



LOW IMPACT DEVELOPMENT STORMWATER MANAGEMENT PLANNING AND DESIGN GUIDE

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LIST OF ACRONYMS AND ABBREVIATIONS

AEM	Adaptive environmental management
AASHTO	American Association of State Highway and Transportation Officials
ARC	Atlanta Regional Commission
ASCE	American Society of Civil Engineers
ASTM	American Society for Testing and Materials
BAU	Business-as-usual
BC MWLAP	British Columbia Ministry of Water, Land and Air Protection
BMP	Best management practice
CA	Conservation authority
CEC	Cationic exchange capacity
CHMC	Canada Mortgage and Housing Corporation
cm	Centimetre
CRWMG	Credit River Water Management Guidelines
CSA	Canadian Standards Association
CWP	Center for Watershed Protection
CVC	Credit Valley Conservation
EIR	Environmental impact report
GVRD	Greater Vancouver Regional District
hr	Hour
HSG	Hydrologic soil group
ICPI	Interlocking Concrete Pavement Institute
IWMP	Integrated watershed monitoring program
L	Litre
LEED	Leadership in Energy and Environmental Design
LID	Low impact development
m	Metre
MDE	Maryland Department of the Environment
meq	Milliequivalents
MESP	Master environmental and servicing plan
mm	Millimetre
MPCA	Minnesota Pollution Control Agency
MTO	Ministry of Transportation of Ontario
N	Nitrogen
NAPA	National Asphalt Pavement Association
NCPTC	National Concrete Pavement Technology Center
NRC	National Research Council of Canada
NRMCA	National Ready Mix Concrete Association
OMAFRA	Ontario Ministry of Agriculture, Food, and Rural Affairs
OMMAH	Ontario Ministry of Municipal Affairs and Housing
OMNR	Ontario Ministry of Natural Resources
OMOE	Ontario Ministry of the Environment
OMOEE	Ontario Ministry of Environment and Energy
OPSS	Ontario Provincial Standard Specification
P	Phosphorus

PAH	Polycyclic aromatic hydrocarbons
PDEP	Pennsylvania Department of Environmental Protection
PVC	Polyvinyl chloride
PWD	Philadelphia Water Department
PWQO	Provincial Water Quality Objective
s	Second
SMPPD	Stormwater Management Practices Planning and Design
STEP	Sustainable Technologies Evaluation Program
SWM	Stormwater management
SWMP	Stormwater management practice
SWAMP	Stormwater Assessment Monitoring and Performance Program
TP	Total phosphorus
TRCA	Toronto and Region Conservation Authority
TSS	Total suspended solids
TWDB	Texas Water Development Board
UNHSC	University of New Hampshire Stormwater Center
U.S. EPA	United States Environmental Protection Agency
yr	Year

PREFACE

This document – the *Low Impact Development Stormwater Management Planning and Design Guide* – has been developed by Credit Valley Conservation (CVC) and Toronto and Region Conservation Authority (TRCA) as a tool to help developers, consultants, municipalities and landowners understand and implement sustainable stormwater planning and practices in the CVC and TRCA watersheds. The use of sustainable stormwater planning and practices will help ensure the continued health of the streams, rivers, lakes, fisheries and terrestrial habitats in our watersheds.

The guide is intended to provide engineers, ecologists and planners with up-to-date information and direction on landscape-based stormwater management planning and low impact development stormwater management practices such as rainwater harvesting, green roofs, bioretention, permeable pavement, soakaways and swales. The information contained in the guide will help practitioners adopt landscape-based stormwater management approaches, and will help select, design, construct and monitor more sustainable stormwater management practices.

This manual is not a stand-alone document. It is intended to augment the Ontario Ministry of the Environment’s 2003 *Stormwater Management Planning and Design Manual*, which provides design criteria for “conventional” end-of-pipe stormwater management practices such as wet ponds and constructed wetlands. It is also a companion document to other stormwater related guidance documents prepared by CVC and TRCA. Amongst others, these include:

CVC

- Credit River Water Management Guidelines (CRWMG) (2007);
- Credit River Stormwater Management Criteria (currently under development; will be an appendix to the CRWMG);
- Geomorphic and Meander Belt Guidelines (an appendix to the CRWMG);
- Floodline Mapping Guidelines (an appendix to the CRWMG);
- Environmental Impact Report Terms of Reference (an appendix to the CRWMG);
- Technical Guidelines for Floodproofing, 1994 (an appendix to the CRWMG);
- Hydrologic/Hydraulic Modeling (an appendix to the CRWMG Guidelines);
- Guidelines for Hydrogeologic Studies (an appendix to the CRWMG);
- Headwater Assessment Guidelines (an appendix to the CRWMG).

TRCA

- Planning and Development Procedural Manual (2007);
- Stormwater Management Criteria (currently under development);
- Floodplain Management Guideline; and
- Stream Crossing Guidelines.