

P R E F A C E

Solid Waste Management is one of the essential obligatory functions of the Urban Local Bodies in India. This service is falling too short of the desired level of efficiency and satisfaction resulting in problems of health, sanitation and environmental degradation. Most urban areas in the country are plagued by acute problems related to solid waste. Due to lack of serious efforts by town/city authorities, garbage and its management has become a tenacious problem and this notwithstanding the fact that the largest part of municipal expenditure is allotted to it. Barring a few progressive municipal corporations in the country, most local bodies suffer due to non-availability of adequate expertise and experience, thereby the solid waste is not properly handled resulting into creation of environmental pollution and health hazards. It is reiterated that the local bodies lack technical, managerial, administrative, financial and adequate institutional arrangements. As such, it is very necessary to provide proper guidance to such Urban Local Bodies so as to make them efficient in managing the solid waste generated in their respective cities and towns.

Looking to the pathetic situation of solid waste management practices being adopted by the Urban Local Bodies in the country due to various reasons and having no action plan to solve the problem in future, the Ministry of Urban Development dealing with the subject of Solid Waste Management, decided to prepare a Manual on “Municipal Solid Waste Management” so as to assist the user agencies in proper management of solid wastes in urban areas. Accordingly, an Expert Committee was constituted by the Ministry of Urban Development, Government of India, during February, 1998 to prepare Manual on “Municipal Solid Waste Management”.

The composition of the Expert Committee is as under:

- | | | |
|----|---|----------|
| 1. | Dr. S.R. Shukla,
Adviser (PHEE),
C.P.H.E.E.O,
M/o Urban Development,
New Delhi. | Chairman |
| 2. | Dr. A.B. Akolkar,
Senior Scientist,
Central Pollution Control Board,
Parivesh Bhawan, Delhi. | Member |

3. Shri A.D. Bhide, Member
Deputy Director,
Solid Waste Management Division,
National Environmental Engineering
Research Institute (NEERI),
Nagpur.
4. Shri A.K. Dhussa, Member
Director,
M/o Non-Conventional Energy Sources,
C.G.O. Complex, Lodhi Road,
New Delhi.
5. Shri A.K. Varshney, Member
Principal Scientific Officer,
M/o Non-Conventional Energy Sources,
C.G.O. Complex, Lodhi Road,
New Delhi.
6. Dr. D.B. Acharya, Member
Senior Health Officer,
Jaipur Municipal Corporation,
Jaipur.
7. Shri M.M. Datta, Member
National Professional Officer (Sanitary Engineer),
O/o WHO Representative to India,
Nirman Bhawan,
New Delhi.
8. Dr. Manoj Dutta, Member
Professor,
Civil Engineering Department,
I.I.T, New Delhi.
9. Dr. N.B. Mazumdar, Member
Deputy Chief (Waste Management),
Urban Infrastructure Division,
HUDCO, India Habitat Centre,
New Delhi.

- | | | |
|-----|--|----------------------|
| 10. | Shri P.U. Asnani,
Urban Env. Infrastructure Representative to India,
United States & Asia Env. Partnership,
Centre for Environmental Planning & Technology,
Navrangpura,
Ahmedabad. | Member |
| 11. | Shri R. Ramanathan,
Superintending Engineer,
Solid Waste Management Division,
Municipal Corporation of Chennai,
Chennai. | Member |
| 12. | Shri V.B. Ramaprasad,
Deputy Adviser (PHE),
C.P.H.E.E.O.,
M/o Urban Development,
New Delhi. | Member |
| 13. | Shri B.B. Uppal,
Deputy Adviser (Trg.),
C.P.H.E.E.O.,
M/o Urban Development,
New Delhi. | Member Secretary |
| 14. | Shri M. Dhinadhayan,
Assistant Adviser (PHE),
C.P.H.E.E.O.,
M/o Urban Development,
New Delhi. | Member & Coordinator |

The Committee held 12 meetings under the chairmanship of Dr.S.R.Shukla, Adviser (PHEE), between February, 1998 and January, 2000 and has drawn material freely from all available literature in drafting the Manual on “Municipal Solid Waste Management”. The Committee wishes to thank the Union Ministry of Urban Development for rendering all the help needed for successful completion of the task.

The Committee wishes to place on record its deep sense of appreciation for the untiring and diligent efforts of Shri B.B. Uppal, Deputy Adviser & Member Secretary and Shri M. Dhinadhayan, Assistant Adviser & Coordinator, who

ensured that the meetings were held regularly to enable the Committee to complete its work despite their normal duties. The Committee also places on record its appreciation of the services rendered by the officers and staff of Central Public Health & Environmental Engineering Organisation (CPHEEO) and PHE Section of the Ministry without whose cooperation and active participation the enormous task assigned to the Committee could not have been accomplished.

The Draft Manual was discussed thoroughly during the two days Workshop held on 17 – 18 February, 2000 at Vigyan Bhavan, New Delhi. The Workshop was attended by the Municipal Commissioners from various Corporations, representatives from Central Ministries and Departments and Experts from International agencies viz., USAID, WHO etc. The Expert Committee had reviewed the suggestions made by the participants during the Workshop and modified the Draft Manual accordingly so as to make it comprehensive and more user friendly to the agencies dealing with municipal solid waste. This Manual is first of its kind in India and there are no two opinions that the same will serve as a practical tool for Urban Local Bodies in proper management of municipal solid wastes in a cost effective and sustainable manner.

The contribution made by Shri V.B. Ramaprasad and Shri R. Sethuraman, Deputy Advisers, Shri M. Sankaranarayanan and Shri N.N. Hotchandani, Assistant Advisers and Shri Sukanta Kar, Scientific Officer, for successful completion of the task is well appreciated. The services extended by Shri S.K. Gulati, Private Secretary, Smt. Shoba Venkataraman and Smt. Padmavathi Ravi, Personal Assistants and Shri Neeraj Kumar Kush, LDC, in computerising the said Manual is duly acknowledged. Last but not the least, the wholehearted cooperation of the Ministry in completing this exercise is greatly acknowledged.

**May, 2000
New Delhi.**

**(DR. S.R. SHUKLA)
Adviser (PHEE)
C.P.H.E.E.O.
Ministry of Urban Development
Government of India**