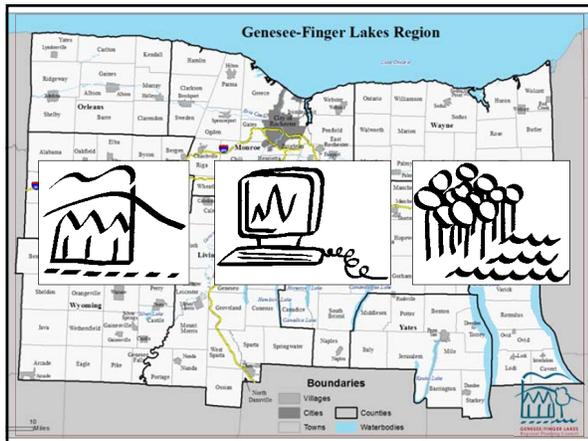


Planning for Green Infrastructure –
A New Tool for Municipal Boards



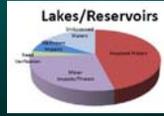
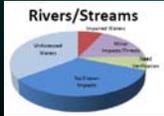
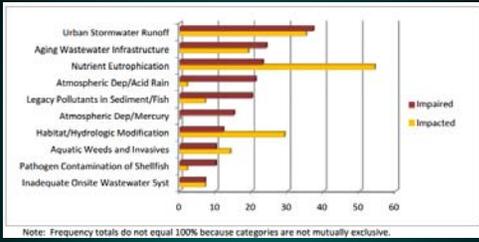
Jayne Breschard Thomann, AICP, CFM
Senior Planner

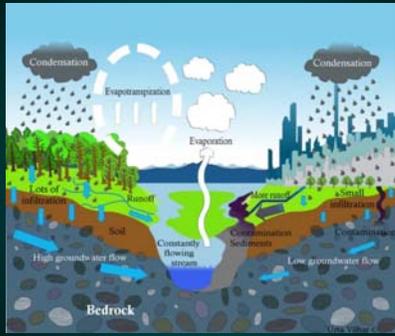






Top Ten Water Quality Issues in New York State







1990s Phase I

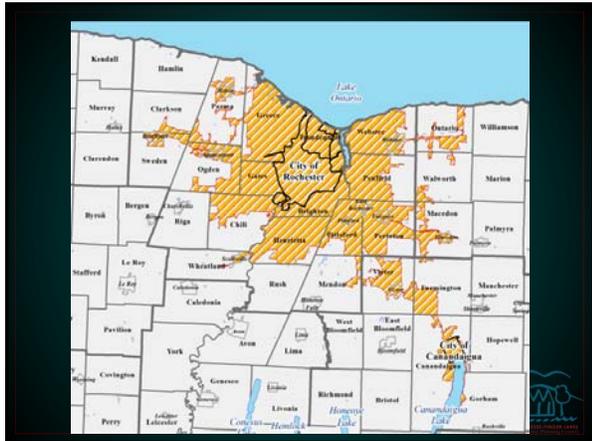
2003 Phase II

2010 MS4 General Permit

New York State
Stormwater Management Design Manual
August 2010

Prepared by
Carter & Burgess
400 West
Main Street
Rochester, NY 14620

For
The City of Rochester
Department of Public Works
400 West
Main Street
Rochester, NY 14620

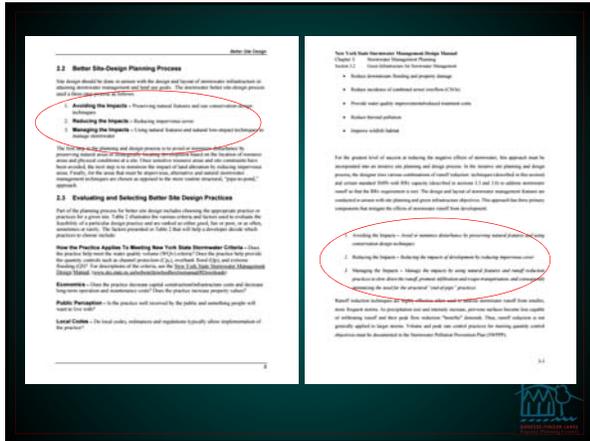


Better Site Design

Low Impact Development

Green Infrastructure





Three GI Principles

1. Avoid the Impacts
2. Reduce the Impacts
3. Manage the Impacts



Avoiding the Impacts



Reducing the Impacts



Managing the Impacts

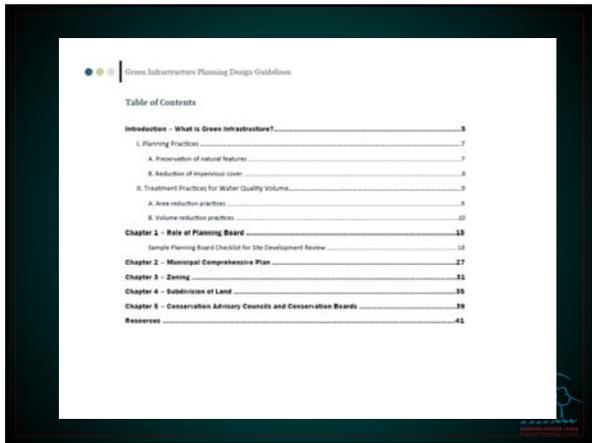




The Benefits	The Obstacles
<ul style="list-style-type: none"> ✓ Reduced construction costs ✓ Reduced long-term operation and maintenance costs ✓ Increased property values ✓ Easier compliance with wetland and other resource protection regulations ✓ More open space for recreation ✓ More pedestrian-friendly neighborhoods ✓ Protection of sensitive forests, wetlands and habitats ✓ More aesthetically pleasing and naturally attractive landscape 	<ul style="list-style-type: none"> ✓ Public perception of a particular practice may not be favorable ✓ Local codes may not allow for particular design elements ✓ Capital costs and/or operation and maintenance costs for some practices may not always be less expensive than conventional designs









<p>Planning Board</p> <ul style="list-style-type: none"> ✓ site plan review ✓ review of subdivision plats ✓ special use permits 	<p>Stormwater Management Officer</p> <ul style="list-style-type: none"> ✓ accepts and reviews all SWPPPs ✓ can engage the services of a registered professional engineer to review the plans, specifications and related documents ✓ can accept a plan certified by a licensed professional
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Site Plan Procedure

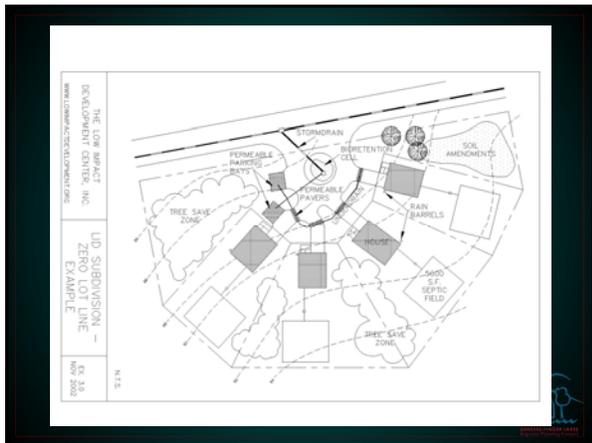
1. Preapplication sketch conference/sketch plan review
2. Preliminary site plan approval
3. Final site plan approval

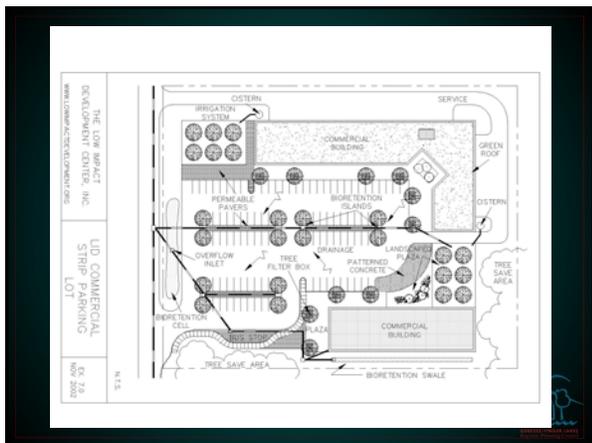


Subdivision Procedure

1. Preapplication conference
2. Conceptual review
3. Preliminary plat subdivision
4. Final plat submission







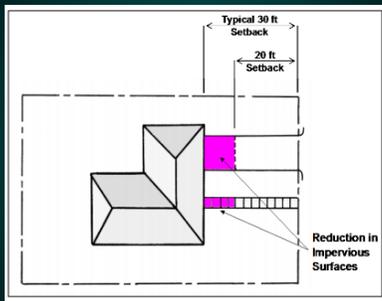
Planning Board

- What stream, lake, wetland, or drainage system does it flow into? Are there particular water quality concerns or flooding issues that should be considered in that watershed?
- Were natural areas preserved? Be sure the property lines of all Conservation Easements and/or Municipal Open Space Regulations are well-marked on the site development plan or subdivision plat. Does the landowner understand that the preserved open space is not their property?
- Was an effort made to reduce impervious cover?
- Are there opportunities to consolidate stormwater management practices?
- Are the soils appropriate for the practices selected?

Zoning Board of Appeals

- ✓ Use reduced setbacks and frontages and narrower right-of-way widths to design nontraditional lot layouts
- ✓ Use smaller side-yard setbacks to reduce total road length
- ✓ Use smaller lot front building setbacks to reduce total driveway length
- ✓ Use alternate or taller building designs to reduce the impervious footprint of buildings
- ✓ Reduce the number of unnecessary parking spaces by examining minimum parking ratio requirements, and set a maximum number of spaces





Conservation Board

- ✓ Ensure all development activities do not encroach on designated floodplain and/or wetland areas
- ✓ Avoid development on steep slope areas and minimize grading and flattening of hills and ridges
- ✓ Leave areas of porous or highly erodible soils as undisturbed conservation areas
- ✓ Use natural depressions for runoff storage
- ✓ Preserve natural flow paths in the site design
- ✓ Conserve existing trees during construction by performing an inventory of the existing forest and identifying trees to protect
- ✓ Carefully select the landscaping materials required





Lessons Learned

- Poor Design
- Lack of Maintenance
- Poor Planning



Poor Design



Poor Design

- Designers and Reviewers need appropriate training!



Western New York
STORMWATER
Management Training Series

Lack of Maintenance

- Who?
*Municipal staff,
Contractor
(3rd Party)*
- Feasible?
*Is the planting
plan easily
understood, or is
special training
required?*



Lack of Maintenance

- Legally binding and enforceable maintenance agreements:
 - Executed as a condition of plan approval
 - A good set of approvable design plans should include a maintenance schedule of proper intervals for the *frequency* of maintenance and objective set of *performance standards*.



Poor Planning

- Easements
Access Issues for Maintenance

Recordable agreement in County Clerk's office with property descriptions attached (site plans and construction plans are NOT recorded)



Comprehensive Plans

Natural Environment



Transportation



Public Safety









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