# Solid Waste Collection And Transport

This book reports research on policy and legal issues, anaerobic digestion of solid waste under processing aspects, industrial waste, application of GIS and LCA in waste management, and a couple of research papers relating to leachate and odour management.

In a world where waste incinerators are not an option and landfills are at over capacity, cities are hard pressed to find a solution to the problem of what to do with their solid waste. Handbook of Solid Waste Management, 2/e offers a solution. This handbook offers an integrated approach to the planning, design, and management of economical and environmentally responsible solid waste disposal system. Let twenty industry and government experts provide you with the tools to design a solid waste management system capable of disposing of waste in a cost-efficient and environmentally responsible manner. Focusing on the six primary functions of an integrated system--source reduction, toxicity reduction, recycling and reuse, composting, waste- to-energy combustion, and landfilling--they explore each technology and examine its problems, costs, and legal and social ramifications.

Your garbage is going places you'd never imagine. What used to be sent to the local dump now may move hundreds of miles by truck and barge to its final resting place. Virtually all forms of pollution migrate, subjected to natural forces such as wind and water currents. The movement of garbage, however, is under human control. Its patterns of migration reveal much about power sharing among state, local, and national institutions, about the Constitution's protection of trash transport as a commercial activity, and about competing notions of social fairness. In Garbage In, Garbage Out, Vivian Thomson looks at Virginia's status as the second-largest importer of trash in the United States and uses it as a touchstone for exploring the many controversies around trash generation and disposal. Political conflicts over waste management have been felt at all levels of government. Local governments who want to manage their own trash have fought other local governments hosting huge landfills that depend on trash generated hundreds of miles away. State governments have tried to avoid becoming the dumping grounds for cities hundreds of miles away. The constitutional questions raised in these battles have kept interstate trash transport on Congress's agenda since the early 1990s. Whether the resulting legislative proposals actually address our most critical garbage-related problems, however, remains in question. Thomson sheds much-needed light on these problems. Within the context of increased interstate trash transport and the trend toward privatization of waste management, she examines the garbage issue from a number of perspectives--including the links between environmental justice and trash management, a critical evaluation of the theoretical and empirical relationship between economic growth and environmental improvement, and highlighting the ways in which waste management practices in the US differ from

those in the European Union and Japan. Thomson then provides specific, substantive recommendations for our own policymakers. Everything eventually becomes trash. As we explore the long, often surprising, routes our garbage takes, we begin to understand that it is something more than a mere nuisance that regularly "disappears" from our curbside. Rather, trash generation and management reflect patterns of consumption, political choices over whether garbage is primarily pollution or commerce, the social distribution of environmental risk, and how our daily lives compare with those of our counterparts in other industrialized nations.

Composting and Recycling Municipal Solid Waste is a comprehensive guide that identifies, describes, explains, and evaluates the options available when composting and recycling municipal solid waste (MSW). The book begins with an introductory chapter on the nature of MSW and the importance of solid waste management programs and resource recovery. Chapter 2 discusses MSW storage and collection, with emphasis on recyclables. Chapter 3 examines issues involved in determining the quantity, composition, and key physical characteristics of the MSW to be managed and processed. The book's other chapters cover topics such as the steps required for processing MSW for material recovery, the use of uncomposted organic matter as a soil amendment, composting and use of compost product, the marketing of recyclables, biogasification, and integrated waste management. Composting and Recycling Municipal Solid Waste provides essential information needed by solid waste professionals, consultants, regulators, and planners to arrive at rational decisions regarding available economic and technological resources for MSW composting and recycling.

The book points out that rural regions need proper attention at the global level concerning solid waste management sector where bad practices and public health threats could be avoided through traditional and integrated waste management routes. Solid waste management in rural areas is a key issue in developing and transitioning countries due to the lack of proper waste management facilities and services. The book further examines, on the one hand, the main challenges in the development of reliable waste management practices across rural regions and, on the other hand, the concrete solutions and the new opportunities across the world in dealing with municipal and agricultural wastes. The book provides useful information for academics, various professionals, the members of civil society, and national and local authorities.

Prudent Practices in the Laboratory--the book that has served for decades as the standard for chemical laboratory safety practice--now features updates and new topics. This revised edition has an expanded chapter on chemical management and delves into new areas, such as nanotechnology, laboratory security, and emergency planning. Developed by experts from academia and industry, with specialties in such areas as chemical sciences, pollution prevention, and laboratory safety, Prudent Practices in the Laboratory provides guidance on planning procedures for the handling, storage, and disposal of chemicals. The book offers prudent practices designed to promote safety and includes practical information on assessing

hazards, managing chemicals, disposing of wastes, and more. Prudent Practices in the Laboratory will continue to serve as the leading source of chemical safety guidelines for people working with laboratory chemicals: research chemists, technicians, safety officers, educators, and students.

GIS for Environmental Applications provides a practical introduction to the principles, methods, techniques and tools in GIS for spatial data management, analysis, modelling and visualisation, and their applications in environmental problem solving and decision making. It covers the fundamental concepts, principles and techniques in spatial data, spatial data management, spatial analysis and modelling, spatial visualisation, spatial interpolation, spatial statistics, and remote sensing data analysis, as well as demonstrates the typical environmental applications of GIS, including terrain analysis, hydrological modelling, land use analysis and modelling, ecological modelling, and ecosystem service valuation. Case studies are used in the text to contextualise these subjects in the real world, examples and detailed tutorials are provided in each chapter to show how the GIS techniques and tools introduced in the chapter can be implemented using ESRI ArcGIS (a popular GIS software system for environmental applications) and other third party extensions to ArcGIS to address. The emphasis is placed on how to apply or implement the concepts and techniques of GIS through illustrative examples with step-by-step instructions and numerous annotated screen shots. The features include: Over 350 figures and tables illustrating how to apply or implement the concepts and techniques of GIS Learning objectives along with the end-of-chapter review questions Authoritative references at the end of each chapter GIS data files for all examples as well as PowerPoint presentations for each chapter downloadable from the companion website. GIS for Environmental Applications weaves theory and practice together, assimilates the most current GIS knowledge and tools relevant to environmental research, management and planning, and provides step-by-step tutorials with practical applications. This volume will be an indispensable resource for any students taking a module on GIS for the environment.

This book presents the findings of a Department for International Development (DFID) funded project. It has been written for policy-makers and professional staff of urban government, development agencies and non-government organizations in low-income countries. The book aims to help improve the poor practices of municipal solid waste management that prevail in many low-income countries - a subject that has received comparatively little attention to other aspects of infrastructure such as water supply and transport. It is a complex subject embracing waste collection, transfer, haulage and disposal and its impacts are wide, including for example, effects on environmental health, municipal finance and management, waste reuse, and informal sector employment.

Recovery of Materials and Energy from Urban WastesA Volume in the Encyclopedia of Sustainability Science and Technology, Second EditionSpringer

This volume in the Encyclopedia of Sustainability Science and Technology, Second edition, provides a comprehensive overview of complementary strategies for dealing with waste in and around urban areas: Waste-to-energy power plants (WTEs) and recycling. Chapters in this volume describe how these plants can be built within or near cities to transform the non-recycled residues of society into electricity and heat, and the recovery of metals using recycling technology and management techniques. The latter includes resource recovery from construction and demolition and electronic waste streams. With nearly one thousand WTE plants worldwide, waste incineration has become increasingly important as a means of closing the materials life- cycle loop. China leads in the beneficial use of these residues with about 30 new WTEs built in each of the last three years, and with plans for at least another 300 with one or more in each large city. In addition, increasing numbers of cement plants use "waste" materials as alternative fuels. Since currently all of these plants combust less than 20% of the available wastes, and the remainder ends up in landfills or dumps, this sector represents a

huge market in the making.This comprehensive reference is suitable for readers just entering the field, but also offers new insights for advanced researchers, industry experts, and decision makers.

The Encyclopedia of Sustainability Science and Technology (ESST) addresses the grand challenge for science and engineering today. It provides unprecedented, peer-reviewed coverage in more than 550 separate entries comprising 38 topical sections. ESST establishes a foundation for the many sustainability and policy evaluations being performed in institutions worldwide. An indispensable resource for scientists and engineers in developing new technologies and for applying existing technologies to sustainability, the Encyclopedia of Sustainability Science and Technology is presented at the university and professional level needed for scientists, engineers, and their students to support real progress in sustainability science and technology. Although the emphasis is on science and technology rather than policy, the Encyclopedia of Sustainability Science and Technology is also a comprehensive and authoritative resource for policy makers who want to understand the scope of research and development and how these bottom-up innovations map on to the sustainability challenge.

This volume focuses on the collection of waste and waste streams as an integral aspect of sustainable waste management. The authors take economic models and behavioral studies into account to go beyond just descriptions of waste collections technologies and collection route design. Models and tools for sustainable waste collection are described in detail, and the authors provide a comprehensive, integrated methodology to design waste collection systems that reduce environmental impacts, are economically viable, and achieve buy-in and participation from target populations. Part I of the book provides fundamentals and context on waste hierarchy, including waste prevention, reduction and reuse, waste collection itself, and steps such as preparation for recycling, recycling, treatment, and landfilling. Background in environmental, social, and economic concerns surrounding waste collection is also provided here. Part II addresses tools for design, operation, and maintenance of waste collection systems. Part III focuses on how the tools presented in Part II can be used to support sustainability assessments and decisions that consider the entire life cycle of waste and the role of waste collection programs in waste prevention, reduction, reuse, recycling, treatment, and disposal. Part IV addresses the challenges of developing sustainable waste management systems and addresses the role of waste collection in sustainable waste management in the future.

With reference to Delhi, India.

The collection, transportation and subsequent processing of waste materials is a vast field of study which incorporates technical, social, legal, economic, environmental and regulatory issues. Common waste management practices include landfilling, biological treatment, incineration, and recycling – all boasting advantages and disadvantages. Waste management has changed significantly over the past ten years, with an increased focus on integrated waste management and life-cycle assessment (LCA), with the aim of reducing the reliance on landfill with its obvious environmental concerns in favour of greener solutions. With contributions from more than seventy internationally known experts presented in two volumes and backed by the International Waste Working Group and the International Solid Waste Association, detailed chapters cover:

Waste Generation and Characterization Life Cycle Assessment of Waste Management Systems Waste Minimization Material Recycling Waste Collection Mechanical Treatment and Separation Thermal Treatment Biological Treatment Landfilling Special and Hazardous Waste Solid Waste Technology & Management is a balanced and detailed account of all aspects of municipal solid waste management, treatment and disposal, covering both engineering and management aspects with an overarching emphasis on the life-cycle approach.

Solid Waste Management (SWM) is a matter of great concern in the urban areas of developing countries. The municipal authorities who are responsible for managing municipal solid waste are unable to discharge their obligations effectively because they lack the in-house capacity to handle the complexities of the process. It is heartening to see that the World Bank has prepared this book covering all important aspects of municipal SWM in great depth. The book covers very lucidly the present scenario of SWM in urban areas, the system deficiencies that exist, and the steps that need to be taken to correct SWM practices in compliance with Municipal Solid Waste (Management and Handling) Rules 2000 ratified by the Government of India. The book shares examples of best practices adopted in various parts of the country and abroad, and very appropriately covers the institutional, financial, social, and legal aspects of solid waste management, which are essential for sustainability of the system. It provides a good insight on how to involve the community, nongovernmental organizations, and the private sector to help improve the efficiency and cost effectiveness of the service, and shows how contracting mechanisms can be used to involve the private sector in SWM services. This book will be a very useful tool for city managers and various stakeholders who deal with municipal solid waste management in the design and execution of appropriate and cost-effective systems.

This book focuses on waste management which is the collection, transport, processing, recycling or disposal of waste materials. The term usually relates to materials produced by human activity, and is generally undertaken to reduce their effect on health, aesthetics or amenity. Waste management is also carried out to reduce the materials' effect on the environment and to recover resources from them. Waste management can involve solid, liquid or gaseous substances, with different methods and fields of expertise for each. Waste management practices differ for developed and developing nations, for urban and rural areas, and for residential and industrial, producers. Management for non-hazardous residential and institutional waste in metropolitan areas is usually the responsibility of local government authorities, while management for non-hazardous commercial and industrial waste is usually the responsibility of the generator.

This publication looks at the use of technologies that are environmentally sound for managing municipal solid wastes in developing countries. It is designed as a sourcebook on solid waste management, covering a multitude of topics including the principles of solid waste management, processing and treatment, and final disposal. It also covers key non-technical aspects, and offers regional overviews on SWM.--Publisher's description.

The Subject Of Waste Management Has Been Grown To The Status Of Maturity In All Developed Countries. Every Year, New Techniques Are Being Developed To Recover The Energy And Recycle The Materials. The Nations Like Usa, Australia, Norway And Western Europe Are Handling Their Solid Wastes In A Scientific And Hygienic Way. However, In Most Of The Developing World, Of Africa, Asia And Eastern European Nations, The Collection, Transportation And Disposal Of Solid Waste Is Still At Its Lowest Ebb. In Usa, Though The Technology For Handling Of The Solid Waste Is Available, The Wastes Are Mostly Managed

By Land Filling (70%) And Incineration With Or Without Energy Recovery. It Means A Major Share Of The Source Is Wasted. Only 30-31% Of The Waste Materials Are Recovered.In Contrast To This, In Developing Countries Like India 60-70% Of The Materials Are Recovered And Reused Mostly By The Informal Sector Without Application Of Any Art Of Technology. There Is No National Level Data Are Available On Solid Waste Management In Those Countries. Often The Waste Is Open Burnt Or Land Filled In The Low-Lying Areas. The Unscientific Way Of Waste Management Pose The Risk Of Diseases To Humans And Also Degrade The Environment. The Toxic Smoke Containing, Furans And Dioxins Are Released After The Burning Of Trash, Leading To The Rise In Carcinogenic Trace Gases In The Atmosphere.In The Present Context, The Us Is Conveniently Taken As A Representative Of Developed World And India Representing Developing Countries And The Book Is Designed Into 6-7 Chapters. Chapter 1 Deals With The General Aspects And Basic Principles Of Solid Waste Management. Chapter 2 Deals With The Solid Waste Management In Usa And Solid Waste Management In India Is Dealt In Chapter 3 Respectively. Details About Plastic Waste Management In Us, India And Rest Of The World Are Explained In Chapter 4. Management Of Biomedical Waste Is Collated And Provided In Chapter 5 And Chapter 6 Deals With The Hazardous Waste Management.The Subject Of Solid Waste Management And Urban Agriculture Is Provided In Chapter 7 And The Chapter 8 Narrates The Comparative Aspects Of Waste Management In Us And India. It Is Observed That A Good Number Of Books Are Available On The Technologies And Principles Of Waste Treatment, However Meager Titles Exist On Waste Management. Hence Book Is An Appropriate Attempt To Fill The Lacunae. This Book Will Be Useful To Undergraduate And Graduate Students, Environmental Managers And The General Public As Well.

Due to the rapid increase in the production and consumption processes, societies generate as well as reject solid materials regularly from various sectors. The primary goals of this book are to encourage reduction of waste at the source and to foster implementation of cost-effective integrated solid waste management systems.

This easy-to-read and pragmatic book offers a systematic treatment of solid and hazardous waste management technology. Encouraging self-learning, with a focus on current technical and scientific fundamentals, it covers all the basic concepts and tools needed for making decisions. Chapter topics include environmental legislation and regulations; sources; composition and characteristics; physical, chemical, and biological properties; storage, collection and transportation; processing technologies; source reduction and reuse; disposal; and management and control of landfill leachate and gas. For civil engineers and scientists facing a first time involvement in any aspect of solid and hazardous waste management, this book will be a valuable reference.

Municipal Solid Waste (MSW) management is a crucial service provided by cities around the world, but is often inefficient and underperforming in developing countries. This report provides eight examples of RBF designs, each tailored to the specific context and needs of the solid waste sector in the specific city or country. These projects are currently in various stages of preparation or implementation; hence, lessons can be inferred only in terms of how solid waste projects can be developed using RBF principles. The eight examples could be classified into three main categories: (a) RBF to improve solid waste service delivery and fee collection: in Nepal and the West Bank, the projects use RBF subsidies to improve the financial sustainability of MSW services by increasing user fee collection while simultaneously improving waste collection services; (b) RBF to promote recycling and source separation: in the cases of China,

Indonesia, and Malaysia, an incentive payment model is used to improve source separation and collection of waste through changes in behavior at the household level; and (c) RBF to strengthen waste collection and transport in under-served communities: in Mali and Tanzania, projects were designed to strengthen secondary waste collection and transport for under-served communities. In the case of Jamaica, the project was designed to improve waste collection in inner-city communities and to encourage waste separation as well as general neighborhood cleanliness. This report presents the challenges faced in the design and implementation phases as well as general recommendations on how to address such challenges in future projects. Some of the lessons learned and recommendations are generally applicable to the preparation of any MSW project, whereas others are particular to the design of RBF projects for MSW. This book provides a basic understanding of waste management problems and issues faced by modern society. Scientific, technical, and environmental principles are emphasized to illustrate the processes of municipal and industrial solid wastes and liquid wastes, and the nature of impacts resulting from waste dispersal and disposal in the environment. Economic, social, legal, and political aspects of waste management are also addressed. Environmental issues and concerns receive thorough coverage in discussing waste reduction, resource recovery, and efficient and practical waste disposal systems. Other specific topics include recycling, physical and chemical processing, the biological treatment of waste solids, incineration, pyrolysis, and energy recover, hazardous wastes, and landfill management.The role of government and other institutions in waste management and resource recovery matters is also detailed. Discussion questions, worked examples, and end-of-chapter problems reinforce important concepts. Waste Management and Resource Recovery is particularly suitable as a text in waste management courses in environmental science or engineering programs. It also works well as a reference for practitioners in the waste management field.