

# Papua New Guinea – Australia Transport Sector Support Program (TSSP)

Supported by the Australian Government - AusAID

PNG DEPARTMENT OF WORKS (OPERATIONS)

## Socio-Economic Impact Statement

## Baseline Report Recommendations

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## 1.0 ABBREVIATIONS & ACRONYMS

AS	Assistant Secretary
AusAID	Australian Agency for International Development
DoW	Department of Works
EIA	Environmental Impact Assessment
EMP	Environment Management Plan (provided by Contractor)
FAS (Operations)	First Assistant Secretary (Operations)
GoPNG	Government of Papua New Guinea
NTDP	National Transport Development Plan
PFC	Principal Field Coordinator
PMC	Project Management and Supervision Consultants
PWM	Provincial Works Manager
RCEA	Road Construction Engineer Advisor
SCC	Special Conditions of Contract
SIS	Socio-Economic Impact Study
SMP	Safety Management Plan (provided by Contractor)
TIPS	Transport Infrastructure Priorities Study
TSSP	Transport Sector Support Program

## **2.0 INTRODUCTION**

One of the key components of the Transport Sector Support Program (TSSP) is the improvement of the prioritized national roads of Papua New Guinea. The program does not intend to construct new roads but rather seeks to improve and maintain the existing roads.

In order to monitor the impacts of these road improvement works, a Socio-Economic Impact Study (SIS) is being carried out by Finnroad Ltd, in close cooperation with SMEC and AusAID, and with institutional support from the Department of Works (DoW). The SIS Project aims at monitoring the impacts of the road improvement works on people's livelihoods and poverty reduction. The impacts of road improvement on cross-cutting issues such as the environment, gender equity and HIV/AIDS are also included in the Study which covers all ten (10) Provinces benefitting of the TSSP.

The SIS Project consists of two phases; the Inception Phase and the Impact Study Phase. During the Inception Phase, a baseline study has been conducted in areas that will be affected by road improvement works. After the completion of these works, the Study is repeated in the same areas in order to monitor the impacts of the road improvement works on the local communities and populations.

The SIS Baseline Report provides six (6) areas of mitigation measures relating to environmental issues, and recommends that these measures be implemented on TSSP construction projects, thus reducing the adverse environmental impacts which are related to road work construction. Whilst the recommendations are included as Environmental Recommendations, they also include broader issues relating to the occupational health and safety requirements of construction personnel, and welfare issues of the local communities.

In addition to addressing each of these recommendations in detail, this Report also looks at the broader issues raised by these SIS Baseline Recommendations.

## **3.0 EXECUTIVE SUMMARY**

When compared with developed countries, the current standards of health, safety, environmental and community welfare issues within the contracts currently administered by the Department of Works (DoW) is at a low standard. In developed countries, the attitudes towards these issues have changed markedly over the past 15 – 20 years, and the previous practices of those times are no longer considered acceptable.

From previous experience, the improvement in the standards of these issues, particularly occupational health and safety, is usually led by the resources sector and this is also the case in PNG. To improve current standards on DoW administered Contracts, a detailed review is required. Such a review will enable short term improvements which will address many issues, including the SIS Baseline Recommendations. Longer term recommendations would involve changes to contractual obligations, and possible structural change within the Department.

A review of the contracts currently being let by the DoW shows that with the proper administration and supervision, the SIS Baseline Recommendations would be adequately addressed. Consequently, in the short term, a review of the current documentation is needed with the supply of relevant Checklists / Guidelines to enable proper reviews of Safety and Environmental Management Plans which are submitted by Contractors as per current contractual requirements.

Ongoing training and proper supervision will enable the standards in the previously mentioned areas to be raised. These Short Term Recommendations will address how current contractual obligations should be administered in a manner which will address the SIS Baseline Recommendations.

However, as with developed countries, it could be expected that the current attitudes towards health, safety, environmental and community welfare issues will develop over coming years, creating an environment where current standards will not be acceptable. Consequently, the Department needs to consider the introduction of structural change within the Department to take account of future changing attitudes.

If current standards are to improve, consideration needs to be given to the creation of a section within the Department, focussing on safety, environment and community welfare issues as they impact on the Department. Such a section within the Department would focus on improvements in current behaviours without an overriding focus on programming issues. Experience in these issues shows that real improvements over longer periods, will only be achieved through changes in attitude, and not just through the implementation of contractual obligations.

#### **4.0 SIS BASELINE REPORT ENVIRONMENTAL RECOMMENDATIONS**

Part of the recommendations of the SIS Baseline Report, prepared by Finnroad Ltd, states that *“Chapter 7 provides some mitigation measures to reduce adverse environmental impacts related to road works. It is recommended that the contractors carrying out the road improvement works are provided with Environmental Guidelines and that Environmental Management Plans (EMPs) are prepared for the works. Training in environmental issues should be provided, if considered necessary.”*

These recommended mitigation measures included in Chapter 7 – The Environment, are as follows: -

- Mitigate risks of erosion and sedimentation around watercourses,
- Restrict water and soil contamination on work sites and around work camps (including littering and waste disposal),
- Restrict generation of dust and noise during construction,
- Plan quarry sites to be located far from population centres, from drinking water intakes, or from streams and cultivated land,
- Implement consultations with communities, and
- Minimize risk of accidents and ensure occupational safety of workers on construction sites.

The Report states further that the environmental impacts of pavement, upgrading and rehabilitation are expected to be minor in Project areas. The environmental impacts of TSSP will be limited mainly to the construction effects associated with rehabilitation and maintenance works. The adverse effects may result from noise and dust, disposal of solid wastes and erosion control. These impacts are common in road works and can be managed adequately in accordance with the Environmental Guidelines and Environmental Management Plan (EMP) which need to be prepared by the Contractors, as part of DoW contractual obligations.

The first four (4) recommendations relate to issues that should be managed through proper approval and monitoring of a Contractor's EMP, as is included in current contract documentation.

The fifth point more generally encompass the overall welfare of local communities, i.e. environmental, safety and lifestyle, and whilst current DoW contract documentation touches on such issues, there appears to be no follow up for the implementation of consultations with communities prior to and during construction.

Whilst the final point refers to the occupational safety of the construction workers, there needs to be a consideration of impacts of the construction activity on the health and safety issues of the surrounding community as well as the occupational health and safety of the construction employees.

When reviewing the implementation of the SIS Recommendations, it needs to be recalled that TSSP operates under GoPNG leadership; policies, strategies, plans, systems and processes. Accordingly, when looking to implement these recommendations, any changes should not be requirement of TSSP funded Projects, but either

through the good governance of existing legislation and current Contracts, or modifying future DoW documentation which will then be implemented throughout the organisation.

## 5.0 CURRENT OBLIGATIONS & PRACTICES

The Road Construction Engineer Advisors (RCEAs) make regular trips to the Provinces, and during the past visits the mitigation measures outlined in the SIS Baseline Report were discussed with the Provincial staff with the aim of assessing the Contractor's current contractual obligations, and also what are common practices employed on current Projects.

- Current Contractor Contractual Requirements & Required Approval Process

Current Contracts being let by the DoW contain a requirement for the Contractor to prepare and implement a safety program on all sites related to the Works. Appendices A and B contain relevant excerpts from current Contracts which relate to health, safety, environmental and welfare issues.

The Contract specifies that the safety program *"shall be in compliance with the Industrial Safety, Health and Welfare Act of Papua New Guinea and the Department of Works Safety Guidelines (if available)"*. Minimum inclusions are then listed – Refer Appendix B Clause 1.3.

Additionally, current Contracts also contain a requirement for the Contractor to prepare and implement an Environment Management Plan (EMP) on all sites related to the Works. *"The Environmental Management Plan shall be in compliance with the Papua New Guinea Environment Act 2000 and the Department of Works Environment Guidelines (if available)"*. Minimum inclusions are then listed – Refer Appendix B Clause 1.4.

Whilst no DoW Safety Guidelines are available, a copy of the *"Environmental Impact Guidelines for Roads and Bridges"* has been supplied by the DoW Environmental Officer. This document supplies information for the preparation of EMPs, and also provides solutions to common environmental issues that could be expected to arise during road and bridge construction.

Additionally in this regard, one of the recommendations in the Draft Activity Completion Report presented by the previous Project Management and Supervision Consultant (PMC) for PMCs 2 and 3, SMEC International Pty Ltd, is: *"DoW should progress and develop Quality, Environmental Management and Safety Management guidelines in order to provide a better framework for major works contractors to develop the Quality, Environmental and Safety Plans."*

Contractually the Superintendent's Representative should give a formal approval of SMPs and EMPs. This has generally not been the case, and this has been addressed with the new PMC Contractors. From discussions with the DoW Environmental Officer, EMPs, when submitted by Contractors, should be forwarded to the Environmental Officer for comment/approval, and his subsequent comments/approval passed back through the Superintendent's Representative to the Contractor.

As there is no such Division for the review of SMPs, any comparison for contractual acceptance is left with either the DoW, or PMC personnel to make comments back through the Superintendent's Representative.

The approval of a particular Plan should entail the comparison of the Plan against a checklist which stipulates the minimum requirements of the relevant Acts or Guidelines, and the subsequent formal approval of the Plan by the Superintendent, or his Representative. At present such checklists, and formal approval processes do not exist.

In current Bill of Quantities there are specific Pay Items dependent on the approval of these Plans, and subsequent payments are dependent on the ongoing satisfactory performance on the implementation of these Plans, i.e. payment should be withheld from the Contractor if he fails to gain approval for the Plans, or fails to satisfactorily meet ongoing requirements.

Consequently, it is dependent on the Superintendent, or his Representative, to firstly approve the submitted Plans as being in accordance with the Contractual requirements, and then certifying that the Contractor has satisfactorily performed his duties against these approved Plans on a monthly basis.

After a review of current DoW Contract documentation, it is apparent that compliance with these contractual obligations would satisfy the recommendations of the SIS Baseline Study.

- **Current Practices**

After discussions with Provincial staff, and a review of current practices, there does not appear to be a structured approval process for either of these Plans, nor any subsequent DoW monitoring and evaluation to assess ongoing satisfactory performance. Once the Plans have been submitted, the initial and subsequent payments for the relevant Bill of Quantity Items appear to be a formality, probably as a result of lack of understanding and training.

During site visits, no formal approval could be located, however it has been minuted in Monthly Meetings that Plans have been approved. No records have been found indicating who was responsible for the approval of these submitted Plans.

A review of some Contractor's Plans, shows that they vary greatly in content and requirements, with little if any requirements highlighted as being specific to the particular Project. Given that safety and environmental requirements are evolving in PNG, the generic approach to the production of these Plans by Contractors is to be expected, and there is no evolution of these Plans as little if any feedback has been provided to date.

After further discussions with Project staff, it is also apparent that these documents, once produced and supplied to DoW/PMC personnel are left "on the shelf" by both DoW and Contractor's personnel with little relevance to the Contractor's ongoing activities.

In contrast, and with a similar Pay Item, it is a contractual requirement that Contractors implement an HIV/AIDS Awareness Programme, which requires the submission and subsequent certification of an HIV/AIDS Compliance Report on a monthly basis. The certification of this form provides evidence of satisfactory performance in accordance with the HIV/AIDS Awareness Programme. Compliance with, and evidence of this contractual compliance is usually available, and a similar requirement should be included in SMPs and EMPs, to begin raising the awareness of these issues.

## **6.0 ADDRESSING SIS SPECIFIC RECOMMENDATIONS**

Based on the current Conditions of Contract, it is evident that all of the recommendations of the SIS Baseline Study would be addressed with the implementation of good governance covering aspects of the Contract dealing with health, safety and welfare.

However, following are measures which could be implemented to specifically address each of the recommendations of the SIS Baseline Study.

- **Mitigate Risks of Erosion and Sedimentation around Watercourses**

- The selected location for extraction needs to take into account other stakeholders who may be affected by the deterioration of water quality, i.e. other businesses or communities downstream of proposed extraction sites.
- Extraction of material from small streams to be discouraged
- Extraction areas shall be selected where there is little or no fine material

- As much as possible extraction areas should be in straight reaches of a riverbed, or at least 30 metres upstream from a concave in the river
- Excavation shall not occur on permanent riverbanks or close to the toe of these banks
- The depth of material removed from any one location shall be limited.
- Vegetation clearance to be limited to site access and extraction location, with stripped material to be stockpiled above the annual flood height for site rehabilitation.
- At the completion of works, the area shall be rehabilitated to approximate natural contours and to promote natural revegetation.

If the contractor's EMP is compliant with Section VIII, Clause 1.4 (e), (g) and (j), and the Contractor subsequently complies with this Plan, actions suggested by this SIS recommendation will be implemented.

These Supplementary Specification Clauses referred to are as follows: -

- "(e) Identification of all work activities and determination of possible environmental impacts of the activities at all work locations, including but not limited to: roadworks, camps, quarries and pits, stockpile and storage sites, fuel dumps, spoil heaps and disposal dumps, etc",*
- "(g) description of procedures and environmental protection measures to be implemented during each work activity, including but not limited to: erosion and sediment control, disposal of stormwater runoff, contaminant spill prevention, water sources protection; protection of wildlife, wildlife habitats, conservation areas, archaeological and burial sites, rehabilitation of work sites, including camps, quarries and pits, dump and storage sites, etc., and dust, noise and vibration mitigation measures" and*
- "(j) Plans showing the type and location of environment protection measures in relation to roadworks, camp sites, quarries, stockpiles, spoil heaps and waste disposal sites, water sources, archaeological, burial and any conservation sites, fuel and oils storage, workshops, plant and equipment storage sites, etc."*

- **Restrict Water and Soil Contamination on Work Sites and around Work Camps (including littering and waste disposal)**

- Items referred to previously need to be taken into consideration
- Schedule construction so that ground disturbance does not occur in the highest rainfall months
- Minimize areas of site disturbance and clearance by marking out work sites prior to clearance
- Schedule works so that disturbed areas are not cleared well before construction activities, and hence more vulnerable to erosion.
- Control runoff through works sites via stable temporary or permanent drains and banks installed early in the construction programme. Drains shall collect and convey clean water around the site, and direct on-site runoff into sediment traps.
- Install sediment control prior to earthworks, including sediment fences, traps and basins as necessary
- Maintain erosion and sediment controls during the period of soil disturbance and until the site is stable.
- Progressively rehabilitate areas as the works are completed along the Project.

In addition to the previously mentioned Clauses which are also applicable, Supplementary Specification Clause 1.4 (i) specifically states: -

- "(i) Description of procedures and environmental measures for the disposal of excess and waste materials and the decommissioning of work sites, camps and quarries"*

- **Restrict Generation of Dust and Noise during Construction**

- Spraying water on exposed surfaces, including earth access roads, if conditions are dry and windy and a large volume of dust is being generated.
- Undertaking all construction activities strictly within daylight hours, except where works are required at night due to a need to minimise disruption to traffic. Where night time activities are required, the construction contractor shall minimise the time of these activities and notify nearby residents within a reasonable period prior to these activities, say 2-3 days.
- Ensuring that machinery and vehicles used are modern and well maintained with mufflers fitted as appropriate.
- If generators are being used, locate them as far as possible from residential dwellings, and within noise reduction barriers such as soil/sandbag bunds to minimise the noise being emitted.
- Trucks transporting material from the quarry should be covered to minimise the release of dust.

In addition to the previously mentioned Clauses which are also applicable, Supplementary Specification Clause 1.4 (d) specifically states: -

*“(d) Programme for the regular environmental compliance inspection of all plant and equipment”*

- **Plan Quarry Sites to be located far from Population Centres, from Drinking Water Intakes, or from Streams and Cultivated Land**

Quarry sites have previously been identified by the DoW and the locations of each of the pits is maintained within the Provincial Offices. Also, by their very nature, quarry site locations are fixed in their location, and hence not all of the criteria outlined in the SIS recommendations can be met.

Additionally, the Contractor has responsibility to negotiate access to the quarries with landowners, and the subsequent compensation for gaining access to the quarries. If there are more properties to be traversed it will likely lead to higher compensation claims. Hence factors which will affect the quarry selected include distance from the Project, compensation requirements and the quality of material which will be won from a particular quarry.

In summary, the quarry location is dependent on many factors, not all of which are environmental, and the following mitigation measures will need to be considered when choosing the quarry to be used: -

- Quarry sites should be located in structurally stable areas and away from population centres, drinking water intakes, streams and cultivated land. Local landowners should be involved in selecting quarry sites, and the negotiation of a rental fee and extraction fee.
- Vegetation clearance shall be limited to the minimum area required for the initial extraction, and the stripped material kept for later rehabilitation.
- Ditches should be dug to facilitate the runoff water, and erosion control, with a sediment basin and sediment trap installed on the down slope side of the extraction (refer to PNG EIA Guidelines for Roads and Bridges). The Contractor shall clearly state the methods that will be used for containment of sediment-loaded runoff.
- Trucks transporting material from the quarry should be covered to minimise the release of dust.
- Quarry activities should only be undertaken during the day.

The Clauses in the Supplementary Specifications previously referred to, adequately address mitigation measures that will address this SIS Recommendation.

- **Implement Consultations with Communities**

- Meetings with Communities, or their representatives located within three (3) kms of the road Project, prior to the commencement of works. Early meetings could be used to highlight the benefits of better roads to gain the acceptance of the community.
- Update meetings as the specific matters arise, or new activities will commence presenting additional hazards to the safety of the community, particularly children and livestock
- Detail potential dangers of construction sites, including large plant with poor driver visibility, deep trenches, steep embankments etc.
- The dangers of illegally constructing housing within specified road reserves, and that these illegal constructions will not attract any compensation should future works require demolition of housing.
- Nearing project completion, these meetings should be used to highlight the dangers of traffic which will be using the road will be travelling at higher speeds.
- Use these meetings to highlight the dangers of digging trenches or constructing informal speed humps in new pavements, as they can also cause accidents.

Specific Clauses for the implementation of community consultation are included in the Supplementary Specification Clauses 1.4 – Contractor’s Environmental Management Plan subclauses (c) and (f), which state as follows: -

*“(c) Programme for the dissemination of environment protection information and the conduct of environmental awareness, on site and in neighbouring communities from the start date to the intended completion date”, and*

*“(f) Description of community consultations and local social issues”.*

Although the current documentation will adequately address this recommendation, Provincial staff have stated that World Bank contract documentation is more onerous regarding community consultation prior to, and during the construction of Projects. A review of the World Bank documentation shows that it does more clearly specify the requirements for such stakeholders meetings, but the implementation of the current DoW Supplementary Specification will also adequately address this issue.

The current DoW contract documentation requires community consultations, and if current contractual requirements are not being addressed, the issue of contract supervision and administration needs to be addressed, not the particular documentation that is being used.

Issues raised at community meetings held on World Bank Projects indicate a belief amongst some villagers that roads are being constructed only for the “rich”, who can afford cars, and offer nothing to the affected villages adjacent to such Projects. Community consultations can also be used to outline and promote the benefits to local communities.

- **Minimize Risk of Accidents and ensure Occupational Safety of Workers on Construction Sites**

- The preparation and implementation of a Contractor’s Safety Plan, in accordance with Clause 1.3 of the Supplementary Conditions of Contract, will address this SIS recommendation
- Any SMP must include for continual monitoring and evaluation to ensure that the requirements of the Plan are being met, and that ongoing improvements can be implemented.

At present the DoW sees Safety as the Contractor’s responsibility, and there is no section within the Department, specifically overseeing policies and practices with regard to safety within the Department, or safety associated with DoW Contracts. There does not appear to be any encouragement to do more in this regard, as currently accidents which occur on site, are seen as the Contractor’s responsibility, and hence associated compensation issues are resolved by the Contractor without any involvement by the Department.

By becoming more involved in safety requirements, there may be a fear that this could be seen as contributory involvement, and hence an involvement with any subsequent compensation issues.

In developed countries the emphasis put on health and safety is ever increasing, and it is unacceptable for hazards and risks which are associated with a person's occupation to go unaddressed.

## **7.0 RECOMMENDATIONS**

A review of current contractual documentation being used by the Department shows that with successful implementation, and subsequent monitoring of approved Safety and Environmental Management Plan requirements, the issues raised in the SIS Baseline Report can be adequately addressed.

Presently however, whilst these Plans are being submitted by Contractors, there is no formal approval process being used to indicate that these Plans meet the minimum specified requirements. Additionally, there is little, if any, monitoring and subsequent follow-up processes to monitor and evaluate the success of current Plans, and the need for subsequent improvements if shortcomings are identified.

As a result, short term measures to address each of the SIS Baseline Recommendations, could be achieved through better contractual supervision and administration to ensure that Plans are in accordance with specified requirements, and that they are subsequently being implemented.

### **Short Term Recommendations**

As previously stated, the successful implementation of the existing contractual obligations will address each of the SIS Baseline Recommendations. Consequently the short term recommendations require the implementation of the Contractor's contractual obligations, as well as raising the awareness of these issues.

- There is a need for a checklist / guidelines which reflect current contractual requirements that will assist with the approval of Contractor's SMPs, and EMPs. These are part of the current TSSP RCEA's Workplans, and will also need the input from PMC personnel.
- The inclusion of monthly "Compliance Reports" linked to the relevant Pay Items, indicating compliance with SMPs and EMPs on a monthly basis similar to that currently being used for HIV/AIDS. As a minimum this should raise the awareness of these issues amongst site management personnel. It is noted that some Contractors include monthly inspections in their SMPs, but there is no evidence that they are being used. Such a monthly "Compliance Report" will need to be included in future Contracts.
- For new contracts, EMPs need to be reviewed by the DoW Environmental Officer, and formal response and final acceptance by the Superintendent's Representative, generally the PWM. This has been addressed with current PMC's, and will need follow up by RCEAs when new contracts are awarded.
- Similarly for new contracts, SMPs need to be reviewed by the DoW/PMC personnel, and formal response and final acceptance by the Superintendent's Representative. This has been addressed with current PMC's, and will need follow up by RCEAs when new contracts are awarded.
- Ongoing training of DoW and PMC supervisory personnel, to properly review submitted documentation, and also the subsequent monitoring and evaluation process to ensure ongoing compliance. Again, this is part of the RCEAs current Workplan, and will need to be implemented through, and with the assistance of PMC personnel.

The short term recommendations relate to the implementation and enforcement of contractual and legal obligations. Whilst this may lead to the implementation of minimum requirements, it will create little buy-in or acceptance of the need for these measures, and hence the majority of the longer term recommendations are related to structural change within the Department, and the need for changing of attitudes towards, safety, environment and welfare issues, over a longer period of time.

Due to the nature of these short term recommendations, any improvement in current performance is only likely to impact on the Provinces currently receiving funding and Advisor support through TSSP.

### Longer Term Recommendations

The Short Term Recommendations are based on reviews and implementation of existing contractual obligations. Whilst this will begin raising the awareness of safety, environmental and community welfare issues, it will not necessarily enable subsequent review and improvement of DoW processes and attitudes. To enable these issues to be addressed across the complete Department, structural changes within the Department would be required to provide the support to Provinces needed to implement broad changes in attitude.

At present there is no Headquarter staff that have specific responsibilities addressing health, safety and welfare issues. This means that the supervision of any such measures fall to the Operations Division within the Provinces, namely the engineers and supervisors. These supervisory duties are in addition to current contractual, supervisory and administrative duties needed for the supervision of Contractors, as well as ongoing duties associated with works programmes required for construction and maintenance works within each Province. With this approach, experiences both positive and negative, as well as knowledge, is not easily transferred between the Provinces, and will likely lead to an inconsistent approach developing.

The Environmental Section within the Department is currently made up of one person. With ever increasing environmental requirements as PNG develops, this staffing level is inadequate to provide the technical assistance to adequately review, monitor, and make recommendations on current environmental legislation and best practices, as well as subsequent implementation throughout all Provinces.

Consequently, longer term recommendations are: -

- Review current health and safety, environmental and welfare contractual documentation and make recommendations for improvements of this documentation. This could include comparison with other contracts currently being used, and also may include some more prescriptive requirements in relation to aspects of these Projects, i.e. minimum safety clothing requirements, or requirements for detailed method statements for high risk safety or environmental activities.
- Consideration is given to the inclusion of a Community Liaison Officer for all Contracts over an agreed value, thus providing a link between contractors and local communities.
- To successfully implement change, input is needed from contractors and also the personnel on the Project. To get buy-in from all site personnel, it may be worth reviewing measures whereby site employees are rewarded for successfully achieving Key Performance Indicators. Alternatively, there could be additional funding set aside by the client for the contractor achieving Key Performance Indicators which are measured by both Contractor and DoW personnel
- With DoW Secretary approval, a review of the current and future requirements within the Department towards health, safety, environmental and community welfare issues, and such a review to include but not be limited to consideration of the following: -
  - Will taking a more proactive stance on safety expose the Department to compensation issues currently being addressed by Contractors?

- The possible establishment of a section within the Department that will be expressly associated with Health, Safety, Environment and community welfare issues as they impact on the Department. This will require additional recurrent funding if established, and could be responsible for such issues as:
  - Overall implementation of DoW policies and procedures on these matters
  - Formal approvals of Contractors Plans, subsequent field audits of contracting and DoW performances on these matters, as well as recommendations for ongoing improvements, throughout all Provinces.
  - Review of ongoing performance, including data collection, to see that occupational and community expectations are being met, and to enable a focus on the more frequent / more serious types of incidents.
  - Formal and informal training on legislative requirements and DoW expectations

## **8.0 CONCLUSION**

When compared with developed countries, the current standards of health, safety, environmental and community welfare issues within the contracts currently administered by the Department of Works (DoW) is at a low standard. In developed countries, the attitudes towards these issues have changed markedly over the past 15 – 20 years, and the previous practices of those times are no longer considered acceptable. Such changes in legislative and community attitudes could be expected in PNG.

A review of the current contractual obligations being used by the DoW shows that with the proper supervisory and administrative implementation, the SIS Baseline Recommendations would be addressed.

Consequently, short term measures to address each of the SIS Baseline Recommendations, could be achieved through better contractual supervision and administration to ensure that Plans are in accordance with specified requirements, and that they are subsequently being implemented. These short term recommendations are largely included within the Terms of Reference for the TSSP RCEAs, and can be implemented through the existing DoW and PMC personnel.

As with developed countries, it could be expected that the current attitudes towards health, safety, environmental and community welfare issues will develop over coming years, creating an environment where current standards will not be acceptable. Consequently, the Department needs look at changes within the Department that will account for these changing occupational and community attitudes.

Longer term recommendations are for a review considering a section within the DoW focussing on safety, environment and welfare issues as they impact on the Department's activities. Such a section within the Department would focus on improvements in current behaviours without an overriding focus on programming issues. Experience in these issues shows that real improvements over longer periods will only be achieved through changes in attitude, and not just through the implementation of legal and contractual obligations.

**APPENDIX A: Excerpt from the Section VI. Special Conditions of Contract**

Special Conditions of Contract 4 – Safety Health and the Environment.

## **SCC 4 – Safety, Health and the Environment**

**Delete Clause 19 - Safety of the Conditions of Contract and add the following new clause**

### **19 Safety, Health and the Environment**

- 19.1 The Contractor shall be responsible for the safety of all activities on the Site and shall comply with all relevant provisions of the Industrial Safety, Health and Welfare Act of Papua New Guinea.
- 19.2 The Contractor shall prepare and submit a safety programme and traffic control plan for the Site and all other sites related to the Works, as specified in the Supplementary Specifications, for the Superintendent's approval, **prior to commencement of work at Site (Start Date)**. The Contractor shall implement and maintain safety and traffic control measures and systems in accordance with its conforming safety programme, from the Start Date to the date of Practical Completion. If the Contractor does not submit a safety programme within the deadline, the Superintendent may withhold the amount of **K10,000** from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue safety programme has been submitted.
- 19.3 The Contractor shall conduct a HIV/AIDS awareness and prevention programme using the services of an approved service provider, and shall undertake such other measures as are specified in this Contract to reduce the risk of the transfer of the HIV virus between and among the Contractor's personnel and their families and the local community, to promote voluntary early diagnosis, and to assist affected individuals. If the Contractor does not conduct a HIV/AIDS awareness and prevention programme as required, the Employer may employ a qualified service provider to provide the required services which the Contractor should have provided and recover the expenses the Employer has incurred from payments otherwise due to the Contractor or, if no payment is due, the payment of the expenses shall be a debt due.
- 19.4 The Contractor shall be responsible for protection of the environment at the Site and all other sites related to the Works. The Contractor shall comply with all relevant provisions of the Papua New Guinea Environment Act, 2000.
- 19.5 The Contractor shall prepare and submit an environment management plan for the Site and all sites related to the works, as specified in the Supplementary Specifications, for the Superintendent's approval, **prior to commencement of work at Site (Start Date)**. The Contractor shall implement and maintain environmental protection measures and systems in accordance with its conforming environment management plan, from the Start Date to the date of Practical Completion. If the Contractor does not submit an environment management plan within the deadline, the Superintendent may withhold the amount of **K10,000** from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue environment management plan has been submitted.

**APPENDIX B: Excerpt from Section VIII. Supplementary Specifications**



## Section VIII. Supplementary Specifications

These specifications take priority over the Specifications in Section VII and include project specific requirements.

### SCOPE OF WORK

The Scope of Work shall include in general:

*(Omitted for clarity)*

### GROUP 1 - GENERAL

#### 1.1 General Clauses

This item shall address the requirements of Group 1 of the Specification, including traffic control.

The Contractor shall ensure that traffic control measures are in place at all times to ensure that both the safety of pedestrian and vehicular traffic is maintained and that the safety of the Contractor's employees is not compromised.

Where necessary, traffic control measures shall include traffic controllers with "GO" and "STOP" signs at both ends of sections of work in progress.

#### Measurement and Payment (Item 1.1 of the Bill of Quantities)

The unit of measurement shall be a lump sum item. A fixed percentage of the total will be paid each month such that the lump sum amount is paid in full at the end of the Contract.

#### 1.2 HIV/AIDS Prevention

1.2.1 For the purpose of Clause 4 of the Special Conditions of Contract, Sub-clause 19.3:

- "an Approved Service Provider" means a person or entity approved by the PNG National AIDS Council to provide the HIV/AIDS Awareness Programme;
- the "Contractor's Personnel" or "Construction Workers" means, without prejudice to any other definition contained in the Contract, all personnel, who are under the Contractor's control and on the Site in connection with the Contract, including any workers who are under the control of any person or entity to whom the Contractor has subcontracted any of his obligations under the Contract other than those responsibilities set out in this Clause;
- "the HIV/AIDS Awareness Programme" means a HIV awareness programme in compliance with the HIV Awareness Programme curriculum and guidelines published by UNAIDS and/or PNG National AIDS Councils);

- “the Local Community” means the communities local to the Site most likely to have contact with the Contractor’s Personnel and, in particular, vulnerable groups and sex workers in those communities;
- “PNG National AIDS Council” is the authority designated by the PNG national government to have responsibility for preventing and/or combating HIV-AIDS;
- “UNAIDS” shall mean the agency of the United Nations of that name or the United Nations Regional Task Force on mobile population and HIV vulnerability;
- Abbreviations: STI – Sexually Transmitted Infection  
HIV – Human Immunodeficiency Virus  
AIDS – Acquired Immune Deficiency Syndrome

1.2.2 It shall be a requirement of the Contract that the Contractor:

- Subcontracts with an Approved Service Provider to provide a HIV Awareness Programme to the Contractor’s Personnel and the Local Community as soon as practical after the Contractor’s Personnel arrive at Site, and to repeat the HIV Awareness Programme at intervals not exceeding four month;
- Gives any representative of the Approved Service Provider, the Employer and PNG National AIDS Council all reasonable access to the Site in connection with the HIV Awareness Programme;
- If the PNG National AIDS Council has not provided the names of available Approved Service Providers within two weeks of being asked the Contractor may select its own service provider after consultation with the appropriate UNAIDS and/or PNG National AIDS Council office;
- Instruct the Contractor’s personnel to attend the HIV/AIDS Awareness Programme in the course of their employment and during their normal working hours or any period of overtime provided for in the relevant employment contracts and uses all reasonable endeavours to ensure this instruction is followed;
- Provides suitable space for delivery of the HIV/AIDS Awareness Programme and does nothing to dissuade the Contractor’s Personnel from attending the HIV/AIDS Awareness Programme;
- As soon as practicable, notifies the PNG National AIDS Council of its subcontract with an Approved Service Provider to facilitate the PNG National AIDS Council’s audit of Approved Service Providers;
- Gives all reasonable cooperation to the PNG National AIDS Council if it exercises its right to audit the provision by the Approved Service Provider of the HIV/AIDS Awareness Programme;
- Makes condoms complying with the requirements of ISO 4074 available to all Contractor’s Personnel at readily accessible points on the site, suitably protected from the elements, for the duration of the Contract;
- Either place and maintain HIV/AIDS awareness posters of size not less than A1 in areas which are highly trafficked by Contractor’s Personnel, or provide Contractor’s Personnel with a pamphlet, in languages largely understood by the Contractor’s Personnel, which reinforce the outcomes of the HIV/AIDS Awareness Programme as stated in Clause 1.14.3;
- Encourages voluntary HIV/STI testing

- Provides information on services concerning counselling, support and care of those that are infected.

1.2.3 The outcomes of the HIV/AIDS Awareness Programme shall as a minimum, result in Contractor's personnel exposed to such a programme being able to:

- communicate the existence of problems of HIV and be able to outline the consequences of transmission of HIV to or from the Local Community;
- recall and communicate the mode of HIV transmission and preventative measures including the proper use of the condom;
- be aware of the advantages of abstinence/avoidance.

1.2.4 Compliance and Payment

The Contractor shall complete and submit a HIV/AIDS Compliance Report Form (attached) with each monthly claim. The associated unit rates in Group 1 of the Bill of Quantities shall include full compensation for any temporary or permanent items required to complete the HIV/AIDS Awareness Programme to the satisfaction of the Superintendent.

Measurement and Payment (Item 1.2 of the Bill of Quantities)

The unit of measurement shall be a lump sum item. A fixed percentage of the total will be paid each month upon the Superintendent's certification of satisfactory performance such that the lump sum amount is paid in full at the end of the Contract.

## **HIV/AIDS Compliance Report (SAMPLE FORM)**

Contract No. \_\_\_\_\_

Payment Claim No: \_\_\_\_\_

Period covered by Payment Claim: \_\_\_\_\_

1. Distribution of condoms (briefly describe where and how condoms are distribute):
  
  
  
  
  
  
  
  
  
  
2. Poster/pamphlets (briefly describe where posters were placed/how pamphlets were distributed):
  
  
  
  
  
  
  
  
  
  
3. Voluntary HIV/STI testing (briefly describe the actions taken/information provided to promote testing):
  
  
  
  
  
  
  
  
  
  
4. Counselling, support and care (summarise information provided):
  
  
  
  
  
  
  
  
  
  
5. Schedule of Contractor's Personnel exposed to the HIV/AIDS Awareness Programme:  
(Attach list of personnel stating the Names, Trade/Occupation, Name of Employer)

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I hereby declare the above to be a true reflection of actions taken to ensure compliance with the Specification.

Name: \_\_\_\_\_

Position: \_\_\_\_\_

Date: \_\_\_\_\_

### 1.3 Contractor's Safety Programme

The Contractor shall prepare and implement a safety programme on all sites related to the Works, pursuant to SCC Clause 4, Sub-Clauses 19.1 and 19.2. The safety programme shall be in compliance with the **Industrial Safety, Health and Welfare Act** of Papua New Guinea and the **Department of Works Safety Guidelines** (if available) and shall include but shall not be limited to the following:

- (a) Contractor's Safety Policy;
- (b) Description of Contractor's organization structure, identifying supervisory and safety personnel, job descriptions, responsibilities, authority and functions;
- (c) Programme for the dissemination of safety information, material safety data and the conduct of safety awareness, on site from the start date to the intended completion date;
- (d) Programme for the regular safety inspection of all plant and equipment and for ensuring the Contractor's operators are appropriately licensed;
- (e) Identification of all work activities on site with clear descriptions of safety procedures and measures to be implemented during each work activity, including the use of necessary protective equipment for each work activity;
- (f) Description of emergency procedures, including responses to accidents and injury, emergency evacuation plans, the supply, use and locations of first aid kits, provisions for rescue and other emergency equipment and personnel, as may be required by the Superintendent;
- (g) Description of fire prevention measures and the supply and location of fire fighting equipment;
- (g) Description of the safety programme administrative arrangements, including the flow of and filing of communications and correspondences, record keeping, investigating and reporting procedures for incidents resulting in death, injury, loss of work-time, damage to equipment and or property.

#### Measurement and Payment (Item 1.3 of the Bill of Quantities)

The unit of measurement for the provision and implementation of the Contractor's approved safety programme shall be a lump sum item. A fixed percentage of the total will be paid each month upon the Superintendent's certification of satisfactory performance.

### 1.4 Contractor's Environment Management Plan

The Contractor shall prepare and implement an Environment Management Plan on all sites related to the Works, pursuant to SCC Clause 4, Sub-Clauses 19.4 and 19.5. The Environment Management Plan shall be in compliance with the Papua New Guinea **Environment Act 2000** and the **Department of Works Environment Guidelines** (if available) and shall include but shall not be limited to the following:

- (a) Contractor's Environment Policy;
- (b) Description of Contractor's organization, identifying supervisory and personnel responsible for implementation of its Environment Management Plan, including organization structure and job descriptions showing functions, responsibilities and authority;

- (c) Programme for the dissemination of environment protection information and the conduct of environmental awareness, on site and in neighbouring communities from the start date to the intended completion date;
- (d) Programme for the regular environmental compliance inspection of all plant and equipment;
- (e) Identification of all work activities and determination of possible environmental impacts of the activities at all work locations, including but not limited to: roadworks, camps, quarries and pits, stockpile and storage sites, fuel dumps, spoil heaps and disposal dumps, etc;
- (f) Description of community consultations and local social issues;
- (g) description of procedures and environmental protection measures to be implemented during each work activity, including but not limited to: erosion and sediment control, disposal of stormwater runoff, contaminant spill prevention, water sources protection; protection of wildlife, wildlife habitats, conservation areas, archaeological and burial sites, rehabilitation of work sites, including camps, quarries and pits, dump and storage sites, etc., and dust, noise and vibration mitigation measures;
- (h) Description of emergency procedures and measures for hazardous material spills, the supply, storage, maintenance, and use of emergency spill kits, as may be required by the Superintendent;
- (i) Description of procedures and environmental measures for the disposal of excess and waste materials and the decommissioning of work sites, camps and quarries;
- (j) Plans showing the type and location of environment protection measures in relation to roadworks, camp sites, quarries, stockpiles, spoil heaps and waste disposal sites, water sources, archaeological, burial and any conservation sites, fuel and oils storage, workshops, plant and equipment storage sites, etc.;
- (k) Description of the Environment Management Plan administrative arrangements, including the flow of and filing of communications and correspondences, record keeping and reporting procedures.

Measurement and Payment (Item 1.4 of the Bill of Quantities)

The unit of measurement for the provision and implementation of the Contractor's approved Environment Management Plan shall be a lump sum item. A fixed percentage of the total will be paid each month upon the Superintendent's certification of the satisfactory performance.

**GROUP 3 - CLEARING AND GRUBBING**

**3.1 Clearing and Grubbing**

*(Items Omitted for clarity)*

Cleared material shall be carted off site to a location approved by the Superintendent. Clearing shall include the removal and disposal of vegetation from existing drainage structures.

## **GROUP 4 – EARTHWORKS**

### **4.1 Excavate Type D Material**

*(Items Omitted for clarity)*

All excavated material shall be carted to spoil sites approved by the Superintendent and graded to a free draining profile.

### **4.2 Construct Road Formation**

*(Items Omitted for clarity)*

All surplus excavated material shall be carted to a spoil site approved by the Superintendent as a part of formation construction work.

### **4.3 Remove and Replace Unsuitable Material**

*(Items Omitted for clarity)*

Excavated unsuitable material shall be carted to an approved spoil areas and graded to a free draining profile.

## **GROUP 7 - DRAINAGE**

### **7.16 Clean Drain Channel**

At locations as detailed in the Culvert Schedule and as directed by the Superintendent, the Contractor shall clean out vegetation, silt and debris at culvert inlets and outlets for a distance of 20m from the invert of the culvert (inlets and outlets) to ensure the effective flow of water. Removed material shall be carted to approved spoil areas and graded to a free draining profile. The Contractor shall ensure that on completion of project works all drainage structures are left in a clean and operational

## **GROUP 8: ROAD FURNITURE AND MARKINGS**

### **8.1 Road Edge Guide Posts**

Where indicated on the in the schedule of works, the Contractor shall supply and install Road Edge Guide Posts. Road Edge Guide Posts shall be in accordance with Clause 8.3 of the Specification and Drawing A1/90007B

The guide posts shall be fabricated from 100mm x 75mm DAR Hardwood with sloping top, painted white in undercoat and two coats full gloss and with reflectors. The guide posts shall be set to a minimum depth of 500mm into a concrete footing 350mm in diameter.

Measurement and Payment (Item 8.1 of the Bill of Quantities)

Payment shall be made at the scheduled rate for the number of guide posts supplied and installed as measured on site and agreed with the Superintendent.

**8.2 Supply and Install Galvanised Guard Rails**

As detailed on the schedule of works, galvanised guard rails shall be installed in accordance with the drawings

Measurement and Payment (Item 8.2 of the Bill of Quantities)

Payment for this item shall be at the scheduled rate for the length in lineal meters of guard rail supplied and installed as measured on site and agreed with the Superintendent.