
URBAN SEDIMENT REMOVAL
*The Science, Policy, and
Management of Street Sweeping*

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by

Robert Brinkmann

Department of Geography

Department of Environmental Science and Policy

University of South Florida

and

Graham A. Tobin

Department of Geography

University of South Florida



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**For: Ronnie Hays, Charles D. Brinkmann,
Elizabeth Bird, Dan Tobin, and Tom Tobin**

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PREFACE

There is not an extensive literature on street sweeping. Much of the research that has been completed exists in the “gray” area of technical reports and government documents. Furthermore, a great deal of this research is locally based, and has not been widely published. Indeed, our review of the scientific literature, revealed that, while storm water quality has received a lot of attention, few academicians have been involved in street sweeping research *per se*. Thus, throughout our research into street sweeper effectiveness, sweeping protocols, and sweeping practices, we wished that there had been a book summarizing some of the important issues associated with street sweeping. As our frustration grew, we realized that we were uniquely poised to write such a book as our research had encompassed a variety of different projects including sweeper testing, waste management, and related storm water quality.

Also, early on in this exercise, we recognized that there was a growing demand for information about street sweeping policies and management, especially for studies focusing on the effectiveness of different sweeping schedules, on waste management operations, and on non-point, pollution reduction practices associated with storm water runoff. It was abundantly clear that there was a profound lack of research on street sweeping that could assist with developing local, regional, or national policies. There was, in effect, little guidance for city managers on these issues. We hope that this book will assist in evaluating some of these concerns and we encourage others to begin research on this important topic.

We have aimed this book at a broad audience and certainly not just academics looking at street sweeping. We hope that it will assist city managers and street sweeping supervisors to understand better the implications of their operations. We believe that the book will prove particularly helpful at the local level by improving approaches to street sweeping management and operations. We also anticipate that it will assist with environmental and public policy decision-making related to street sweeping. It seems that much of the public policy directed towards street sweeping is conducted without a great deal of relevant information at hand for policymakers. This information is essential to develop sound approaches to street sweeping.

Not only will this book assist individuals involved with policy making and day-to-day operations of street sweeping, it will also be useful to academicians, environmental agencies, civil engineers, and environmental consulting firms involved with street sweeping research. We have seen a growth in the need for academic research in the area over the last few years, so in our final chapter, we have provided a comprehensive summary of research questions that should be addressed by researchers. We sincerely hope that this list will be noticed by local, state, and federal agencies in developing their street sweeping research agendas.

Our approach in this book is far reaching. In the introductory chapter, we put forward a framework through which one might investigate issues of street sweeping, and outline some of the major concerns. The following chapter provides a brief review of the history of street sweeping and the evolving concerns over dirty roads, with a particular focus on how technological developments have led to the modern street sweeper. The third chapter summarizes some of the characteristics of the more commonly used types of street sweepers. In the fourth chapter, we examine the various issues associated with waste management, especially what to do with the sediments collected during routine sweeping operations. The fifth chapter analyzes the effectiveness of street sweeping in improving storm water quality, and the sixth chapter reviews the various management approaches to street sweeping in the United States. As noted above, we conclude the book with a chapter on research goals for the future.

Throughout the book, we have attempted to provide a geographical approach to the problem, while noting the unique nature of specific case studies, particularly those undertaken in Florida. As geographers, we look at street sweeping research, in part, as falling in line with our discipline's tradition of exploration. In the past few decades our planet has become known in great detail and there are very few stones unturned. As modern-day explorers, we find ourselves looking in unusual directions for inquiry. We also see street sweeping research rooted firmly within geography's human-land tradition. Street sweeping is one way that humans interact with their environment, especially the city. Street sweeping sediment is somewhat like mobile archaeological deposits that can tell us a great deal about ourselves and about our society. Street sweeping research also fits well with the tradition of applied geography. Indeed, this book has demonstrated the importance of conducting research on the geographic implications of street sweeping to assist communities in more effectively managing their operations. We hope you enjoy this book.

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