

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
গৃহায়ন ও গণপূর্ত মন্ত্রণালয়
সিলেট আঞ্চলিক অফিস, নগর উন্নয়ন অধিদপ্তর, সিলেট
সিনিয়র প্ল্যানার এর কার্যালয়
সিলেট আঞ্চলিক অফিস, নগর উন্নয়ন অধিদপ্তর, সিলেট



স্মারক নম্বর: ২৫.৪৫.৯১৬২.১০৩.১৪.০০১.২১.৩৪

তারিখ: ১১ ফাল্গুন ১৪২৭

২৪ ফেব্রুয়ারি ২০২১

বিষয়: গেজেটভুক্ত সিলেট বিভাগীয় শহরের মাষ্টার প্ল্যান (২০১০-২০৩০) এর প্রস্তাবনাসমূহ বাস্তবায়নের অগ্রগতি প্রতিবেদন প্রেরণ প্রসঙ্গে।

জনাব,

যথাবিহিত সম্মান প্রদর্শনপূর্বক উপর্যুক্ত বিষয়ের প্রেক্ষিতে জানানো যাচ্ছে যে, গেজেটভুক্ত সিলেট বিভাগীয় শহরের মাষ্টার প্ল্যান (২০১০-২০৩০) এ বিভিন্ন উন্নয়ন কর্মকান্ড বাস্তবায়নে সেবা প্রদানকারী সংস্থাদের দায়িত্ব নির্দিষ্ট করা আছে (মাষ্টার প্ল্যানের সংশ্লিষ্ট পৃষ্ঠা সদয় দ্রষ্টব্য)। বর্তমানে মাষ্টার প্ল্যান বাস্তবায়নের বিষয়ে বাৎসরিক মনিটরিং রিপোর্ট প্রস্তুতকল্পে গেজেটভুক্ত মাষ্টার প্ল্যানের প্রস্তাবনাসমূহ সেবা প্রদানকারী/বাস্তবায়নকারী সংস্থাসমূহ (গেজেটে উল্লেখিত) কর্তৃক কতটুকু বা কতটি বাস্তবায়িত হয়েছে তার তথ্য জানা একান্ত প্রয়োজন। ফলশ্রুতিতে, আপনার প্রতিষ্ঠান কর্তৃক মাষ্টার প্ল্যান বাস্তবায়নের অগ্রগতি প্রতিবেদন নিম্ন-স্বাক্ষরকারীর নিকট প্রেরণের জন্য বিনীত অনুরোধ করা হলো।

সংযুক্তিঃ বর্ণনামতে।

২৪-২-২০২১

জনাব শাহীন আহম্মেদ
সিনিয়র প্ল্যানার

পরিচালক

পরিবেশ অধিদপ্তর, সিলেট বিভাগীয় কার্যালয়, কমিশনার
কার্যালয় ভবন (৫ম তলা), আলমপুর, সিলেট

স্মারক নম্বর: ২৫.৪৫.৯১৬২.১০৩.১৪.০০১.২১.৩৪/১(৭)

তারিখ: ১১ ফাল্গুন ১৪২৭

২৪ ফেব্রুয়ারি ২০২১

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- ৬) স্টাট লিপিকার(পিএ), পরিচালক এর দপ্তর, নগর উন্নয়ন অধিদপ্তর (পরিচালক মহোদয়ের সদয় অবগতির

MASTER PLAN
for
SYLHET DIVISIONAL TOWN
(2010-2030)

STRUCTURE PLAN, URBAN AREA PLAN
and
DETAILED AREA PLAN

JUNE 2010



URBAN DEVELOPMENT DIRECTORATE (UDD)
Ministry of Housing and Public Works
The Government of the People's Republic of Bangladesh

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Part-I : Structure Plan and Urban Area Plan

Part-II : Detailed Area Plan

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রেজিস্টার্ড নং ডি এ-১

বাংলাদেশ



গেজেট

অতিরিক্ত সংখ্যা
কর্তৃপক্ষ কর্তৃক প্রকাশিত

বৃহস্পতিবার, নভেম্বর ১৭, ২০১১

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
গৃহায়ন ও গণপূর্ত মন্ত্রণালয়
পরিকল্পনা শাখা-৩
প্রজ্ঞাপন

তারিখ, ৮ কার্তিক ১৪১৮/২৩ অক্টোবর ২০১১

নং গৃগম/পরি-২/০৮/২০০৪(অংশ-২)/২২০—গণপ্রজাতন্ত্রী বাংলাদেশ সরকারের Organizational Set up, Phase-II, (Departments/Directorates and Other Organizations under them), Volume XV (Ministry of Works), Chapter VI (Urban Development Directorate, June, 1983 এর Allocation of Functions এর ক্ষমতাবলে সরকার সিলেট এবং বরিশাল বিভাগীয় শহরের জন্য নতুন Master Plan এলাকা নির্ধারণ এবং অত্র এলাকাধীন প্রণীত Master Plan (Structure Plan, Urban Area Plan ও Detailed Area Plan) যথাযথ প্রক্রিয়া অনুসরণ করিয়া অনুমোদন করিয়াছে।

অতএব, সরকার অত্র প্রজ্ঞাপনের দ্বারা নতুন Master Plan (Structure Plan, Urban Area Plan ও Detailed Area Plan) এর অনুমোদনের বিষয়টি, অনুমোদিত Master Plan সহ সংশ্লিষ্ট সকলের অবগতির জন্য প্রকাশ করিল।

বিশেষ দ্রষ্টব্য : অনুমোদিত মাস্টার প্ল্যান ও প্রতিবেদন এর কপি নগর উন্নয়ন অধিদপ্তর, ৮২ সেগুন বাগিচা, ঢাকা-১০০০ এবং জেলা প্রশাসক, সিলেট ও জেলা প্রশাসক, বরিশাল এবং সিলেট সিটি কর্পোরেশন ও বরিশাল সিটি কর্পোরেশন এর কার্যালয়ে জনসাধারণের পরিদর্শনের সুবিধার্থে সংরক্ষিত থাকিবে।

রাষ্ট্রপতির আদেশক্রমে

মোঃ গোলাম মোছাদ্দেক
সিনিয়র সহকারী প্রধান।

মোহাম্মদ জাকীর হোসেন (উপ-সচিব), উপ-পরিচালক, বাংলাদেশ সরকারি মুদ্রণালয়, ঢাকা কর্তৃক মুদ্রিত।

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(১৪৭৯৭)

মূল্য : টাকা ২.০০

Policy SD/2: Development of Hierarchical Drainage Network for the Entire Area

Justification

To save the future city from possible drainage congestion through preservation of natural drainage and creation of new drainage network is necessary. Drainage hierarchy is required for smooth drainage of waste and storm water into the final outfall.

Implementing Agency: SCC, LGED.

Means of Implementation

Develop drainage system following the natural slope of the ground as much as possible. Further new drains may be developed as required.

Policy SD/3: Protection of the Natural Drainage System of the City based on existing Chhoras

Justification

Chhoras serve as the arteries of drainage in the city, so they must be protected from encroachment and filling up.

Implementing Agency: SCC, DC, DOE

Policy SD/4: Regular cleaning of Drainage System and Excavation of Chhoras

Justification

Regular cleaning of secondary and tertiary drains should be ensured so that they can collect sufficient volume of water and feed the primary drainage network otherwise they may create water logging during heavy rainfall. A huge amount of silt is carried by the storm water during the flush flood which makes it a necessity for periodic excavation of Chhoras.

Implementing Agency: SCC, CBOs and NGOs

Means of Implementation

Local community can play vital role in cleaning up the drains next to their door and SCC can initial periodical exaction of Chhoras.

Policy SD/5: Motivational Drive among citizens against Indiscriminate Waste Dumping

Justification

Awareness generation is very effective for motivating people not to dispose waste in the nearby drains.

Implementing Agency: SCC, CBOs and NGOs

Means of Implementation

Monthly campaign to motivate local community may be an effective way of ensuring this policy.

5.6.4 Water Supply

Policy WS/1: Development of Sustainable Water Supply System based on Surface Water

Justification

Increasing urbanization of the city would soon cause increasing demand for water over time. Uncontrolled withdrawal of ground water will cause depletion of ground water table. Easy and sustainable water supply system may be explored by extracting surface water from the Surma River.

Implementing Agency: SCC, DPHE

Means of Implementation

Surface water treatment plant should be introduced near Surma River. These will ease the pressure on ground water which will eventually prevent depletion of ground water.

Policy WS/2: Strict Enforcement of Environmental Regulations about Surface and Ground Water Pollution

Justification

Sylhet City is going to face serious scarcity of water in the upcoming days. The source of ground water and surface water has to be kept free from all sort of pollution so that they can be used in the future.

Implementing Agency: SCC, DPHE, CBOs, DOE

Means of Implementation

Proper implementation of policy related to sanitation and drainage will eventually resist the scope for polluting water from domestic waste and sewerage. The policy related to industrialization will resist the scope of pollution through industrial waste. More over local community can play vital role acting as watch dog on pollution water.

Policy WS/3: Conserve major sources of Surface Water in the City to serve Emergency Water Needs

Justification

In the built up areas sometimes fire hazard become so dangerous that the fire service requires quick and huge supply of water. So in the built up areas the large and medium scale water bodies should be conserved for these sorts of emergencies.

Implementing Agency: SCC, Fire Service, DPHE, DOE

Means of Implementation

Large and medium scale water bodies should be kept reserved as urban open space where people may find some breathing space. Moreover, these will reduce the temperature of the surrounding areas as well as serve the emergency need of the locality during fire hazard.

5.6.5 Solid Waste Management

Policy WM/1: Introduction of Community based Solid Waste Collection System

Justification

Creation of community initiative to collect solid waste from door to door dispose them to transfer stations.

Means of Implementation

The total collection system from households can be done by means of contributory community based solid waste collection approach through NGOs.

Implementing Agency: SCC, CBOs, NGOs

Policy WM/2: Create Dumping Site to Dispose Solid Waste in a Hygienic Manner

Justification

NGO/commercial initiatives to be needed to generate innovative ideas to convert solid waste into resources.

Implementing Agency: SCC

Means of Implementation

For the hygienically disposal of solid waste the following methods can be used: (i) Controlled dumping system (ii) Sanitary landfill system (iii) Incinerator (iv) Composting (v) Resource recovery from the wastes.

Policy WM/3: Generate Innovative Ideas to convert Waste into Resource

Justification

Proper management of disposal of solid waste will generate source of income for poor rag-pickers/scavengers. Reusable/recyclable materials recovered will reduce the volume of wastes and extend the life of disposal site. Vegetable waste composted in the composting plant can produce manure for agriculture firms and gardens and bio gases produced from the wastes can be used for local cooking and heating purpose in the small scale.

Implementing Agency: SCC

Means of Implementation

A Controlled Dumping or Sanitary Landfill System should be introduced for handling large volume of solid waste to be generated in future. After filling and closing up of disposal site, it can be reused as play ground, market, shopping centre, park or recreational area, car parking area, bus/truck terminal or any other public facilities.

5.6.6 Industrial and Commercial Development

Policy ICD/1: Top Priority to Economic Activities - Business and Industry

To promote economic prosperity of Sylhet city top priority should given to smooth and uninterrupted going of trade and commerce.

Justification

Economic activities are the life blood of any urban center. They also generate employment for urban dwellers, so all measures must be directed for their smooth running.

Implementing Agency: SCC, Ministry of Industries, Bangladesh Bank, DoE.

Means of Implementation

To execute the policy concrete efforts would be needed from various government agencies.

Policy ICD/2: Promotional Activities related to Economic Stimulus must include adequate supply of Power as the top most requirement

Justification

Power is the number one handicap to industrial promotion in particular. Adequate power guarantee is needed to speed up business activities.

Implementing Agency: SCC, PDB and REB.

Means of Implementation

Increase power production and supply, improve transmission and distribution system.

Policy ICD/3: Care should be taken to ensure smooth movement of Goods and prevent Toll Extortion

Justification

Toll extortion has been found as a major problem in keeping the price level of consumer goods in particular. These unlawful and criminal activities must be brought to an end to allow smooth going of economic activities.

Implementing Agency: SCC, SMP, RHD, LGED and DOC.

Policy ICD/4: To avoid Indiscriminate growth of Industries leading to Environmental Pollution

Justification

Indiscriminate growth of industries lead to infrastructure problems as well pollution problem. Agglomeration of industries can help provide infrastructure and services at a lower cost.

Implementing Agency: SCC, Ministry of Industries, BSCIC, Bangladesh Bank, DOE.

Policy ICD/5: Promotion of Private Sector Investment in SEZ Development

Justification

Special Economic Zone (SEZ) can help develop industries in healthier way with all the services and infrastructure within hand.

Implementing Agency: Ministry of Industries, Bangladesh Bank, BEPZA.

Means of Implementation

Policy decision by the government.

Policy ICD/6: Provision of Easy Credit to Promote Small and Medium Entrepreneurs

Justification

Capital is the most important component of any business activity. Due to low income and consequent low savings capital is scarce among the potential entrepreneurs. So arrangement should be made to supply capital to small entrepreneurs free of collateral.

Implementing Agency: BSRS and Bangladesh Bank.

Means of Implementation

Policy decision by the government.

5.6.7 Housing

As the most dominant function of any urban center housing needs special care in the policy recommendations. Adoption and implementation of appropriate policy can promote urban housing which in turn will result positive changes in urban living standard and its productive activities of its people.

Policy TR/3: Promotion of Local Heritage Based Tourism

Justification

Upholding local heritage and culture can help promote tourism. They may include handicraft, culture, archaeological/historical site, places of religious importance, tea garden.

Implementation Agency: SCC, Department of Archaeology, Department of Culture and Religious Affairs, NGOs.

Means of Implementation

Conservation of heritage, promotion of traditional culture, development of infrastructure.

5.6.10 Environment

Uncontrolled urbanization is a major cause for urban environmental degradation. Adoption of appropriate policies and their implementation would help reduce the threat of urban environmental degradation.

Policy ENV/1: Prevention of Hill Cutting

Justification

Cutting of hills in the city must be brought to stoppage in order to maintain ecological balance and bio-diversity as well on aesthetic grounds.

Implementing Agency: SCC, DOE, DC office.

Policy ENV/2: Prevention of Encroachment of Chhora and River

Justification

Chhoras are the natural drainage system of the city. They must be protected to allow smooth flow of storm water. River is also source of recreation and aesthetics of the city. Strict measures are needed against the encroachers.

Implementing Agency: SCC, LGED, DOE.

Policy ENV/3: River Erosion Protection

Justification

Erosion of the Surma River at some points might endanger widening of erosion areas threatening loss to land and properties.

Means of Implementation

Construction of new groyenes in threatened areas based on proper feasibility study. Activities related to bank mattress may also be tried.

Implementing Agency: BWDB, SCC.

Policy ENV/4: Promotion of Recreational Open/Green Space

Justification

Urban areas are turn overcrowded where open space disappears fast with increase of population. Open space for recreational purpose should be kept reserved before they are lost amid physical growth.

Means of Implementation

Recreational open space to be earmarked in city plans, allocation of budget for land acquisition and development of open space.

Implementing Agency: SCC, DOE.

Policy ENV/5: Promotion of Social Forestry

Justification

Enhance afforestation to create livable environment.

Implementing Agency: BWDB, RDA, SCC, DOE, DOF, LGED, BMDA.

Means of Implementation

Undertaking participatory and benefit sharing social forestry project, encourage setting up nursery and strict law enforcement against tree cutting.

5.7 Policy Implementation

Implementation of policy recommendations are largely a political will. It will involve a number of public and private sector organizations as stakeholders. This calls for strong political commitment and motivation. There must be consensus among local politicians about the need for boosting the local economy that is a pre-requisite to the prosperity of Sylhet.

Chapter- 7

ENVIRONMENTAL IMPROVEMENT

7.1 Introduction

In response to the environmental problems described in Chapter 4 and the environmental policies described in Chapter 6 of the report, the consultant proposes the following mitigation measures to minimize the impacts of possible environmental degradation.

7.2 Impacts and Enhancement Measures

7.2.1 Physical Environment

a. Flood Protection

The Surma River is subject to bank erosion, but it is not continuous. The western part of the Surma river area (western fringe of the city) is still unprotected. The road along the river has eroded to some extent at Ward no. 10. With implementation of Sylhet Master Plan (SMP) Project, the whole project area will be protected from flooding.

Enhancement Activities

1. Construction of new retention wall in western side.
2. Arrangement of pump drainage to the Surma during high flood when gravitational drainage fails. Pumping of excess water will save Mendibagh area from internal flooding.

Responsible Organizations: BWDB and SCC

b. Earthquake

Earthquake is among the most destructive and terrifying disaster that nature can unleash. Bangladesh sits on several seismically active faults that are the focal points of tremor. Sylhet city is located in the seismic zone 3, which is highly vulnerable to earthquake. Unplanned and unregulated urbanization and disregard to BNBC rules in building construction aggravate the situation more. With the implementation of SMP the planned urbanization will strictly follow the actual zoning plan and following of BNBC rule will minimize the earthquake damage. In DMDP Urban Area Plan Volume- II, (Part-3, Interim Planning Rules) development restriction considering the geological fault line areas states "**Structures above 2 storeys situated within 500 meters of a geological fault is not allowed unless built to the BNBC standards for Seismic Zone 3 (BNBC Section 6 Chapter 2.25)**". Similar measures are also suggested for Sylhet town.

Enhancement Activities

- Ensure that all new buildings are designed and constructed following the guideline of BNBC.
- Development of a comprehensive plan for managing post earthquake situation.
- Train community workers who would carry out the initial search and rescue efforts.
- Launch a massive public awareness campaign.

Responsible Organizations: SCC, MOFDM, Civil Defence, Fire Service and DOE.

c. Change in Topography

Topographically Sylhet is different from most of the other part of Bangladesh. The natural topography of SCC area has already been changed for urbanization. Implementation of SMP activities like roads, drainage, bridge/culvert, housing and industrial estates and bazars will radically change the natural topography and land use pattern of the area. The agricultural area will be converted into urban and semi-urban area. The present green scenic beauty will disappear, water bodies will be lost and general slope will be diminished for earth cutting due to rapid urbanization.

Mitigation

1. Careful planning to minimize the change of topography.
2. Avoid water bodies during construction of roads, housing and industrial estates.
3. Practice good architectural/engineering design during planning of housing estates, buildings and the intersections of main roads.
4. Enhancement of plantation and gardening to increase the scenic beauty of the city.
5. Preserve the tillas, ponds, chhoras and large water bodies.

Responsible Organizations: SCC, DOE and Forest Department

d. Land Use Change

The major land use goes to residential land and it is about 36% of the total land. The second major land use is agriculture and occupying about 21.50 % of the project area. Beside these, tea garden and hilly area occupy about 17.77% of the total land. However, urban and semi-urban land uses are observed in SCC and its surrounding areas. With project implementation, the semi-urban and agricultural land use pattern will be changed radically into urban land use type.

Mitigation

1. Careful planning to reduce change of agricultural land use and rural set up.
2. Keep water bodies and productive agricultural land from urban development.
3. Economical use of land.

Responsible Organizations: SCC and Ministry of Agriculture & Livestock, DOE

e. Drainage Congestion

Drainage congestion may increase further with expansion of city boundary. Faulty design, solid-waste and rubbish dumping, encroachment and un-authorized structures, siltation, lack of renovation and re-excavation are the main causes of drainage congestion. Discharge of seven major chhoras, which serve as drainage channel, has been passing through the SMP area. However, the main outlet of these chhoras is the Surma river. As a result discharge of new drainage network of expanded urban area will create severe drainage problem in Sylhet City, particularly in monsoon period.

Mitigation

1. Construct a new pump drainage network for the eastern side of SCC area towards Surma River.
2. Re-excavate the chhoras and renovate the secondary and tertiary drains.
3. Remove all un-authorized structures, which developed on drainage structures.
4. Make proper drainage network in new area considering the slope and local topographical condition.
5. Strictly prohibit the people in dumping of rubbish and solid waste in drain.
6. Regular cleaning and maintenance by the concerned authorities.

Responsible Organizations: SCC

f. Surface Water Pollution

The surface water quality of the Surma River, Kuigang Khal, ponds and haors are polluted in respect of pH, turbidity and coliform bacteria of national standard. The present pollution level of these water bodies are found to be low except coliform bacteria. The main causes of surface water pollution are city wastewater, sanitary sewage and solid waste dumping. With implementation of this project, the surface water pollution level may further increase for high volume of discharge of wastewater, sanitary sewerage, over spilling of pit and septic tank, industrial effluent, surface run-off of katcha bazars, indiscriminate solid and medical waste dumping.

Mitigation

1. Stop katcha, hanging and pit latrines.
2. Create underground sewerage system for SCC area.
3. Use pucca latrine with septic tank and soak well.
4. Prohibit indiscriminate dumping of medical and solid waste in drainage, chhoras and river.
5. Improve sanitation condition of slaughter house, fish market and katcha bazars.
6. Prohibit the direct discharge of city waste water to any chhoras, low lying areas and river.
7. Establish waste water and sewerage treatment plant.

Responsible Organizations: SCC, LGED and DOE

g. Groundwater Depletion

Groundwater level of Sylhet city is facing constant lowering over the last few decades. It has been calculated that in 2030 the lowering of ground water level might be 20m (DPHE Report). Eventually fall of groundwater table is a common phenomenon in project area during dry period (Feb.-May). Some deep-set pumps of SCC remain out of function during dry season for fall of groundwater table. With expansion of urbanization and industrialization through this project, the groundwater table may further fall if present trend of using groundwater is continued.

Mitigation

1. Use the Surma river water for pipeline supply to households and industries.
2. Introduce rainwater harvesting system.
3. Stop filling of ponds and water bodies to maintain the groundwater level through recharge and leaching process.

Responsible Organizations: SCC, DPHE and NGOs

h. Groundwater Pollution

Groundwater pollution due to manganese, iron and hardness is a major problem in the project area. With expansion of urban area, more dependency on groundwater sources may increase the pollution level of sub-surface water.

Mitigation

1. Use surface water of the Surma river.
2. Introduce rain water harvesting.
3. Reduce dependency on groundwater.
4. Preserve surface water source like ponds, chhoras, ditches and rivers for irrigation.

Responsible Organization: SCC, LGED, BWDB, DOE and NGOs

i. Loss of Wetlands

Wetlands are mainly affected first by the urbanization process. Earth filling fills up the ponds, haors and chhoras. Waste water affects the aquatic ecosystem and makes the ponds, chhoras and haors unproductive and as a result the aquatic plants, fishes and animals have to die or migrate to other places. For high price of highlands, the developers enlarge their hands to the low cost wetlands. There is no strict regulation on earth filling of ponds. The SCC can fine only Tk.500 if some one fills the ponds. However, Wetlands Conversation Act exists in Bangladesh, which is applicable only to natural beels and khals. Number of ponds in Sylhet city is reduced every year to accommodate housing and commercial structures. Wetlands play an important role as a reservoir of rain and flood water. They are also important to maintain the balance of ecosystems and for replenishing the ground water level through seepage.

Mitigation

1. Cutting of drainage outlets to the beels and ponds.
2. Avoiding wetlands during road alignment fixation.
3. Stop housing estate, industries and other development works in wetlands through earth filling.
4. Stop filling of ponds in SCC area through creation of public awareness.
5. Strict implementation of Wetland Conversation Act, 2000.

Responsible Organizations: SCC, DOE and NGO's

j. Noise Pollution

Noise is unacceptable level of sound that creates annoyance, hampers mental and physical peace and may induce severe damage to the health. Along with the increasing degree of air and water pollution, noise pollution is also emerging as a new threat to the inhabitants of Sylhet City. Motorized traffic is one of the major sources of noise pollution in urban areas. Although there are many sources of noise, which include industries, construction works and indiscriminate use of loud speakers, motorized traffic is the principal source of creating noise in urban areas. With the increase in the number of motorized vehicles in the city, the hazard of noise pollution has increased and exceeded the level of tolerance. The more noisy area are Sylhet Bus Terminals, Bondar bazar, Amberkhana, Zindabazar, Chowhatta.

Exposure to high level of noise may cause severe stress on the auditory and nervous system of the city dwellers, particularly the children. Regular exposure to loud noise damages the hearing capability and has adverse effects on health, like increasing mental stress and blood pressure and sleeplessness, resulting in poor work performance. It has been reported that the hearing ability of the inhabitants of the City has reduced during the last ten years. About five to seven percent of the patients admitted to the Sylhet Osmani Medical College are suffering from permanent deafness. With expansion of urban area, the noise pollution will be increased for increasing motor vehicles, market places, industries etc.

Mitigation

1. Stop using hydraulic horn in buses, trucks and other motor vehicles.
2. Declare some areas like hospitals, schools, parks, etc. as silent zone.
3. Strict implementation of law.
4. To control abnormally high noise from saw mill the old machines should be repaired or replaced.
5. Foundation of machines should be specially prepared to reduce noise.
6. Special type of silencer may be attached with the machines to reduce noise.
7. Welding and blacksmith workshops can be fenced with classes to protect the passersby from possible pollution effects.
8. People constantly working in welding and blacksmith workshops should wear earplugs and glasses. Regular medical check ups can be carried out to identify possible health problems.

Responsible Organizations: SCC, BRTA, SMP, Medical Colleges, Motor Owners Association and Labor Unions, etc.

k. Air Pollution

As Sylhet city is not an industrial area traffic movement contribute maximum to air pollution. Most vehicles have neither fitness certificate nor necessary legal papers.

The level of carbon dioxide, sulphur dioxide and floating dust in the air has exceeded acceptable limits at many places of the city. Concentration of dust as well as SO₂, NO₂ exceeded the allowable limit at the selected points. The concentration of carbon dioxide was measured-the highest being 550ppm at Zindabazar and the lowest 420ppm at Upashahar. The average concentration of carbon dioxide in the air is 350 ppm.

The level of sulphur dioxide at different places was measured as 840 micrograms per cubic metre, while the standard level is 100 micrograms per cubic metre, according to the Department of Environment (DOE).

Besides, the level of floating dust in the city's air was found excessively high. The highest level of dust was 3333 microgram per cubic meter while the accepted level of dust in the air is 400 to 500 micrograms per cubic meter. The worst affected places are Amberkhana, Zindabazar, Shibganj, Upashahar, Rikabibazar and Tantipara areas.

Mitigation

1. Use catalytic converter in buses, trucks, taxis and tempos.
2. Use CNG instead of petrol.
3. Set up 120 ft. high stack in brickfields and use filter to reduce the CO, SO₂ and NO₂ gases in atmosphere.
4. Stop the operation of brick-fields which have grown near the homesteads, bazars and growth centres.
5. Impose ban on movement of stone carrying trucks on the inner roads.

Responsible Organizations: SCC, DOE, BRTA, DC office, Motor Owner and Labour Unions, etc.

I. Unlawful Hill Cutting

Sylhet, has a number of topographical features like hills and hillocks (tilas), haors (wetland) and high flood plain which made it quite different from the rest of Bangladesh. It is obvious that any sort of mishandling of the hills will make the ecosystem of this region complicated. In recent years destruction of hills is occurring in different scales for different purposes especially in Sylhet city due to the rapid growth of urbanization. The direct and probable impacts due to destroying hills are on the topography, land use and hydro-climatic features of the Sylhet region. Major effects of cutting hills can be grouped as deforestation, desertification and biodiversity, ecological imbalance and climatic change, impact on morphology and water resources and causes land sliding.

Mitigation

- Requirement of a detailed Environmental Impact Assessment (EIA) study.
- Strict implementation of Environment Conservation Act(ECA), 1885
- Propaganda for public awareness

Responsible Organizations: SCC and DoE

7.2.2 Biological Environment

a. Loss of Habitat

The habitat for fauna and wildlife has already been lost in the urban area (26.5 sq. km). However, with urban expansion in rural area, the natural habitat will be lost in this area. For urbanization and industrialization, agriculture will be gone, water bodies will be filled up, rivers and chhoras will be polluted and trees will be cut down for new settlement. Birds, mammals, fishes and other animals will permanently lose their habitat and food in the new urban area.

Mitigation

1. Careful planning to avoid disturbing the sensitive ecosystem.
2. Minimum use of land for urbanization.
3. Preservation of water bodies and chhoras.
4. Make people aware to avoid tree cutting and vegetation clearing.

Responsible Organizations: SCC, DoE and NGOs.

b. Loss of Biodiversity

Expansion of the project boundary to the new rural area will enhance the urbanization in this area. Urbanization like roads, infrastructure development, housing, commercial places, industrialization etc. will replace the existing green natural environment to man made environment. Trees will be cut down, water bodies will be filled up and polluted, garden and bush will disappear for urban expansion in new area. Wild animals, birds and fishes will lose their habitats and as a result a big loss of biodiversity will happen for urban expansion in new SMP area.

Mitigation

1. Avoid critical ecological area and refugee sites from development works.
2. Aware people for keeping some trees and bushes around the homesteads.
3. Increase tree plantation in roadside along the river and chhoras and homesteads.
4. Preserve the lakes for aquatic birds and fishes and some bush areas as wildlife refugee sites.
5. Ban on hunting of birds and wildlife.

Responsible Organizations: SCC, Forest Department, Fisheries Department, Institute of Environmental Science, Shah Jalal University and NGO's.

c. Loss of Capture Fisheries

The project area is mainly high and medium high land. Beels and low lands are very limited. Therefore, open water fisheries resources are low. Only 15-20% fish demand is met by the capture fisheries. The Surma river, ponds, haors and some chhoras support the capture fisheries in the project area.

With implementation of this project, the capture fisheries will be remarkably reduced for loss of habitat due to water pollution of sewerage and drainage discharge, industrial effluent, solid waste dumping, earth filling and less flushing. New flood control embankment in east and west sides, sluices and structures will further restrict the in and out fish migration. Area of khals, beels and other water bodies will be reduced for land development and urbanization.

Mitigation

1. Stop direct drainage outfall to river, chhoras and beels.
2. Set up sewerage and wastewater treatment plant.
3. At the early monsoon, keep open the gates of sluices and regulators during spawning period of fish.
4. Strict regulation on land filling of water body.

Responsible Organizations: SCC and DOE

d. Loss of Ponds and Culture Fisheries

Sylhet City is also famous for ponds. There are about 1774 ponds (678.37acre) in Structure Plan area. With urbanization and industrialization through this project, many ponds will be lost for land filling by the owners for increasing land value due to human pressure, settlement and development accordingly loss of fishes. There is no strict regulation on earth filling of ponds in the area. The SCC can fine only Tk.500 if some one fills the ponds.

Mitigation

1. Designate all ponds in Master Plan Map and protect the large ones according to the ecological importance and public interest.
2. Protect the ponds as per regulatory framework of Master Plan.
3. Create new laws if existing one fails to stop land filling of ponds.
4. Create public awareness about the importance of ponds and its role in culture fisheries, bathing and water reservoir for surface run-off during monsoon.

Responsible Organizations: SCC, DOF and DC (Land)

e. Loss of Productive Agricultural Land

The project has included a vast area of agricultural land in the eastern and southern sides of this project. Both highlands and lowlands fall into this area. After implementation of the project, agricultural environment will be converted into un-productive urban and semi-urban areas.

Mitigation

The DOE EIA Guidelines emphasized on the avoidance of productive agricultural land during any development. Therefore, it will be wise to consider more economical use of land to avoid some fertile lands. The city expansion and land acquisition should be based on the growth rate of city population. SCC should demarcate the expanded city boundary for next 20 years considering the growth rate of population and urban utilities. The rest of the project area should be kept outside from SCC legislation.

Responsible Organizations: SCC and DOE

7.2.3 Social Environment

a. Population

The population of the study area is about 3.35 lakh in 2001. After implementation of this project, the population will be increased to 28.74 lakh in 2030 for natural growth of existing population and migration of people to the expanded urban area from different places. Therefore, this project will enhance the new settlement in the project area.

Enhancement Activities

1. Develop planned housing area with adequate facilities.
2. Arrangement for low cost comfortable transportation facilities.
3. Establish standard educational institutions with appropriate facilities.
4. Take proper steps to increase employment opportunities.
5. Establish hospitals and clinics to ensure appropriate treatment of people.

Responsible Organizations: SCC, NHA, Bangladesh Parjatan Corporation, BRTA, Ministry of Education and Directorate of Health.

b. Literacy

At present the overall literacy rate in the city area (population aged 7 years and above) ranges between 68.73%, whereas the national average is 45.3% as per 2001 census. In the city area male literacy rate is 72.85%, while for female; the corresponding figure is 65.76% where as in Extended Area these figures are 66.00%, 71.85% and 58.33% respectively. With implementation of this project, the literacy rate in the extended area is expected to increase further for establishment of new educational institutions. Female education rate will also increase in this area for promotion of female education and modernization of society. However, the literacy rate in urban area may increase slightly.

Enhancement Activities

1. Set up new schools, colleges and Madrashes in extended area.
2. Start Night School for poor children, hawkers & street children labour and illiterate persons.
3. Initiate the people to take the opportunity of government fellowship programs at primary, high school and college levels.
4. Initiate NGOs to operate non-formal education for poor people.

Responsible Organizations: SCC, Thana & District Education Offices, NGOs

areas will improve for setting up new clinics, hospitals, diagnostic centers in government and private sectors. For improvement of transportation, the government doctors of rural clinic will visit the clinics more regularly, who are visiting now 2-3 times per week.

Enhancement Activities

1. Set up new clinics, hospitals, diagnostic centres with adequate facilities in government and private sectors in the newly developed urban areas.
2. Ensure posting of well trained doctors, nurses and other technicians to these newly established clinics and hospitals.
3. Ensure good communication in the metropolitan area for easy movement of doctors and patients and transportation of medical facilities.

Responsible Organizations: SCC, Ministry of Health and Ministry of Communication.

g. Human Diseases

Diseases like diarrhea, worm infection, peptic ulcer, acute respiratory infection, skin diseases and anemia incidences are very common in the project area. With plan scenario, diarrhea, worm infection, skin diseases and anemia condition will be improved with pure drinking water supply, good sanitation, hygienic housing condition and improved dietary food intake for increasing income level. On the other hand, respiratory diseases, cardiac arrest and blood pressure may increase for smoke emitted by more motorized vehicles, industries and brickfields.

Enhancement Activities

1. Ensure supply of pure drinking water, good sanitation and hygienic housing condition.
2. Ensure improved dietary intake by providing facilities for increased income level through better employment.
3. Reduce air pollution by controlling smoke from motorized vehicles and other potential sources like industries etc.
4. Brickfields should be off limited from the city.

Responsible Organizations: SCC, DPHE, Ministry of Labor and DOE.

h. Sanitation

Sanitation system is not good in the project area. Sanitation coverage is to some extent better in SCC area than extended area. According to DPHE, Sylhet, most of the septic tank of houses have illegal connection to the nearby ditches/ponds. With implementation of this project, the sanitation system will be improved through creation of underground sewerage and strict regulation on katcha latrine.

Enhancement Activities

1. Creation of underground sewerage system in SCC area is favorable in the context of environment. With increasing city population and infrastructure construction, over spilling of septic tank and pit will be increased and city environment and health risk will be increased further. However, underground sewerage system maintained centrally by pumping and treatment has little scope for environmental pollution.
2. If underground sewerage system is not feasible economically, SCC should impose that all households should have a sanitary toilet with septic tank and soak-well. No household should be allowed to make connection of septic tanks to the nearby ponds/ditches in urban area.
3. Arrangement of pucca toilet with septic tank and soak-well for well-off people and low-cost semi-pucca water-sealed latrines for poor peoples. Arrangement for sufficient number of public toilets in Sylhet City.
4. Strictly prohibited for construction of katcha and hanging toilet on the sides of ponds, chhoras, haors and river in project area.
5. Ensure NGOs participation in sanitation sector.

3. Initiate local people and NGOs for nursery set up.
4. Scrutinize National Tree Plantation Day with local communities, schools, clubs and NGOs.
5. Firm implementation of law on unauthorized cutting of road and embankment side trees.

Responsible Organizations: SCC, BWDB, DOF, CBOs and NGOs

7.2.4 Economic Environment

a. Traffic Congestion

Sylhet city become a place of traffic congestion due to rapid growth of economic activities. Traffic congestion is space-based problem. It occurs at particular junction and or at a particular land use area. Extension of city boundary and growth of population will increase movement of vehicles in and around Sylhet city. Number of rickshaws will also increase to meet the people's demand. Rickshaws will be the main cause of traffic congestion in Sylhet city in future. The areas of likely congestion spots are the following:

- i) Humayun Rashid Chattar Intersection
- ii) Rikabi Bazar Intersection
- iii) Zinda Bazar Intersection
- iv) Court Point Intersection at Bondor Bazar
- v) Nayorpul Intersection
- vi) Taltola Intersection
- vii) Amborkhana Intersection
- viii) Chowhatta Intersection
- ix) Subanighat Intersection

Mitigation

1. Introduction of bus service in certain parts of Sylhet city.
2. Restrict licensing of new rickshaws.
3. Make one way road from Bondar Bazar to Amberkhana
4. Strict implementation of traffic rules to improve traffic management.

Responsible Organisation: SCC, LGED, RHD.

b. Fire Hazard

With expansion of city boundary and population the probability of fire may increase for more offices, institutions, markets, growth centers and industries. Electric short-circuit is mainly responsible for fire hazards in urban area. However, human error may also cause for fire sometimes. Slums and some industries like garments and plastic products are more susceptible to fire hazards.

The present two fire stations at Taltala and Gotatkar are not enough to cope with future fire hazards.

Mitigation

1. Set up one new fire station at Bahar.
2. Collect modern fire prevention devices.
3. Refrain people from using low quality electrical wire in buildings and industries.
4. Ensure periodical checking of electric lines.
5. Create awareness of people about fire hazards.
6. Ensure fire-fighting devices in new industries, high-rise buildings and markets.
7. Strict implementation of BC rule.
8. Large and medium scale water bodies should be conserved for quick and huge supply of water at the time of emergency.

Responsible Organizations: SCC, PDB, DOE and Fire Service and Civil Defense

Responsible Organizations: SCC, Ministry of Communication, Ministry of Health, Ministry of Education, DPHE, BPDB and DOE.

b. Industrialization

Industrialization is not prominent economic sector in Sylhet. With implementation of this project and establishment of Special Economic Zone nearby having good road, drainage, water, gas, electricity and telephone facilities will attract the promoters and NRBs to invest here and help in industrialization.

Enhancement Activities

1. Arrangement for gas pipe line in the industrial zone.
2. Arrangement for water, electricity, telephone, fire-service and drainage facility in industrial zone.
3. Arrangement for soft-loan for agro-industry, garments, electronics, IT etc.
4. Strengthening the activities of Sylhet Shilpa and Banik Samity (SSBS).
5. Invite the national and foreign investors to visit and invest in industrial zone.
6. Initiate the local entrepreneurs through incentives for industrialization.

Responsible Organizations: Board of Investment, Banks, Sylhet Shilpa and Banik Samity

c. Employment

Employment opportunity is very limited in the project area for less number of industries. Only 0.8 % is engage in industrial sector. Average 20.35% people have employment in govt. & autonomous organizations (27.8% in urban area and 12.8% in rural area) and 0.8% in industrial sector. Business constitutes 41.88% of total working population because it is one of the dominant sub-sector. More than 21% households are employed by private organizations. As Sylhet is a divisional headquarters as well as promoted to City Corporation with a number of regional functions, government employment is of major importance in terms of real occupation service in govt /autonomous organizations.

With implementation of this project, the employment in industrial sector will increase. However, the employment in government sector may remain same or slightly increase. Non-government employment in health, education and utility services will expand further for setting up new clinics, hospitals, schools, colleges, etc. With the enhancement of tourism industry more employment will be generate in this sector.

Enhancement Activities

1. Set up new industrial zone with all facilities like water, electricity, gas, telephone, drainage and good road communication.
2. Encourage setting up new industries in the industrial zone to increase employment opportunity.
3. Establish new clinics, hospitals, schools, colleges, etc. in the newly developed metropolitan area to facilitate new employment.
4. Enhancement of tourism industry to facilitate new employment.

Responsible Organizations: SCC, BWDB, BTTB, DPHE, JTCL, Ministry of Health, Ministry of Education and BPC.

d. Business

Business is the main employment sector in the project area. Business constitutes 32.27% of all household incomes which is the highest among all other sources of income within the study area. Also as supportive income more than 50% is engaged in business. With expansion of urbanization, the business sector will be developed with the development of new business centres, markets, bazars and expansion of existing growth centers and the people will be engaged as traders, shop-keepers and whole-sellers. Improved road communication by this project will attract more outside traders also to come to the project area to import and export vegetables, fruits, handicrafts and agricultural products to and from the other districts of the country.