

Road Safety and Transport Authority

The Road Safety and Transport Authority office is located above the Bank of Bhutan near the town core. In absence of a RSTA campus the transport buses are parked in the parking lot near Gyem Chamdrel Sum (Prayer Wheel). This regional office serves entire Samtse dzongkhag and is primarily responsible for public transportation. Buses are available from Samtse plying towards Sipsu, Thimphu and Phuentsholing. The bus services across the border have been temporarily stopped. Future proposals include construction of a bus terminal with a base office.

Royal Guest House

The Royal Guest House, located near the Dzong, serves as an official guest house for government employees, bureaucrats and dignitaries. It is served by a care-taker whose quarters are located on the backside of the guest house.

Financial Institutions

The Bank of Bhutan has their branch established in Samtse. Apart from these financial institutions the Royal Insurance Corporation of Bhutan, Bhutan Chamber of Commerce and Bhutan Development Finance Corporation also have their branches established in Samtse.

Fuel Station

The fuel station in Samtse is located near the town core at the entrance of Samtse town. The Bhutan Oil Distributor also takes care of the LPG cylinder supply for the town.

Public Toilets and Parking facilities

Public toilets and truck parking facilities are provided by the Municipal Corporation near the football ground. These are in dilapidated state. However the bazaar committee has recently constructed public toilets behind the town core. The central parking area near the Gyem Chamdrel Sum (Prayer Wheel) in town core is designated as a parking lot for the buses, taxis and private vehicles.

3.6 UTILITY NETWORKS

Utility Networks in a city are synonymous to the blood streams in the human body. Malfunctioning of any specific stream may allow collapsing of the entire structure. Hence it is essential to ensure an efficient and conscious planning effort. Competent service providers are a key to good management of Utility Networks which is as critical as their planning.

Utility Networks are broadly classified into three distinct sub-sections, based on their nature.

- Road Network and Traffic Movement
- Electric Distribution Network
- Street Lighting
- Telecommunication Distribution Network

3.6.1 Road Network and Traffic Movement

The topography of the town forms the base for the road network. Samtse, unlike most other Bhutanese towns, possesses a considerable amount flat terrain above a peninsular hillock. However there is limited urbanizable land on this hillock and the possible expansion areas are Damdhum Chhubed on north and Gairigaon on south which is at a lower level.

It is important to realize that most urban road patterns evolve and only a handful of them are planned before. In this process of evolution road networks are laid in the order of nature and the shape of plots surrounding them. The oval nature of Samtse town core is the focal point for the future development. Today the road network in Samtse functions effectively. The compactness of the town with most of the present development concentrated in and around the town core, and more than half of the population of the town living in these areas, together with a low vehicle ownership rate and the mixed landuse of the town, considerably reduces the vehicular movement. The road leading from Zero-point to NIE forms the major spine of the town, with roads branching at intervals. Important institutions and public facilities like fuel station, cinema hall, dratshang, market, chortens, BFPL, Bhutan telecom, Dzong, royal guest house, school, etc. are linked by this central spine.



Road junction near Doduel Chorten



Footpath in the extended areas

Except for the town core area, if one analyses the road pattern within earlier GSI colony it is one central road with branches and the road terminating into a dead end. The cross roads near fuel station and Bhutan post form crucial junctions in the town. Both the roads leading towards NIE above Dzong and to Army Welfare Project and forest area from Dzong terminate as dead ends.

Ridged by rivers, roads and the international boundary, Samtse has a compact urban form. It is essentially a pedestrian city. It is also the nodal focus of the proposed national highway system connecting the larger urban settlements in Bhutan with India. At present despite these contrasting traffic functions, serious conflict does not arise between pedestrian and vehicular movement. The existing traffic problems are amenable to correction by use of traffic management techniques supported by some minor construction works. Over the next fifteen years because of assumed growth in trade and commerce and higher personal incomes it is envisioned that there will be a major increase in the number of commercial and private vehicles. Unless accommodation for these vehicles is planned, traffic congestion and hazards will grow rapidly as plan period progresses. At that time conflicts will arise between local traffic and through traffic; between traffic and pedestrians!

Most trips in Samtse are made on foot and 50% of these take less than ten minutes. The close spatial relationship between various urban activities is clearly brought out by the survey. In spite of the present dominance of pedestrian traffic in Samtse, the lack of adequately defined and paved footpaths is a major concern.

No built footpaths exist in the town. With respect to the traffic movement pattern in the town, there is a strong need of established or dominant patterns of footpaths in the town.

3.6.2 Electric Distribution Network

Urban areas around the globe have witnessed rapid growth in the last few decades. The population, as well as the standard of living, has increased, resulting in increased demand for energy sources. This burden is to be carried almost in totality by the electrical distribution system. The electricity supply in Samtse has not met the demand in recent times due to various reasons; the prime reason being ever increasing demand. The Government is rightly discouraging the use of timber and firewood and this has added pressure on the limited power supply. Alternative energy sources are not utilized to their potential. Use of solar energy is still in infancy and not very popular. There is a diesel power generator located near the Dzong, but it serves only on special occasions. An 11 KV substation is located in Gairigaon, near the international boundary. The substation receives power supply from Gomtu sub station and West Bengal State Electricity Board at Banarhat (India). This substation is now the main

source of in-feed into the sub-transmission system of the town. There are about 587 electric connections within the town limit.

Electricity from Samtse is supplied to neighboring small villages with 1875 number of metered connections. At times electricity from the diesel generator located is also connected to this distribution system. Today the town faces the acute problem of frequent power-cuts due to low voltage regulation. Distribution is entirely covered by overhead cables. There exists no underground distribution system in the town. The dense overhead network in the town core is one of the major concerns.

3.6.3 Street Lighting

Samtse Municipal Corporation provides and maintains street lighting facilities for the town. The existing on-street lighting facilities consist of Sodium Vapour lamps, installed on the roads and in a few office compounds. Currently not all the roads of Samtse have street lighting facilities, due to the lack of finances and inadequate human resources. Roads in the town core, and the important arteries which lead to the surrounding areas, have street lights, while the majority of roads in the extended area lack any lighting facilities.

Table 3.6 : Details of Roads with Street Lighting facilities

Sr. No.	Road / Locality	Sodium Vapour Lamps (Nos.)
1.	Hospital Compound	20
2.	NIE Compound	57
3.	Bazaar Area	7
4.	Bhutan-India Border Check Post	11
5.	AWP Area	8
6.	Dzongda and Drangpo's Residence Compound	9
7.	Dzong Area	3
8.	Army Camp	6
9.	Dzongkhag Staff Quarters Area	4
10.	Earlier GSI Colony	1
11.	Football Ground	7
12.	Telecom Area	2
13.	BFPL Road	2
14.	Bazaar Road	7



	Total	144
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Source: Street Light Maintenance Division, Samtse Municipal Corporation

3.6.4 Telecommunications Distribution Network

The modern era has brought all the facilities to Samtse's doorstep, with telecommunications being one of the most important conveniences. It has drastically affected life-styles by shrinking the world. The increase in population, as well as the standard of living, has resulted in increased demand for telephone connections.

The telecom network in Samtse is formed by a few underground lines, with a majority of overhead lines. Most faults occurring in the telecommunication system are related to overhead lines and hence the Bhutan Telecom has future plans to convert them into an underground network. There is also a proposal to switch from microwave technology to optical fiber technology.

There were domestic, and five public telephone both connections in Samtse town as of June 2004. There is a growing demand for introducing a mobile phone service and the Bhutan Telecom has responded with its proposal of introducing mobile phone facilities in the near future.

3.7 PUBLIC HEALTH ENGINEERING AND TOWN SANITATION

When thousands of people come to live in the same location, they have to change their behavior to accommodate each other. Thus, the word "civil" comes from civic, which in turn means "of the city!" Public health emerges when any individual's health is more characterized by that of the public community they live in than by their own personal hygiene. The following section on Public Health Engineering and Town Sanitation explains the existing systems adopted by the local body to provide various services and maintain hygiene.

The Danish Development Agency, DANIDA, has offered assistance in this area, and has made a commitment to Samtse, as well as other towns, to assist them in the enhancement of their existing public health engineering infrastructure. As DANIDA has realized that public health engineering, and the peoples' welfare are essential to over-all planned development, and as their program of assistance begins shortly, this Structure Plan exercise could not come at a better time.

3.7.1 Water Supply Network

There are three sources from where water is drawn for supply to the town. These include the Damdhum Chhu, Sukretey Chhu and Athraise Chhu. Water from these sources is partially

treated in the water tanks above the NJBC campus. There is no water treatment plant in Samtse town. Water from these tanks is transmitted to the town by gravity flow.

The combined water yield is 2376 cubic meters per day. The water is supplied ranging from six to nine hours a day. On comparing the water availability and demand it is observed that present sources are adequate to meet the present demand. However there are complaints of water shortage for days together.

The water supply system of Samtse consists of 8 inches, 6 inches, 5 inches, 4 inches, 11/2 inches and 1 inch diameter galvanized iron (GI) pipes arranged in a hierarchical manner with respect to the water supply requirements. Two lines of 4 inches diameter HDPE pipes from Damdhum are laid recently.

The total demand is anticipated at 945 cubic meters per day excluding industrial demands. The industrial demand is about 110 cubic meters per day. The domestic water demand is about 455 cubic meters per day, while the commercial and fire-fighting demand is 200 cubic meters per day. The National Jersey Breeding Center has its own supply line directly from the Damdhum Chhu.

Availability and management of water is a key factor in the city's future growth and the evolution of a dynamic economic base.

3.7.2 Storm Water Drainage

The storm water drainage system of Samtse consists of a natural drainage system, together with constructed open drains. This combined system carries storm water, sullage and septic tank overflow. Constructed in the past, the drainage system comprises of rectangular and trapezoidal lined main drains built along the natural drainage pattern with slopes in the range of one to four percent. The larger part of the town core is served by lateral, mainly open drains. Taking advantage of the terrain, runoff is carried to the fringe areas of the town and disposed off into the natural drains to the north and south of the town. This is an unhygienic solution promising health hazards in the future.

3.7.3 Sewerage Management

Samtse does not have an organized sewerage system. Individual buildings are served either by septic tanks or by soak pits within plots. Apartment buildings usually have a common septic tank.

According to the Pre-feasibility Study Report, based on water consumption, the likely sewerage which could be generated is 708 cubic meters per day. In addition an equal amount of industrial waste is likely to be generated. In the absence of any organized sewerage system



in the town, septic tanks are the common method of sewerage disposal. The overflow of effluents from septic tanks is disposed of into surface drains. This causes a great threat to the hygienic conditions in the town. It is observed that the septic tanks and the soak pits are full and rarely cleaned. For public convenience the local governing body in the past had constructed one public toilet.

Out of the total population of Samtse, about 17% of the population depends on pit latrines and open defecation as their sole sanitary facility, while 83% of the population depends on in-house sanitation facilities.

Though the problem of sewerage management is not evident in the town, due to less population, one cannot discard this issue. When the population grows there is every possibility that the hygienic condition of the town will breakdown, given the climatic and physiographic character of the town. The ill-effects can already be sensed in the back lanes of the town core even today. There is a definite need to re-conceptualize the sewerage system in Samtse by construction of sewer lines and community septic tanks. DANIDA has already initiated a proposal which will help improving the sanitation facilities and public hygiene in the town.

3.7.4 Solid Waste Management

According to the pre-feasibility Report, carried out by the RGoB, the solid waste generated in the town is about 2.2 tons per day. There is no solid waste management system in Samtse. Even though some people dispose their waste in community bins, in absence of system for emptying bins the solid waste is burnt in open.



Dumping of solid waste behind the market area and on the slopes near Sipsu Roaa

All the commercial establishments in the town core have been provided with individual dustbins by the Municipal Corporation. The dustbins are carried by the sweepers and emptied in the nearby forest area.

The school and a few other institutes burn their waste in the open air. The domestic waste collected is about 1.4 tons, per day while the commercial establishment's wastes account to

0.7 tons. Spilling of solid waste from the open bins is one of the common problems faced and creates a serious threat to the hygienic condition in the town.

The existing system of waste disposal needs to be re-conceptualized by studying alternate disposal techniques and proper collection methods. A suitable land-fill site for disposal of solid waste should be identified and transport vehicles need to be procured. It should be ensured that waste is collected from each and every place to keep Samtse clean and healthy.

3.8 SAMTSE MUNICIPAL CORPORATION

The Samtse Municipal Corporation is headed by the Honorable Chairman (Dzongda of Samtse Dzongkhag). The municipal engineer is responsible for the day to day administration activities. Town sanitation, water supply, street lighting, revenue collection, civil survey, maintenance of municipality owned roads, infrastructure facilities and implementation of new developmental activities pertaining to the basic needs of the town are some of the broad activities taken care of by the Samtse Municipal Corporation.

The total staff-strength of the Municipal Corporation is about thirty people including sweepers, drivers, electricians and caretakers. The Samtse Municipal Corporation operates from the existing Dzong structure in the absence of a separate office building.

3.8.1 Role of Samtse Municipal Corporation in Town Management

Within the town limits, the Samtse Municipal Corporation performs the following obligatory functions :

- Provision of potable water supply, including distribution reservoirs and water treatment;
- Construction and Maintenance of stormwater drains;
- Construction and Maintenance of roads owned by the Municipal Corporation;
- Providing and Maintaining street lights;
- Approving construction proposals;
- Provision and maintenance of various social, cultural and recreational amenities; and,
- Coordination with other agencies during calamities.

It provides and maintains the following social, cultural and recreational facilities in the town area:

- Football Playground;
- Vegetable market;
- Bus and Taxi parking; and,
- Public Toilet.

Since the Samtse Municipal Corporation is attached to the Dzongkhag, the other discretionary functions are taken care of by the Dzongkhag Administration like providing health facilities,



educational facilities and disaster management measures for any kind of epidemic outbreak, flooding, etc.

avoidable recurring expenditure on salaries; funds for maintaining old and new infrastructure raise a dilemma of management.

3.8.2 Financial Status of Samtse Municipal Corporation

The Samtse Municipal Corporation is primarily responsible for the collection of taxes and charges, for all the facilities and services provided by government within the Municipal Limit. These include land tax, service charges, water charges, building plan approval fee, house rent taxes and land registration fees. Assistance for accounting of the revenue collected is provided by the Dzongkhag Administration. A major portion of the collected revenue is spent on water supply and street lighting facilities.

Table 3.7 : Revenue collection by the SMC between 2001-2004

Sr. No.	Description	Revenue Collection during July 2001-June 2002 (in Nu.)	Revenue Collection during July 2002-June 2003 (in Nu.)	Revenue Collection during 2003-2004 (Till September (in Nu.)
1	Land Tax	114036.21	1129119.19	5027.64
2	Service Charge	166560.00	151560.00	1020.00
3	Water Bill and Water Connection	-	-	-
4	Building Plan Approval Fee	-	-	-
5	Land Registration Fee	-	43560.00	6340.30
6	Property Transfer Fee	-	1306.80	-
7	Miscellaneous (including House Rent, Salary Tax, Cost of Tenders, Equipments Hiring, Penalty, Health contribution)	18832.00	20542.00	100.00
	Total	299428.21	1346087.99	12487.94

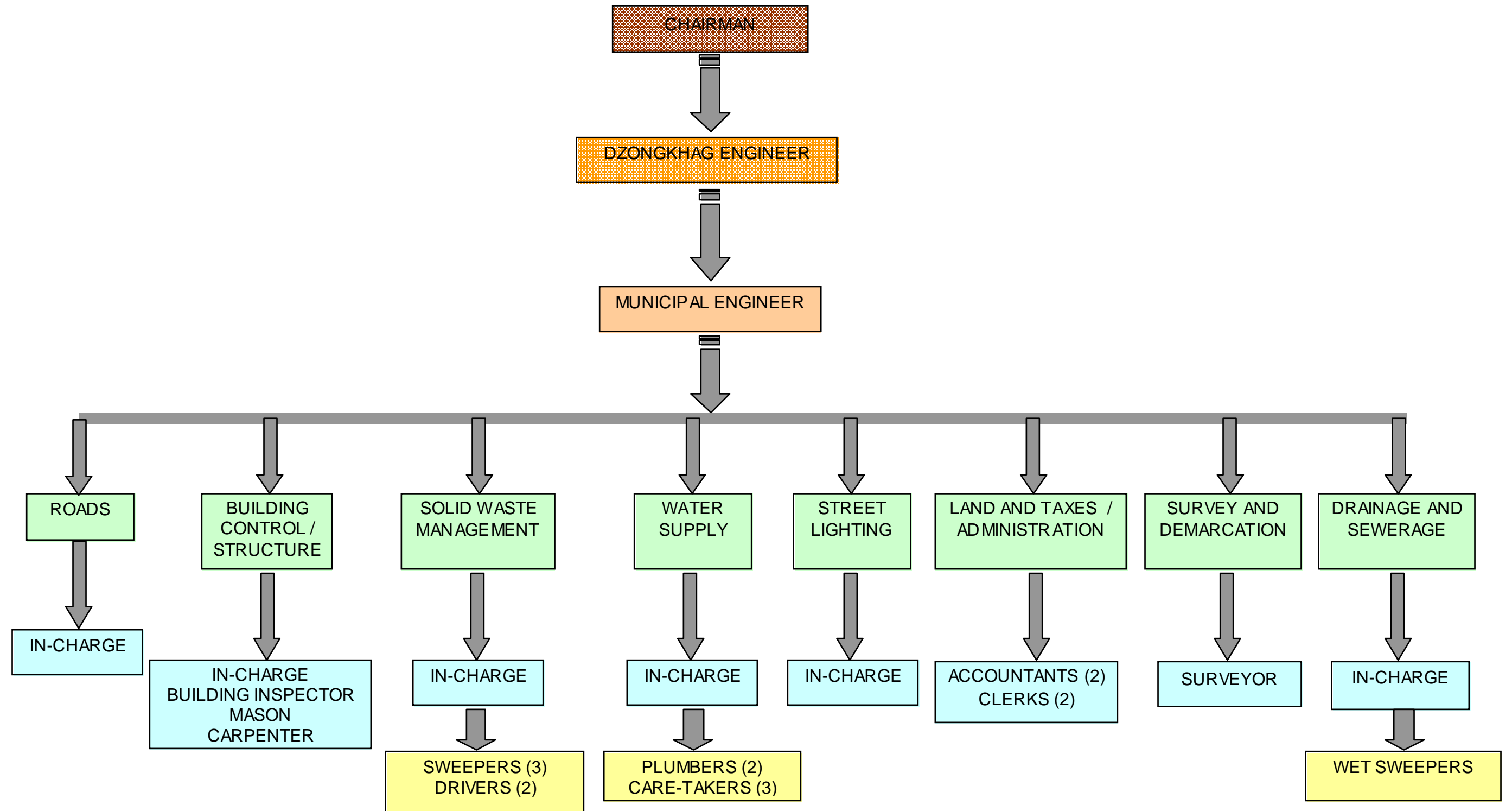
Source: Samtse Municipal Corporation

As can be noted the financial position of the Samtse Municipal Corporation has seen a decline, even in an area like Land Taxes, which would normally increase marginally each year. Some of the taxes appear to be retrogressive. In other words it would cost more to collect and audit the tax than the amount mobilized. What is labeled as a "Corporation" lacks the modicum of a corporate definition; that is basic income mechanisms, which not only cover costs, but generate investment surpluses. Where the income of an agency does not even cover the non-



Source: Samtse Municipal Corporation

3.8.3 Organization Structure of the Samtse Municipal Corporation



3.9 PAST, ON-GOING AND FUTURE PROJECTS IN SAMTSE

This section gives a summary of the development projects during the Eight and Ninth Five Year Plan periods along with other long term proposals. This helps us to understand the developmental activities taking place within the town in the past and future.

The Structure Plan includes an Investment Plan for the future infrastructure development. Two Local Area Plans, using land pooling have been completed. They must be technically laid out by competent surveyors. This will involve the demarcation of plots, roads and public lands.

Table 3.8 : Projects listed out during Eighth Five Year Plan

Sr. No.	Project / Activity	Description of the Project	Location of the project in the Municipal limits	Current stage of project/ Remarks
1.	Construction and resurfacing of roads	- 2.8 km of town roads.	-	- Completed
2.	Construction of Institutional latrines	- 20 nos. of latrines.	-	-
3.	Augmentation of street lights	-	- Within town area	- Completed
4.	Water supply scheme	-	-	- Completed
5.	Construction and maintenance of vegetable market sheds	-	- Within vegetable market	- Completed
6.	Vehicle parking	- Developing about 1250 sq.m. of parking area.	- Town core	- Completed

Source: Samtse Municipal Corporation

Table 3.9 : Projects listed out during Ninth Five Year Plan

Sr. No.	Project / Activity	Description of the Project	Location of the project in the Municipal limits	Current stage of project/ Remarks
1.	Preparation of Master Plan	- Preparation of Master Plan in order to avoid unplanned developments.	- Samtse extended areas	- Undertaken by DUDE&S
2.	Survey and demarcation of new Municipal boundary as per Master Plan	-	-	-
3.	Land Acquisition	- Acquiring 150 acres of private lands in buffer zone.	-	-
4.	Relocation and Construction of new Dzong	-	-	-



5.	Construction of footpaths	- Constructing 2.5 km of footpath along short routes.	-	-
6.	Construction of roads/culverts/drainage	- Constructing about 4.8 km of roads and drains.	-	-
7.	Construction of public toilets	- Constructing one public toilet.	-	-
8.	Improving water supply facilities	-	-	-
9.	Construction Of additional Market Sheds	- Constructing additional 3 nos. of market sheds.	- Existing vegetable market	-
10.	Construction of water drains	- Constructing about 1.5 km of water drains.	-	-
11.	Flood protection works	- River training works for 1.5 km length.	-	-
12.	Solid waste management	- Identification of suitable land fill site. - Purchasing of Truck for Collection and disposal of solid waste - Purchasing garbage containers / bins.	-	- Under consideration
13.	Vehicle parking	- developing about 300 sq.m. of parking area.	-	-
14.	Augmentation of street lights	- 20 street lights to be augmented.	-	- Under consideration
15.	Construction of recreation plaza	-	-	- Under consideration
16.	Purchasing of Vacuum Tanker	-	-	- Under consideration
19.	Construction of Multi purpose hall and DYT hall	-	-	-

Source: Samtse Municipal Corporation

Table 3.10 : Projects listed out on Long-term basis

Sr. No.	Project / Activity	Description of the Project	Location of the project in the Municipal limits	Current stage of project/ Remarks
1.	Construction of Samtse-Phuentsholing National Highway	- Proposed by Department of Roads.	-	- Under way
2.	Relocation and Construction of New Dzong	- Proposed by Dzongkhag Administration.	-	- Under consideration
3.	Relocation and Construction of New Thrimkhang (Royal Court of Justice)	-	-	- Under way
4.	Construction of Bus Terminus	- Proposed by Road Safety and Transport Authority.	-	- Under consideration
5.	River training and flood protection works	-	- Along Damdhum Chhu and Sukrety Chhu	- Under consideration

