Contractor Development in the Maintenance Industry

for immovable assets
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# Contractor Development in the Maintenance Industry

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1. INTRODUCTION

The purpose of this report is to incorporate the National Contractor Development Programme (NCDP) into the National Immovable Asset Maintenance Management (NIAMM) Framework. The intent is not to develop new or parallel frameworks or processes, but rather to make the necessary linkages so as to properly integrate the maintenance of public infrastructure into the existing National Contractor Development Programme (NCDP).

This report includes the following:

• an overview of the National Contractor Development Programme;
• maintenance work packages;
• procurement approaches; and
• recommendations for enhancing contractor development through maintenance.
2. CONTRACTOR DEVELOPMENT

2.1 THE NATIONAL CONTRACTOR DEVELOPMENT PROGRAMME

Contractor Development is a deliberate and managed process to achieve targeted developmental outcomes that improves a contractors grading status, performance and quality of service, and equity and targeted ownership. The National Contractor Development Programme (NCDP) is a government programme comprising a partnership between the cidb, National and Provincial Public Works and other willing stakeholders\(^1\).\(^2\). In terms of the NCDP the participating stakeholders commit their resources to develop previously disadvantaged contractors; and align their individual contractor development programmes or initiatives with the principles set out in the NCDP framework thereby meeting both the objectives of the NCDP and their own service delivery objectives.

The stated objective of the NCDP is to promote affirmative equity ownership across the different contracting categories and grades, as well as improving skills and performance in the delivery and maintenance of capital works across the public sector.

To achieve this objective, participants within the NCDP aim to:

- increase the number of black, women, disabled, and youth-owned companies in targeted categories and grades – increasing the representativeness of contractors in all categories and grades;
- improve the grading status of previously disadvantaged contractors in targeted categories and grades;
- improve the performance of previously disadvantaged contractors in terms of quality, employment practices, skills development, safety, health and the environment; and
- improve the business management and technical skills of these contractors.

The key focus of the NCDP is to exit and graduate contractors from the programme with measurable improvements (e.g. NQF level or improvement in contractor grading). Contractors should have achieved predefined criteria relating to skills, qualifications, certification, sustainability, quality, etc. that improve the competency of the contractor\(^3\).

The NCDP provides for two instruments:

- direct targeting through Contractor Development Programmes (CDPs), which are established for the purpose of providing developmental support to contractors; and
- indirect targeting through procurement, where development outcomes are conditions of contract requiring developmental support to be provided by a main contractor to a JV partner or sub-contractor\(^4\).

The figure following indicates the grades and competencies targeted by the two instruments i.e. direct targeting through CDPs and indirect targeting through procurement.
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**Figure 1: Grades and Competence Targeted: Direct and Indirect Targeting**

<table>
<thead>
<tr>
<th>Direct Targeting</th>
<th>Indirect Targeting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New start-ups</strong></td>
<td><strong>Enterprise Development</strong></td>
</tr>
<tr>
<td>This targets cidb grade 1 to 3 contractors. Key instruments will be learnerships within Contractor Development Programmes (CDPs), predominantly incorporating mentorship in which the developing contractor learns the basic business and construction components of contracting. Within the CDPs, budget will be allocated to ensure sustainable work for the learner contractors.</td>
<td>This targets the cidb grade 2 to 6 contractors who exhibit potential to grow and develop. Key instruments will be structured developmental support provided within CDPs or through a structured relationship with an established contractor. The developmental support provided will be guided by the competence standards set by the cidb Best Practice Contractor Recognition Scheme.</td>
</tr>
<tr>
<td><strong>Performance Improvement</strong></td>
<td></td>
</tr>
<tr>
<td>This targets the cidb grade 4 to 7 contractors who exhibit potential to develop. Key instruments will be structured procurement-driven relationships specifying developmental support to the targeted developing contractors that is aligned with the cidb Best Practice Contractor Recognition Scheme.</td>
<td></td>
</tr>
</tbody>
</table>

### 2.2 Expanded Public Works Programme (EPWP)

Contractor development also occurs through the Expanded Public Works Learnership Programme called Vuk’uphile which focuses on building the capacity of emerging contractors as part of the EPWP. This programme also offers opportunities for maintenance contracts and is therefore outlined below.

**The aim is to develop emerging contractors so that they are able to execute labour intensive projects.** In addition the programme focuses on developing entrepreneurial, business and technical skills.

**To be eligible for participation Learner Contracting Companies must have:**

- one contractor (trained at NQF 4 -254 Credits); and
- one to two site supervisors (trained at NQF 4-218 Credits).
3. NIMS COMPONENTS OF WORK

On the basis of an analysis of the work undertaken in respect of the NIAMM Framework, two generic work components are identified namely preventative and corrective maintenance. An overview of these forms of maintenance is shown in the table below.

**TABLE 2: PREVENTATIVE AND CORRECTIVE MAINTENANCE**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>DESCRIPTION</th>
<th>EXAMPLES</th>
</tr>
</thead>
</table>
| Preventative Maintenance (Condition and Interval Based) | Maintenance carried out at predetermined intervals or corresponding to prescribed criteria and intended to reduce the probability of failure or the performance degradation of an item. Preventative maintenance is planned or carried out on opportunity. | • Monitoring of pressure and sewage flow on an ongoing basis  
• Monthly inspections of a facility  
• Annual visual checking of all door fixings, five yearly wall and ceiling painting, annual repair of all the jointing. |
| Corrective Maintenance (Planned and Emergency) | Maintenance carried out after a failure has occurred and intended to restore an item to a state in which it can perform its required function. Corrective maintenance can be planned or unplanned. | • Burst geyser or pipes  
• Elevators or escalators stop working  
• Leaking roof |

The following are representative components for a public building:

- electricity reticulation;
- fire detection systems;
- water supply and reticulation systems;
- steam and gas supply and reticulation systems;
- security systems;
- sewage disposal systems;
- heating and ventilation systems;
- waste management systems;
- elevators and escalators;
- internal building maintenance;
- external building façade; and
- roofing system.

The cidb provides further insight into the different classes of construction works as set out in the table on the following page.
<table>
<thead>
<tr>
<th>DEFINITION</th>
<th>BASIC WORKS TYPES</th>
<th>EXAMPLES</th>
<th>NIMS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Civil Engineering (CE)</strong></td>
<td>Construction Works primarily concerned with materials such as steel, concrete, earth and rock and their application in the development, extension, installation, maintenance, removal, renovation, alteration, or dismantling of building and engineering infrastructure</td>
<td>Water, sewerage, roads, railways, harbours and transport, urban development and municipal services</td>
<td>• Structures such as cooling tower, bridge culvert, dam, grand stand, road, railway, reservoir, runway, swimming pool, silo or tunnel&lt;br&gt;• The results of operations such as dredging, earthworks and geotechnical processes&lt;br&gt;• Township services, water treatment and supply, sewerage works, sanitation, soil conservation works, irrigation works, stormwater and drainage works, coastal works, ports, harbours, airports and pipelines</td>
</tr>
<tr>
<td><strong>Electrical Engineering Works – Building (EB)</strong></td>
<td>Construction Works that are primarily concerned with the installation, extension, modification or repair of electrical installations in or on any premises used for the transmission of electricity from a point of control to a point of consumption, including any article forming part of such an installation</td>
<td>All electrical equipment forming an integral and permanent part of buildings and/or structures, including any wiring, cable jointing and laying and electrical overhead line construction</td>
<td>• Electrical installations in buildings&lt;br&gt;• Electrical reticulations within a plot of land (erf) or building site&lt;br&gt;• Standby plant and uninterrupted power supply&lt;br&gt;• Verification and certification of electrical installations on premises</td>
</tr>
<tr>
<td>DEFINITION</td>
<td>BASIC WORKS TYPES</td>
<td>EXAMPLES</td>
<td>NIMS PUBLIC BUILDING COMPONENTS</td>
</tr>
<tr>
<td>------------</td>
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</tr>
</tbody>
</table>
| **Electrical Engineering Works – Infrastructure (EP)** | Construction Works that are primarily concerned with development, extension, installation, removal, renovation, alteration or dismantling of engineering infrastructure: a) relating to the generation, transmission and distribution of electricity; or b) Which cannot be classified as EB | Electrical power generation, transmission, control and distribution equipment and systems | • Power generation  
• Street and area lighting  
• Substations and protection systems  
• Township reticulations  
• Transmission lines | • Electricity reticulation systems |
| **General Building Works (GB)** | Construction Works that: a) are primarily concerned with the development, extension, installation, renewal, renovation, alteration, or dismantling of a permanent shelter for its occupants or contents; or b) cannot be categorised in terms of the definitions provided for civil engineering works, electrical engineering works, mechanical engineering works, or specialist works | Building and ancillary works other than those categorised as:  
• civil engineering works  
• electrical engineering works  
• mechanical engineering works  
• specialist works | • Buildings for domestic, industrial, institutional or commercial occupancies  
• Car ports  
• Stores  
• Walls | • Internal building maintenance  
• External building façade |
<table>
<thead>
<tr>
<th>DEFINITION</th>
<th>BASIC WORKS TYPES</th>
<th>EXAMPLES</th>
<th>NIMS PUBLIC BUILDING COMPONENTS</th>
</tr>
</thead>
</table>
| **Mechanical Engineering Works (ME)** | • Machine systems including those relating to the environment of building interiors  
• Gas transmission and distribution systems  
• Pipelines  
• Materials handling, lifting machinery, heating, ventilation and cooling, pumps  
• Continuous process systems, chemical works, metallurgical works, manufacturing, food processing | • Air-conditioning and mechanical ventilation  
• Boiler installations and steam distribution  
• Central heating  
• Centralised hot water generation  
• Compressed air, gas and vacuum installations  
• Conveyor and materials handling installations  
• Continuous process systems involving chemical works, metallurgical works, oil and gas wells, acid plants, metallurgical machinery, equipment and apparatus, and works necessary for the beneficiation of metals, minerals, rocks, petroleum and organic substance and other chemical processes  
• Dust and sawdust extraction  
• Kitchen equipment  
• Laundry equipment  
• Refrigeration and cold rooms  
• Waste handling systems (including compactors) | • Steam and gas supply and reticulation systems  
• Heating and ventilation systems  
• Waste management systems  
• Fire Detection  
• Elevators and escalators  
• Roofing |

Construction Works that are primarily concerned with the development, extension, installation, removal, alteration, renewal of engineering infrastructure for gas transmission and distribution, solid waste disposal, heating, ventilation and cooling, chemical works, metallurgical works, manufacturing, food processing and materials handling.
### DEFINITION

**Mechanical Engineering Works (ME)**

The development, extension, installation, renewal, removal, renovation, alteration or dismantling of fire prevention and protection infrastructure (drencher and sprinkler systems and fire installation).

The development, extension, installation, repair, renewal, removal or alteration of corrosion protection systems (cathodic, anodic and electrolytic).

The installation, renewal, removal, alteration or dismantling, as relevant, road markings and signage

- Fire Detection
- Elevators and escalators
- Roofing

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### BASIC WORKS TYPES

#### Demolition of buildings and engineering infrastructure and blasting.

The development, extension, installation, renewal, removal, renovation, alteration or dismantling of corrosion protection systems (cathodic, anodic and electrolytic).

The development, extension, installation, renewal, removal, renovation, alteration or dismantling of structural steelwork and scaffolding.

Timber buildings and structures

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### EXAMPLES

- Fire Detection
- Elevators and escalators
- Roofing

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### NIMS PUBLIC BUILDING COMPONENTS

#### Fire Detection
- Elevators and escalators
- Roofing

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On the basis of the above it is evident that maintenance offers significant opportunities for contracts in respect of the National Contractor Development Programme both in respect of the direct and indirect targeting components. It is noted that preventative maintenance is likely to be more appropriate as it is planned and more regular than corrective which is more adhoc responding as problems occur.
4. PROCUREMENT ARRANGEMENTS

The Infrastructure Delivery Management System (IDMS) sets out the basis to develop a procurement strategy as part of the planning processes. It consists of 3 main stages (see figure below):

- Delivery Management Strategy;
- Contracting Arrangements; and
- Procurement Arrangements.

Each have steps in which a procurement strategy is progressively developed that responds to the specific needs of the organisation. The decisions made in the management strategy formulation and contracting arrangements impact how maintenance should be procured.

FIGURE 4: STAGES IN DEVELOPING A PROCUREMENT STRATEGY

<table>
<thead>
<tr>
<th>DELIVERY MANAGEMENT STRATEGY</th>
<th>CONTRACTING ARRANGEMENTS</th>
<th>PROCUREMENT ARRANGEMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gather and analyse information</td>
<td>1. Allocate risks for packages (i.e. allocation of responsibilities, pricing strategy and the form of contract)</td>
<td>1. Quality strategy</td>
</tr>
<tr>
<td>2. Formulate procurement objectives</td>
<td>2. Establish requirements for outsourced professional services</td>
<td>2. Procurement procedure</td>
</tr>
<tr>
<td>4. Delivery mode</td>
<td>4. Allocate risks for professional service contracts</td>
<td>4. Tender evaluation procedure</td>
</tr>
<tr>
<td>5. Package works</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The table on the following page sets out the critical factors in respect of the development of the maintenance industry when applying a construction procurement strategy.
**TABLE 5: MAINTENANCE CRITICAL FACTORS IN A CONSTRUCTION PROCUREMENT STRATEGY**

<table>
<thead>
<tr>
<th>CONSTRUCTION PROCUREMENT STRATEGY</th>
<th>APPLICABILITY AND IMPACT ON MAINTENANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Delivery Management Strategy</strong></td>
<td>• The contractor developmental objectives should be defined upfront as part of the planning process, for maintenance these need to be documented and prioritised as per the NCDP principals (see section 2.0)</td>
</tr>
<tr>
<td>• Formulate procurement objectives</td>
<td>• The packing of maintenance works is a strategic decision, it identifies opportunities for framework agreements (which then need arrangements to be put in place); sets out the plan for maintenance programmes / projects, identifies each package, and the mode of delivery</td>
</tr>
<tr>
<td>• Package works</td>
<td>• Guidance of establishing packaging of works in support of developing the maintenance industry can be found in:</td>
</tr>
<tr>
<td></td>
<td>• cidb Practice Note 33: Balancing Delivery and Development on Infrastructure Projects</td>
</tr>
<tr>
<td></td>
<td>• cidb Practice Note 32: Application of the Potentially Emerging (PE) Status</td>
</tr>
<tr>
<td></td>
<td>• cidb Practice Note 29: Allocating Sustainable Work Opportunities to Contractor Development Programmes</td>
</tr>
<tr>
<td></td>
<td>• cidb Practice Note 15: Framework Agreements</td>
</tr>
<tr>
<td></td>
<td>• Practice Note 10: Attaining Social and Economic Deliverables</td>
</tr>
<tr>
<td></td>
<td>• Practice Note 1: Scaling up Delivery and Accelerating Empowerment</td>
</tr>
<tr>
<td><strong>Contracting Arrangements</strong></td>
<td>• The service requirements for maintenance may be stand-alone, or combined with construction and/or operations</td>
</tr>
<tr>
<td>• Allocate risks for packages (i.e. allocation of responsibilities, pricing strategy and the form of contract)</td>
<td>• Maintenance can be priced based (list) or cost based (reimbursable plus fee or target cost)</td>
</tr>
<tr>
<td><strong>Procurement Arrangements</strong></td>
<td>• The mandatory sub-contracting arrangements must be included that provide for the development of contractors either through a JV or sub-contractors</td>
</tr>
<tr>
<td>• Targeted procurement procedure</td>
<td>• The specific parameters must be clearly outlined in the contract with specific targets that are measurable defined</td>
</tr>
</tbody>
</table>

Framework agreements are a particular form of arrangement for contracting which is useful for dealing efficiently with the procurement for a large number of maintenance contracts either in a particular geography or in respect of a category of public building. It also allows the additional contractor development conditions of contract to be applied efficiently across a wide range of maintenance contracts using targeted sub-contractors and/or JV partners.

The **key elements of a framework agreement are:**

- A framework agreement is only **entered into with contractors who have the resources and the capability to carry out work that is likely to be instructed.**

- A framework agreement needs to **include the basis by which contractors are to be remunerated for instructed work.**

- The **scope of work of a framework agreement needs to identify the extent and location of the work covered by the contract** as the employer may not instruct a contractor to provide work outside of the scope of work associated with the contract:
  - the budgets available and the detailed scope of the needs are uncertain;
  - the potential for additional funds to be made available exists;
  - the need involves repetitive work of a similar nature;
  - a quick response time is required; and
  - long term relationships (3 to 5 year) are desirable to achieve efficiencies.
• **Competition amongst framework contractors participating in framework agreements** covering a particular scope of work needs to be reopened whenever there is no justifiable reason for issuing a batch/task/package order to a particular contractor, in which case all such contractors are invited to submit quotations to execute a batch/task/package order.

• **Contractors may only proceed with work** associated with a batch/task/work package **when given an official** batch/task/package order to do so.

Maintenance activities, both preventative and corrective, can be scoped to identify the extent and location of the work that may be required.

Framework agreements can be used for contractor development in both the direct and indirect targeting components of the NCDP.

**Direct:** The CDP contractors must be appointed as contractors for particular maintenance works within a framework agreement. These contractors will then be inline for packages of maintenance works aligned to the particular scope of work of the Framework agreement. This provides the ability of an entity to provide on-going and predictable packages of maintenance works to be issued (in terms of the framework agreement) in a procurement process that is more time efficient.

**Indirect:** Development is achieved through CPGs such as the cidb Standard for Indirect Targeting. The benefit of the Framework Agreement is that the contractors will have already been though a competitive selection process to be eligible for maintenance works packages and as such will be able to better plan and commit to the development objectives of NCDP.

In both cases the framework agreements provide the benefit in that the issuing of work instructions is a contacted-time process as the parameters for the development objectives and selection process is done upfront (in a suitable procurement process). The selection of the contractors upfront in the setting up of the framework agreement provides for a longer-term relationship between the entity and the contractor.
5. RECOMMENDATIONS FOR ENHANCING CONTRACTOR DEVELOPMENT THROUGH MAINTENANCE

On the basis of the overview of the NCDP, the envisaged maintenance work components required and the procurement arrangements available, it is evident that maintenance contracts (particularly preventative and to some extent corrective) offer excellent opportunities for contractor development as they are ongoing and predictable, as well as repetitive. The Expanded Public Works Programme Vuk’uphile also offers opportunities for maintenance contracts.

Framework Agreements are particularly suitable for maintenance works as the packaging of maintenance into programmes of packages (clustering / grouping similar works or geographic areas) can provide a way to effectively achieve the developmental objectives identified. This is due to the ability to issue instructions to contractors on identified maintenance works packages with predefined development objectives as specified in the framework agreement.

The most appropriate contracting and procurement arrangements should be identified for the specific infrastructure to be maintained and taking into account the capacity of the responsible entity.

It is noted however that a contractor development programme does add additional costs and administration and while it offers developmental outcomes, should only be undertaken if there is a need to develop capacity and competency amongst targeted contractors in the geographic area.

The table below summaries the types of maintenance which are all provide suitable for contractor development.

**TABLE 5: TYPES OF MAINTENANCE AND NCDP APPLICATION**

<table>
<thead>
<tr>
<th>TYPE OF MAINTENANCE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predictive</td>
<td>Implement operation and maintenance activities as specified by the equipment manufacturer</td>
</tr>
<tr>
<td>(Condition and interval based)</td>
<td>Analysis/measurement of operational records/facility/equipment on a regular basis (monthly, quarterly, annual) to detect system degradation and repairs thereof</td>
</tr>
<tr>
<td></td>
<td>Specific repairs undertaken on a regular basis (annually) for example external wall painting, sealing of windows, replacement of corroded fixings, repair of external paved areas and rain damage</td>
</tr>
<tr>
<td>Corrective</td>
<td>Repairing or replacing damaged equipment when problems occur</td>
</tr>
<tr>
<td>(planned and emergency)</td>
<td></td>
</tr>
</tbody>
</table>

Framework agreements are particularity appropriate for maintenance works packages due to their ability to streamline the procurement of targeted contractors for a wide range of generally small packages of maintenance work linked to a specified contractor development process.

The CDP (direct approach) is best for predictive maintenance, while the procurement driven development (indirect) can be applied in the context of both predictive and corrective maintenance.
6. REFERENCES

6) NT (2013) The Infrastructure Delivery Management System, National Treasury
CONTRACTOR DEVELOPMENT IN THE MAINTENANCE INDUSTRY for immovable assets

NOTES
COMPETENCY FRAMEWORK for immovable assets under the custodianship of National and Provincial Departments of Works
CONTRACTOR DEVELOPMENT IN THE MAINTENANCE INDUSTRY

This publication is brought to you by The Department of Public Works and The Construction Industry Development Board (cidb). This book is number six in the following series:

1. Maintenance Management Standard
2. Maintenance Accounting Framework
3. Maintenance Monitoring and Evaluation Protocol
4. Maintenance Planning Guidelines
5. Maintenance Competency Framework
6. Contractor Development in the Maintenance Industry