

## Consultation Paper 2.2

### MPW Construction and Maintenance Operations

#### Executive Summary

The Ministry of Public Works (MPW) previously operated essentially as a large-scale engineering, construction and maintenance organisation. Today, spokesmen acknowledge an inability of the MPW to take on even a single big project because of a lack of qualified personnel and equipment, and as a consequence donors, and other organisations, in particular Afghan Assistance Coordination Authority (AACA), are in effect taking over the planning, preparation, procurement and contract management work for projects currently in hand.

The main part of the present road and airport construction staff of about 1,600 that the MPW still employs should, to the extent possible, be transferred to private sector contractors. This can partly be realised in connection with the numerous donor sponsored road rehabilitation projects that will be carried out in the immediate future. Consideration should also be given to the establishment of state-owned companies based on the present construction units.

Part of the Ministry's present maintenance staff should be given training in labour-based road maintenance in order for them to be able to act as trainers for private sector labour-based maintenance units - which may be small-scale contractors and community groups. The rest of the maintenance staff should be formed into units to perform emergency and routine maintenance works.

The local contracting industry is very weak with virtually only one contractor being able to carry out bigger projects. A stronger local contracting industry has to be created. A clause on compulsory use and training of local subcontractors has to be included in rehabilitation contracts in order to develop and train the local contracting industry. The contract with the local subcontractors must include an obligation to employ MPW construction personnel as part of their permanent staff.

#### Recommendations:

The MPW's own account operations should focus on emergency and routine maintenance works. Surplus staff should be transferred to the private sector, new state-owned construction companies (to be privatised in due course), and/or labour-based units, as a precursor to the establishment of private labour-based units.

#### Actions:

A detailed strategy for how to restructure MPW needs to be worked out, including implementing the above recommendation. See further Consultation Paper 2.3.

## **Introduction**

The Ministry of Public Works (MPW) was before responsible for virtually all government construction and maintenance. This included roads and bridges, airports, public housing, water, etc. All aspects of planning, design, construction and maintenance were carried out in-house through a number of MPW construction companies. Before 1992, one of the departments in MPW, Road Construction and Development, alone totalled over 5,000 employees.

The MPW operated essentially as a large-scale engineering, construction and maintenance organisation. Anecdotally, the MPW claims a historic capacity to handle as many as eight major projects simultaneously.

Over the years, the size and scope of the MPW have been reduced, in part through attrition as, lacking resources, there were no projects. More significantly, a portion of the MPW portfolio (e.g. housing, water, etc.) has been shifted to the Ministry of Urban Development and Housing.

Today, spokesmen acknowledge an inability of the MPW to take on even a single big project because of a lack of qualified personnel and equipment and in consequence donors and other organisations in particular Afghan Assistance Coordination Authority (AACA), are in effect taking over the planning, preparation, procurement and contract management work for projects currently in hand.

Although there has been some subsequent additions to the MPW's construction and maintenance equipment, the overriding message remains clear. On a nation-wide basis the MPW's resources are very limited, and a high portion of what is on hand is currently inoperable.

## **Proposal**

It is proposed here that the Ministry should not try to restore the construction and maintenance capacity that it once possessed. The way forward should be to mainly engage the private sector in road construction and maintenance works. The reason for this is not only that it will be more cost-effective, but also that donors, who will be the main financiers of road works for years to come, will be promoting works done by way of contract, including in the field of routine maintenance. The present situation as concerns construction equipment in the MPW poses a further obstacle; see Annex 1.

The Ministry should, however, retain a capability to carry out emergency repair works as well as routine maintenance. The reason for this is that it will not be possible to get the construction works contracting market to actually function in a satisfactory way for quite some time. This applies particularly to remote areas and to smaller works, so the MPW should be able to handle these kinds of operations.

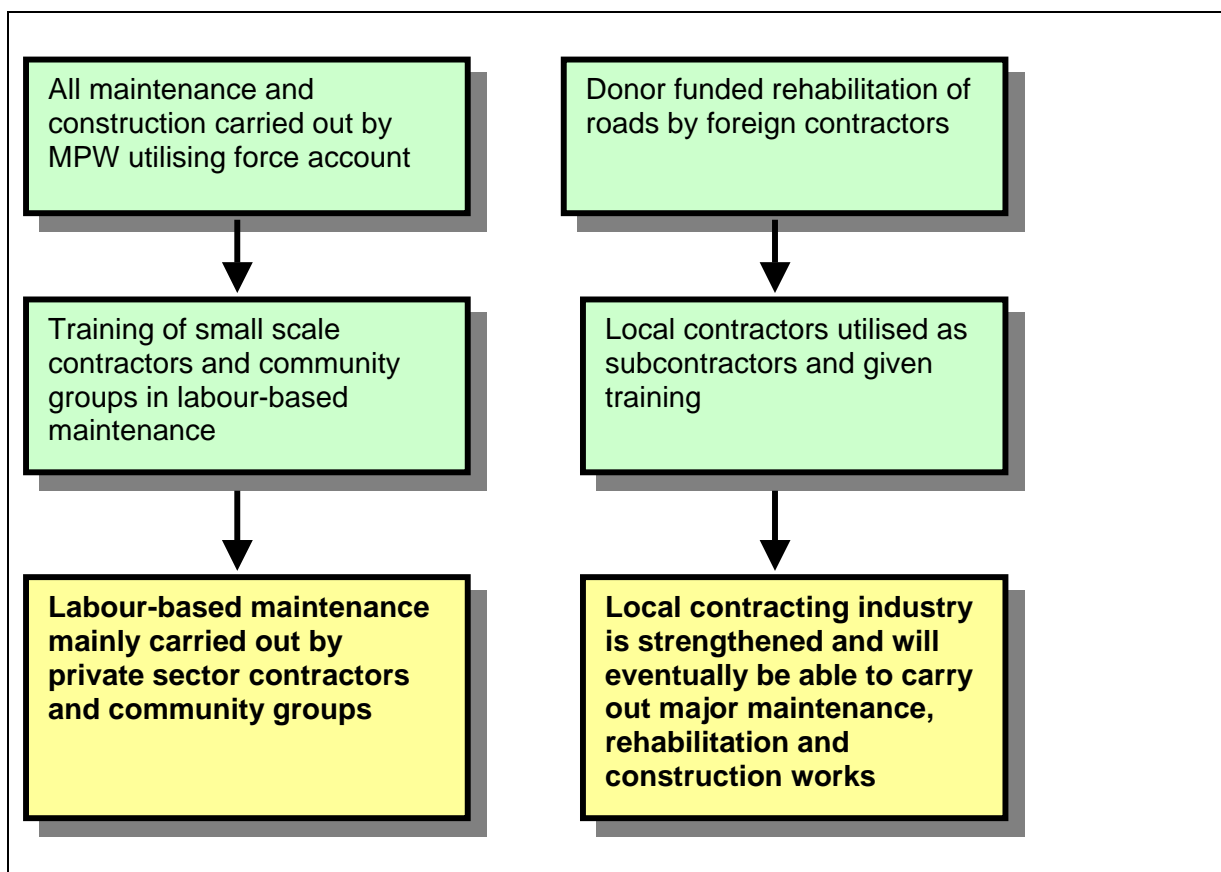
Many of the present road construction staff of about 1,600 that the MPW still employs could be transferred to private sector contractors. This can be realised in connection with the

numerous donor sponsored road rehabilitation projects that will be carried out in the immediate future.

To further this process, consideration should also be given to the establishment of state-owned construction companies based on the present construction units. These companies would later be privatised, at an appropriate time.

The local contracting industry is very weak with virtually only one contractor being able to carry out bigger projects. A stronger local contracting industry has to be created. Almost all primary and secondary roads are in need of rehabilitation before meaningful maintenance of them can be commenced. The rehabilitation will mainly be donor funded with foreign contractors carrying out the rehabilitation work. A clause on compulsory use and training of local subcontractors has to be included into the rehabilitation contracts in order to develop and train the local contracting industry. The contract with the local subcontractors must include an obligation to employ MPW construction personnel as part of their permanent staff.

Strong co-ordination of donor funded road sector activities has to be introduced. The donor community involved in road sector funding in Afghanistan has to agree on procurement procedures that enable development and training of local subcontractors in connection with road rehabilitation and construction projects.



*Fig 1: Development Process to be Applied in Order to Engage the Private Sector in Road Maintenance, Rehabilitation and Construction Works*

## **Developing the Local Contracting Industry**

The practice to include local subcontractors in the rehabilitation contracts signed with foreign contractors should be commenced as soon as possible. This will need strong involvement and commitment of the donor community as well as the MPW. The foreign contractors must also take the responsibility to train the local subcontractors in good contracting and work performance practices. The contractor should include an appropriate training program in his tender. The training should include:

- Tendering
- Work costing
- Contract documentation
- Accounting
- Work planning and scheduling
- Work supervision
- Road works equipment and machinery
- Quality assurance
- Progress monitoring

The training will require the main contractor to include staff and equipment for the training component. This will be reflected in the contract price, but must still be considered as the fastest and probably cheapest way to develop the local contracting industry.

The MPW should monitor the contractor's performance in carrying out the training component. The subcontractor's subsequent performance after having received the training should also be monitored.

## **Labour-based Maintenance**

As concerns maintenance staff, a substantial number would transfer to the new units for emergency and maintenance works. In addition, it is proposed that part of the Ministry's present maintenance staff be given training in labour-based road maintenance in order for them to be able to:

- (a) act as trainers for private sector labour-based maintenance units - which may be small-scale contractors and community groups
- (b) be formed into emergency/routine maintenance units

Small-scale contractors and community groups that will be involved in labour-based maintenance have to be assisted through training to enable them to carry out road maintenance work efficiently and satisfactorily. The training should include:

- Simple tendering
- Simple contract documentation
- Simple accounting
- Work planning and scheduling

- Shoulder maintenance
- Slope maintenance
- Drainage maintenance
- Road surface reshaping
- Patching
- Regravelling
- Bridge maintenance
- Plant and tools

Selected suitable personnel from the MPW must be given trainer's training in the above subjects in order to be able to carry out training of contractors and community groups.

As the small-scale contractor and community groups, to be involved in the labour-based maintenance work may often not have the necessary plant and tools to carry out the work a *Plant and Tools Pool* should be established by the MPW. *The Plant and Tools Pool* would hire out the equipment to the contractors until they can afford to procure equipment of their own.

The Ministry's present maintenance staff has also to be given training in labour-based maintenance and be formed into emergency/routine maintenance units. The aim has to be to have the MPW maintenance staff trained and capable to independently carry out emergency maintenance operations and labour-based routine maintenance within six months from the commencement of the relevant training programme. The emergency/labour-based routine maintenance units have to be properly equipped to be able to carry out the tasks. Required equipment and personnel resources for each unit of 50 labourers will include:

#### Personnel

- 2 foremen
- 1 driver
- 1 mechanic for daily servicing and repair
- 1 storeman
- watchmen

#### Equipment

- 1 tractor
- 2 trailers
- 1 towed deadweight roller or hand operated vibrating roller
- 1 towed fuel bowser
- light vehicles for transport of personnel
- 40 shovels
- 10 hoes
- 25 mattocks
- 25 pickaxes
- 5 bushknives
- 5 wheelbarrows
- 10 rakes
- 2 sledgehammers
- 2 tape measures (30 m)

- 5 buckets
- 5 water containers
- 1 camber board and spirit level
- wooden pegs
- string
- 2 files (for sharpening tools)

### Donor Assistance

The MPW will need a considerable amount of donor assistance in order to be able to develop the capabilities for labour-based maintenance through the use of small-scale contractors as well as through the use of force account. Likewise the MPW will need assistance in developing the local contracting industry. Need for the following assistance is envisaged:

Assistance	Explanation	Estimated costs (USD)
Technical assistance in labour-based road maintenance	MPW personnel have to receive training to be able to form emergency/labour-based maintenance units. The MPW must also have the capacity to train small-scale contractors and community groups in labour-based maintenance operations.	1 expert for the duration of 24 months USD 480,000
Assistance in procurement of plant and tools for the MPW force account emergency/labour-based units	The MPW emergency/labour-based units must be properly equipped to be able to carry out their tasks	Cost of plant and tools for 5 unit of 50 labourers USD 500,000
Assistance in establishing a plant and tools pool for labour-based maintenance	The small-scale contractors and community groups that will be engaged in labour-based maintenance operations may not possess the plant and tools required. They would hire needed equipment from the MPW plant and tools pool.	A plant and tools pool for labour-based maintenance USD 500,000
Technical assistance in organising transfer of MPW staff to the private sector	The transfer of MPW staff to the private sector requires that the staff be given proper support and that some forms of incentives are introduced in order to encourage staff to accept a private sector employer or become self-employed.	1 expert for the duration of 18 months and cost of introduced incentives USD 860,000

Assistance	Explanation	Estimated costs (USD)
Technical assistance in planning and monitoring training of local sub-contractors by foreign contractors.	The training given local sub-contractors has to be carefully planned and also monitored.	1 expert for the duration of 24 months USD 480,000
<b>TOTAL COSTS (USD)</b>		<b>2,820,000</b>

### Recommendations

The MPW's own account operations should focus on emergency repair and routine maintenance works. Surplus staff should be transferred to the private sector, new state-owned construction companies (to be privatised in due course), and/or labour-based units, as a precursor to the establishment of private labour-based units.

### Actions

A detailed strategy for how to restructure MPW needs to be worked out, including implementing the above recommendation. See further Consultation Paper 2.3.

## ANNEX 1: Construction Equipment Availability at the Ministry of Public Works

Equipment	Kabul	Kandahar	Herat	Parwan	Nangarhar	Baghlan	Jaozjan	TOTAL
Trucks	3	2	5	2	2	2	1	17
Operable	3	2	3	0	2	1	1	12 (71%)
Dumpers	15	15	22	12	13	6	4	87
Operable	5	8	15	4	9	4	3	48 (55%)
Water Tankers	0	4	0	2	2	3	1	12
Operable	0	2	0	0	2	1	1	6 (50%)
Bitumen Tank	0	0	1	0	1	1	0	3
Operable	0	0	1	0	1	0	0	2 (67%)
Buses	1	0	2	0	0	1	0	4
Operable	1	0	1	0	0	1	0	3 (75%)
Cars	4	1	4	2	0	0	0	11
Operable	4	1	4	1	0	0	0	10 (91%)
Bulldozers	3	0	6	6	2	4	2	23
Operable	2	0	4	3	0	2	1	12 (52%)
Loaders	4	2	4	3	1	1	1	16
Operable	2	2	2	2	1	1	0	10 (63%)
Graders	3	3	3	2	2	1	2	16
Operable	2	2	2	0	1	0	1	8 (50%)
Excavators	2	0	0	3	1	1	1	8
Operable	1	0	0	2	1	0	0	4 (50%)
Cranes	2	1	2	2	1	1	0	9
Operable	2	0	1	0	0	0	0	3 (33%)
Rollers	5	0	4	2	2	1	1	15
Operable	2	0	3	1	1	1	0	8 (53%)
Asphalt Mixer	4	0	1	0	6	0	0	11
Operable	2	0	1	0	2	0	0	5 (45%)
Asphalt Plant	2	1	1	1	1	0	0	6
Operable	2	0	1	0	1	0	0	4 (67%)
Air Compr.	1	2	2	2	0	0	1	8
Operable	0	1	2	0	0	0	1	4 (50%)
Welders	2	0	2	1	0	2	0	7
Operable	1	0	1	0	0	1	0	3 (43%)
Generators	0	0	0	1	0	0	0	1
Operable	0	0	0	0	0	0	0	0 (0%)
Snowplows	0	0	0	2	0	0	0	2
Operable	0	0	0	1	0	0	0	1 (50%)
<b>TOTAL</b>	<b>51</b>	<b>31</b>	<b>59</b>	<b>43</b>	<b>34</b>	<b>24</b>	<b>14</b>	<b>256</b>
<b>Operable</b>	<b>29</b>	<b>18</b>	<b>41</b>	<b>14</b>	<b>21</b>	<b>12</b>	<b>8</b>	<b>143</b>
<b>Percent</b>	<b>57%</b>	<b>58%</b>	<b>69%</b>	<b>33%</b>	<b>62%</b>	<b>50%</b>	<b>57%</b>	<b>56%</b>

Source: Ministry of Public Works, November 2002