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# **Institutional agenda and PPP options for water supply and sewage in Ludhiana**

## **Final Report**

**Prepared for the Government of Punjab**

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# Institutional agenda and PPP options in Ludhiana<sup>1</sup>

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<sup>1</sup> A common assessment was carried out for Ludhiana and Amritsar. While a separate report has been prepared for Ludhiana, many of the institutional aspects are common to both cities, and significant parts of the assessments are common.

## 1 Summary

Water supply and sewage (WSS) operations in Ludhiana resemble that of many Indian cities; service levels are poor when compared to benchmarks; cost recovery is low; the municipal corporation subsidises operating deficits; the Government finances capital expenditure; assets are created through a State owned entity; internal capacity, systems and procedures are weak.

The State Government has taken a decision to make key municipal corporations (including Ludhiana) responsible for future asset creation and also expects them to share capital expenditure. To improve the quality of service, the city needs immediate capital investments and change in management practices. Key institutional actions to achieve this are a) WSS operations focusing on higher cost recovery, b) increased contribution from the municipal corporation to WSS capital expenditure financing as opposed to O & M financing and c) modern governance structure for WSS operations.

Financial analysis indicates that the WSS operations could achieve cost recovery between the years 2020 and 2022, but it would need substantial tariff restructuring and rate revisions; in the interim period, the WSS operations would need subsidies. The Ludhiana Municipal Corporation(LMC) will be in a position to provide these subsidies and finance other committed capital expenditure and debt repayments; further it may also be in a position to contribute to 50% of WSS capital expenditure. To facilitate this, Government of Punjab may need to support LMC to create a security mechanism out of the VAT related inflows to LMC.

Improving governance will require providing a suitable legal structure for WSS operations, tariff setting practices, HR rules, performance measurement framework and an investment framework. Since current capacities in WSS operations are weak, outsourcing the proposed capital expenditure programme and operations to a private sector partner can help the municipal corporation by pass internal constraints and limitations.

There are a variety of legal structures and PPP options available, some of which have already been attempted in India. In Ludhiana, private sector financing is possible; however investments cannot be recovered through tariff and have to be serviced through subsidies from the municipal corporation. A recommended option for Ludhiana would be

- a) the creation of a publicly owned utility that is provided autonomy in WSS operations
- b) a short term PPP arrangement between the utility and private sector with financing being mobilized by the municipal corporation and the State

Government. If the creation of a utility is not possible due to legal constraints, the WSS operations can be ring fenced within the municipal structure to the extent possible.

- c) In Ludhiana, it would also be possible to seek partial financing from private sector, in which case a long term PPP arrangement could be adopted.

## **2 Institutional assessment of the water supply service provision in Ludhiana<sup>2</sup>**

Water supply services in Punjab are housed within the urban development function. The urban sector itself is administered by two departments. The department of Urban Development and Housing(UD & H) is responsible for urban planning functions. The department of Local Government(LG) is responsible for administrative oversight of urban local bodies. The Deputy Chief Minister is the Minister for Urban Development and Housing. The various urban local bodies (ULBs), Urban Improvement Trusts (UITs) and the Punjab Water Supply and Sewerage Board are under the administrative control of the LG department. The office of Town and Country Planning carries out town planning functions and is housed within the UD & H department.

The MC of Ludhiana(LMC) is responsible for the following key functions.

1. Operation and maintenance of all water supply assets and provision of service
2. Maintenance of sewage networks within the city
3. Roads and buildings
4. Solid waste management
5. Regulation of building activities and implementation of development control rules

Mayors for the MCs are elected by corporators for a five year term. The House Finance Committee is constituted by the corporators and has executive powers to approve contracts.

The Urban Improvements Trusts (UITs) are established through a special legislation. Their primary responsibility is the development of specific layouts and disposal of plots and properties. UITs acquire land and develop infrastructure within these layouts. UITs may also undertake construction of residential and commercial buildings within these layouts.

The Punjab Municipal Infrastructure Development Company(PMIDC) has been established with the long term objective of providing financial intermediary services to cities. At present, PMIDC provides several functions.

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<sup>2</sup> Based on "Template for Assessing the Governance of Public WSS Service Providers"; A. Locussol and M. van Ginneken; World Bank, 2010

- a) A Punjab Municipal Infrastructure Fund (PMIF) has been established by the Government of Punjab into which a share of Value Added Tax receipts of the Government are credited. This is then allocated to various local bodies as a share of State Government tax receipts. A Punjab Municipal Infrastructure Development Fund (PMIDF) has also been constituted which receives a share of the surcharge on value added tax. PMIDC manages both the funds. While the PMIF is divided amongst local bodies under a formula, the PMIDF has been leveraged by PMIDC for commercial borrowing. These receipts have been advanced as loans to local bodies.
- b) PMIDC has also negotiated a line of credit from agencies like HUDCO. Local bodies, at their discretion, can directly access this line of credit. Repayment is secured through an assurance of intercepting the share of value added tax receipts allocated to the local body.
- c) In addition to the fund management and financial intermediary functions, PMIDC also functions as the State Level Nodal Agency (SLNA) for JNNURM projects. PMIDC is also the Secretariat for Punjab Urban Development Mission which looks at investments, reforms and governance improvements in the urban sector in Punjab. PMIDC also acts as a nodal agency for implementing state wide initiatives such as E-Governance implementation, energy saving programme for street lights etc. PMIDC has developed a cluster based approach to solid waste management and is considering the setting up of a State level mechanism to monitor the solid waste management projects being implemented by private sector.

The Punjab Infrastructure Development Board (PIDB) is leading the preparation of Bus Rapid Transport System projects in the State. PIDB would also be the implementing agency for these projects.

## ***2.1 Overall policy environment for Water supply and sewage functions***

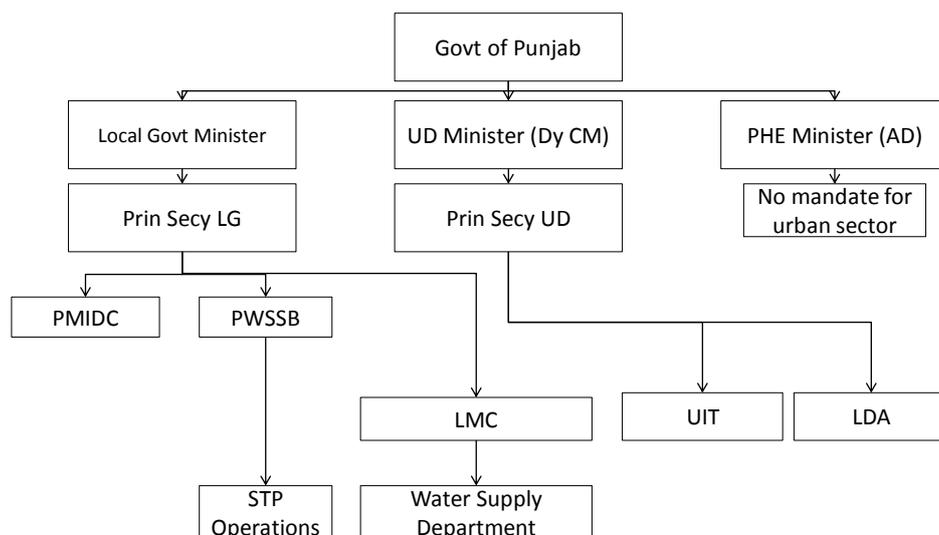
### **2.1.1 Institutional Structure**

The municipal corporation act (Section 44) identifies water supply, sanitation and solid waste management among the functions of urban local bodies (ULBs). The Punjab Water Supply and Sewerage Board (PWSSB) Act established PWSSB with the responsibilities for planning, design and construction of water supply and sewage facilities. The Act also tasks PWSSB with administrative powers such as prescribing staffing norms for water supply within the ULBs.

The LG department of the Government of Punjab (GoP) has policy making powers with regard to water supply; it also exercises administrative control over the LMC.

Traditionally, financing of capital expenditure has been the responsibility of the GoP. The PWSSB is responsible for design and construction, after which the assets are handed over to the MCs for operation and maintenance. All the ongoing water and sewage projects approved under JnNURM<sup>3</sup> are also implemented by the PWSSB. In the case of sewage treatment plants, in Ludhiana, the PWSSB continues to operate them after construction.

Figure 1 - Institutional Structure for WSS



In the past, responsibility for construction and operation was fragmented since it was felt that the municipal corporations lack the specialized skills required for design and construction. The GoP has recently taken a decision to devolve the entire responsibility for water supply and sewage functions to five large municipal corporations including Ludhiana. In future LMC will plan and implement water supply and sewage projects. Ongoing projects will continue to be implemented by PWSSB.

### 2.1.2 Service Standards

Service level benchmarks (SLBs) for water supply and sewage functions have been developed by the Ministry of Urban Development of the Government of India. These are not mandatory and are intended only as guidelines. Nevertheless, these have been adopted by the State Governments, especially since the sector did not have any other standardized framework. The use of SLB framework has also been accelerated by mechanisms such as the Central Finance Commission grants, which linked a part of its disbursements to States declaring performance of ULBs as per the SLB framework. The SLB framework has only been used for reporting and

<sup>3</sup> Jawaharlal Nehru National Urban Renewal Mission, a grant project from the national Government for urban infrastructure creation and reforms

planning purposes. There are no requirements to meet the targets specified in the SLB framework and there are no consequences for under performance. There is no framework for performance measurement in Punjab other than the SLB framework.

### **2.1.3 Cost recovery and pricing**

Cost recovery is significantly low (28% in 2011 and 31% in year ending March 2014,). This is a result of a) low levels of tariff and exemption, b) poor collection efficiency and c) higher costs as a result of high tubewell supply. The expenditure gap is met by ad hoc provisions from the general municipal budget. In the past four years ending March 2014, 77% of the revenue surplus from the general budget has been used to subsidise WSS.

There is no established principle for cost recovery and pricing. Deciding the water tariff structure is the responsibility of the LMC but is subject to the approval of the State Government. Water supply is not a ring fenced function and the Water supply finances are reported as a part of the municipal finance. As a result, there are no targets for cost recovery for water supply.

### **2.1.4 Financing of investments**

Most cities in India operate under an ad hoc investment framework which is dependent on availability of grants from the State or national Governments; the exceptions are those with a strong municipal revenue base. Ludhiana too operates in a similar environment. Neither the water account nor the municipal account generate surpluses that are capable of meeting the investment needs of the city. The State is expected to finance the capital expenditure. State support to capital expenditure is discretionary and there is no formal framework for capital expenditure support.

### **2.1.5 Autonomy of WSS service provision**

Except for the creation of PWSSB by law, there is no formal requirement for any particular institutional arrangement for the WSS provision. By default, the WSS functions are housed under a departmental structure. There are no specific requirements regarding ring fenced operations or financial reporting for WSS. The WSS assets are owned nominally by the ULB. The accounting systems do not record asset ownership and these are financed by the State Government. As a result, there is only a handover of assets to ULBs after construction.

The State procurement rules apply for LMC as well as PWSSB. These rules specify the procurement method and procedures to be followed. The staff are governed under Government service rules.

The municipal act permits the ULBs to contract with external entities for specific services. There is no explicit permission to pursue private sector arrangements;

there are understood to have been enabled under the facilitating clauses for contracting. However, there are other restrictions such as the requirement that all revenues of the municipal body be credited to the corporation fund first.

### **2.1.6 Functioning of WSS department**

The WSS provision is in a departmental structure under the ULB and therefore the autonomy is negligible. There are no formal specifications of the responsibilities of the WSS service, performance standards, financial support etc. The operations are headed by a senior water supply engineer, who is appointed by the State Government amongst a pool of engineers in municipal services. Traditional constraints of public sector employment, such as lack incentives for performance; poor accountability; weak autonomy to execute job responsibilities; poor training and career development opportunities etc. apply to WSS function also.

Financial management practices are based on Government accounting procedures. In the recent years, LMC has been moving towards a double entry accrual based accounting system, from an erstwhile cash based single entry accounting system. The accounts of the corporation are required to be audited by the Examiner of the Local Fund Accounts of the Government of Punjab.

Since the sector agencies do not finance infrastructure development and depend on the State Government, infrastructure development is normally reactive and is in response to availability of finances, such as through a Government grant programme or an externally aided project. Plan preparation is carried out by the PWSSB, which is an asset creator and not an operator. Therefore, plans have tended to focus on asset creation and have not sufficiently addressed operational problems in service delivery. Plans are prepared as per national guidelines of the Central Public Health Engineering and Environmental Organisation.

The technical, commercial and financial operations reflect problems seen commonly in Indian utilities. Operations are not codified and are generally only focused on ensuring availability of water on a daily basis to consumers. Other aspects of service delivery such as uninterrupted supply, complaint redressal etc are not focused on; the attention to efficiency aspects such as leakage control, reduction of illegal consumption are also low.

*Table 1 - Key Service Level Benchmarks*

<b>Service Area</b>	<b>Benchmark</b>	<b>Average for large Indian cities</b>	<b>Ludhiana</b>
Water supply coverage	100%	54.7%	Above 80%; being improved to near 100%
Availability litres per capita per day	135	89.9	Around 280
Hours of supply	24	4.3	12 Hours
Sewage network coverage	100%	50.4%	Above 80%, being increased
Treatment capacity as a % of sewage generation	100%	58%	100%
Cost recovery	100%	56.9%	Around 31%

Source: Data from LMC, SLB notification of major States

Ludhiana has around 9 staff per 1000 water supply connections. In addition, Ludhiana also has contract employees attached to each tubewell. The STPs are operated by the PWSSB. The LMC meets the electricity costs, the cost of outsourced operator and supervision charges of PWSSB. Compared to other similar sized cities, the LMC has experienced and senior engineering staff. However, the senior staff are nearing retirement. Both MCs have extreme short supply of junior level engineers, since recruitment has been in freeze for several years. The Government of Punjab is addressing this and is in the process of recruitment of junior engineers. The Engineering cadre in MCs is transferable across cities which improves cross learning.

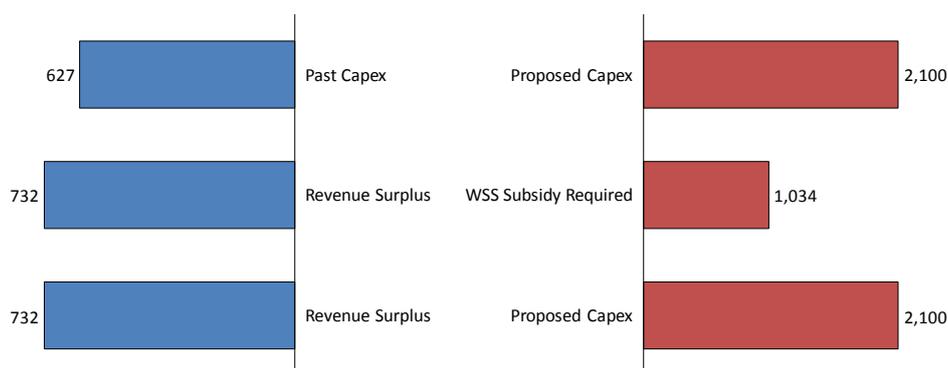
Traditional customer databases, billing and collection systems exist, but these are not backed by a GIS based customer database. The LMC lacks other utility systems necessary for modern operations such as a) flow and pressure management, b) leak detection, c) complaint redressal, d) investment planning, e) revenue and financial management.

### 3 Institutional agenda in Ludhiana

Improving service levels in Ludhiana will require investments as well as improvement in operational practices. Unlike in the past, this would require substantial efforts from within the Municipal Corporation. The reasons are as follows:

- a) The State Government has taken a decision to transfer design and construction responsibilities for water supply and sewage from PWSSB to LMC; Priority service improvements to shift to surface water sources and to provide continuous supply will require investments of Rs 2100 crores. This is three and a half times the capital expenditure LMC has implemented in the last four years; **technical capacity to plan and implement these investments has to be developed by LMC.**
- b) To improve operational practices and achieve service levels, LMC needs to **provide greater autonomy to WSS services and also induct technically qualified staff and reorient management practices.**
- c) The financial analysis indicates that in the next eight years the anticipated revenue surplus in the general budget is only 75% of anticipated deficit in the WSS account. This is a result of higher cost increases in WSS which are not matched by revenue increase. Therefore, the general budget will not be in a position to support WSS fully. Further, the available surpluses in the general budget will also be required to meet other committed loan repayments. Therefore, **cost recovery from user charges needs to improve to eliminate or minimize subsidy requirement from general budget.**
- d) The State Government policies are expected to require the municipal corporations to bear an appreciable share of future capital expenditure. Even if the entire anticipated revenue surplus in the general budget is earmarked for proposed investments (ignoring subsidy needs of WSS, loan repayments and ULB contribution for JNNURM projects), it will only meet 36% of the proposed capital investments for the 24 X 7 project. Therefore LMC will need to raise new resources and **support WSS capital investments.**

Figure 2 - Comparison of financial capacity and requirements



Note: All figures in Rs Crores

Thus, LMC needs to a) mobilise a part of the investments required, b) eliminate/minimize reliance of WSS operations on general budget and c) adopt a governance model that enables effective investments and service delivery.

### 3.1 Cost Recovery agenda

If WSS continues to demand the current extent of subsidies from the general budget, none of the institutional agenda can be pursued. Therefore the first institutional agenda needs to be increased cost recovery. At present, the cost recovery in the WSS is 31%, as seen from Table 2. As a result 74% of revenue surplus in the general budget has been utilized to subsidise WSS operations.

Table 2 - Cost Recovery

All figures in Rs Mn	Mar-11	Mar-12	Mar-13	Mar-14
Revenues from WSS	231.0	245.1	243.3	370.8
O & M Expenditure	823.7	988.8	1154.3	1202.6
Cost Recovery	28.1%	24.8%	21.1%	30.8%
General budget surplus	2277.6	1609.2	2074.3	1776.1
Support to WSS	1229.0	1513.3	1196.8	1311.9
WSS subsidy as a % of general budget surplus	54.0%	94.0%	57.7%	73.9%

Poor cost recoveries are a result of several factors, the key among them being

**Exemption granted to households:** In Ludhiana houses with plot area less than 125 square yards are exempt from water charges. This shrinks the paying customer base in Ludhiana to 53%.

**Non volumetric tariff:** The tariff for the rest of the customers is a flat monthly charge (separate charges exist for water supply and sewage). Further, lack of increasing block volumetric tariff implies that customers are not being charged for increased consumption, even though the average customer is being supplied water in excess of normative requirements.

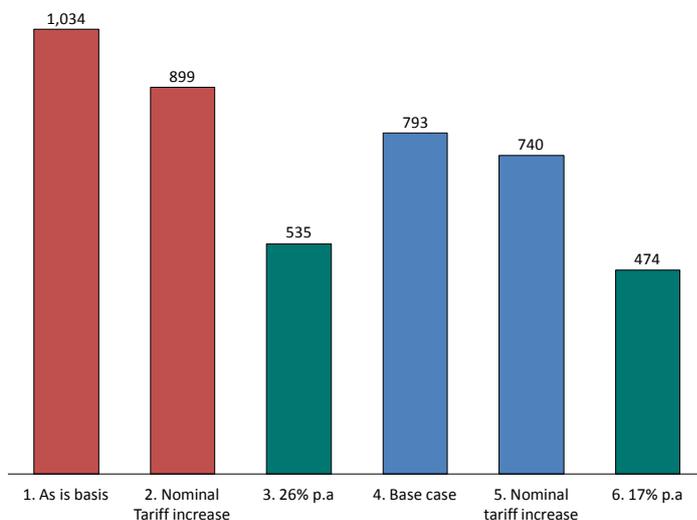
**Lack of regular tariff revision:** The fixed monthly tariff is not revised in step with inflation. Manpower costs and electricity expenses contribute to a maximum share of O & M expenses and increases in these cost heads are outside the control of LMC, but it is unable to recover these from the customers through regular tariff revisions. Lack of a regular tariff revision in the past has steadily reduced cost recovery and tariffs are now inadequate to even recover staff salaries.

The financial analysis indicates that the 24 X 7 project could reduce electricity expenses due to the shift to surface water sources. However, this reduction is not so significant as to improve cost recoveries. Figure 3 summarises the effect of the 24 X 7 project on WSS subsidies as well as the subsidies at different levels of tariff revision. Scenarios 1, 2 and 3 are without 24 X 7 project. Scenarios 4, 5 and 6 are with implementation of 24 X 7 project.

In Scenario 1, which is the “as is basis”, WSS subsidies will amount to Rs 1034 crores till March 2022. In Scenario 2, if tariff is increased nominally (10% after completion of JICA project and 6% p.a thereafter, all slabs are charged) the subsidies will reduce only marginally (to Rs 899 crores), since tariff is still well below cost. To achieve O & M cost recovery in the year 2022, annual tariff increase has to be 26% (Scenario 3). Even in this case, the total WSS subsidy till cost recovery is reached in the year 2022 will amount to 534.7 crores.

After implementation of the 24 X 7 project, the WSS subsidy till the year 2022 will reduce to Rs 792.8 crores. This is due to a) reduction in O & M expenses, b) increased base of paying customers assuming that the 0-5 Marla households will also be charged after completion of project and c) volumetric tariff. With nominal tariff increases of 10% in the year 2017-18 and 6% thereafter (Scenario 5), the subsidy requirement will reduce marginally to Rs 740 crores. In order to achieve full cost recovery, annual tariff increase has to be 17% p.a (Scenario 6) and even in this case the WSS subsidy till cost recovery is reached in the year 2022 will be Rs 473.6 crores.

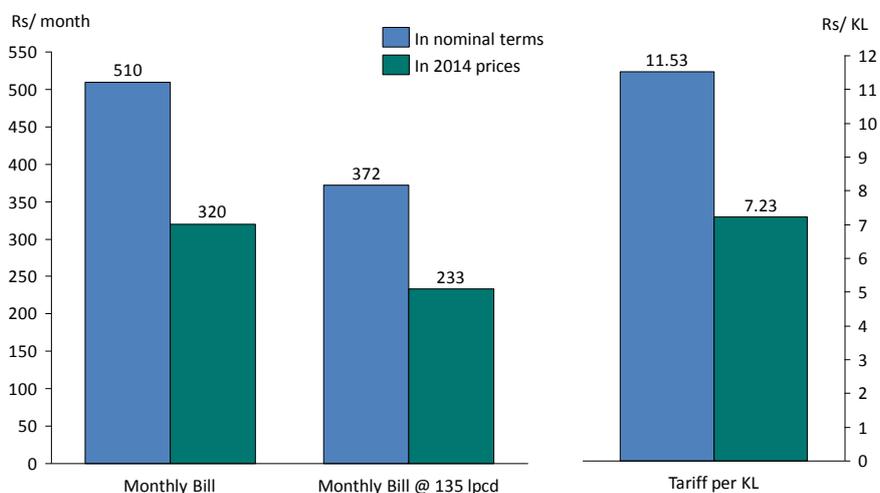
Figure 3 - WSS subsidy at different levels of tariff revision



Note: Figures indicate total WSS subsidy till March 2022 in Rs Cr.

The financial analysis indicates that on a standalone basis, the cost structure after implementation of the proposed project is affordable (Figure 4). The average monthly water bill for a household is expected to be Rs 510 in the year 2022. It may be noted that this is at 185 litres per person per day consumption. If the consumption is at the normative levels prescribed by CPHEEO (135 lpcd), the average bill per month would be Rs 372 in the year 2022. If these are converted to 2014 prices (assuming an inflation of 6% p.a), the average monthly bill for consumption of 135 lpcd would be Rs 233, which compares well with the current recoveries in Karnataka where 24 X 7 projects have been implemented. Similarly, the cost Per KL would be Rs 11.53 in 2022 prices and Rs 7.23 at 2014 prices.

Figure 4 - Comparison of monthly bills and tariff for cost recovery



Therefore, it would be possible for LMC to target cost recovery in the year 2022. It would require the following measures;

- a) Introducing charges for the currently exempted households on completion of the project
- b) Introducing an increasing block volumetric tariff structure
- c) Regular tariff revision linked to increases in input costs

### 3.2 Financing agenda

Any contribution from private sector or commercial borrowing towards capital expenditure will need to be recovered, either through tariff or through repayments from LMC. As noted earlier, O & M cost recovery itself is a medium to long term agenda in WSS. Therefore recovery can only be through revenue surpluses from the general budget of LMC.

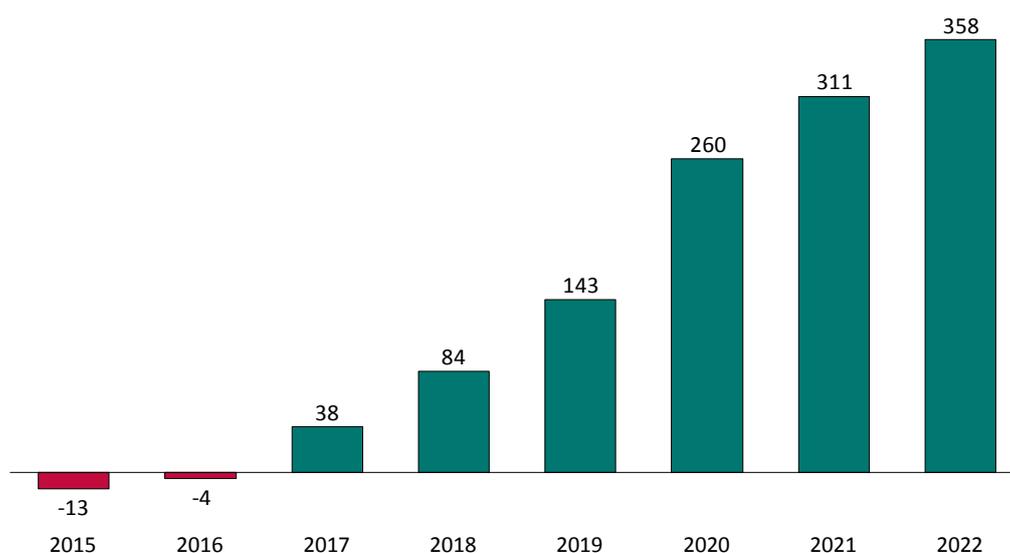
The financial analysis indicates that the ability of LMC to finance the proposed WSS investments is limited; at present 74% of available surplus is being used to finance O & M deficit in WSS. This is expected to worsen in the future years. The available revenue surplus (Item 1 in Table 3 below) is adequate to cover existing loan repayments (Item 2) and anticipated WSS deficits (Item 3). The tariff structure used for this scenario is comparable to the tariff followed in small cities in Karnataka for 24 X 7 water supply. After meeting these requirements, there would be a residual surplus of only Rs 238.0 Crores which is inadequate to finance the water supply capital expenditure of approximately Rs 2100 crores.

*Table 3 - Projected general budget revenue surplus and utilization, Rs Mn*

"As is" scenario on municipal finance	Total	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22
1. General budget revenue surplus	7759.6	1004.6	1149.4	1150.8	996.3	938.5	908.4	845.7	765.9
2. Committed capex and repayments	1863.4	288.2	272.4	256.6	240.8	225.0	209.2	193.5	177.7
3. WSS deficit to be subsidised	3516.0	910.6	1,039.7	935.9	688.9	473.0	-216.4	-206.4	-109.4
4. Residual surplus for financing WSS capex	2380.2	-194.2	-162.7	-41.7	66.6	240.4	915.6	858.6	697.6
<b>With revenue improvement</b>									
5. General budget revenue surplus	17137.2	1065.1	1267.3	1570.8	1770.3	2129.3	2588.2	3095.2	3650.9
6. Committed capex and repayments (same as Item 2)	1863.4	288.2	272.4	256.6	240.8	225.0	209.2	193.5	177.7
7. WSS deficit to be subsidized (same as Item 3)	3516.0	910.6	1,039.7	935.9	688.9	473.0	-216.4	-206.4	-109.4
8. Residual surplus for financing WSS capex	11757.8	-133.6	-44.8	378.3	840.6	1431.3	2595.4	3108.1	3582.6

If the growth in municipal finance is health (own revenue growing at 8% and share of VAT growing at 13%), the available revenue surplus will increase to a total of Rs 1714 Crores till the year 2022 (Item 5). This would improve the ability of LMC to finance committed capital expenditure, repayments and WSS deficit. From the year 2017 onwards, LMC would have a residual surplus. The total surplus that is available to support capital expenditure is approximately Rs. 1175 crores (Item 8), which could meet approximately 57% of the projected capital costs.

Figure 5 – Surplus available to support WSS capital expenditure, Rs Crores



Overall, it is likely that LMC could contribute to the financing of the proposed WSS investments. This could be in the form of upfront commercial borrowings by LMC which could be repaid through the surplus available, as indicated in Figure 5.

### 3.3 Governance agenda

Improving the governance of WSS<sup>4</sup> is the third critical institutional agenda in Ludhiana.

**WSS governance** in Ludhiana is similar to that of other Indian cities. Structurally, WSS services are performed by a municipal department, like in many Indian cities. The level of autonomy to the WSS services is weak. WSS operations are not subjected to performance standards and oversight of operations is limited to

<sup>4</sup> Characteristics of well performing public water utilities; Aldo Baietti, William Kingdom and Meike van Ginneken; Water Supply and Sanitation Working Notes, May 2006

Template for Assessing the Governance of Public WSS Service Providers; A. Locussol and M. van Ginneken; World Bank, 2010

ensuring availability of water on daily basis. WSS operations are not permitted to set tariff near cost recovery levels; investment support for WSS is ad hoc. Governmental HR systems do not enable hiring of technically capable staff.

**WSS operations** are also not focused on performance or customer service. Staff capacity is weak and staff are not rewarded or promoted for performance; operating performance is not documented; and there is little effort to benchmark and improve performance. Internal processes and systems are weak, like in many WSS operations in India.

Improving WSS governance in Ludhiana will require actions in both directions – firstly, the external policy environment and institutional structure for WSS governance will need to improve and secondly WSS operations will need to be focused on results and customer service. Each of these is necessary to improve performance and neither of them is individually sufficient.

**Key changes required in the external environment** are summarized in Figure 6. The current situation is shaded in blue and the desired status is shaded in green. Given the current status of WSS in Ludhiana, the best possible solution may not be practical at this point of time.

Figure 6 - Key changes required in external environment

Area of Governance	Weak mechanisms	Intermediate stages ----->		Best possible solution
Legal Structure	Departmental	Ring fenced operations	Authority under Law	Corporate Utility
Mandate for the ULB	WSS not under ULB	Responsible for distribution only; Bulk operations and capex by separate entity	Source to tap responsibility for operations; investment by separate entity	Source to tap responsibility for operations and investments
Tariff setting	Well below costs, ad hoc revisions, supported with ad hoc subsidy	Near O & M costs, with ad hoc subsidy	Near O & M costs, regular revisions and transparent subsidy	Cost recovery tariff with hard budget constraint
Accountability for performance	No performance requirements; weak monitoring	Clear performance standards; no consequence for shortfalls	Clear performance standards; consequences for shortfall	Independent regulatory oversight
Staff salaries	Governed by public sector rules; no linkage with performance	Largely public sector rules with some provision for contracting	Within public sector rules, but with adequate incentives and rewards	Market linked with incentives for performance
Investment framework	Ad hoc and inadequate	Need based and negotiated	Objective framework linked to needs and performance	Enabled through tariff and objective Govt support

**Legal structure:** The desirable status for Ludhiana would be to establish a corporatized water utility. The option of setting up an entity under law, such as an authority or a Board, has limitations and is no longer a necessity since utilities under corporate law have been well accepted in India, such as in the electricity sector.

**Mandate for the ULB:** Ludhiana is already in a relatively better position since it is fully responsible for operations. The Government has decided in principle to devolve the responsibility for capital expenditure also to LMC and this should be implemented.

**Tariff setting:** Ludhiana is in a weak position in tariff setting practices. Due to the low levels of tariff, it would continue to require support from the municipal budget and therefore the best possible status may not be achievable in the medium term. Ludhiana should target to achieve O & M cost recovery with transition support from the general budget in the next six to eight years.

**Accountability for performance:** Though the SLB framework is used for planning purposes, there are no consequences for poor performance. In the medium term, Ludhiana should move to a situation where tariff revisions are linked to the WSS operations achieving pre-decided efficiency targets. As and when the State Government decides on establishing a regulatory framework, Ludhiana would also be subject to it.

**Staff salaries:** Governments and Government agencies have a natural limitation in accessing talent, due to rigid pay structures and lack of performance linked reward systems. This is aggravated in the WSS context which is not considered as an attractive career choice. This situation is unlikely to change without larger reforms in Government HR rules. Therefore, the focus in Ludhiana should be to maximize the possibilities for incentives and rewards within the Governmental system and to tactically cope with this limitation to at least attract a small set of functionally competent staff.

**Investment framework:** At present, the investment framework is ad hoc with no clear responsibilities to be shared between WSS operations, the ULB and the State Government. In the near term, the responsibility for financing will rest largely with the State Government (due to the financial condition). The State should target establishing a framework for future capital expenditure that relies on a mix of WSS revenues, ULB finances and State Government support. The need and extent of capital investment should also be linked to performance.

While changes in the external environment are well recognized and the willingness to implement them are also relatively high, the key challenge Ludhiana will face is in internal performance orientation. WSS operations require urgent improvements. The gap between existing capabilities and requirements are high. The ability of Government owned entities to attract talent and to inculcate a performance orientation within is still not proven. While there are examples in the electricity distribution sector, the performance and skill gap in water sector is much wider as compared to electricity sector.

Given these limitations, it is necessary for Ludhiana to examine outsourcing as an alternative to building internal performance orientation. An appropriate PPP arrangement will help Ludhiana outsource project implementation and service delivery; and by-pass the key limitations of Government owned operations – inability to attract talent and inability to create a performance culture.

## 4 Institutional and PPP models for Ludhiana

In addition to pursuing various institutional options for WSS, different models of PPP are also possible. Three broad models are commonly recognized based on domestic experience;

- Based on parallels in electricity where unbundled, regional distribution utilities have been created; these are fully owned by the Government with one or two exceptions.
- In other infrastructure sectors, PPP projects have been implemented through an SPV framework. Such SPVs are generally fully owned by the private sector.
- Some PPP projects, especially in the airport sector have been implemented through SPVs which are jointly owned by the Government and the private partner.

These can be seen in two dimensions as below:

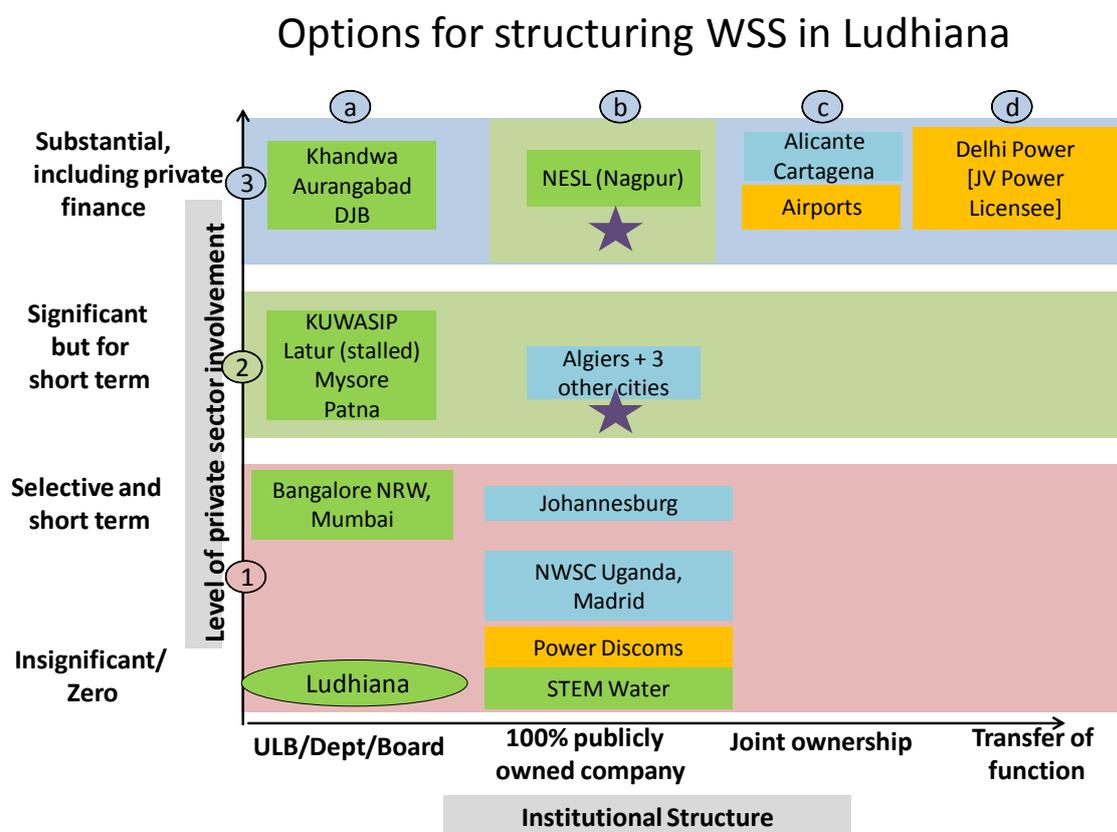
**Institutional model for WSS:** The options under this are i) the current ULB structure, ii) a fully ULB owned SPV and iii) an SPV jointly owned with private sector and iv) divestment.

**PPP dimension:** For simplicity, the PPP options can be seen as i) the current system which has negligible private sector involvement, ii) limited outsourcing, iii) a short to medium term PPP option with no private financing and iv) a long term option like a concession which also includes some extent of private finance.

These are plotted in Figure 7 below and relevant examples in India (from water and other sectors) are highlighted. These models are elaborated in the later sections. It may be noted that so far, there hasn't been any integrated water and sewage PPPs in India. In Ludhiana, the models being explored also include the potential for integrated water and sewage operations.

The models in the red shaded box (1a and 1b) have selective or no involvement of private sector. Model 1a applies to most Indian cities where the operations are fully Government owned and there is no private sector involvement. Ludhiana follows this model. An improvement over this model would be the initiatives in Mumbai(ULB dept) and Bangalore(Board). In these cities, selective private sector involvement has been pursued; the private sector assists the WSS agencies in carrying out WSS operations, **but the responsibility for service delivery remains with the public agency**. In the case of Bangalore, the private sector is responsible for NRW reduction whereas in Mumbai, the private sector has been contracted to provide a variety of services including reduction of leakages and continuous supply.

Figure 7 - Options for structuring WSS in Ludhiana



Model 1b refers to 100% Government owned companies with no significant private sector involvement. Over the past ten years or so, integrated electricity Boards in several States in India have been unbundled and corporatized. In most States corporatized, regional electricity distribution utilities have been set up. They have the same features as in this option, but have some additional features such as a) they are generally unbundled and depend on power supplied by another upstream utility and b) they are subject to independent regulation.

There are several international examples of this model, including Madrid (Spain) and National Water Supply Corporation (Uganda). Annexure 1 provides further details of these models. There aren't any examples of such utilities in water supply in India yet. An isolated example of this model in the water sector is STEM Ltd (in Maharashtra), which is a company owned by ULBs to which it provides **bulk water**. STEM is not involved in water distribution and therefore is not a clear parallel to the "Utility" term that is being used to define an organisation that serves end users directly.

The models in the green shaded box (2a and 2b) involve private sector in a short term contract. Model 2a refers to arrangements where the ULB contracts with the private sector to improve services. The 24 X 7 demonstration projects in Karnataka in the three cities of Belgaum, Hubli-Dharwad and Gulbarga (KUWASIP) follow this

model. The institutional structure of the WSS operations remained the same and under the control of the ULB. A similar arrangement in Latur in Maharashtra failed in implementation and has been suspended.

Model 2b refers to similar short term private sector arrangements, but under a ULB owned utility. The private sector would be responsible for improving operational performance. Where the existing utility is reasonably mature, the private sector would work with the existing utility to improve performance in a management contract. If the existing utility is not mature and does not have capacity, the private sector may build its own operational setup. Capital expenditure is supervised by the private sector but is financed by Government authorities. The private sector will also be responsible for building the capacity of the publicly owned utility.

There are no examples of India of a similar approach in the water sector. International examples of this model are Johannesburg in South Africa and Algiers in Algeria (and in three other cities in Algeria). The Government corporatized the WSS operations and established a fully Government owned company. A short term contract was signed with private sector to improve utility performance.

Models 3a to 3d involve private sector finance. Model 3a is the usual practice in infrastructure PPPs in India. A PPP project is housed in a Special Purpose Vehicle which is fully owned by the private sector. The private sector mobilises all or significant part of the finance required for capital expenditure, implements and is responsible for operations and maintenance. At the end of the contract term, the assets would be transferred to the Government agency; staff may be absorbed by the private sector parties elsewhere; databases and other systems may be available to the Government agency. **There is no ownership relation between the SPV and the Government agency; the relationship is entirely contractual.** Examples of such a model in water sector are the PPPs in Khandwa, Shivpuri, Delhi Jal Board and Aurangabad, where 10% to 50% of the capital investments are being mobilized by the private sector.

Model 3b is similar to 3a, except that the city also establishes a fully owned utility. **Nagpur Municipal Corporation** has set up **Nagpur Environmental Services Limited(NESL) as a fully owned utility.** Water and environmental services have been delegated to the utility. The Executive Engineers handling the water supply operation, elected officials and the Commissioner of the Corporation form the Board of NESL. A few other officers from the corporation have been appointed to NESL. NESL in turn has signed a PPP arrangement and has contracted all treatment and distribution activities. NESL will only operate bulk water offtake and transmission assets and supply raw water to NESL.

Model 3c is a joint ownership model, where the water operations are housed under a Special Purpose Vehicle, which is jointly owned by the ULB and the private sector.

The special purpose vehicle mobilises finance from the market and is responsible for all WSS capital expenditure and operations. This form is generally seen when ULB involvement in the project company is considered necessary to ensure protection of Government interests or to provide comfort of Government support to investors. This design also has an additional benefit; the project company would survive the term of the contract. Therefore, the operational staff, assets and systems housed under the SPV would be available to the new set of shareholders (or) to the Government if it assumes full ownership. This model is generally more suitable for a long term PPP arrangement which has a full fledged capital structure. Examples of such a structure in India in other infrastructure sectors are Airport PPP models in Mumbai, Delhi, Bangalore and Hyderabad.

Model 3d is an extension of 3c, where the WSS operations are divested from Government ownership through a statute and licenses are provided to private, Government or joint venture companies. An example of this is the Delhi power privatization model where distribution responsibilities were divested from Government ownership and were transferred to a joint venture company through a license.

### **4.1 Relevance to Ludhiana**

In the context of Ludhiana, significant private sector involvement is necessary to implement the agenda of capital investments and service delivery improvement. Therefore, models 1a and 1b that rely only on public utility led improvements are not advisable, since the existing WSS operations in Ludhiana lack the capacity.

Models 2a and 2b are possible in Ludhiana. Model 2a contracts out to private sector on a short term contract, with all finance provided by LMC or GoP. However, it is not recommended as a first choice since it does not build any long term sustainable entity to provide services at the ULB level, and leaves the ULBs exposed in the event of failure of the PPP contract for whatever reason.

Model 2b is relevant, but substantial freedom needs to be provided to private sector to bring in own staff and systems since the WSS operations in Ludhiana are not mature. Implementing 2b would involve the following steps:

1. Creation of a 100% ULB owned company(utility), which owns the system assets, employs limited senior staff (directly or under deputation)
2. The company contracts with the private sector through a Performance Based Management contract (6 to 10 year duration) to build the capacity of the new company and improve service to 24/7 across the city.
3. Capital finance will be mobilized by LMC and GoP. The operator will be paid a performance linked management fee for a range of services specified in the contract (e.g. the design, purchase, and operationalization of a GIS system).

In the context of Ludhiana, models 3a and 3b are possible, provided the surplus from the general budget is made available for repaying the private investments. Within these two, it is desirable to pursue Model 3b, since it involves the creation of a utility which can take up the agenda for long term water supply and sewage planning. It may be noted that in the case of 3b, since private financing will require a long term PPP, the utility owned by the municipal corporation will be a lean utility which largely undertakes strategic planning for water supply and sewage in the city as a whole. Unlike in Model 2b, the private operator may not be tasked with creating operational capacities within the utility in the Model 3b.

Models 3c and 3d require that the Joint Venture companies (or) Licensees are allowed to recover the investments in WSS through user charges. Theoretically it is also possible to provide the surplus available in the general budget to the joint venture company or the licensee as a subsidy (like it is provided in electricity distribution sector). These models require high level of maturity within the public as well as the private sector. Moreover, since tariffs are expected to recover only O& M costs, public and political acceptance has to be built up for providing transparent subsidies from the general budget to the Joint Venture company or the licensee.

*Table 4 - Benefits and limitations of options*

<b>Model</b>	<b>Benefits</b>	<b>Limitations</b>	<b>Remarks</b>
Mode 1a: Status quo	Familiar model; natural political oversight and high political acceptability	Limited autonomy; poor customer focus; poor financial resources; rigid procedures; inability to hire talent	Not recommended
Model 1b: Utility with no PPP. Most power distribution companies in India. STEM Ltd which is a municipal owned (multi ULBs) bulk water supplier incorporated as a company.	Provides autonomy, improves accountability	Without PPP, the desired performance improvements are unlikely;	Not recommended
Model 2a: Short term PPP Examples: KUWASIP, Mysore	Provides private sector skills for performance improvement.	Without creation of a utility, capacity of the ULB does not improve; ULB will continue to depend on private sector for operations.	Recommended if utility creation is not possible
Model 2b: Utility with short term PPP. Examples: None	Provides autonomy, improves accountability. Provides private sector skills for performance improvement.	Not possible to mobilise private sector finance. Sustainability after completion of PPP needs careful planning.	Recommended
Model 3a: Traditional SPV Example: Water PPP in Khandwa, Shivpuri and Aurangabad Malviya Nagar and Nangloi in Delhi (12-15 years)	Provides private sector skills for performance improvement. Preferred if private finance is necessary and possible.	Does not create a ring fenced utility operation. Does not create any capacity in the public body to manage water supply function.	Does not accommodate Utility concept in any way. Not recommended for the project.

## Institutional agenda and PPP options in Ludhiana

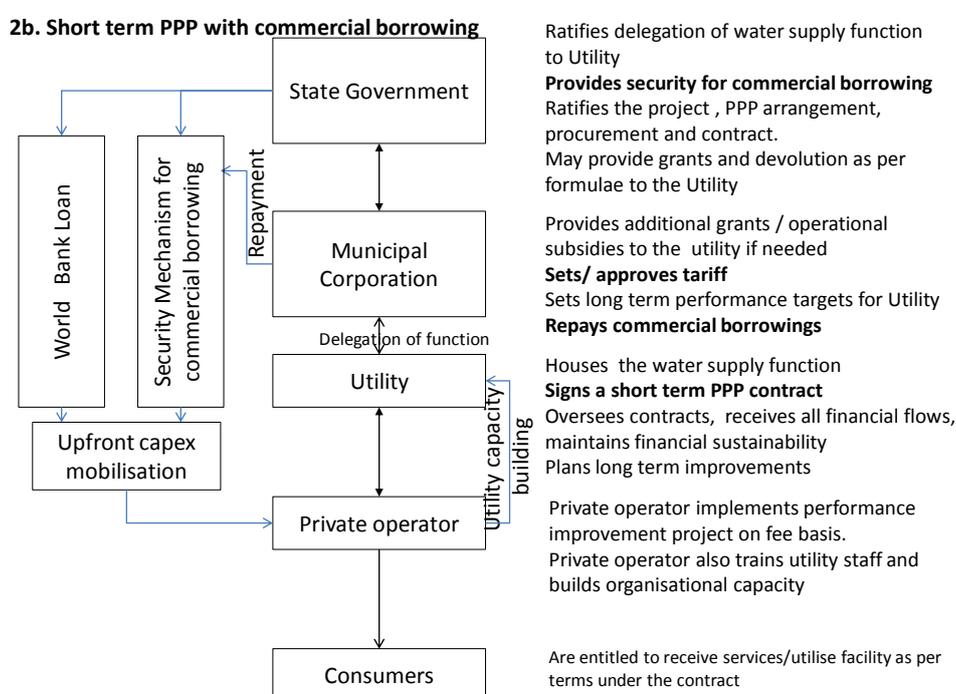
Model	Benefits	Limitations	Remarks
<p>Model 3b: Utility with long term PPP. NESL in Nagpur.</p>	<p>Provides autonomy, improves accountability. Provide private sector skills for performance improvement and possibly private sector finance.</p>	<p>No major limitations. Since the PPP is long term in nature, there may not be any urgency in creating operating capacity within the utility initially.</p>	<p>Recommended</p>
<p>Model 3c. 3d: Joint ownership model. Airport PPP in Bangalore, Mumbai, Delhi. Power privatisation in Delhi</p>	<p>Primarily to ensure Government involvement. Also enables continuity of operations in events of dispute.</p>	<p>Public and political acceptance to provide subsidies from the general budget to the joint venture company or licensee, is untested.  Liabilities and contracts need to be approved at Board level since a) there is joint ownership and b) the liabilities may continue with the company even after contract duration.  May not be possible to formally delegate water supply function to the utility if it has private ownership.</p>	<p>Not recommended</p>

## 4.2 Recommended institutional models for Ludhiana

The recommended institutional models for Ludhiana are Model 2b and 3b.

Under Model 2b a fully owned utility is set up by LMC. Separately, a short term contract is signed with a private sector operator. The Government and LMC jointly provide the finances that are required for the capital expenditure. The private sector oversees the implementation of the capital expenditure programme and provides O & M for a short term (6-10 years in addition to the construction period). The institutional relationships and the functions of agencies at different levels are summarized below.

Figure 8 - Institutional relationships, ULB owned utility with short term PPP arrangement

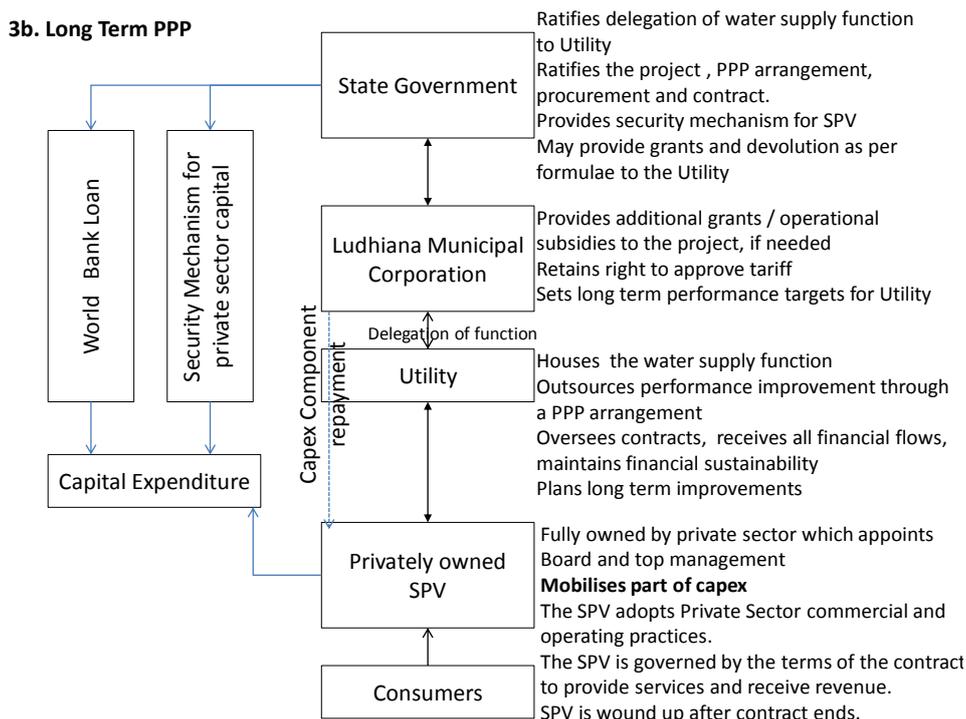


If a publicly owned utility cannot be formed in Ludhiana due to legal constraints or other unavoidable reasons, the same structure as above would be relevant without the utility. In such a case, the WSS operations can be ring fenced within the LMC as much as legally permissible. The institutional relationships as shown above could still be made applicable so as to ensure autonomy for WSS operations.

Under Model 3b, a publicly owned utility is set up by the LMC. This utility will have the responsibility for long term planning for WSS. However, unlike in Model 2b, no operations capacity will be built into the utility, since it would enter into a long term PPP arrangement, where the private sector would also be responsible for mobilizing

part of the finance required for the project. The repayment of the private investment would be the responsibility of LMC; LMC may set up a security mechanism. Under this mechanism GoP will commit to intercept the VAT related revenues that are due to LMC from the GoP, in case LMC does not meet the repayment obligations to the private sector.

Figure 9 - Institutional relationships, ULB owned utility with long term PPP arrangement

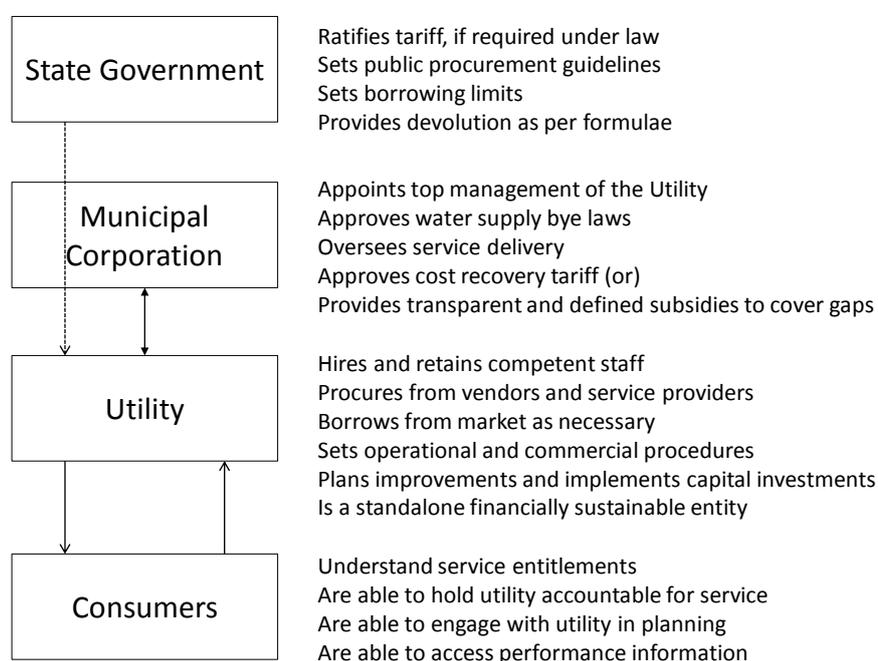


## 5 Annexure 1 – Institutional Models

### Model 1b: Fully ULB owned utility with no PPP

In this model, the ULB establishes 100% ULB owned utility SPV. The ULB formally delegates water supply operations to the SPV. The city will appoint the top management of the utility. It is likely that existing senior officers of the city (or even the water board) handling water supply are appointed as the top management to the utility. It may compromise some of the performance expectations, especially since existing staff are not familiar with distribution improvement. In the normal course, the top management appointment should be by the city; but it's also possible that the State appoints some officers to the utility (administratively persuading the city to appoint the State nominees). It would distort power equations and the purpose for which the utility is set up; this may need to be addressed in the project design. The city will play the regulatory role; it would set performance standards and approve cost recovery tariff.

Figure 10 – Model 1b: Fully ULB owned utility with no PPP



Over the past ten years or so, integrated electricity Boards in several States in India have been unbundled and corporatized. In most States corporatized, regional electricity distribution utilities have been set up. They have the same features as in this option, but have some key differences such as a) they are generally unbundled

and depend on power supplied by another upstream utility and b) they are subject to independent regulation.

There aren't any examples of such utilities in water supply in India yet. An isolated example of this model in the water sector is STEM Ltd (in Maharashtra), which is a company owned by ULBs to which it provides **bulk water**. STEM is not involved in water distribution and therefore is not a clear parallel to the "Utility" term that is being used to define an organisation that serves end users directly.

### **Example: National Water and Sanitation Corporation (NWSC) of Uganda<sup>5</sup>**

The National Water and Sanitation Corporation (NWSC) of Uganda was created by decree in 1972. Twenty-three years later, the NWSC Act of 1995 revised its objectives, powers, and structure to require, among other things, that NWSC's revenues be sufficient to cover all costs, including debt service, depreciation, and a return on investment. As of July 2004, NWSC was providing water supply services to about 1.5 million people in 15 urban service areas throughout the country and operating the few sewerage systems that exist therein.

Between 1988 and 1998, bilateral and international development agencies financed substantial investments in rehabilitation and expansion of fixed assets, but some of the investments were ill-conceived and resulted in excess capacity. Part of the funds was on-lent to NWSC at near-market rates. Despite the legal reform, by 1998 NWSC's performance was unsatisfactory. Unaccounted for water (UfW) stood at 51 percent, and collection efficiency was only 60 percent. The corporation was severely overstaffed; only three of its service areas were able to meet their costs, and NWSC could no longer service the debt that resulted from its investment boom.

In late 2000, a comprehensive study of urban water supply and sanitation services identified the key challenges and sources of inefficiency in the services. That year, the government of Uganda (GOU) agreed to a three-year Performance Contract (PC1) with NWSC under which the latter's debt service obligations were suspended in return for a commitment to operational and financial improvements and an increase in coverage, reflecting GOU policy objectives. A second Performance Contract (PC2) was signed in 2003. PC2 allowed for the continued temporary suspension of debt service and specified that NWSC's debt would be restructured to a sustainable level.

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<sup>5</sup> Extract from Case Studies of Bankable Water and Sewerage Utilities Volume: II

NWSC Uganda has, during the period 2000-2004 has shown good results and achieved significant improvements in operational performance, financial health, and compliance with contracts agreed with the government of Uganda. By 2004, the corporation had begun to generate an operating surplus.

### **Example: Metropolitan region of Madrid, Spain**

**Institutional arrangement:** Since 1951, the water supply services in the region of Madrid have been provided by a 100% publicly owned company called Canal de Isabel II. Over a period of time, the company had entered into several agreements with the municipalities in the region to manage the water supply and sewage services. These agreements cover both the technical requirements and customer service requirements. At present the Company has about 1.4 million customers.

The group was fully owned by the Community of Madrid till 2011. Since 2012, a new company Canal de Isabel II Gestion has been created to enable other municipalities to own the business. At present 82.4% of the equity is owned by the Community of Madrid through the parent company and the rest are owned by the municipalities which are served. The restructuring also provides for potential dilution of public ownership in favour of a private partner upto 49%.

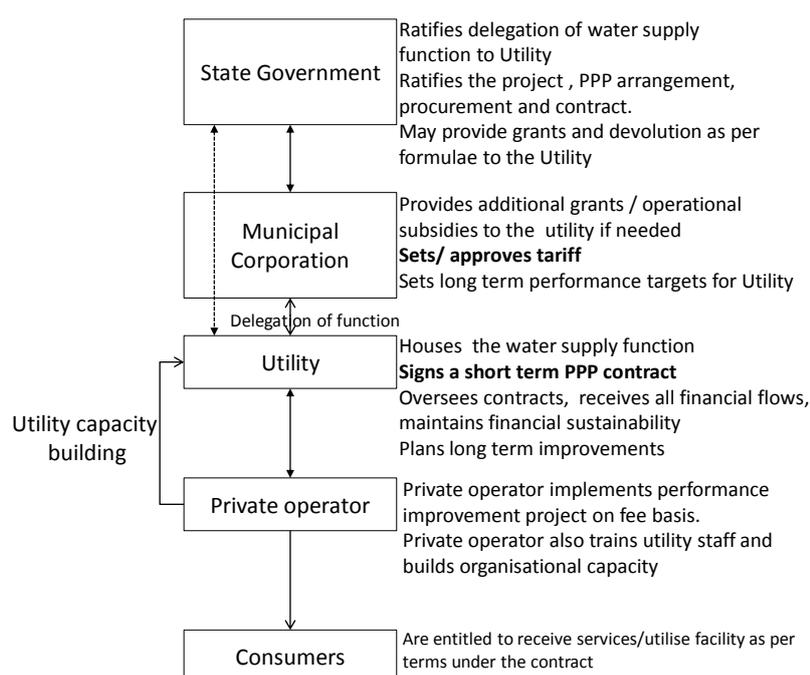
**Operational results:** The Company is managed professionally and is supervised by the Board of Directors who are appointed by the municipalities and the community of Madrid. The Vice President of the Community of Madrid chairs the Board of Directors. The company delivers water to all its customers on a 24 X 7 basis. NRW levels are 18% out of which physical losses are estimated to be about 7%. The Company has consistently generated profits and currently earns about Rs 7200 crores annual revenue; profits after tax are approximately 20% of revenue. The Company pays significant dividends to its shareholders and in the current year expects to issue approximately Rs 710 crores as dividend. The Company prepares tariff proposals based on financial projections. These are approved by the regional Government. The Company has a two part tariff like other Spanish utilities comprising of a fixed charge and a telescopic variable charge. In addition, during dry season, the Company also imposes a higher tariff of upto 50% to discourage excessive consumption. This has helped the utility manage water supply during dry seasons; Consumption per capita has reduced by 25% over the recent years due to demand management.

Over a period of time, the Company has also expanded its services. The Group companies now serve customers in other regions of Spain, Colombia and Ecuador. The group also provides technical services in Panama and Dominican Republic. As on the year 2011, the group was providing water services to 16 municipalities in Latin America and to 185 municipalities in Spain.

## Model 2B: ULB owned SPV entering into a short term PPP

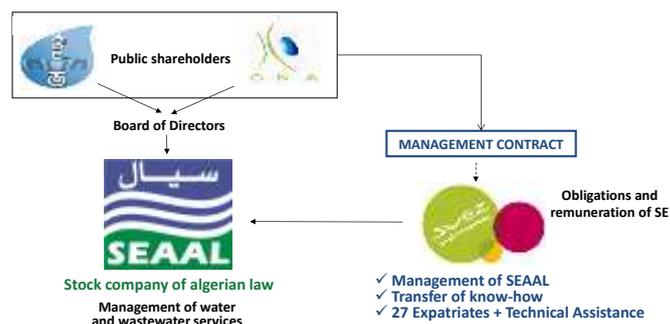
In this model, the 100% ULB owned SPV contracts with a private operator under a short term arrangement. In addition the operator may also be required to train the ULB staff and build the required systems of the SPV. Thus, at the end of the contract period, in addition to physical improvements in distribution, the Utility/SPV would have also been strengthened and would have gained capacity.

Figure 11 - Model 2b



### Example: SEAAL, Algiers

**PPP arrangement:** The Government of Algeria recognised growing water problems after a series of drought in the early 2000's. The Government initiated a PPP arrangement for the capital city Algiers (3.2 mn current population) with the Suez Group. The staff and assets of the State owned operations were transferred to a new water utility company (SEALL) **wholly** owned by Government shareholders. Parallely, the Government awarded a management contracted to Suez. The objectives of the management contract were two fold, a) to deliver continuous water supply in the city of Algiers within 42 months and b) to build the strength of the State owned company SEAAL.



The state owned operations had approximately 5800 employees. All the employees were to be retained in the new arrangement. As per the contract, Suez was permitted to bring in only 27 of its own employees to manage the utility out of which 9 were in management positions and 18 were in operational positions. In addition, Suez was permitted to bring in specific expertise for short periods of time. The CEO of SEAAL would be nominated by Suez. All large scale capital investments, including bulk water capacity additions will be implemented by the Government. Water tariff is set by the Government and is not influenced by SEAAL or Suez. There have been no tariff revisions since 2005. Any subsidy requirements are met by a direct transfer from the Government shareholders to SEAAL. In addition the Government also meets the revenues due to SUEZ under the management contract.

**Achievements:** Public investments have improved bulk water availability by 50%. Within four years, SEAAL had achieved 24 X 7 supply for 100% of its consumers, up from 6% when the management contract was signed. This improvement was achieved replacing only 289 kms out of the total network of approximately 4000 kms. NRW in the intermittent regime was 62% and this has been reduced to 52% under continuous regime.

Utility strengthening targets were fully achieved. These targets were set using the WIKTI (Water Industry Knowledge Transfer Initiative) framework of Suez under which 38 critical processes of the utility are benchmarked against international standards. Annual targets were set for each year of the contract and improvements were audited by both Suez staff and external experts. All the knowledge transfer targets have been achieved. Day to day operations of the utility are now being run by the staff themselves.

The management contract was extended in the year 2011 for an additional five years to a) deepen the utility strengthening and b) to improve performance in an adjacent area of about 0.8 million people. This contract will be completed in the year 2016.

### **Example: Johannesburg Water<sup>6</sup>**

Johannesburg Water (JW) was incorporated on 20 November 2000 by the City of Johannesburg (CoJ) and started operating as a business on 1 January 2001. Its core business is distributing potable water, and collecting and treating of wastewater; this includes infrastructure provision and maintenance, quality control, and customer services.

It entered into an arrangement with a private sector company, Johannesburg Water Management (JOWAM), which was a joint venture between the Suez Group of France, and its subsidiaries in the UK and SA. JOWAM was brought in to assist JW with its operations for five years from 1 April 2001 until June 2006. JOWAM was responsible for the day-to-day management of many aspects of JW's functioning; the JW Board were accountable to the CoJ, with the CoJ responsible for investment funding and potential funding shortfalls. The objectives of the management contract were to leverage private-sector expertise to build a financially viable and efficient water and sanitation entity through a structured skills transfer programme. A key aspect of the skills transfer programme was that JOWAM would over time reduce the number of its managers deployed within JW.

JOWAM started the management contract in April 2001 with 13 managers/experts, and this was reduced to four in year three, and two in the last two years of the management contract. The indicators for monitoring of and remuneration for JOWAM's performance were set out in the management contract. Monitoring of JOWAM's performance was overseen by the Board and the MD of JW, with an independent auditor contracted by the Board to assess JOWAM's performance. Remuneration paid to JOWAM was based on both a fixed fee and an incentive scheme.

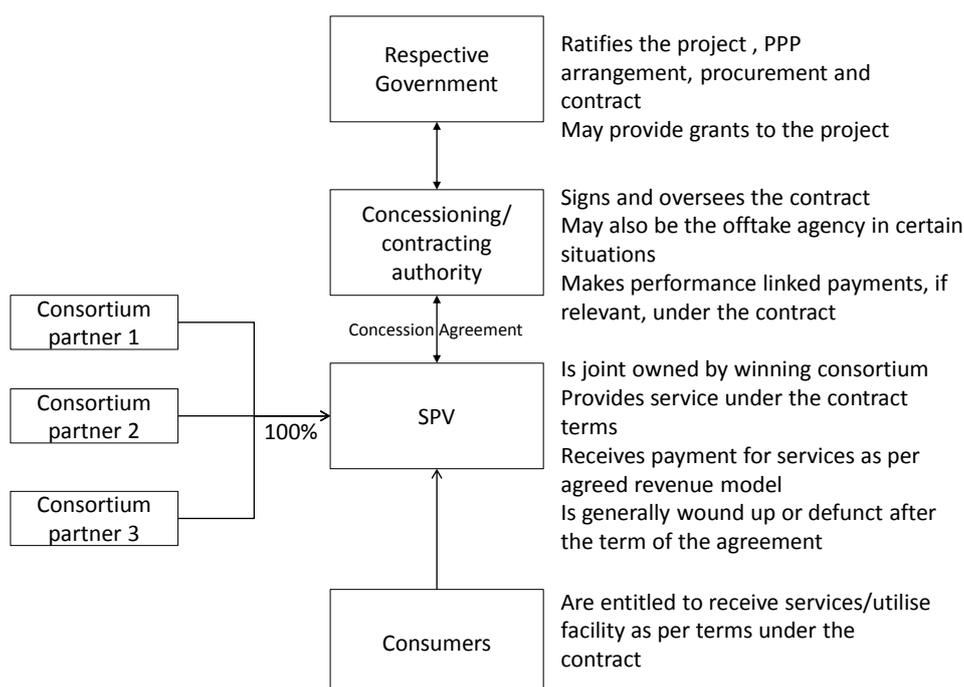
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<sup>6</sup> Extracted from Johannesburg Case Study, Water Dialogues Synthesis Report 2009

## Model 3a: Privately owned Special Purpose Vehicle

This is the usual practice in infrastructure PPPs in India. A PPP project is housed in a Special Purpose Vehicle which is owned by the winning bidder. An SPV becomes necessary in case the winning bidder is a consortium and is practically necessary due to project finance reasons even when the winning bidder is a single company. The relationships are depicted below;

Figure 12 – Model 3a: Traditional SPV Model in Infrastructure PPPs



At the end of the contract term, the assets would be transferred to the Government agency; staff may be absorbed by the private sector parties elsewhere; databases and other systems may be available to the Government agency. **There is no ownership relation between the SPV and the Government agency; the relationship is entirely contractual.**

## Model 3b: A fully ULB owned SPV with long term PPP

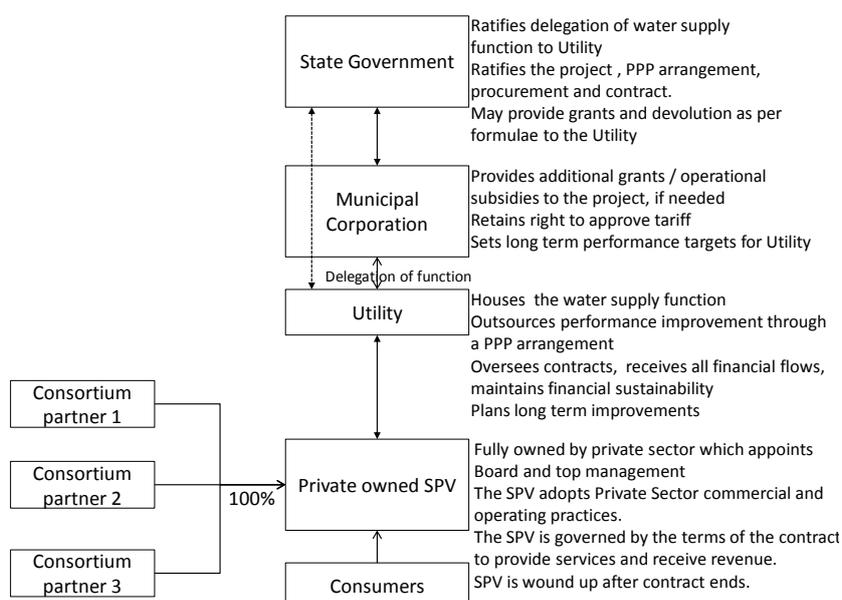
The difference between this and Model 2B is only the duration of the PPP arrangement and that some amount of private finance may be coming through the private operator. The specific features of this model are

- a) **Formal delegation of the water supply function to the Utility** by the municipal corporation, if permitted under the laws; ratified by the State Government if necessary.
- b) Formal expectation that the Utility will be a standalone financially sustainable entity; to this extent, financial support to the utility will be formalised; The State may provide devolutions and grants to the Utility, nominally routed through the corporation. The corporation may provide additional annual operating subsidies that are pre-determined. The corporation also sets long term performance goals for the utility.
- c) The utility contracts with the private sector partner for a long term to achieve performance improvement targets. Some amount of private finance may be mobilised by the private partner. The Utility may provide some amount of concessional public finance, in the initial stages and if necessary for future expansions. The utility also undertakes long term performance planning, which may go beyond contract scope of the private operator.

After the contract duration ends, the Utility may retender the project or absorb the assets into itself, becoming an operating public utility.

This arrangement is depicted below:

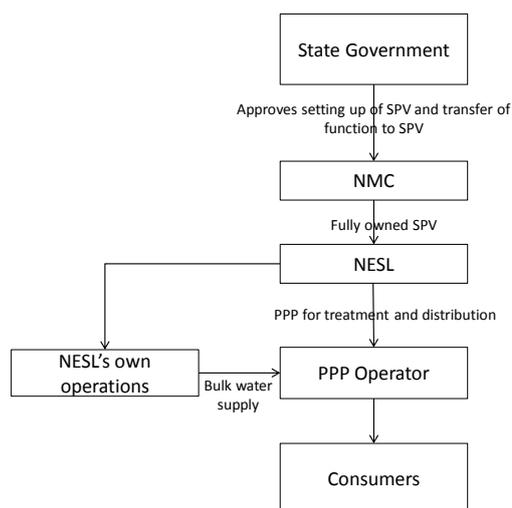
Figure 13 - Model 3b – Long term PPP arrangement



### Example: Nagpur Municipal Corporation

A close parallel to this model is the SPV, **Nagpur Environmental Services Limited, set up by Nagpur Municipal Corporation**. Water and environmental services have been delegated to the utility. The Executive Engineers handling the water supply operation, elected officials and the Commissioner of the Corporation form the Board of NESL. A few other officers from the corporation have been appointed to NESL. However, NESL in turn has signed a PPP arrangement and has contracted all treatment and distribution activities. NESL will only operate bulk water offtake and transmission assets and supply raw water to NESL. **The key difference is that, instead of developing as an operating utility, NESL has outsourced distribution functions.**

Figure 14 - Model 2C as implemented in Nagpur

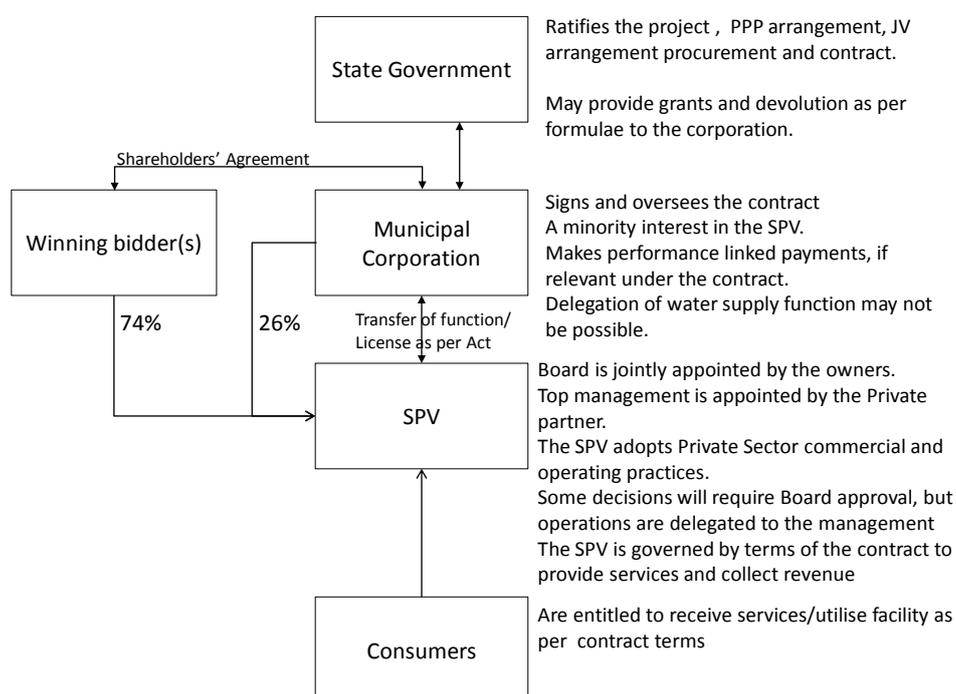


## Model 3c: Joint ownership model

In the joint ownership model, the project is housed under a Special Purpose Vehicle, which is jointly owned by the ULB and the winning bidder(s). This form is generally seen when ULB involvement in the project company is considered necessary to ensure protection of Government interests or to provide comfort of Government support to investors. This design also has an additional benefit; the project company would survive the term of the contract. Therefore, the operational staff, assets and systems housed under the SPV would be available to the new set of shareholders (or) to the Government if it assumes full ownership.

**Thus, this structure ensures that transition from private ownership to public ownership is relatively smoother; the project company can operate as a “going concern”<sup>7</sup> even though ownership would change at the end of the contract. It allows the Government to easily continue operations if there is a dispute with the Operator, since staff, systems and procedures are built considering the SPV as a “going concern.”**

Figure 15 - Model 3c - Joint Ownership Model



<sup>7</sup> “Going concern” implying a company that indefinitely continues operations as opposed to an SPV that is designed for a limited purpose and duration of operations; does not imply “going concern” as per accounting principles

There are normally two contractual relationships in such structures, a) a concession agreement between the ULB and the jointly owned SPV that provides service and b) a shareholder's agreement between the ULB and the private sector shareholders.

The municipal corporation has a minority shareholding in the project SPV-Utility. The shareholding agreement will specify mutual rights, matters that require Board approval, and mutual rights to appoint members of the Board and the top management. All matters related to service provision such as service obligations, tariff, responsibility for expansion etc are governed by the Concession Agreement which is signed between the ULB and the SPV-Utility.

**Unlike in the earlier model, there could be legal restrictions to delegate the water supply function under the laws to the SPV-Utility, since it is partially privately owned.**

On expiry of the Agreement, full ownership of the SPV-Utility may be assumed by the municipal corporation. It could retender for a similar arrangement. Alternatively, at this point of time, the water supply function may be delegated to the SPV-Utility, making it a formal Public Utility.

This model is generally more suitable for a long term PPP arrangement which has a full-fledged capital structure; however, even under a short term management contract, this model could be followed, with suitable adjustments.

Examples of such a structure in India in other infrastructure sectors are a) Airport PPP models in Mumbai, Delhi, Bangalore and Hyderabad and b) Power privatisation model in Delhi.

### **Example: Alicante city utility (Spain)**

**PPP arrangement:** The Alicante city (population of 520,000) is served by a mixed ownership model. Under this model, a legal mixed capital company, generally having upto 50% private capital is formed. The local Governments can award long term contracts to such a mixed capital company. The private investor in the company is selected through a tender process which is standardised and considers both technical and financial requirements. The contract durations are 25 years (for service contracts) and upto 75 years (when it involves hydraulic works).

Aguas De Alicante (AA) is one such mixed capital company. A Spanish incorporated water company Agbar holds 50% of the equity. Alicante Municipal council holds 50% of the equity. The Mayoress of the city council is the head of the Board of Directors. The company was first set up in the year 1953 and in the year 2006 the municipal council extended the contract until 2036.

The right to use public assets are contributed as equity by the council; the private partner brings in cash equity that may be required for further investments. Within the

mixed capital company, the private investor is in charge of appointing the managing director and area managers. The private partner is also responsible for operations, technical and commercial policies. Regular decisions require a simple majority of the Board. Specific decisions, such as bye law modification, credit operations, investment plans and financial statement approvals require a three fourth majority. Tariff proposals are prepared by the company and submitted to the regional Governments which alone have the authority to approve them. Every year the Company (AA) prepares financial projections. Dividends to equity holders are considered and projected in the financial statements. The private partner (Agbar) is also paid a small management fee (generally 2% to 6% of annual revenues, not necessary in all contracts). The city council considers the financial projections and approves the tariff proposals which are further approved by the regional community rate commission.

**Achievements:** The entire city receives continuous water supply; NRW levels are around 10% and is the best in Spain; the city has a fixed monthly tariff and a telescopic variable charge; the city is in financial surplus. Current initiatives are to improve reuse (currently at 2.5%), storm water management (due to irregular rainfall), waste to energy ( a co- generation plant is already operating) and citizen education. AA has been able to manage its scarce resources well; it supplies 114 lpcd at present and has not resorted to bulk water capacity addition since 1991. The utility reports that there is a common interest among partners to ensure financial viability and all issues have been resolved amongst the partners without seeking recourse to arbitration (which is permitted under the contract).

### **Example: Cartagena, Colombia**

**PPP arrangement:** The mixed ownership model of Alicante has also been followed in Colombia to improve services in the city of Cartagena. Agbar is the common private partner in both Alicante in Spain and in Cartagena in Colombia. Cartagena has a population of approximately 1 million. The water services when the PPP was pursued were poor and very similar to Indian water utilities; network was old and dilapidated, service was intermittent, coverage was low, commercial efficiencies were poor and there was under recovery. The mixed ownership model was pursued in Cartagena by transferring the water operations from the district utility to Aguas de Cartagena, a new company. The public ownership was 50%, Agbar owned 45.91% and another private operator owns the rest of the shareholding. Board comprises five members and decisions require 80% agreement. The private operator appoints the CEO. Investments were made in bulk water capacity, treatment capacity and in distribution management.

**Achievements:** The mixed ownership company has delivered significant improvements. Number of customers has increased by about 140%, coverage has

reached 99.9% from an earlier 73.6%, water is provided 24 X 7, number of meters has increased by almost 300%, metered billing has increased to 99.67% as compared to the earlier 58.6% and collection efficiency has increased from 69% to 96.6%. Utility capacity has significantly increased; several processes of the utility have an ISO certification; significant investments have been made into utility processes, technology and information systems have been established; asset maintenance culture has been introduced.