

MINISTRY OF PUBLIC WORKS AND COMMUNICATIONS

DIRECTION OF LOCAL ROADS (DCV)

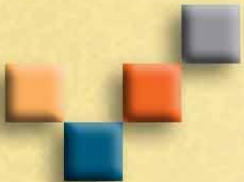
RURAL ROADS
MAINTENANCE MANAGEMENT PLAN (PGM)

LOCAL ROADS MANAGEMENT IN THE
REPUBLIC OF PARAGUAY

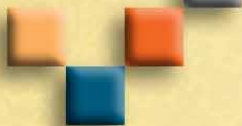
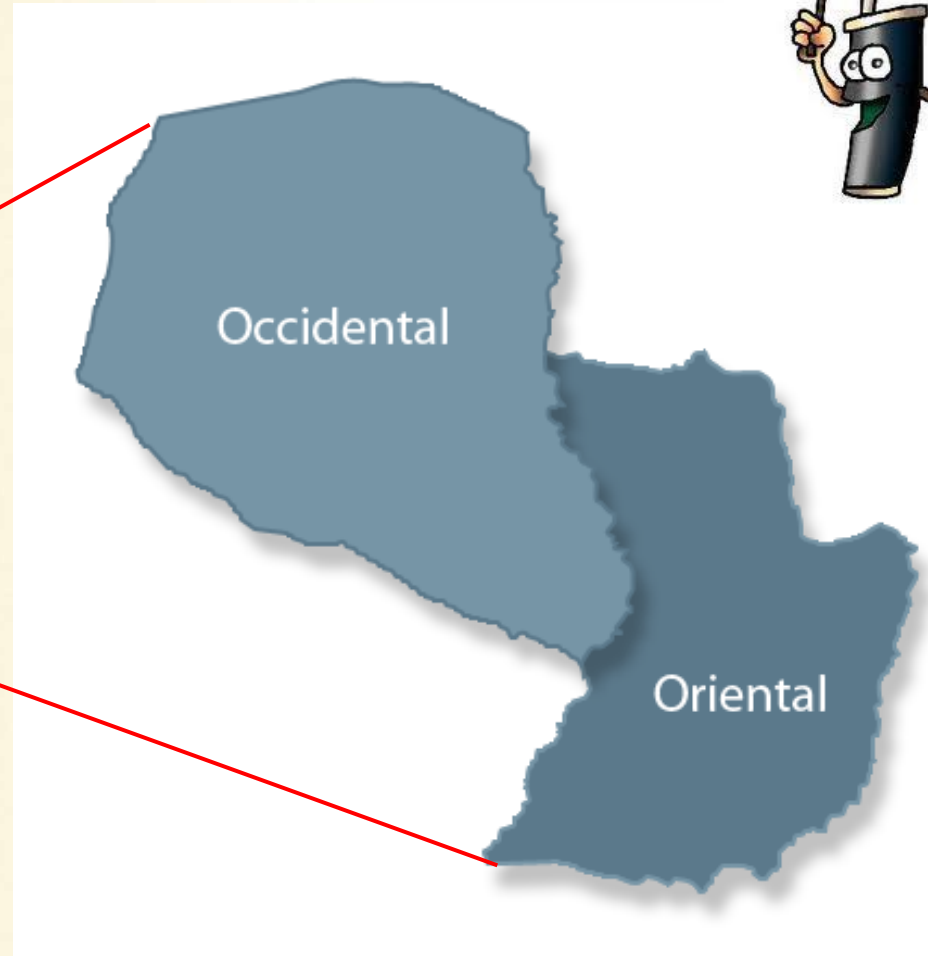
Maintenance Management Plan



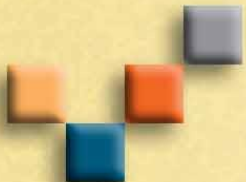
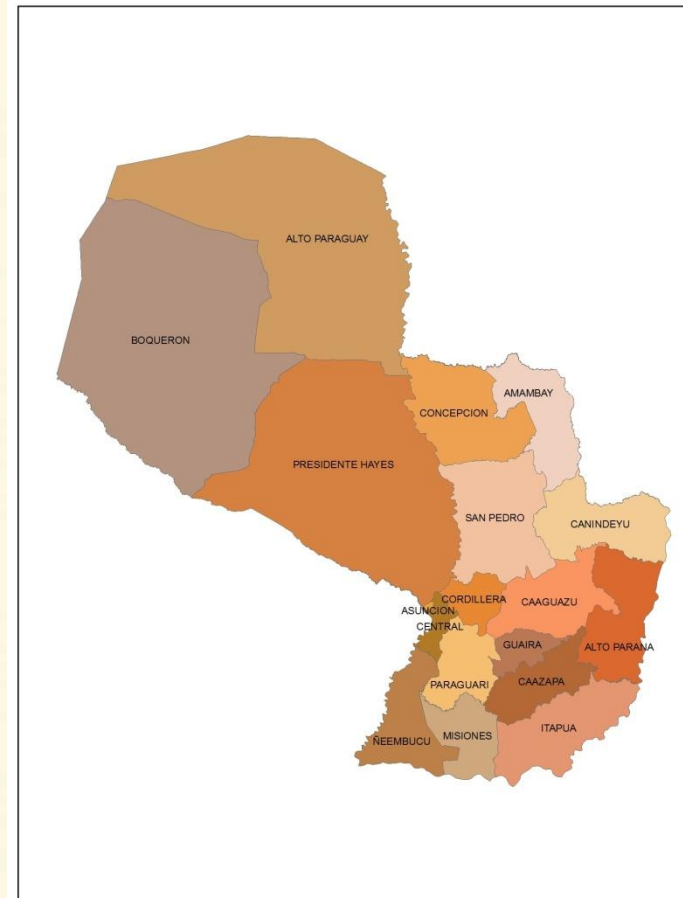
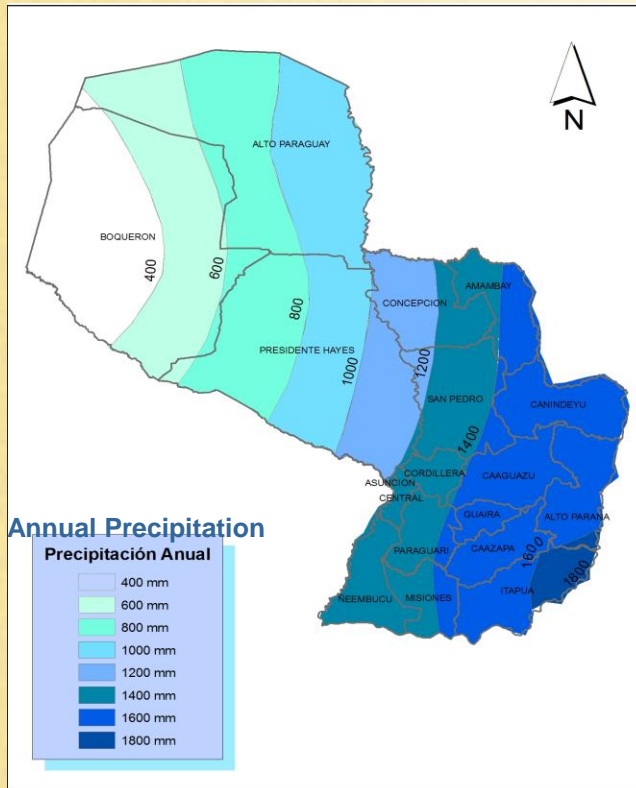
- The Maintenance Management Plan (PGM) projects the implementation of more efficient modes of local tracks maintenance. It's components are:
 - Road Maintenance with Private Sector Enterprises
 - Road Maintenance by Agreement with Civil Associations
 - Maintenance with Microenterprises



Geographic Location



GEOGRAPHIC AND ENVIRONMENTAL REFERENCES





MPWC



CONTRACT

CONTRATO



Mantener los tramos seleccionados

Maintain selected sections

Medición de los trabajos

Measurement of works



Evaluaciones mensuales

Monthly Evaluations

Criterio

Criteria



Niveles de Servicio establecidos

Established Service Levels



Payment

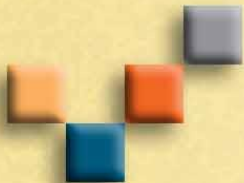
Pago

Road Maintenance with Private Sector Enterprises

CONTRACTS

AREA 1: GUAIRA:	242.35 km
AREA 2: CAAGUAZÚ :	302.55 km
AREA 3: SAN PEDRO:	251.50 km
AREA 4: CONCEPCION:	318,00 km
AREA 5: AMAMBAY:	73,00 km

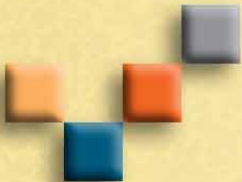
CONTRACT MODE TOTAL: 1187.40 km





Local Roads Management & Maintenance by Service Levels

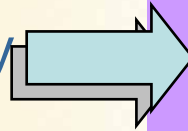
- What is road maintenance by service levels contracting?
 - It's a service contract consisting on maintaining each road according to a **predetermined standard**.
 - Payments are carried out not by executed work volume, but by **predetermined standard accomplishment** on roads.
 - It's a new concept devised to increase **effectiveness & efficiency** on road maintenance operations.





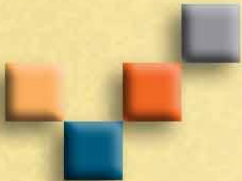
Local Roads Management & Maintenance by Service Levels

- The contractor aims to optimize interventions & determine by himself:



- What to do?
- Where to do?
- How to do?
- When to do?
- At what cost?

Payment is a **Fixed Raised Sum** adjusted conforming to the reached Service Level according to established standards.





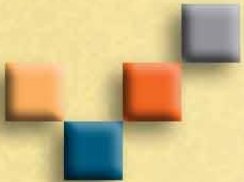
Local Roads Management & Maintenance by Service Levels

Maintenance Stages

- **Initial Maintenance** Performed with the objective of improving the trafficability conditions on selected roads and attain predetermined service levels.
- **Routine Maintenance** Performed with the objective of keeping the service levels attained with the Initial Maintenance.

Assessments to be performed

- Monthly assessment for certification and payment.

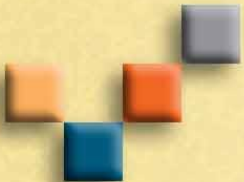




Local Roads Management & Maintenance by Service Levels

Service Level Indicators

- Road Surface(40%)
- Drains (20%)
- Bridges (wood & concrete) (10%)
- Signaling (preventive & informative)(10%)
- Domain Strip(10%)
- Coated Ditches (5%)
- Natural Ditches & Draining Ditches (5%)



MAINTENANCE BY CONTRACT COSTS

CONTRACTOR: CONTRATISTA: B&B S.A.

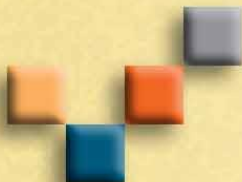
ROAD MAINTENANCE MANTENIMIENTO VIAL (Dpto. Guair?) INITIAL MAINTENANCE	LENGTH LONGITUD	MONTHS DURACI?	UNIT COST
			COSTO UNITARIO DOLARES US\$
MANTENIMIENTO INICIAL (/ Km)	242,35	6	890,53
MANTENIMIENTO RUTINARIO (/ Km x a?) ROUTINE MAINTENANCE (/ Km x year)	242,35	18	1.653,61

CONTRATISTA: VIALTEC S.A.

MANTENIMIENTO VIAL (Dpto. Caaguaz?)	LONGITUD	DURACI?	COSTO UNITARIO
			DOLARES
MANTENIMIENTO INICIAL (/ Km)	302,55	6	1.527,45
MANTENIMIENTO RUTINARIO (/ Km x a?)	302,55	18	978,36

CONTRATISTA: C. HEISECKE S.A.

MANTENIMIENTO VIAL (Dpto. San Pedro)	LONGITUD	DURACI?	COSTO UNITARIO
			DOLARES
MANTENIMIENTO INICIAL (/ Km)	251,50	6	2.913,15
MANTENIMIENTO RUTINARIO (/ Km x a?)	251,50	18	722,11



Road Maintenance by Agreement

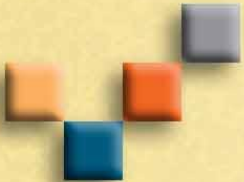
- An agreement is signed between the MPWC and an Association of Municipalities to perform maintenance activities on local roads. The MPWC transfers the funds and for certain geographic areas delivers road equipment under commodatum to the Association of Municipalities. Besides, it's in charge of the supervision of activities development.

The signed Agreement details:

The local roads that will be subject of maintenance activities

The activities and estimated amounts to be carried out

The estimated budget for each activity and each section



Road Maintenance by Agreement

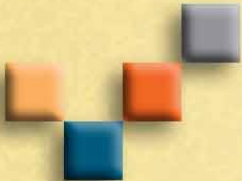


Road Maintenance by Agreement

The Executing Entity is a Civil Association (of municipalities or a nonprofit entity) and it's responsible to the MPWC for the coordination of work.

The Executing Entity submits Account Reports about the executed expenditure on maintenance activities

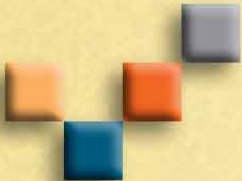
Evaluations of the work performed are conducted and Account reports are verified



Road Maintenance by Agreement

Maintenance Activities Clasification

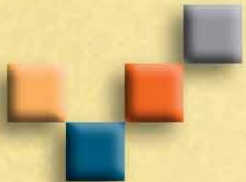
- Initial Maintenance: Performed with the objective of improving the trafficability conditions on selected roads and attain predetermined service levels.
- Routine Maintenance: Performed with the objective of keeping the service levels attained with the Initial Maintenance.



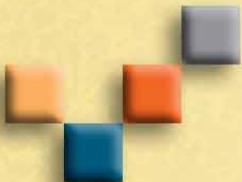
Road Maintenance by Agreement

AGREEMENTS IN THE ORIENTAL REGION

ITAPUA AGREEMENT:	484.54 km
SOUTH ALTO PARANÁ AGREEMENT:	531.15 km
EAST CANINDEYÚ AGREEMENT:	426.48 km
CAAZAPÁ AGREEMENT:	313.70 km
<u>AGREEMENT MODE TOTAL:</u>	1755.87 km



AGREEMENTS IN THE OCCIDENTAL REGION

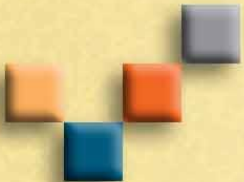


Road Maintenance by Agreement



GENERAL ASPECTS

- New work mode with Local Authorities.
- Joint planning of work.
- Generation of local employment sources .
- Recovery of Road Infrastructure.
- Technical–Administrative models and schemes development.
- Community recognition.
- Resource management transparency.
- Large social–economical impact.



Road Maintenance by Agreement

The Objective

El Objetivo

To maintain selected sections

Measurement of works

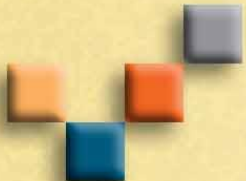
Medición de los trabajos

Monthly evaluations

Criteria

Criterio

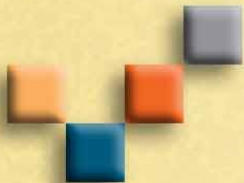
Established Service Levels



MAINTENANCE ACTIVITIES



- DOMAIN STRIP CLEANING (Km)**
- COBBLE PAVEMENT MAINTENANCE (m2)**
- ROADWAY SHAPING WITHOUT MATERIALS REPLACEMENT (Km)**
- ROADWAY SHAPING WITH MATERIALS REPLACEMENT (Km)**
- DRAINS REPAIRING (Lines)**
- DRAINS CLEANING (Lines)**
- CONCRETE COATED DITCHES (lin m)**
- REINFORCED CONCRETE BRIDGES REPAIRING (m2)**
- WOOD BRIDGES REPAIRING (m2)**



Monthly Evaluation Form

South Alto Paraná Agreement SECTION EVALUATION FORM

Code:

Date:

Section:

Evaluation

N°:

Length:

Corresponding month:

	Roadway		Domain Strip	Coated Ditches	Natural Ditches		Drains	Bridges	Sector Percentage
Sector A	Undulations				Section & Gradient				
	Wheel tracks				Veg. & Sedim.				
	Degradations				Average:				
	Average:								
Sector B	Undulations				Section & Gradient		Doesn't have	Doesn't have	
	Wheel tracks				Veg. y Sedim.				
	Degradations				Average:				
	Average:								
Sector C	Undulations				Section & Gradient				
	Wheel tracks				Veg. y Sedim.				
	Degradations				Average:				
	Average:								
Sector D	Undulations			Doesn't have	Section & Gradient		Doesn't have	Doesn't have	
	Wheel tracks				Veg. y Sedim.				
	Degradations				Average:				
	Average:								
Sector E	Undulations			Doesn't have	Section & Gradient			Doesn't have	
	Wheel tracks				Veg. y Sedim.				
	Degradations				Average:				
	Average:								
Item's total score									
Weighting factor	0,40		0,10	0,05	0,05		0,20	0,10	
Total weighted score									A
Max possible weighted score	6		1.5	0.45	0.75		1.8	0.6	B
									A/B

References:

Good (3)

Regular (2)

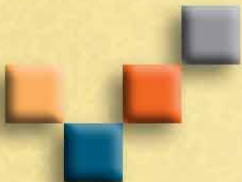
Bad (1)

Final Score

Road Maintenance By Agreement (MMP)

Participatory Road Plans

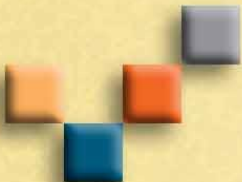
- Participatory Workshops in the Departments of Itapúa, Alto Paraná and Concepción.
- Local authorities and citizens participation.
- Roads prioritization for local development process.
- Road Inventory of more than 2.000 km of main roads on the two departments for their prioritization.



Road Maintenance By Agreement (MMP)

Microenterprises Forming

- Microenterprises forming in the Departments of Caazapá and Itapúa for the maintenance.
- Participatory workshops with the community and authorities are carried out.
- Development of training sessions for workers.





SECTION: Col. Independencia - Pireka



SECTION: Col. Independencia - Pireka



SECTION: Col Independencia - Pireka

Stolen signs



SECTION: Iturbe – Cñía. Rincón

TEBICUARYMI
TACURU PYTA 15.20 Km. ↑

SECTION: TEBICUARYMI - TACURU PYTA



SECTION: Col. Independencia - Pireka



SECTION: Potrero del Carmen - Yroya



SECTION: Natalicio Talavera – Col. Independencia



SECTION: Valle Pé – Isla Alta



Replaced beam

SECTION: Cñía. Rincón - Costeada



SECTION: Cñía. Rincón - Costeada



**Drains full of weeds and
without retaining walls**

SECTION: Itapé - Boquerón



SECTION: Desvío Pireka - Potrero del Carmen



SECTION: Río Tebicuarymi – Tacurú Pyta



SECTION: Itapé - Boquerón



SECTION: Col. Don Antonio - Tebicuarymi



09/08/2007 11:49

SECTION: Potrero del Carmen – Río Tebicuarymi

**FINCA
"LA ARBOLEDA"**

**GRACIAS
POR LA
RUTA
VALOREMOS
TODOS!!! JcG**

**"LA ARBOLEDA"
FARM**

**THANKS
FOR THE
ROAD
LET US ALL
APPRECIATE IT!!!**

THANK YOU