**PROPOSED COASTAL CITIES
ENVIRONMENTAL SANITATION PROJECT
– VIET NAM**

PUBLIC-PRIVATE PARTNERSHIPS FOR SOLID WASTE & SEPTAGE MANAGEMENT


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Contents

1. INTRODUCTION

A solid waste management (SWM) preparation mission was carried out mid-2004 for the proposed World Bank Coastal Cities Environmental Sanitation Project (CCESP). The purpose of the mission was to assess the solid waste management needs of the cities of Dong Hoi, Nha Trang and Quy Nhon over a fifteen year planning horizon (ie. to Year 2020), taking into account the quantity, character and distribution of solid wastes, disposal alternatives and management systems governing administration and finance. The findings, conclusions and recommendations of the mission were used to prepare a prefeasibility study report for improving SWM in each city.

A number of opportunities for increasing private sector participation in the delivery of solid waste and septage management services were identified and outlined by the SWM preparation mission team.

The World Bank is now supporting a consultancy, the objectives of which are to propose a range of options for use of the private sector in solid waste collection and septage management, to agree a preferred approach for each CCESP city, and then to develop a detailed implementation program.

The consultancy is to be conducted over two separate trips to the three project cities. The first trip was conducted between 13 and 30 September, 2005 and included a visit to Da Nang to discuss private sector participation initiatives introduced in that city as part of the World Bank's Three Cities Sanitation Project.

Key activities undertaken by the public-private partnerships (PPP) consultancy team are as follows:

- Review the existing situation regarding solid waste and septage management in each of the three CCESP cities and, in particular, to study and analyse current and past initiatives for private sector involvement.
- Determine local government objectives for reform of the sector with regard to the role of the private sector in environmental sanitation activities with particular emphasis on solid waste management and cost recovery mechanisms.
- To meet with a range of private sector interests and listen to their perspectives on the role of the private sector in solid waste and septage management in Viet Nam.
- Summarise a representative range of models for solid waste and septage management, identifying the key characteristics of each.
- To assess the implications for PPP under each of the models identified previously and then assess the relevance of each model to the PPP study objectives. A series of options that could be considered for each of the CCESP cities will be identified and evaluated together with recommendations provided for an appropriate level of private sector participation.

This working paper presents the initial findings of the PPP Consultancy Team and addresses each of the key activities listed above. The findings of the visit to Da Nang are also included in this working paper.

The term "public-private partnerships" describes a spectrum of possible relationships between public and private parties for the cooperative provision of a service. The only essential requirement is some degree of private participation in the delivery of traditionally public-domain services.

For the purposes of this working paper the private sector is taken to include:

- **private businesses including limited liability companies, joint-stock companies and private unlimited enterprises;**
- **commercialised government agencies/utilities including fully State-owned companies and multiple-ownership companies where the State holds a dominant or controlling stake; and**
- **cooperatives, non-government organisations (NGOs) and community-based organisations (CBOs).**

A glossary of terms as used in this working paper is presented in Appendix A.

In many cities throughout the world, private firms have demonstrated ability to improve solid waste and septage management services delivered to the community. However, it is important to bear in mind that private involvement does not provide an automatic solution to the delivery of sanitation services. Private sector involvement changes, but by no means eliminates, public sector responsibilities. Governments must maintain responsibility for ensuring that adequate and affordable sanitation services are provided to the community. Whether they exercise this responsibility as a provider, partner or regulator will depend on the government's needs, constraints and capacity.

2. CURRENT INITIATIVES FOR PUBLIC-PRIVATE PARTNERSHIPS

2.1 Nha Trang

2.1.1 *Urban Solid Waste Management*

A community-based pilot scheme for solid waste collection was introduced in Nha Trang City during 2002 and included a number of wards and communes (including one island off Nha Trang). Under the scheme, sanitation workers employed by the ward/commune people's committees were responsible for the handcart collection of waste within the pilot areas and hauling it to designated transfer points. URENCO was then responsible for transporting the waste from these transfer points to the city's dump site.

The trial was conducted in Van Thang Ward for a period of twelve months, commencing July 2002. It is reported that prior to the introduction of the trial only 50% of solid waste was collected and 30% of the fee recovered from households. At the end of the pilot, 85-90% of waste and 89-90% of fees were recovered from households.

The pilot was overseen by a project management unit (PMU) comprising representatives from URENCO and the Office of Industry. The PMU provided all necessary equipment and protective clothing to undertake the trial and funded a community education and information program prior to and during the trial.

The community-based solid waste collection pilot trial was completed in September 2004 and the service has now been transferred to URENCO.

The Urban Management Office in Nha Trang City has recently completed draft bid documents for contracting out of streetsweeping, waste collection and transportation activities in nine southern wards of the city. It is proposed that the contract be subject to competitive bidding. The proposal is yet to receive CPC approval, however, the draft bid documents were submitted to the Office of Finance earlier this year for pricing.

2.1.2 *Septage Management*

Septage management services in Nha Trang City are presently performed entirely under an open-competition arrangement in which domestic and non-domestic premises directly engage the services of either a private firm or URENCO.

Seven private firms are presently involved in septage management within the city. These companies are all relatively small (most firms owning 2 trucks and employing 6 people), have limited business experience in this sector (most firms have been operating between 4 and 5 years) and septage management is their sole business activity. All firms operate under a business licence issued by the DPI.

2.2 Quy Nhon

2.2.1 Urban Solid Waste Management

The private sector presently does not participate in urban solid waste management in Quy Nhon City. All streetsweeping, waste collection and transport activities are undertaken by URENCO.

2.2.2 Septage Management

The private sector presently does not participate in septage management in Quy Nhon City. This activity is performed by URENCO.

2.3 Dong Hoi

2.3.1 Urban Solid Waste Management

A community-based solid waste collection service has been provided to Bac Ly Ward and Duc Ninh Village since 2001. Under this program, sanitation workers employed by the local people's committees are responsible for the collection of waste and hauling it to designated transfer points. The Public Works Company (PWC) is then responsible for transporting the waste from these transfer points to the city's dump site.

It is now proposed that this program be expanded to include 16 other wards and communes, including Bao Ninh Commune commencing 1 October 2005.

A number of other private sector initiatives are presently under consideration or at the early stages of preparation but have not yet received CPC/PPC approval.

2.3.2 Septage Management

Septage management within Dong Hoi City is almost exclusively performed by the PWC. An ad-hoc and non-business registered service is presently provided by one local operator. Again, a number of other private sector initiatives are presently under consideration or at the early stages of preparation but have not yet received CPC/PPC approval.

2.4 Da Nang

2.4.1 Solid Waste Management

URENCO has entered into agreements with the Department of Public Works and Transport (DPWT) for the provision of beach cleaning and streetsweeping services it provides. The primary purposes of URENCO entering into these agreements are to ensure greater revenue security to the company and to establish an improved accountability framework through clearly defined performance measures. Under the terms of the agreement, URENCO is paid for the nature, extent and quality of work it provides as determined by DPWT under rates that are established in the agreement. This enables URENCO to receive regular payment for the services and for the company to properly plan and appropriately resource the activities.

In this regard, URENCO provides these services as a contractor to the city. The agreements have been structured such that future service delivery could be performed by the private sector.

2.4.2 Septage Management

Two arrangements for septic tank clean-out presently exist in Da Nang; they may be broadly categorised as a scheduled service and an unscheduled service.

The scheduled service is managed by URENCO and is presently provided to all households having a septic tank. Six private firms presently undertake the pump-out service under a contract arrangement with URENCO. Householders do not directly pay for this service; it is paid for indirectly through a sanitation fee levied on the water bill (presently 300VND/m^3 of water consumed).

URENCO presently proposes that household septic tanks be cleaned out every 5 years and each quarter develops a program within a specified area of the city to achieve this. URENCO arranges for notices to be sent to each household within this designated area and householders must respond to be included in the program. The contractors are then assigned a certain number of households within this designated area. As far as practical, each contractor is assigned an equal number of households with “easy” and “difficult” access. To ensure transparency of the process, information on the number and location of households assigned to each contractor is made available to all other contractors.

Monthly payments to the contractors are made by URENCO from a budgetary allocation provided by the DOF on a quarterly basis. The unit rate is fixed for a period of two years under the terms of the contract.

Contractor performance is monitored and assessed both by the household and URENCO following the completion of each assignment. Under the terms of the contract, the services of a contractor can be temporarily suspended or its services terminated all together if URENCO considers that a contractor has failed to deliver a quality and professional service during the previous assignment.

Non-domestic premises in Da Nang and households requiring unscheduled pump-out of their septic tank engage the services of a private firm directly under an open-competition arrangement and pay for this service.

All septage, whether collected under the scheduled or unscheduled arrangement, must be disposed of at a disposal facility operated by URENCO. A disposal fee is only charged to the private firms for septage collected under the unscheduled arrangement.

3. LOCAL GOVERNMENT OBJECTIVES FOR REFORM

3.1 General

During the initial visit to each of the CCESP cities by the PPP Consultant Team meetings were held with relevant government agencies and, where possible, with private firms presently engaged in solid waste management operations. The main purpose of these meetings was to determine their objectives for reforming the management of solid waste and septage and to identify any issues or constraints to increased private sector involvement in the delivery of these services.

Reform objectives differed between the various government agencies depending upon their perspective and area of responsibility. In general terms, however, the perceived advantages and disadvantages of increased private sector participation and the roles of the private sector were consistent between the cities; the greatest difference between the cities and government agencies being the most appropriate means of increasing private sector participation and the rate of reform.

Strong support was expressed by the vast majority of government agencies in each of the CCESP cities to increasing private sector participation in solid waste and septage management. Indeed, it was considered inevitable that this would occur as a result of central government reforms and policies mandating the privatisation of services traditionally delivered by State Owned Enterprises (SOEs).

3.2 Reasons for Private Sector Participation

Reasons cited by the government agencies of the CCESP cities for increasing private sector participation or the advantages of privatisation included:

- the public sector had failed to deliver a good level of service because they are poorly resourced and funded;
- the private sector will ease the present burden on the public sector;
- the private sector will improve quality of service;
- the private sector is more efficient and/or productive and consequently will deliver a more cost-effective service resulting in lower budgetary allocation by the city to the delivery of solid waste and septage management services;
- private sector management and administration is more flexible/effective;
- the private sector is more dynamic and responsive;
- the private sector has more flexible conditions of employment;
- the private sector (excluding small local firms presently involved in SWM activities) has better knowledge of or access to technology (particularly in waste treatment/processing);

- private sector participation will enable improved service coverage;
- the private sector is better able to mobilise funds from private investors;
- PPP will lead to improved efficiency of the public sector as it will be competing on an equal footing with the private sector; and
- PPP will lead to improved monitoring of solid waste management services particularly if service contracts are employed.

3.3 Role of the Private Sector

The operational areas considered by the government agencies of the CCESP cities to be most appropriate for private sector participation in the management of solid wastes were streetsweeping, waste collection, waste transportation and fee collection. Some government agencies felt that certain waste types were presently poorly managed or not managed at all by the public sector and this created an opportunity for private sector participation. Waste types cited were construction and demolition waste and port waste.

Community-based waste collection, and streetsweeping where appropriate, was considered the most suitable approach to PPP in areas where it was not viable for the formal sector to operate (including the public sector and limited liability companies). This included areas where road access was difficult and/or where population densities were low. In the opinion of some government agencies, community-based organisations were appropriate in any areas where the public sector could not operate due to financial constraints or limited liability companies could not obtain sufficient return on investment.

The vast majority of government agencies felt that the public sector should continue, at least in the shorter term, to operate solid waste transfer stations and landfills. Some agencies felt that the private sector was well placed to develop and operate waste treatment/processing facilities such as composting plants.

In septage management, private sector participation was considered appropriate in septic tank pump-out, septage transport and fee collection while the public sector was better placed to handle septage treatment or disposal at a centralised facility.

3.4 Rate of Reform

In general terms, it was felt by the government agencies that the privatisation process would need to proceed gradually as:

- The concept is relatively new in Viet Nam particularly in the SWM sector. Few examples of successful privatisation of the sector presently exist elsewhere in Viet Nam from which experience could be gained.
- The existing political, institutional, financial, legal and regulatory framework did not encourage or promote PPP. Major reform is necessary before significant PPP would occur. The community's ability and willingness to pay for SWM services is considered a major barrier to reform. In general terms, it was considered that the necessary legal and regulatory reforms could take place over a relatively short period of time given present central government policies dealing with SOE reform and privatisation.

- Existing local private firms operating in the SWM sector are generally small and have limited experience and access to the capital. Capacity building through technical assistance would be required if strengthening of these private firms was considered an appropriate approach to PPP.

4. COMMON PUBLIC-PRIVATE PARTNERSHIP MODELS

4.1 Key Features and Characteristics

Private sector participation involves reducing government control, ownership and/or activity within a service traditionally provided by the public sector. A wide range of models and combination of models are available for private sector involvement and new models for cooperation are being developed all the time. The key features and characteristics of models commonly adopted for PPP for the delivery of solid waste and septage management services are presented below.

4.1.1 Reduced Government Control

Reduced government control is usually achieved through the commercialisation of a public enterprise. Commercialisation can take many forms, however, it generally involves the restructuring of a government enterprise into a semi- or quasi-private enterprise. Commercialised enterprises may be wholly or partly owned by government but have a high degree of independence in management and finance. Strictly, this is not private sector participation, but seeks to incorporate many of the strengths of private companies in a decentralised government enterprise. Various forms of commercialisation include private corporations, public corporations, semi-private corporations and public authorities.

Commercialised enterprises may either provide some or all of the waste management services themselves, or subcontract and supervise private companies to provide the services.

When commercialised enterprises cannot make major decisions themselves and are little different from a government department, their performance is likely to be similar to that of a government department.

This model has not been considered further in this section as the SOE restructuring process is being implemented under present GOV reforms and hence will occur regardless of the outcome and recommendations of the PPP Mission. Its application to the CCESP in conjunction with other PPP models outlined below, however, has been evaluated in Section 5.

4.1.2 Reduced Government Ownership

Government ownership is reduced when government-owned enterprises are divested and when public/private joint ventures are formed.

Divestiture

Under divestiture, government-owned enterprises and their related assets are partially or wholly sold to the private sector, with the expectation that the basic function of the enterprise would continue.

This model has not been considered further in this working paper as it is not recommended for the CCESP cities in the short to medium term for PPP in the SWM sector.

Public/Private Joint Ventures

Public/private joint ventures, also known as mixed-capital partnerships, involve each party contributing assets and resources, and each party assuming certain risks and responsibilities as defined in a contractual agreement. Under a joint venture, the public and private partners can either form a new company or assume joint ownership of an existing company that provides sanitation services. In either case, it is essential that the company be independent from government.

Joint venture PPPs provide a vehicle for "true" public-private partnerships in which governments, businesses, NGOs and other parties can pool their resources and generate shared "returns" by solving local sanitation issues. Under joint ventures, the government is the ultimate regulator, but it also is an active shareholder in the operating company. The private sector partner often has primary responsibility for performing daily management and operational activities.

4.1.3 Reduced Government Activity

Private sector participation is also a means of reducing government activity. The key characteristics of common approaches are presented below.

Contracting

Under an operation, maintenance and service contract ("service contract"), the public sector essentially engages a private firm to carry out one or more specified tasks or services over a finite period. The public sector retains overall responsibility for service delivery and only contracts out portions of its operation to the private firm. The private firm must perform the service at an agreed cost and typically meet performance standards set by the public sector and which form part of the contract.

Alternatively, the government may award a management contract to a private firm to provide management oversight of other parties who are providing the service.

Franchise

Under a franchise, government grants a private firm an exclusive monopoly to provide a specific type of solid waste service within a specific area. The firm collects its own revenues from waste producers within the area or from the sale of solid waste by-products removed from the area (eg recyclables).

Concession

Under this arrangement, the government allows the private sector to utilise waste for profit-making purposes. Concessions typically involve construction of major long-term facilities to sort, treat, transfer or dispose of solid waste. Government may pay the concessionaire a tipping fee or service charge to partly off-set the cost of processing the solid waste, but sale of the concessionaire's product (eg. recyclables, compost, energy), or service fees paid by non-government customers typically cover the remaining costs. Government provides a guarantee of flow control, so that amounts of waste received at the facility closely match facility design capacity. Most concessions are operated on a "take or pay" basis, where concession fees are paid even if the guaranteed daily quantity of waste is not provided.

In essence, the government's role shifts from being the provider of the service to the regulator of price and quantity. The fixed infrastructure assets are entrusted to the concessionaire for the duration of the contract, but they remain government property.

Concessions can take many forms including build and transfer, build-lease-transfer, built-operate transfer, build-own-operate, and build-transfer-operate.

Open Competition (or Private Subscription)

Under this arrangement, government licenses private firms to compete with each other in providing solid waste management services. No firm has a monopoly within an area and price regulation typically is not required. Each firm collects its own revenues directly from its customers.

4.2 Potential Strengths and Weaknesses and Typical Applications

The potential strengths and weaknesses of the above models and how these models have commonly been applied in the solid waste and septage management sector are summarised in Table 1.

Table 1 – Evaluation of Alternative Models for PPP in Solid Waste and Septage Management

Model	Potential Strengths	Potential Weaknesses	Typical Applications in SWM Sector
1. Public / Private Joint Ventures	• Combine the advantages of the private sector – dynamism, access to private finance, knowledge of technologies, managerial efficiency and entrepreneurial spirit – with social responsibility, environmental awareness and local knowledge of public sector. • Both the public and private sector partners have invested in the company and therefore both have a strong interest in seeing the venture work. • Full responsibility for investments and operation gives both partners major incentive to make efficient investment decisions and to develop innovative technological solutions, since efficiency gains will directly increase profitability. • Early participation by both partners allows for greater innovation and flexibility in project planning. • Early investment by the partners reduces the transaction costs associated with say BOTs.	• If public sector partner also has regulatory responsibilities, this can lead to a conflict of interest for the public sector in maintaining both public accountability and attempting to maximise returns to the venture. • Private sector tends to focus on the “bottom line” while governments on the process. These differences can lead to differences in opinion regarding timetables and can create barriers during the project development phase. • The early involvement of both parties that is required for joint ventures typically precludes the use of traditional public tender procedures and promotes alternative procedures such as direct negotiation. This can raise transparency and corruption concerns.	• streetsweeping • solid waste and septage collection • solid waste and septage cartage • transfer station development and operation • landfill development and operation • waste treatment/processing facility development and operation • septage treatment/disposal facility development and operation
2. Contracting	• Relatively low-risk option. • Process of awarding contracts enables government to gain a more complete understanding of their service. • Great potential to provide better system operation, allowing government to obtain improvements in performance and efficiency through technology transfer and the acquisition of technical and/or managerial capacity. • Generally the most competitive form of privatisation as contracts are reissued on a regular basis and so contractors should be under continuous pressure to keep costs low. • Because service contracts are limited in scope, barriers to entry are fairly low.	• Typically does not involve significant infusions of private capital. • Typically does not create a base from which the entire SWM services of the city are fully integrated and optimised. • Government still responsible for politically sensitive matters such as user fees and asset ownership. • Government is often under pressure to award service contracts to the lowest bidder without considering a private firm’s ability to provide high quality service. This can stifle private sector incentives to propose innovative solutions to service provision.	• streetsweeping • solid waste and septage collection • solid waste and septage cartage • fleet maintenance • transfer station operation • landfill operation • waste treatment/processing facility operation • septage treatment/disposal facility operation

Model	Potential Strengths	Potential Weaknesses	Typical Applications in SWM Sector
3. Franchise	• May be a suitable model where government revenues are constrained or services heavily subsidized by government. • Typically, franchisees are financially motivated to satisfy their customers in order to be paid (and consequently usually are very responsive to the demands of customers). • Government still retains overall responsibility for service including awarding the franchises to only qualified and responsible private firms and monitoring their performance with respect to agreed specifications.	• Franchisee has a zonal monopoly which tends to limit customer bargaining power and influence on the quality of service. • Governments generally find that increased regulation and monitoring capacity is required.	• streetsweeping • solid waste and septage collection • solid waste and septage cartage • transfer station operation • landfill operation • waste treatment/processing facility operation • septage treatment/disposal facility operation
4. Concession	• Effective way to bring private investment into the construction of new waste infrastructure. • Combining responsibility for investment and operation gives the concessionaire strong incentives to make efficient investment decisions and develop innovative technological solutions, since any gains in efficiency will directly increase profits. • Less prone to political interference than government-operated utility services because the service stays under the same operator regardless of changes in political positions.	• Large-scale concessions can be politically controversial and difficult to organise. • Often suffer from failure to undertake sufficient dialogue and planning prior to entering into binding long-term contractual commitments. • Governments generally find that increased regulation and monitoring capacity is required. • Difficult to set bidding and contractual framework for concessions that are likely to evolve over a period of 25 years or more. • Some people argue that the benefits of open competition are limited in a concession market since such a small number of international companies are able to run a concession. • Concessions essentially create a monopoly, which then protects the concessionaire from most forms of competition during contract renegotiations.	• streetsweeping • solid waste and septage collection • solid waste and septage cartage • transfer station development and operation • landfill development and operation • waste treatment/processing facility development and operation • septage treatment/disposal facility development and operation

Model	Potential Strengths	Potential Weaknesses	Typical Applications in SWM Sector
5. Open Competition	• No private firm has a monopoly on service provision. • Price regulation is not required. • Revenue collection is the responsibility of each and every private firm. • May lead to substantially lower prices for the collection of special waste types (eg. septage, construction and demolition waste) or major waste generators. • Generally not subject to political interference. • Private firms deal directly with the community typically making this an efficient and responsive service.	• Generally requires a strong regulatory and enforcement framework to ensure collected wastes are not illegally dumped. • May lead to substantially higher costs incurred by government contracting when the collection of urban solid waste is concerned (ie. loss of economies of scale or contiguity when a number of competing firms operate in the same area for the same waste type). • May lead to price collusion.	• solid waste and septage collection • solid waste and septage cartage • fleet maintenance • transfer station operation • landfill operation • waste treatment/processing facility operation

5. POSSIBLE OPTIONS FOR PUBLIC-PRIVATE PARTNERSHIPS FOR CCESP CITIES

5.1 Solid Waste Management

5.1.1 General

Widespread support was expressed during initial discussions held by the PPP Team for increased private sector participation in the provision of urban solid waste collection and transportation and streetsweeping services in the CCESP cities. Support was also expressed for PPP in the collection and transportation of waste types which are presently not managed or only poorly managed by the public sector. Wastes types specifically mentioned were construction and demolition waste and solid waste produced at port facilities including waste from ships accessing the ports.

Community-based solid waste collection was widely considered to be the most appropriate approach to increased private sector participation in areas where neither a commercialised utility nor private businesses could operate cost-effectively.

It was felt that financial barriers to entry by private business, particularly small local firms, may be relatively high because of the larger scope of service provision, particularly for urban solid waste collection, and the relatively high capital cost requirements resulting.

The service contract model was widely considered the most appropriate means of increasing private sector participation in streetsweeping and the collection and transportation of urban solid waste.

Generally, it was felt that the public sector should provide and operate (or continue to provide and operate) solid waste transfer facilities and landfills. While a number of the alternative models outlined in Section 4 may be applied to the operation of these facilities, it is recommended that these activities be performed directly by a commercialised utility (say the URENCO or PWC) at least in the short to medium term under a contract arrangement with the government.

5.1.2 Key Features of Possible Options

Based on the above considerations and the local government reform objectives presented in Section 3, the following options for PPP in solid waste collection and transportation are proposed for discussion purposes:

Option SW1

- Commercialised utility (say URENCO/PWC) provides solid waste collection and transportation services within the entire urban area of the city under contract to the city government.
- Private businesses are supported to provide special waste collection and transportation services within the city under an open competition model.
- Community-based solid waste collection services are supported in areas with difficult access and/or lower population densities under a franchise arrangement with individual communes and wards.

Option SW2

- As per Option SW1 **except** private businesses also provide solid waste collection and transportation services in some parts of the urban areas of the city under contract to the city government. The operational area of the commercialised utility is accordingly reduced in size.

Option SW3

- Private businesses provide solid waste collection and transportation services within the entire urban area of the city under contract to the city government.
- Private businesses are supported to provide special waste collection and transportation services within the city under an open competition model.
- Community-based solid waste collection services are supported in areas with difficult access and/or lower population densities under a franchise arrangement with individual communes and wards.

Option SW4

- Public/private joint venture is formed to provide solid waste collection and transportation services within the entire urban area of the city under contract to the city government.
- Private businesses are supported to provide special waste collection and transportation services within the city under an open competition model.
- Community-based solid waste collection services are supported in areas with difficult access and/or lower population densities under a franchise arrangement with individual communes and wards.

5.1.3 Evaluation of Options

The above options for PPP in solid waste management services in the CCESP cities have been evaluated in terms of their relative advantages and disadvantages, cost implications and implementation issues and needs. The findings of the evaluation are summarised in Table 2.

Table 2 – Evaluation of Alternative Options for PPP in Solid Waste Collection and Transport in CCESP Cities

Option No.	Advantages	Disadvantages	Cost Implications	Implementation Issues and Needs
Option SW1	• Commercialised utilities have local knowledge and developed considerable technical and managerial expertise in the SWM sector, particularly solid waste collection and transportation activities. • Government subsidies to a commercialised utility to perform this service are no longer required. Services are provided on a "fee for service" basis in accordance with a contract or franchise agreement. • Will lead to increased service coverage resulting in improved sanitation and environmental conditions in the city. • Institutional reforms required to implement this option are relatively minor in comparison to other options.	• Monopolistic service continues to be provided for the vast majority of solid waste produced in the city. Lack of true competition and hence improvements in service quality and price may be modest. • Will not involve significant infusions of private capital. • Government still responsible for politically sensitive matters such as user fees and asset ownership. • Private business has relatively minor involvement in SWM in the city and this market sector may be too small to encourage their participation.	• Lack of true competition means that the cost of delivering SWM services under this option are likely to be the highest of the four alternatives considered herein. • Increased cost to government in contract / franchise monitoring and enforcement activities but expected to be the lowest of the four alternative options considered herein.	• Establish unit within a government agency which has responsibility for managing/overseeing the service contracts with the commercialised utility. Significant capacity building and resourcing of this unit will be required. • Provide financial incentives to encourage private businesses to enter market (eg. tax incentives). • Provide capacity building in the form of technical assistance and training to small to medium sized local businesses entering or presently operating in sector. • Introduce local regulation requiring households within a serviced area to use and pay for the service. • Introduce local regulations requiring all operators to use city landfill for wastes which otherwise cannot be recycled, reused or reprocessed.
Option SW2	• Commercialised utilities have local knowledge and developed considerable technical and managerial expertise in the SWM sector, particularly solid waste collection and transportation activities. • Government subsidies to a commercialised utility to perform this service are no longer required. Services are provided on a "fee for service" basis in accordance with a contract or franchise agreement. • Will lead to increased service coverage resulting in improved sanitation and environmental conditions in the city.	• Typically does not involve significant infusions of private capital. • Typically does not create a base from which the entire SWM services of the city are fully integrated and optimised. • Government still responsible for politically sensitive matters such as user fees and asset ownership. • Government is often under pressure to award service contracts to the lowest bidder	• Development of a truly competitive business environment is expected to result in reduced service costs. • Increased cost to government in contract / franchise monitoring and enforcement activities.	As per Option SW1 with following additional needs/issues: • If financial barriers are still considered too high to encourage local private businesses to enter market may need to consider a lower form of PPP such as operations contracts (ie. equipment is provided to contractor by government and operator is responsible for operating and maintaining this equipment for the term of the contract). • In Quy Nhon where no local SWM private businesses presently exist, may need to provide support to staff within URENCO to leave the company and establish their own

Option No.	Advantages	Disadvantages	Cost Implications	Implementation Issues and Needs
	• Government monopoly on service provision is broken. • As contracts are reissued on a regular basis contractors should be under continuous pressure to keep costs low. • Creates competitive business environment under which the performance of private businesses and commercialised utilities may be compared. This will serve as a driver for improved performance of commercialised utilities, possibly leading to a reduction in service costs. • Revenue collection may be the responsibility of individual contractors (including commercialised utility).	without considering a private firm's ability to provide high quality service. This can stifle private sector incentives to propose innovative solutions to service provision.		private business.
Option SW3	• Government subsidies to perform this service are no longer required. Services are provided on a "fee for service" basis in accordance with a contract or franchise agreement. • Will lead to increased service coverage resulting in improved sanitation and environmental conditions in the city. • Government monopoly on service provision is broken. • As contracts are reissued on a regular basis contractors should be under continuous pressure to keep costs low. • Creates competitive business environment under which the performance of private businesses may be compared. • Revenue collection may be the responsibility of individual contractors.	• Typically does not create a base from which the entire SWM services of the city are fully integrated and optimised. • Government still responsible for politically sensitive matters such as user fees and asset ownership. • Government is often under pressure to award service contracts to the lowest bidder without considering a private firm's ability to provide high quality service. This can stifle private sector incentives to propose innovative solutions to service provision. • Transferral of operational responsibilities entirely to private businesses may lead to a loss of local knowledge and	• Development of a truly competitive business environment is expected to result in reduced service costs. • Increased cost to government in contract / franchise monitoring and enforcement activities.	As per Option SW2.

Option No.	Advantages	Disadvantages	Cost Implications	Implementation Issues and Needs
		technical and managerial expertise in the SWM sector. However, this loss may not be significant as it is likely that many URENCO/PWC employees would gain employment with private businesses.		
Option SW4	As per Potential Strengths for Model 1 presented in Table 1 with additional benefits: • Government subsidies to a commercialised utility to perform this service are no longer required. Services are provided on a "fee for service" basis in accordance with a JV or franchise agreement. • Will lead to increased service coverage resulting in improved sanitation and environmental conditions in the city.	As per Potential Weaknesses for Model 1 presented in Table 1 with additional disadvantages: • Monopolistic service continues to be provided (ie. by the JV) for the vast majority of solid waste produced in the city. Lack of true competition and hence improvements in service quality and price may be modest. • Benefits of open competition are limited since such a small number of national / international companies are expected to be suitable private partners in the JV.	• Lack of true competition means that the cost of delivering SWM services under this option are likely to be higher than Options 2 and 3. • Increased cost to government in contract / franchise monitoring and enforcement activities.	As per Option SW1 with additional issue/need as follows: • Provide institutional strengthening of public sector partner in the JV particularly during the early stages of negotiation with possible private partners and in developing the JV agreement.

5.2 Septage Management

5.2.1 General

Widespread support was expressed during initial discussions held by the PPP Team for increased private sector participation in the provision of septic tank pump-out and septage cartage services in the CCESP cities. Support was particularly strong in Quy Nhon and Dong Hoi where private business presently is not involved or has minimal involvement in these activities. It was felt that private business, in general, would not be constrained by capital access, technical and management barriers to entering the sector. Support was expressed for both open competition and contracting models, and the scheduled (as per the Da Nang model) and unscheduled pump-out of septic tanks (as presently exists in all three CCESP cities).

Generally, it was felt that the public sector should provide and operate (or continue to provide and operate) centralised septage treatment facilities. The existing septage private sector in Nha Trang voiced strong support for this arrangement on the condition that they are permitted to use these facilities for septage disposal and be charged the same rate as the public sector. While a number of the alternative models outlined in Section 4 may be applied to the operation of the septage treatment facilities, it is recommended that this service be performed directly by a commercialised SOE (say the Water Supply and Drainage Company as recommended by the World Bank or suitable alternative such as the URENCO or Public Works Company) at least in the short to medium term under a contract arrangement with the government.

5.2.2 Key Features of Possible Options

Based on the above considerations and the local government reform objectives presented in Section 3, the following options for PPP in septage management are proposed for discussion purposes:

Option S1A

- Services provided under open competition model only;
- Service provision by both private businesses and commercialised SOE (probably URENCO/Public Works Company);
- Service initiated by owner of septic tank (ie. unscheduled pump-out service) directly to service provider;
- User fees could be regulated by government but this is not essential; and
- Business registration by government of all firms (including commercialised SOE) involved in these activities.

Option S1B

- As per Option S1A **except** service provision by private businesses only.

Option S2A

- Scheduled or programmed pump-out of household septic tanks provided under service contract model;
- Unscheduled pump-out of household septic tanks and non-domestic septic tanks provided under open competition model;

- Service provision by private businesses only with scheduled service provided by approved contractors;
- Unscheduled service initiated by owner of septic tank;
- Households do pay directly for scheduled service. Sanitation fee levied on water bill contributes to the maintenance of the scheduled program.
- User fees for unscheduled service could be regulated by government but this is not essential;
- Contractor unit fee rates are the same for all firms and are fixed in the contract (ie. applies to all contractors); and
- Business registration by government of all firms involved in these activities.

Option S2B

- As per Option S2A **except** contractor unit fee rates are not fixed in contract but are subject to individual bidding by contractors (ie. approved contractors bid for individual work packages with lowest contractor generally being awarded work package).

The alternative models outlined in Section 4 (concession, franchise and public/private joint ventures) are not considered appropriate for the delivery of septic tank pump-out and septage cartage services and have not been evaluated in this working paper.

5.2.3 Evaluation of Options

The above options for PPP in septic tank pump-out and septage cartage services in the CCESP cities have been evaluated in terms of their relative advantages and disadvantages, cost implications and implementation issues and needs. The findings of the evaluation are summarised in Table 3.

Table 3 – Evaluation of Alternative Options for PPP in Septage Tank Pump-out and Septage Cartage in CCESP Cities

Option No.	Advantages	Disadvantages	Cost Implications	Implementation Issues and Needs
Option S1A	• No operator has a monopoly on service provision. Businesses compete on an even basis on service price and quality. Only companies providing a cost-competitive and quality service will survive in the long term. • Financial barriers to entry are fairly low due to limited scope of service provision and relatively low capital cost requirements. • Price regulation is not required. • Revenue collection is the responsibility of each and every operator. • Operators deal directly with the community making this a “user friendly” service in terms of efficiency and responsiveness. • Business registration ensures that minimum business operating standards and practices are maintained. • The fact the service is not scheduled means that over-servicing does not occur (ie. septic tanks are pumped out when required and generally no sooner). • Enables performance of commercialised URENCO/PWC to be compared with private businesses (in terms of both cost and quality of service).	• Generally requires a strong regulatory and enforcement framework to ensure collected wastes are not illegally dumped and minimum operating standards maintained. • May lead to price collusion which over time could result in an increase in user fees. • May lead to predatory pricing practices by some operators in order to reduce competition. Over time this could lead to an increase in user fees particularly if undertaken in conjunction with price collusion with the remaining operators. • The fact the service is not scheduled will result in many septic tanks only being emptied when they are overflowing and already creating unsanitary conditions and/or impacting on the local environment.	• Competitive business environment is expected to lead to reduced user charges - perhaps significant reductions. • Increased cost to government in monitoring and enforcement activities and conducting community education and information programs.	• Cease government subsidies to commercialised utilities to ensure they do not have an unfair commercial advantage over private businesses for this service. • Increase government involvement in community education and information to ensure proper monitoring of septic tanks by owners. Appropriate programs developed and implemented. • Introduce local regulations to ensure proper monitoring of septic tank condition by owners and enable fines to be issued to owners of septic tanks which are overflowing. • Introduce local regulations requiring all septage operators to use centralised septage treatment facilities. • Establish unit within a government agency which has responsibility for managing the service (including monitoring and enforcement) and coordinating relevant community education and information programs. Significant capacity building and resourcing of this unit will be required. • Provide financial incentives to encourage private businesses to enter market (eg. tax incentives). • Provide capacity building in the form of technical assistance and training to small to medium sized local businesses entering sector.

Option No.	Advantages	Disadvantages	Cost Implications	Implementation Issues and Needs
				• In Quy Nhon where no local SWM private businesses presently exist, may need to provide support to staff within URENCO to leave the company and establish their own private business.
Option S1B	As per Option S1A. Additional advantages as follows: • Government subsidies to a commercialised URENCO/PWC to perform this service are no longer required. • Enables a commercialised URENCO/PWC to focus on core business activities and only perform those activities which cannot be undertaken or which cannot be viably provided by other private sectors. Septic tank clean-out and septage cartage is probably a non-core business activity of these organisations.	As per Option S1A.	As per Option S1A.	As per Option S1A apart from first bullet point.
Option S2A	• Scheduling of service enables the government agency responsible for overall service provision to properly plan, budget and resource septic tank and septage management activities. • Contractor fees are fixed for the duration of the contract simplifying budgetary process for the responsible government agency. • Scheduling of service minimises likelihood of septic tank overflows and hence leads to improved sanitation and environmental conditions. • The fact that households do not pay directly for a schedule service encourages participation in the scheme and hence leads to improved sanitation and environmental conditions. • Government subsidies to a commercialised utility to perform the service are no longer	• Generally requires a strong regulatory and enforcement framework to ensure collected wastes are not illegally dumped and minimum operating standards maintained. • Provision of a scheduled service may lead to over-servicing as septic tanks are emptied on a routine rather than needs basis. • Government agency responsible for overall service provision must seek budget allocation from city rather than obtaining funds directly from users.	• Contractors for the scheduled service do not compete on price possibly resulting in higher costs to maintain the service than other options. • Increased cost to government in monitoring and enforcement activities and conducting community education and information programs.	• Establish unit which has responsibility for developing the service, contract/contractor supervision and scheduled service planning, budgeting and resourcing. Significant capacity building and resourcing of this unit will be required. • Provide financial incentives to encourage private businesses to enter market (eg. tax incentives). • Provide capacity building in the form of technical assistance and training to small to medium sized local businesses entering sector. • In Quy Nhon where no local SWM private businesses presently exist, may need to provide support to staff within URENCO to leave the company and

Option No.	Advantages	Disadvantages	Cost Implications	Implementation Issues and Needs
	required. • Enables URECN/PWC to focus on core business activities and only perform those activities which cannot be undertaken or which cannot be viably provided by other private sectors. Septic tank clean-out and septage cartage is probably a non-core business activity of these organisations. • Financial barriers to entry are fairly low due to limited scope of service provision and relatively low capital cost requirements. • No private business has a monopoly on service provision. Businesses compete on an even basis on service quality. • Contractors which fail to provide a consistently high quality service may be temporarily suspended or removed from the scheduled service altogether.			establish their own private business.
Option S2B	As per Option S2A apart from second bullet point.	As per Option S2A. Additional disadvantage as follows: • May lead to predatory pricing practices by some contractors in order to reduce competition. Over time this could lead to an increase in contract rates.	• As contractors for the scheduled service compete on price for individual work packages, the cost of delivering this service is likely to be lower than Option S2A. • Increased cost to government in monitoring and enforcement activities and conducting community education and information programs.	As per Option S2A.

APPENDIX A – GLOSSARY OF TERMS

Commercialisation	Establishment of a publicly-owned unit or utility that has a high degree of independence in management and finance.
Commercialised State-Owned Enterprise	This term is taken to include both fully State-owned companies and multiple-ownership companies where the State holds a dominant or controlling stake. Also referred to as commercialised utility.
Composting	Biological conversion of biodegradable organic substances/wastes in the presence of air to produce a humus-like material which may be used as a soil conditioner.
Concession	A concession is awarded by the government to a private firm to establish a facility that utilises government-owned resources (in this case, waste). This concession may enable the private firm to recycle materials or to transfer or dispose of waste. The concession is in the form of a long-term contractual agreement, whereby the private firm builds the facility. In some cases, the private firm may maintain indefinitely the ownership and operation of the facility. In others, the private firm may transfer ownership of the facility to the government after a specified period of private ownership and operation.
Contracting	Government awards a finite-term contract to a private firm for the delivery of specified services. The contract is usually awarded after a competitive tendering process. The firm is paid for service delivery by the government under the terms of the contract.
Contractor	An individual or organisation that undertakes to provide a service at the request of a client and is paid for this service by the client.
Dump (or Open Dump)	A site used to dispose of waste without any management and/or environmental controls.
Franchise	Method and agreement by which a government agency awards a monopoly to a private company to deliver a particular service, in a defined area and for a fixed period of time. Generally, the private company pays a performance bond to the government agency and pays a franchise fee to cover the costs of monitoring service provision.
Hazardous Waste	Waste defined as such under Decision No. 155/1999/QD-TTg. Defined in this decision as a waste containing substances or compounds that bear one of the hazard-causing properties (flammable, explosive, poisonous, corrosive, and infectious) or may interact with other substances to cause hazards to the environment or human health.
Healthcare Waste	Includes all waste generated by healthcare institutions, research facilities and laboratories.
Incineration	Thermal processing or combustion of waste in a controlled environment. Used primarily for volume reduction with or without energy recovery.
Joint Venture	An association of a private enterprise with a public organisation, or a national with a foreign company for the purposes of fulfilling a particular task. The assets and resources that each party contributes and the risks and responsibilities that each

party assumes are defined in a contract.

Leachate Contaminated water which has percolated through waste and typically contains dissolved or suspended solids and/or liquids.

Open Competition In a situation where a number of service providers are competing for same work, contracts are made directly between the individual waste generators and service providers. Government authorities may require that only service providers that have been awarded a licence may participate. Also referred to as "private subscription".

Private Business This term is taken to include limited liability companies, cooperatives, joint-stock companies and private (unlimited) enterprise.

Public-Private Partnership This term is used to cover a wide spectrum of legal arrangements in which private enterprises, including community-based organisations and non-government organisations, are involved in the provision of services. There is always some link with, or accountability to a government or public body.

Sanitary Landfilling (or Engineered Landfilled) Engineered method of disposing waste to land in a manner that protects the environment by spreading waste in thin layers, compacting it to the smallest practical volume and covering it with soil at the end of each working day. Properly sited, designed and operated sanitary landfills represent a viable alternative to open dumps for the protection of public health and preservation of environmental quality.

Septage Sludge that accumulates within septic tanks and must be periodically removed for disposal.

Transfer Station Facility at which waste collected by small vehicles is transferred to larger vehicles for more economical haulage to distant treatment/disposal facilities. Transfer stations may be informal (ie. contain little or no infrastructure) or formal.

Urban Solid Waste All general solid waste generated within urban areas of the city. Sources include households, markets, hotels, restaurants, hospitals, medical clinics, shops, factories, offices, schools and other institutions. Also includes streetsweeping waste. Also referred to as "municipal solid waste".