North Carolina Coastal Federation

- Nonprofit, 501(c) member supported organization founded in 1982.
- 30 staff and 30 board members.
- Cover 20 coastal counties.
- Three offices.
- Key goals -
  - Living Shorelines
  - Thriving Oysters
  - Clean Coastal Waters
  - Reduced Marine Debris
  - Effective Coastal Management

All connecting People, the Environment and Economy

North Carolina Coastal Federation
Working Together for a Healthy Coast

How We Work

- Protect and Restore
- Educate and Inform
- Collaborate and Partner
- Promote Economic and Environmental Connections

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The Economic Benefits of Low Impact Development

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The Economic Benefits of Low Impact Development

Research shows that building green does not necessarily cost more, especially when strategies are integrated early into the development process *AND* when considering the economic benefits to developers, local governments, consumers and the environment collectively….

The Economic Benefits of Low Impact Development

the U.S. Environmental Protection Agency (EPA) has found that implementing well-chosen LID practices saves money for developers, property owners, and communities while also protecting and restoring water quality (USEPA, 2007).

Specifically, utilizing LID designs can result in project cost savings by decreasing the amount of expensive below ground drainage infrastructure required, as well as reducing or eliminating the need for other stormwater management-related facilities including curbs, erosion control measures, catch basins, and outlet control structures.

Energy Independence and Security Act

(December 2007- Bush Administration)

Title IV - Energy Savings in Federal Buildings and Industry

Section 438 - Storm Water Runoff Requirements for Federal Development Projects

- Requirement –

"The sponsor of any development or redevelopment project involving a Federal facility with a footprint that exceeds 5,000 square feet shall use site planning, design, construction, and maintenance strategies **for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property** with regard to the temperature, rate, volume, and duration of flow."

The Economic Value of LID to the:

- Developer
- Local Government
- Consumer/homeowner
- Environment

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Economic Value of LID to the Developer

Imagine the savings if incorporated into the initial concept, design, permitting phase of the project…..

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Economic Value of LID to the Developer

- Reduce land clearing and grading costs
- Potentially reduce infrastructure costs (streets, curbs, gutters, ponds)
- Reduce storm water management costs (less pipes, etc)
- Potentially reduce impact fees and increase number of buildable lots
- Increase lot and community marketability and value
- quicker and more profitable sale?

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Economic Value of LID to the Developer

Example Pervious Pavement Benefit:

Asphalt: estimated cost between $.50 and $1 per square foot of installed pavement. This sounds quite cheap, but it does not include the costs of any storm water management system or drainage piping.

Porous Concrete: estimated cost between$2.00 to $6.50, per square foot of installed pavement.

A More Accurate Cost Comparison: consider added costs of storm water management system that would have to be built to treat the runoff from the asphalt parking lot. This bumps up cost of asphalt pavement to $9.50 and $11.50 per square foot of installed pavement.

Paversearch.com

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EPA LID Cost Comparison Report

Project	Conventional	LID	Cost Difference	Percent Difference
Bellingham City Hall	$27,600	$5,600	$22,000	80%
Auburn Hills	$2,360,385	$1,598,989	$761,396	32%
Donovan Park	$52,800	$12,800	$40,000	76%
Gap Creek	$4,620,600	$3,942,100	$678,500	15%
Garden Valley	$324,400	$260,700	$63,700	20%
Prairie Glen	$1,004,848	$599,536	$405,312	40%
Somerset	$2,456,843	$1,671,461	$785,382	32%

Economic Value of LID to the Developer:

Evaluating LID for a Development in the Lockwood Folly Watershed

Jason D. Wright, EI, William F. Hunt, Ph.D., PE, and Dwane L. Jones of NC State

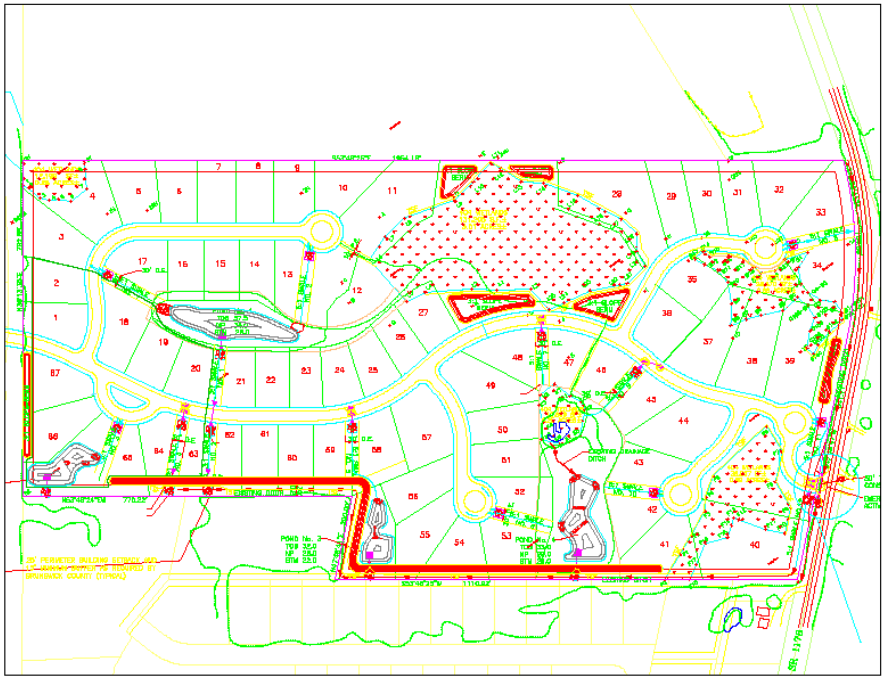
Study evaluated conventional neighborhood design and redesigned it with LID comparing the costs.

Findings: Cost savings with LID practices include:

- shrinking the pond
- narrowing the roads
- eliminating drop inlets and pipe
- eliminating curb and gutter

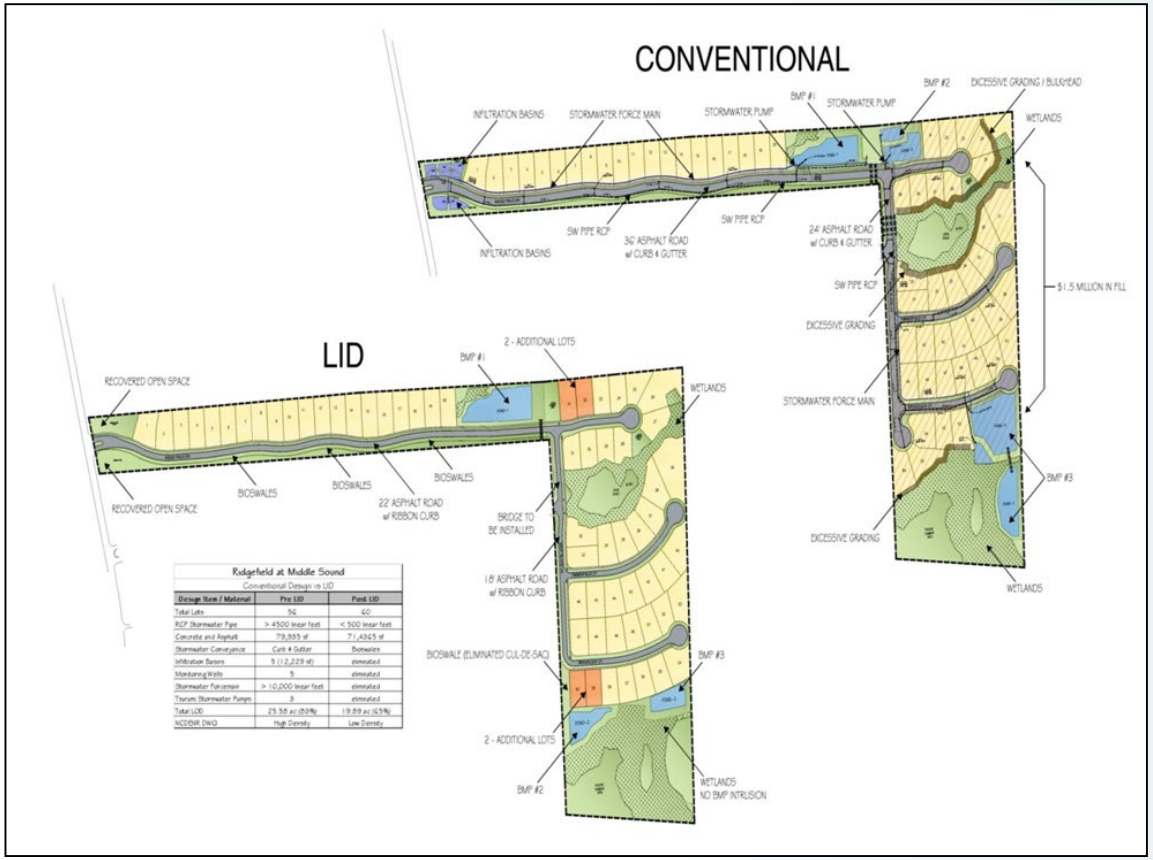
**By decreasing the surface area of the wet pond, room was created for another home on the lot.

This is perhaps the greatest benefit to the developer as comparable homes in the area have sold for approximately $380,000.



Economic Value of LID to the Developer: Ridgefield Redesign from Conventional to LID

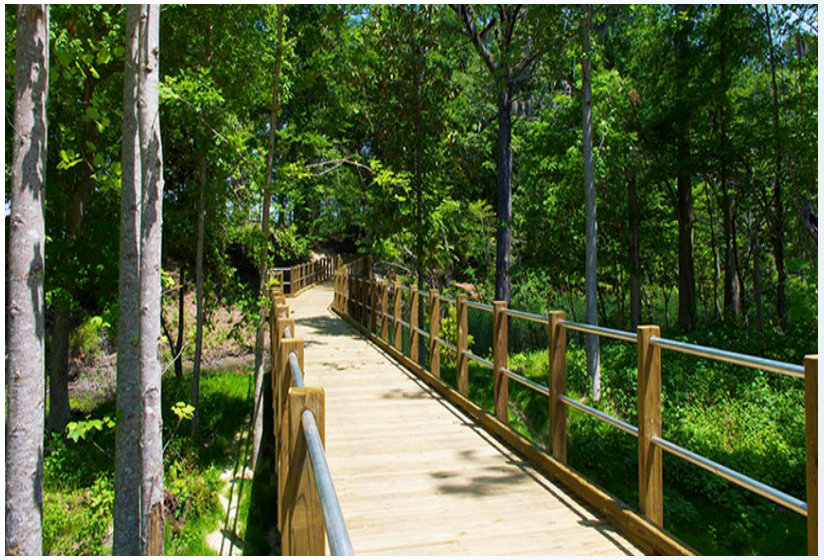
- Gained 4 lots
- Reduced stormwater pipe by 89%
- Eliminated 9,000 ft curb and gutter
- Eliminated 5 infiltration basins
- Saved $1 million in fill and grading
- Increased functional and recreation open space
- Minimized wetlands intrusion and wildlife impacts
- Created more marketable “green” real estate development



Economic Value of LID to the Developer

RIVER BLUFFS.

"We saved about $2 million in development cost on 100 lots by not installing curbing and by using natural areas as infiltration basins and not having to excavate for wet ponds. Other than that, all the other costs were about the same. I also think the trees we were able to save by not clearing for ponds and drainage was an added plus." *Burrows Smith, developer in New Hanover Co. through design of 300 acre subdivision*



Economic Value of LID to the Developer

River Bluffs markets a commitment to the Cape Fear River and LID.

They promote:

Minimal paved roads & driveways.

Preserved mature trees, natural vegetation & green spaces

No retention ponds.

Winding streets.

Energy efficient home building.

Economic Value of LID to Local Governments:

Capitol Region Watershed District Project Study Results:

$2.5 million grey (pipe) project
only benefit of conventional approach with pipes and culverts would be reduced flooding

$2.0 million LID/GI BMP project
Benefits include:
-reduced flooding with increased infiltration
-increased infiltration that recharges groundwater supply
-Increased infiltration improves surface water quality

Economic Value of LID to Local Governments:

- Protecting water quality helps protect real estate values, which protects tax revenues.
- Using LID can help reduced public expenditures on stormwater infrastructure.
- Maintaining open spaces for infiltration can also increase adjacent parcel values.
- Clean water increases property tax revenue (swimmable and fishable waters have higher value than polluted waters for lot value).
- Reduced system-wide operations and maintenance costs of pipe infrastructure.
- Reduce hazardous and costly flooding.

Economic Value of LID to the Consumer

- Proximity to open space adds to parcel value.
- Water quality improvements can increase market value of adjacent properties.
- Potentially reduced stormwater fees.
- Lots in conservation subdivisions sold in about half the time as lots in conventional subdivisions. *landchoices.org*
- Clean waters to swim and fish.

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Economic Value of LID to Environment

- Clean water quality results in waters that are swimmable and fishable
- Groundwater recharge
- Keeps natural spaces unchanged

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The Economic Value of LID

www.nccoast.org

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