FEES FROM BARANGAY OPERATED INFRA EG DRYING FLOORS;***
- GRANTS FROM CIVIC ORGANISATIONS**



# LABOR-BASED ROUTINE ROAD MAINTENANCE (LBRRM)

## RESPONSIBILITIES IN RELATION TO ROAD MAINTENANCE.

- *The Barangay Councils are legally responsible for barangay level roads and have funds (eg 20% IRA)*
- *The Barangay Council Infra Committee are technically responsible for maintaining & managing the road,*
- *MLGUs often allocate funds annually specifically for barangay roads*
- *CBOs can manage the maintenance but they have no direct legal access to funds such as 20% IRA.*

### RELEVANT SUB-BODY (Bgy Infra Committee):

#### FACTORS:

##### **It's membership**

*Chairman – Kagawad  
Vice Chairman – kagawad  
2/3kagawad*

##### **It's responsibilities:-**

*Identifying requirements;  
Preparation of estimates;  
Management of infra activities, eg road maintenance*

# **LABOR-BASED ROUTINE ROAD MAINTENANCE (LBRRM)**

- **PROCESS IN IMPLEMENTING A BARANGAY LEVEL LABOR-BASED ROUTINE ROAD MAINTENANCE PROGRAMME**
- **1. Activate the relevant sub-body (Bgy Council Infra Committee)**
- **2. Make a plan (3-5 years)**
- **3. Organise funding**
- **4. Make an annual implementation plan**
- **5. Manage the implementation**

## **EFFECTIVE PLANNING AT BARANGAY LEVEL**

**The Barangay should prepare a 3-5 year  
BARANGAY ROAD MAINTENANCE PLAN  
(BRMP)**

### ***PURPOSE***

**To ensure that the Barangay roads are  
maintained in a passable condition by:-**

- Effective planning and implementation of regular routine maintenance;**
- Allocation of appropriate funding;**
- Identification of what additional funds are required.**

**As well as being an effective means of  
organising the activities, it should also be  
effective in presenting to possible sources of  
assistance (MLGU, PLGU, NGOs)**

**It should focus primarily on the work that the  
Barangay can organise itself, ie routine  
maintenance and smaller rehabilitation**

# **BARANGAY ROAD MAINTENANCE PLAN**

**The essential components of the plan should be:-**

**a. Rationale**

- **Barangay profile (population, area)**
- **Agricultural potential (farming area, potential crops and total outputs, crop calendar, marketing requirements)**
- **Weather pattern (Likely wet, wet/dry, dry months)**
- **Likely types of vehicles and traffic levels**
- **The present status of the roads (periods of impassability, seasonal limits on types of vehicles, level of hindrance to economic and social activity)**
- **Present road management arrangements (bayanihan etc)**

**b. Objective of plan**

**c. Planned activities**

- **Road management activities (ordinances etc)**
- **Road layout diagram and detail of required improvement and maintenance activities.**
- **Proposed timescale**
- **Fund raising activities (Toll fees etc)**

**d. Proposed management**

- **Working arrangements (contracts/bayanihan etc)**
- **Management role of BLGU**
- **Linkages with MLGU/PLGU/Congressman's Fund**

**e. Budget**

- **Likely annual cost**
- **Funds to be allocated by BLGU**
- **Funds likely to be available from elsewhere (MLGU, toll fees)**
- **Additional funds required**



# **LABOR-BASED ROUTINE ROAD MAINTENANCE (LBRRM)**

## **METHODOLOGIES FOR FUND GENERATION/SOURCING**

- **LGU FUNDING SYSTEM**
  - ***USE OF IRA (ANNUAL AIP SHOULD REFLECT LIKELY COMMITMENT)***
  - ***BARANGAY IRA ALONE IS UNLIKELY TO BE ENOUGH***
  
- **ACTIVE CONTACT/LIAISON WITH MUNICIPAL & PROVINCIAL GOVERNMENT IN TAPPING AVAILABLE FUNDS & ASSISTANCE**
  - ***LODGING BARANGAY AIPS ON TIME WITH MLGU;***
  - ***BEING AWARE OF AVAILABLE FUNDS AT MLGU & PLGU;***
  
- **IMPLEMENTATION OF INCOME GENERATING ACTIVITIES, eg road tolls**

### **SETTING UP A TOLL FEE SYSTEM – Main factors:-**

**THE MOST SUITABLE SITUATION** [*the road between Bgy proper and outside.*]

**WHAT SHOULD BE TAXED** [*eg Traders & passenger vehicles, skylabs:*]

**ORDINANCES** [*Drawn up by Bgy Council, endorsed by Municipal Council*](See example)

**HOW TO MANAGE IT** [*eg permanent manned gate or monthly arrangement with regular commercial users*]

**WHERE TO KEEP THE FUNDS** [*Usually in the general fund, possibly in a special account*]

*The income generated for one barangay road can be used for the maintenance of all the barangay roads within the barangay.*

# Road Toll Ordinance (Example)

Republic of the Philippines  
Province of Davao del sur  
Municipality of Magsaysay  
Barangay of Tagaytay

-000-

Introduced by: Kagawad Cristita G. Constantino  
Seconded by: Kagawad Dorillo T. Luguisan

ORDINANSYA KABAHIHIN SA MGA SAKYAMAN NGA HOSULOD NILIHING MAONG  
BARANGAY SAMBA SA: SKYLAR, JEEP, UG TRUCK PAGAANKOLEKTAHANAN UG TOLL FEE.

BARANGAY ORDINANCE NO. 06


SERIES OF 2003


SKYLAR -----	2.00/BIWANE
JEEP -----	5.00/BIWANE
TRUCK -----	10.00/ BIWANE

Ang dili netunan sa maong ordinansa pagamultahan:ug ipatawag sa Barangay Kapitan.

Unang opansa 20.00  
 Ikatubang opansa - 50.00  
 Ikatulong opansa - 100.00

Prepared by:

  
Theresa B. Pangasinan  
 BARANGAY SECRETARY

APPROVED BY  
  
Cesarin Banaag  
 BARANGAY CAPTAIN

# LABOR-BASED ROUTINE ROAD MAINTENANCE (LBRRM)

## IMPLEMENTING A MAINTENANCE PROGRAMME

### ANNUAL IMPLEMENTATION PLAN

#### **Will most likely require:**

- Programme of work & Schedule of Manpower & Cost Allocation
- MoAs (*eg Between BLGU & MLGU*)
- Barangay Resolution
- AIP *reflecting the requirements of the plan*
- Contracts (*Between BLGU & CBO*)

#### **Practical Arrangements**

- Organise method of working, eg contract, paid labour, bayanihan
- Prepare & issue contracts (if applicable)
- Tools: *Should be procured & issued by Barangay Council*
- Supervisor/Foreman: *Infra Committee member or from MLGU*
- Daily working arrangements
- Certification arrangements: *Who responsible for certifying work*
- Payment: Who is funding and arrangements for billing/payments

## LABOR-BASED ROUTINE ROAD MAINTENANCE (LBRRM)

### IMPLEMENTING A MAINTENANCE PROGRAMME

## MANAGING THE PROGRAMME

- Record sheets provide records of daily accomplishment & labour.
- Daily supervision & recording should normally be by a member of the Bgy Infra committee.
- Billing and payment is normally twice monthly. The verifying/approval signatories depend on the situation.
- It is useful at each  $\frac{1}{2}$  monthly verification to prepare a target sheet for the next  $\frac{1}{2}$  month. This can aid effective management and be used to check accomplishment at the end of that half month.