

NC Low Impact Development Manual

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Overview

- Project Background
- Writers and advisors
- Documenting a Need
- Content of Manual
- Around the Table...
- Schedule



What do we mean by LID?

Mimic natural hydrologic conditions, manage precipitation where it falls, work with nature, not against it by:

1. conserve natural areas
2. minimize development impacts - design and techniques
3. Increase time water stays onsite
4. best management practices
5. pollution prevention and education

- Growing interest in LID
- NC LID team brainstormed strategy
- EPA grant awarded
- Target audience
 - Building professionals & consultants
 - Local government staff
- Needs assessment: format and content
- Interdisciplinary collaboration
 - Core Writing Team
 - Advisory Committee



Project Background

Core Writing Team

NC State University

- Ag and Resource Economics
 - Steve Smutko
 - Christy Perrin (WECO)
- Biological and Ag Engineering
 - Bill Hunt
 - Laura Szpir (Water Quality Group)
 - Jean Spooner (WQG)
 - Dan Line (WQG)
- Landscape Architecture
 - Lee-Anne Milburne
- Extension
 - Dwane Jones

• Soil Science

- David Lindbo

UNC-Coastal Studies Inst.

- Robert McClendon

Local Governments

- City of Raleigh
- Triangle J Council of Govts
- Land of Sky Council of Govts.

Consultants

- Tetrattech
 - Scott Job
 - Heather Fisher

The rest of the writing team wishes they were here...



Advisory Committee

State and Federal Government

- NCDENR Div. Water Quality
- NCDENR Ecosystem Enhancement Program
- NC Dept. of Transportation
- US EPA

Local and County Government

- Wake County
- Durham County
- Pitt County
- City of Kinston
- Town of Carrboro
- City of Brevard
- Town of Cary
- Mecklenburg County

Special Interest

- NC Coastal Federation
- NC Home Builders Assoc.

Academia

- NCSU Dept. Forestry & Env Res.
- Warren Wilson College

Builders / Developers

- Crossland
- The Milliken Co.
- Cherokee Investment Fund

Consultants

- BLUE Land, Water, Infrastructure
- Withers & Ravenel
- Horvath & Assoc.
- John R. McAdams
- Little & Little Landscape Architects
- Carter Burgess

LID “Needs Assessment”

36 building professionals, consultants, and government staff replied

Building Professionals’ Needs:

- best management practices info (24%)
- precedents and case study examples (14%)
- key rules and regulations (10%)
- costing information (10%)



LID “Needs Assessment

Government Staff Needs:

- Design specifications (18%)
- Checklists (13%)
- Design guides (10%)
- BMP information (10%)
- Regulatory language (10%)



LID Needs Assessment

Development professionals: policy barriers

- Stormwater requirements
- Time for approvals
- Automotive-oriented standards
- Lot design and layout standards
- Restrictive regulations



LID Needs Assessment

50% of government staff respondents reviewed ordinances. Those who did not said they would need more support:

- Increased staffing and/or staff stability
- Champion politician or manager
- Successful LID examples
- Community education
- Model ordinance

Core Team Response

- Manual with examples from 3 regions: mountain, piedmont, and coast
- BMPs included
- Case studies with costing
- Checklists for design, submission review, ordinance review and development



LID Manual Chapters

1. Introduction
2. Managing Water Resources Using a Hydrologic Cycle Approach
3. LID Site Assessment & Design
4. LID Stormwater BMPs
5. Decentralized Wastewater
6. Low Impact Construction
7. Local Government Planning & Regulatory Strategies
8. LID Case Studies

Around the Table we go...

- What *is* predevelopment? pre-columbian?
 - Coweeta Forest station data from NC is best available
- How to analyze hydrology?
 - How basic? How sophisticated?
- Finding common language
 - LID vs Green infrastructure vs sustain. devpt
- How much detail to include in manual?

Around the Table we go...

- How to guide BMP maintenance?
- How to address shifting costs of water quality to new groups?
- Can one size “model ordinance” fit all?
- Is it possible to address all concerns?!

lessons learned

- Getting to low impact development is a learning process for everyone, even the “*experts*”
- Getting started is the most important step





January 2009 Due date

Manual will be posted online, visit

www.ncsu.edu/WECO

Or

www.bae.ncsu.edu/programs/extension/wqg/

in January

Or provide us with your email for a notice!