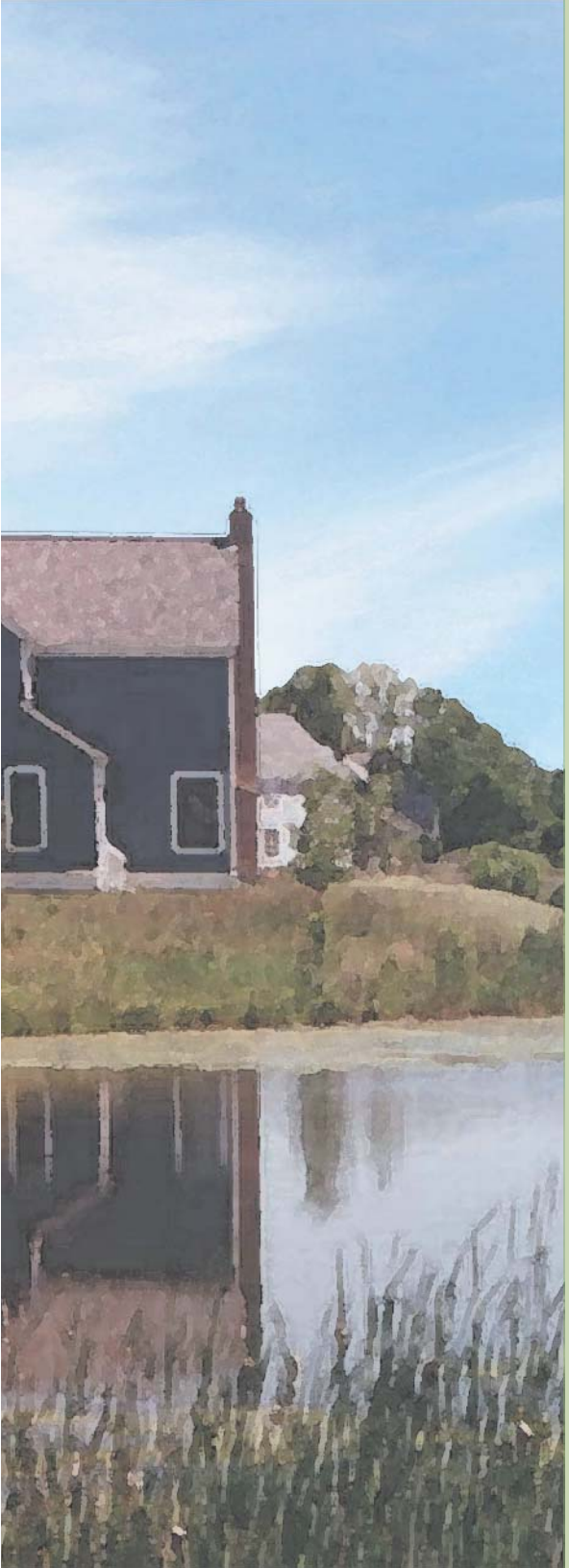

Conservation Development In Practice

The Nature Conservancy and Chicago Wilderness

"We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect."

- Aldo Leopold, Ecologist

"We have the capacity and ability to create a remarkably different economy, one that can restore ecosystems and protect the environment while bringing forth innovation, prosperity, meaningful work, and true security."

- Paul Hawken, "The Ecology of Commerce"

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1. Below: Prairie Crossing (Grayslake, Illinois)

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Cover image - Prairie Crossing, Northeastern Illinois Planning Commission

1. Prairie Crossing, Conservation Design Forum
2. Conventional development, Northeastern Illinois Planning Commission
3. Conservation development, Northeastern Illinois Planning Commission
4. Matteson Village Hall, Conservation Design Forum
5. Chicago City Hall green roof, Conservation Design Forum
6. Parking lot bioswale, Conservation Design Forum
7. Native landscaping, Conservation Design Forum
8. Permeable paving, Conservation Design Forum
9. Level spreader and Filter strip, Northeastern Illinois Planning Commission
10. Naturalized wet detention, Conservation Design Forum
11. Tellabs, Inc., Conservation Design Forum
12. Prairie Crossing, Northeastern Illinois Planning Commission
13. Mill Creek, Conservation Design Forum
14. Prairie Crossing, Conservation Design Forum
15. Mill Creek, Northeastern Illinois Planning Commission

Chicago Wilderness

Phone: (312) 580-2137
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The Nature Conservancy

Chicago Office
8 South Michigan Avenue, Suite 900
Chicago, Illinois 60603
Phone: (312) 580-2100
Fax: (312) 346-5606
http://nature.org/wherewework/northamerica/states/illinois/

Conservation Design Forum

375 West First Street
Elmhurst, Illinois 60126
Phone: (630) 559-2000
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www.cdfinc.com

Conservation Development

Conservation development is a design strategy to protect and preserve onsite and offsite natural resources from development impacts. Conservation development site plans are prepared with consideration of existing site topography, soils, vegetation, natural drainage patterns, and other sensitive or unique landscape features. Conservation development also integrates stormwater Best Management Practices (BMPs) throughout the site to protect and restore natural hydrology, prevent flooding, and protect habitat and water quality. This booklet illustrates design principles, best management practices, and site design strategies for conservation development. Within the booklet, there are also references to conventional development. Conventional development refers to practices that are commonly being used in land development and building construction throughout North America today. While most conventional development is required to manage stormwater, the practices are often "end-of-the-pipe" stormwater solutions that use elaborate storm sewer networks to quickly drain runoff, and detention basins to slow runoff back to the rate allowed by law. In contrast, conservation development relies on a more distributed stormwater management approach that utilizes the entire landscape to mimic natural hydrologic processes and manage stormwater closer to where it falls by absorbing, slowing, and filtering runoff. Conservation development utilizes stormwater as a resource, not a waste product.

Conservation Development and Sustainability

Conservation Development is one component of sustainable development. Conservation development, as outlined in this booklet, focuses on natural resource protection but should incorporate all three components of **Sustainable Development - environmental integrity**, **economic prosperity**, and **community livability**. The three components are mutually inclusive and supportive when appropriately applied to urban development. For example, real estate professionals report that residences and commercial property adjoining natural land and open space sell at a premium. In fact, many desirable communities owe their attractiveness to the quality of their natural resources – from Chicago and its proximity to Lake Michigan to the Fox River communities and their celebration of the river and its rich heritage.

Environmental integrity involves protection and improvement of the air, water, and land, upon which all living things depend for sustained health. Environmental protection that focuses on "minimizing impacts" still presumes some level of damage. Instead, environmental protection should focus on *enhancing* the environment and increasing biodiversity through land use, development, and individual decisions and practices.

Economic prosperity is enhanced through conservation development that is cost effective and reduces flooding and water quality degradation, thereby benefiting both new and existing residents. Economic prosperity leads to community well being and attracts high quality residential and commercial development, providing opportunities for all members of the community.

Community livability is enhanced by conservation development that provides access to recreational opportunities, open space, and trails and reduces the risk of flooding. Natural areas provide quiet, visual diversity and beauty as well as buffers and screening. To maximize mobility and independence for all age groups, development should be located and designed to enhance transportation options and provide easy access to employment, education, and shopping.

2. Top left: conventional residential development
3. Bottom left: conservation residential development
4. Right: Matteson Village Hall (Matteson, Illinois)

Sustainable Development Principles for Protecting Nature

The following sustainable development principles for protecting nature were created through a collaboration of local government officials, developers, engineers, planners, site designers, and conservationists (Chicago Wilderness, 2004). The effort was funded and the principles adopted by Chicago Wilderness. The principles provide a working framework upon which the conservation development practices in this booklet are based.

Principles of Sustainability

1. Promote infill development and redevelopment where transportation facilities and utilities already exist in order to minimize the development of open lands, such as natural areas and farmland. Encourage development that is compact and contiguous to existing community infrastructure.

2. Locate and plan new development in ways that protect natural resources and habitat and provide buffers between sensitive natural areas and intensive use areas.

3. Use the development process to enhance and restore streams, wetlands, and lakes, and to enhance their potential as recreational and aesthetic amenities.

4. Preserve permanent open space as an integral part of new development to both protect critical natural areas and to provide opportunities for recreation and environmental education. Design developments to create open space linkages to adjacent and regional natural areas so that nature exists not as islands but as connected habitat.

5. Recognize the value of water as a resource and manage it to protect downstream waterbodies and wetlands, prevent increased flooding, preserve groundwater resources, and maintain natural hydrology.

6. Minimize changes to natural topography, soils, and vegetation to preserve land, water, and soil relationships that are essential for sustaining plant and animal habitats. Where sites have been previously altered, attempt to restore natural conditions to the extent possible.

7. Establish procedures that assure the ongoing management of natural areas within developments as part of an overall strategy for achieving sustainability.

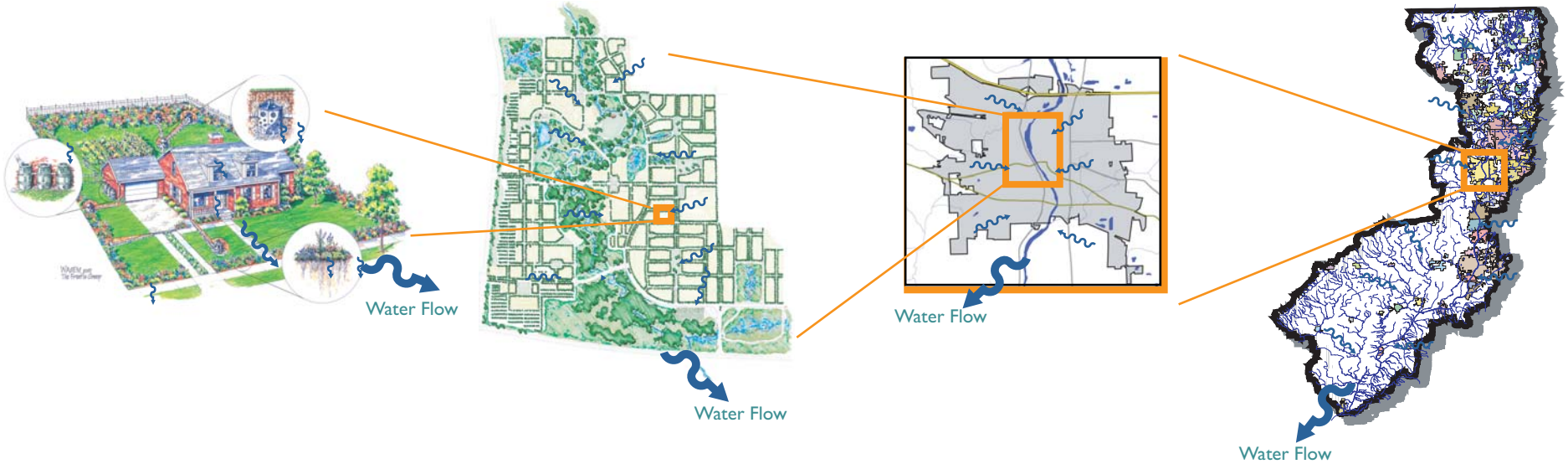
8. Design developments to achieve the broader sustainability of human and natural communities, including the social and economic dimensions of sustainability.

Download the Principles at www. chicagowilderness.org

Conservation At Every Scale

"The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation increased, and not impaired in value."

- Theodore Roosevelt



Individual Building Lot Scale

Every lot is part of a larger watershed. The degree to which water is properly managed at the lot scale is the degree to which downstream flooding, water quality, and habitat degradation can be avoided. Many of the practices described in this booklet can be applied on individual residential and commercial lots. These include green roofs, rain gardens and bioswales, native landscaping, and permeable paving. Although governed by community standards and regulations, implementation of lot-scale BMPs is generally the responsibility of property owners.

Neighborhood or Campus Scale

Greater benefits can be achieved through application of a conservation design approach at the neighborhood and campus scale. Proper planning at this scale ensures that onsite natural areas, hydrology, and water quality are protected. Clustering and other approaches protect onsite resources from disturbance. Stormwater management approaches that emulate natural infiltration, evaporation, and runoff processes will protect offsite resources from the impacts of urban runoff. The templates in this booklet illustrate implementation of BMPs at the neighborhood scale.

Municipal, Community, or County Scale

Communities are responsible for land use planning and thus have the ability to implement regional open space plans through zoning, ordinances, easements, planning assistance, and acquisition. Communities should establish stormwater and natural resource standards based on regional goals. Conversely, traditional community landscape and subdivision codes often can discourage conservation design through weed ordinances, minimum lot sizes, and lengthy PUD processes that have the effect of discouraging native landscaping, natural drainage techniques, and clustering to preserve natural areas.

Watershed Scale

Since a watershed is composed of many communities, the actions of each of the communities will affect their watershed neighbors. Analysis of water resources and establishment of goals at the watershed scale will ensure full protection of the region's lakes, streams, and wetlands. Open space plans established at the watershed scale can create ecologically functioning open space networks.

Best Management Practices For Conservation Development

There are a variety of Best Management Practices (BMPs) that can be used to protect onsite and offsite water resources. These practices range from site planning techniques that preserve onsite resources to stormwater BMPs that preserve site hydrology and maintain pre-development runoff volumes and rates and preserve water quality. This page and the next two pages outline a handful of these techniques and the subsequent templates demonstrate integration of those techniques into commercial and residential land uses of varying density. Below is a site design approach that should be applied during the site and stormwater design process. Because many of the strategies outlined in the approach are new, costs for design and approval may be higher, but generally construction costs are similar or less than for conventional techniques.

Conservation Site Design Approach

1. Protect and enhance natural features including streams, lakes, wetlands, buffers, remnant natural areas, and critical habitats.
2. Respect site topography and utilize natural drainage patterns to minimize the need for impervious drainage systems such as storm sewers.
3. Cluster built areas in a range of lot sizes and create views, privacy, and amenities for each home site.
4. Cluster built areas to protect natural areas and facilitate integration of naturalized stormwater management systems into an open space network.
5. Integrate native vegetated landscapes and stormwater management systems throughout the site to utilize their natural filtration, infiltration, transpiration, and water cleansing processes and provide habitat and aesthetic benefits.
6. Manage stormwater as close to its source as feasible, taking advantage of the natural water retention of soils and vegetation to emulate natural conditions.
7. Utilize engineered systems based on natural process as part of the stormwater management system, to improve water quality, enhance groundwater recharge, and stabilize site and regional hydrology. A number of these engineered systems are illustrated on subsequent pages.

Cluster Design is a site planning and design strategy that concentrates site development activities on portions of the site that are least sensitive to disturbance. Cluster development should be used to preserve important natural features that do not have regulatory protection while maintaining overall development density. Cluster design can also be used to create larger areas of connected open space to provide passive recreation and wildlife habitat and at the same time facilitate naturalized drainage systems.

Benefits

- Preserves significant natural features and open space.
- Facilitates integration of isolated streams, wetlands, and high quality woodlands and prairies into ecosystem-based networks of open space.
- Facilitates creation of naturalized drainage systems that can also serve as common open space.
- Improves views and site aesthetics, while providing site drainage and water quality functions.
- Protects water quality.
- Provides habitat for birds, butterflies, and other wildlife.

Cost Implications

- Reduces regulatory burden by avoiding streams, wetlands and other regulated areas.
- Reduces site grading and infrastructure costs by reducing area of development.
- Improved marketability through increased perception of open space.
- Reduces engineering costs.
- May increase development approval time.

clustering plan to avoid streams and wetlands

Best Management Practices for Conservation Development

Green roofs are vegetated roof systems designed to retain and slow rainwater runoff from the tops of buildings. In general, green roofs are planted with drought and wind tolerant vegetation.

Benefits

- Significantly reduces runoff volumes and rates (50 to 90% reduction in annual runoff).
- Can reduce detention needs.
- Reduces urban heat island effect.
- Can reduce energy requirements associated with heating and cooling.
- Creates outdoor space such as rooftop gardens.
- Prolongs the life of the roof.

Cost Implications

- Unit costs range from $10 to $20 per square foot depending on thickness.
- Reduces detention volumes and land area necessary for detention.
- Reduces heating and cooling costs.
- Rooftop gardens increase property values due to improved aesthetics and addition of outdoor living space.

5. Chicago City Hall green roof (Chicago, Illinois)

Bioswales and rain gardens are vegetated swale systems that have an infiltration trench designed to retain and store stormwater. Bioswales and rain gardens are planted with native grasses and wildflowers that enhance filtration, cooling, and cleansing of water.

Benefits

- Reduces impervious runoff volumes and rates.
- Recharges groundwater and sustains stream base flows.
- Reduces sediment and nutrient runoff, improving water quality.
- Can reduce detention needs.

Cost Implications

- Unit costs range from $3 to $10 per square foot depending on complexity of system and planting plan.
- Replaces storm sewers within parking lots.
- Reduced cost premium where parking islands are already required.
- Reduces detention volume and land area necessary for detention.

6. bioswale in a parking lot at Tellabs, Inc. (Naperville, Illinois)

Native landscaping refers to use of native plants in a range of applications from large corporate or institutional open space areas to small residential gardening projects. Native landscaping is often a component of other BMPs such as detention basins, filter strips, bioswales, and rain gardens.

Benefits

- Reduces runoff volumes.
- Increases the landscape's ability to retain nutrients.
- Increases organic content of soils
- Increases permeability of compacted soils.
- Reduces irrigation and fertilization requirements.
- Reduces the use of fossil fuels and air pollution relative to turf landscapes, which require regular mowing and maintenance.
- Improves water quality and enhances native biodiversity, providing habitat for birds, butterflies, and other wildlife.

Cost Implications

- Per acre costs vary significantly with project size.
- Reduces long term maintenance costs relative to mowing for large properties.
- Where there is no grading, local stormwater agencies may exempt native landscape areas from detention requirements.

7. native landscape at Tuthill Corporation (Burr Ridge, Illinois)

8. porous pavement parking lot at Morton Arboretum (Lisle, Illinois)

Permeable or perforated paving materials or pavers are paving systems with spaces that allow water to move through the driving surface to the stone base below. Runoff is temporarily stored in the base for infiltration into the underlying soils and/or slow release to the storm drain system. Common applications for permeable paving include parking lots and driveways.

Benefits

- Reduces runoff volumes and rates.
- Recharges groundwater to sustain stream base flows during drought periods.
- Filters sediments and associated pollutants from runoff.
- Removes hydrocarbons through microbiological activity.
- Reduces detention needs.

Cost Implications

- Unit costs vary from $5 to $10 per square foot.
- Appropriately designed permeable paving areas may need no detention.
- Permeable paver surfaces typically last twice as long as asphalt and require less rehabilitative maintenance (resurfacing, etc.).

9. level spreader and filter strip at Matteson Village Hall (Matteson, Illinois)

Filter strips are areas with native vegetative cover used to filter and absorb runoff from impervious areas.
Level spreaders are trenches laid on level contours to distribute runoff over filter strip areas.

Benefits

- Reduces runoff volumes and rates by allowing runoff to infiltrate over a large area.
- Recharges groundwater and sustains base stream flows.
- Improves water quality by filtering sediment and nutrients.
- Diffuses storm sewer and detention basin discharge to dissipate energy, reduce scour, and better mimic natural water movement patterns.

Cost Implications

- Unit costs for level spreaders range from $5 to $10 per foot.
- There is no cost for filter strips beyond normal vegetative management.

10. naturalized wet detention basin at Sears Prairie Stone (Hoffman Estates, Illinois)

Naturalized detention basins are used to store runoff temporarily and release it at a rate that is at or below what is allowed by local ordinances. Native wetland and prairie vegetation improve water quality and habitat benefits. Naturalized detention may also be used as a retrofit to improve water quality benefits of existing detention basins.

Benefits

- Reduces runoff rates.
- Recognized by virtually all stormwater agencies as approved method of controlling stormwater runoff.
- Very effective at removing sediment and associated pollutants to improve water quality.
- Provides attractive site amenity when properly designed and managed and used in conjunction with other onsite BMPs.

Cost Implications

- Generally costs less than conventional wet detention due to reduced excavation and naturalized shoreline protection.
- Enhances value of adjacent properties.

11. native landscaped water feature at Tellabs, Inc. (Naperville, Illinois)

Commercial/Industrial/Multi-family

General Character

Commercial/industrial developments include retail, light industrial, and offices in various scales from large-scale "big box" retail stores and light industrial and office park development, to smaller-scale restaurants, shops, and individual offices. The conventional and conservation versions of the two templates below have the same number of parking spaces and square feet of commercial area. The templates were developed and modeled for the Blackberry Creek Alternative Futures Analysis project.

Applied BMPs

- **Site Stormwater BMPs**
  - Bioswales with infiltration trenches
  - Green roofs
  - Naturalized detention
  - Porous pavement
  - Rain gardens
  - Vegetated swales
- **Landscaping**
  - Native landscaping within stormwater management areas

Cost Implications

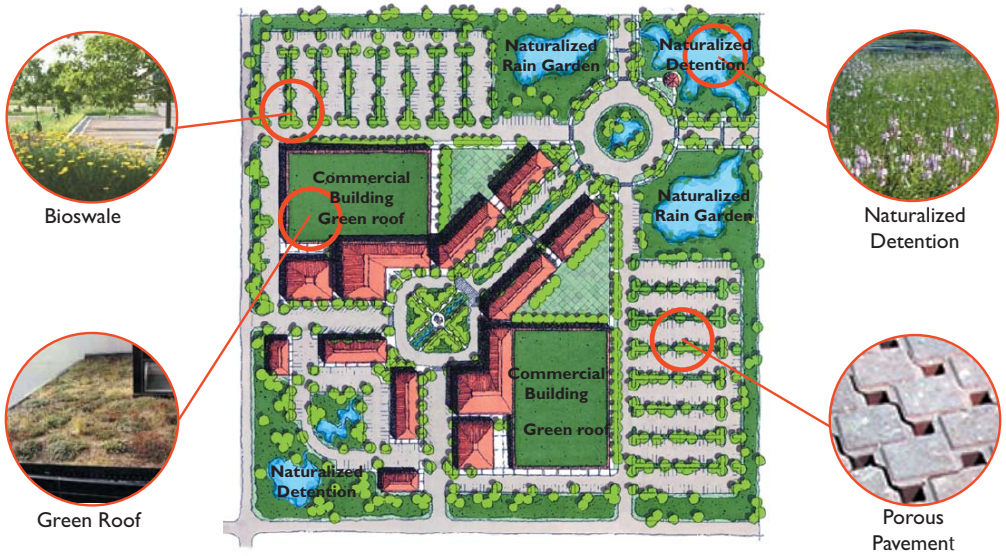
The conservation template below was estimated to have a similar combined infrastructure and landscaping cost as the conventional template (Conservation Research Institute, CRI). Although parking and commercial space were intentionally held constant, there was significant potential for additional commercial space in the conservation version while still maintaining a high level of open space. Stormwater modeling of the two templates indicated that 40% less detention was required for the conservation template.

Conventional Template

The conventional template is laid out as a typical strip mall, with two "big box" retail establishments, isolated outlet shops, parking, landscaping, and stormwater detention according to code.

Conservation Template

Like the conventional template, the conservation template has two "big box" retail stores, but in the conservation design, they have green roofs and are designed as part of a "Main Street" retail setting with second floor mixed-use areas, a plaza, and parking both on-street and in parking lots. Permeable paving systems are used in the parking lots along with stormwater infiltration bioswales as part of a naturalized and landscaped stormwater system.



12. native landscape at Prairie Crossing (Grayslake, Illinois)

Moderate-Density Residential

General Character

Moderate-density residential developments have gross densities of 2 to 3 units per acre, with lot sizes that range from 6,000 to 15,000 square feet, and municipal water and sewer service included. Typically, these developments are under municipal jurisdiction but may occur in unincorporated areas as part of planned unit developments (PUDs). The templates were developed and modeled for the Blackberry Creek Alternative Futures Analysis project.

Applied BMPs

- **Site Stormwater BMPs**
  - Street bioswales with infiltration trenches
  - Naturalized detention
  - Backyard rain gardens/ vegetated swales
- **Landscaping**
  - Native landscaping in stormwater management areas and common open space

Cost Implications

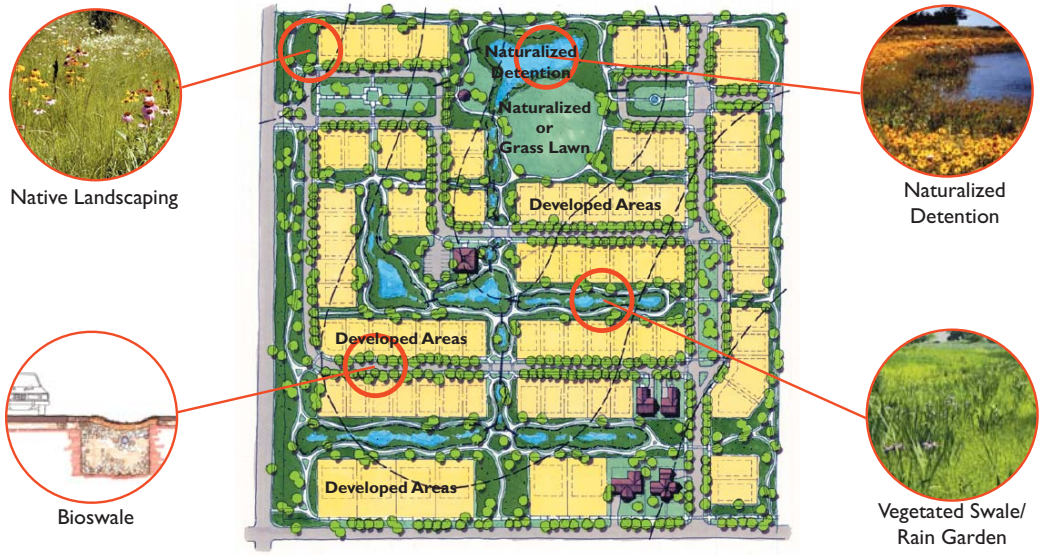
The conservation template below was estimated to cost 10% to 15% less than the conventional template (CRI). The conservation version has significant marketing advantages with each lot abutting naturalized open space and community trails. Stormwater modeling of the two templates indicated that 50% less detention was required for the conservation template.

Conventional Template

The conventional template includes wider roads, no public open space, and storm sewers that discharge into turf and/or rip-rap-lined detention basins.

Conservation Template

The conservation template includes narrower streets and an integrated, naturalized stormwater system that hosts trails and public open space and allows every residence to have views of naturalized open space. The conservation template has the same number of lots as the conventional template.



13. native residential landscape at Mill Creek (Geneva, Illinois)

Rural Residential

General Character

Rural residential developments have gross densities of 0.5 to 1 unit per acre and private well and septic systems. Typically, rural residential development is limited to unincorporated areas. More recently, however, many developments of this density have come under municipal jurisdiction, and would then often be served by municipal water and sewer. The templates were developed and modeled for the Blackberry Creek Alternative Futures Analysis project.

Applied BMPs

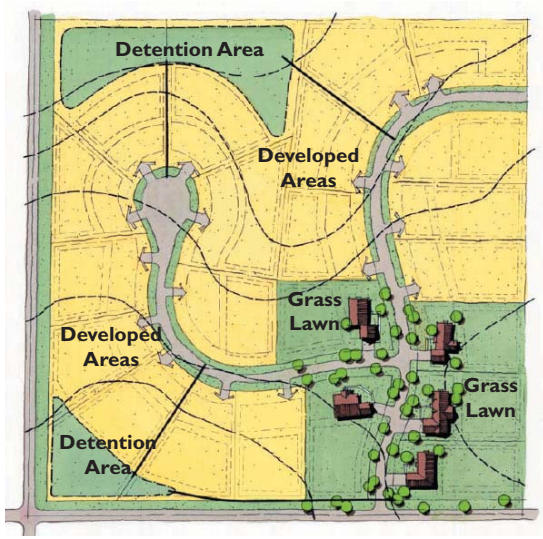
- **Site Stormwater BMPs**
  Naturalized detention
  Vegetated swales
  Rain barrels/cisterns
  Rain gardens
- **Landscaping**
  Native landscaping

Cost Implications

The conservation template below was estimated to cost 5% to 10% less than the conventional template (CRI). The conservation version includes significantly more amenities such as trails and site landscaping that can provide a distinct marketing advantage. Stormwater modeling of the two templates indicated that 70% less detention was required for the conservation template.

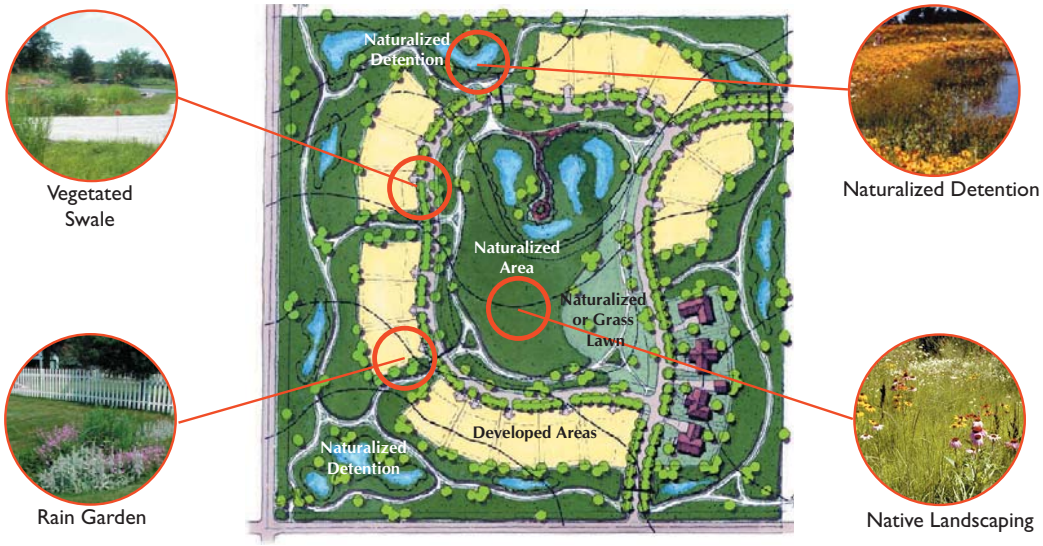
- **Conventional Template**

The conventional template includes a cul-de-sac with turf swales drained by storm sewers that discharge into detention basins.



- **Conservation Template**

The conservation template includes a narrow driving lane and a naturalized stormwater system that utilizes the landscape to filter, evapotranspire, and absorb runoff. Walking and biking trails are commonly incorporated into the plan. The conservation template has the same number of lots as the conventional template.



14. native landscape at private residence (Batavia, Illinois)

Estate Residential

General Character

Estate residential developments have lots that average approximately 5 acres in size, a gross density of approximately 0.2 units per acre, and private well and septic systems. Estate residential developments occur almost exclusively in unincorporated areas. The templates were developed and modeled for the Blackberry Creek Alternative Futures Analysis project.

Applied BMPs

- **Site Stormwater BMPs**
  Naturalized detention
  Vegetated swales
  Rain barrels/cisterns
- **Landscaping**
  Native landscaping

Cost Implications

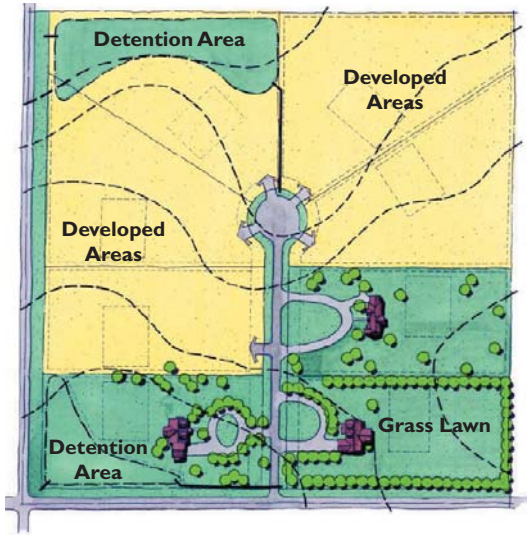
The conservation template below was estimated to cost 40% to 45% less than the conventional template (CRI). The conservation version includes significantly more amenities such as trails and site landscape restoration. Stormwater modeling of the two templates indicated that 90% less detention was required for the conservation template.

- **Conventional Template**

The conventional template has longer driveways and is primarily landscaped with lawn.

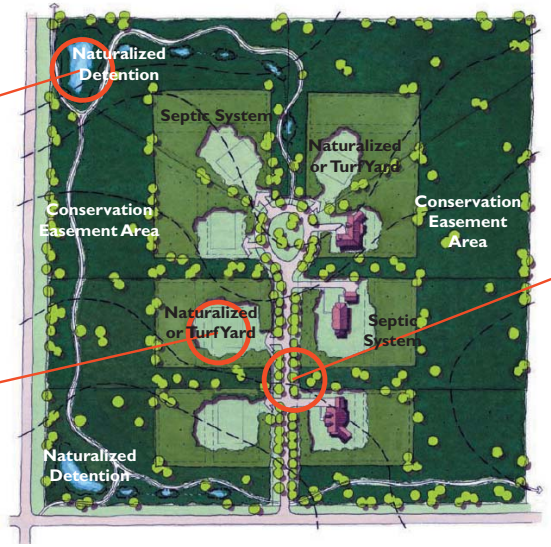
- **Conservation Template**

The conservation template has shorter driveways and uses native plantings and a conservation easement. It disturbs the minimum amount of land necessary to install the roads, houses, programmed lawns, and septic systems. The remainder is undisturbed or is restored.



Naturalized Detention

Native Landscaping



Vegetated Swales

Organizations Providing Advice and Assistance:

Campaign For Sensible Growth
25 E. Washington, Suite 1600
Chicago, Illinois 60602
phone (312) 863-6009
www.growingsensibly.org

Chicago Center For Green Technology
445 N. Sacramento Boulevard
Chicago, Illinois 60612
phone (312) 746-9642
www.cityofchicago.org/environment/greentech

The Conservation Foundation
10 S 404 Knoch Knolls Road
Naperville, IL 60565
phone (630) 428-4500
www.theconservationfoundation.org

Northeastern Illinois Planning Commission
222 South Riverside Plaza, Suite 1800
Chicago, Illinois 60606
phone (312) 454-0400
www.nipc.org

➢ 15. Right: Mill Creek (Geneva, Illinois)

Resources and Web Sites

For more information on sustainable development practices, please consult the following resources:

Center for Watershed Protection, *"Better Site Design,"* www.cwp.org/better_site design.htm.

Chicago Wilderness, *"Sustainable Development Principles for Protecting Nature in the Chicago Wilderness Region,"* 2004.

Chicago Wilderness, *"Changing Cost Perceptions: An Analysis of Conservation Development,"* Conservation Research Institute, 2004.

Congress for New Urbanism, *"Model Ordinance List,"* 2002.

Fraser Valley Real Estate Board, *"Alternative Development Standards for Sustainable Communities,"* 1998.

Greater Toronto Homebuilders' Association, *"Residential Development and Environmental Regulations,"* 1991.

Institute of Transportation Engineers, *"TND Street Guidelines,"* 1999.

Kane County Stormwater Management Committee, "*Blackberry Creek Alternative Futures Analysis* (prepared by CDF for Kane County, Illinois DNR, & U.S. EPA)," www.co.kane.il.us/kcstorm/index.htm.

Low Impact Development (LID) Center, www.lowimpactdevelopment.org.

Northeastern Illinois Planning Commission (NIPC), *"Building Sustainable Communities"* fact sheets, 2004. www.nipc.org.

Northeastern Illinois Planning Commission (NIPC), *"Conservation Design Resource Manual,"* 2003. www.nipc.org.

Northeastern Illinois Planning Commission (NIPC), *"Natural Landscaping: A Source Book for Public Officials,"* 1996.

Northeastern Illinois Planning Commission (NIPC), *"Protecting Nature in Your Community,"* 2000.

Northeastern Illinois Planning Commission (NIPC), *"Reducing the Impacts of Urban Runoff: The Advantages of Alternative Site Design Approaches,"* 1997.

Northern Illinois University: Center for Governmental Studies, *"Blackberry Creek Alternatives Futures Fiscal Study,"* 2004.

The Western Reserve Resource Conservation and Development Council, *"The Countryside Program: Conservation Design Manual,"* 1998.

Works by Randall Arendt, www.greenprospects.com.

U.S. Environmental Protection Agency, Green Landscaping with Native Plants www.epa.gov/glnpo/greenacres/.

Conservation Development Checklist

Does your watershed community support conservation development?

cut here

Watershed/Regional

1. Has a plan been prepared for your watershed that comprehensively addresses flooding, water quality, habitat protection, and open space? Does the plan recommend watershed-wide standards for stormwater and floodplain management and erosion control? ☐ Yes ☐ No

2. Have regional open space plans been prepared to protect natural (e.g., riparian buffers, riparian ecosystem, and native prairie restoration and management plans), cultural, and historical resources (e.g., agricultural lands preservation, historical heritage preservation)? ☐ Yes ☐ No

Municipal

1. Does your community have a comprehensive land use plan that incorporates regional and local open space to protect natural, cultural, and historical resources? ☐ Yes ☐ No

2. Does your community have zoning codes that allow mixed-use or environmentally sensitive zoning or planning? ☐ Yes ☐ No

3. Does your community have codes and ordinances that regulate both stormwater volumes and rates as well as water quality? Does the ordinance encourage or require use of stormwater strategies that preserve natural hydrology? ☐ Yes ☐ No

4. Does your community have codes and ordinances that provide credits to encourage Conservation Design? ☐ Yes ☐ No

5. Does your community provide technical and financial assistance for lot-scale water management such as rain barrels, rain gardens, and disconnection of downspouts and sump pumps? ☐ Yes ☐ No

6. Does your community have codes and ordinances that encourage shared parking? ☐ Yes ☐ No

7. Does your community have codes and ordinances that allow and encourage native plantings or restrict the use of lawns? ☐ Yes ☐ No

Neighborhood Associations

1. Do your homeowner or neighborhood association rules allow for well designed and maintained natural landscapes? ☐ Yes ☐ No

2. Does your Association have funds set aside for management of onsite natural areas such as lakes, stream, wetlands, woodlands, and prairies? ☐ Yes ☐ No

3. Does your Association have funds set aside for management of stormwater features such as detention and naturalized drainage areas? ☐ Yes ☐ No

4. Does your Association have community gardens to provide locally grown produce? ☐ Yes ☐ No

Private Landowners

1. Do you collect rainwater for reuse on your property as landscape irrigation water? ☐ Yes ☐ No

2. Do you have a rain garden on your property to capture, infiltrate, evaporate, and cleanse excess rainwater? ☐ Yes ☐ No

3. Do you compost leaves, lawn clippings, and other yard waste to use as mulch and soil amendment in landscape beds? ☐ Yes ☐ No

4. Do you have naturalized landscape areas on your property to minimize mowing, irrigation, and use of fertilizers and pesticides? ☐ Yes ☐ No

The Nature Conservancy

SAVING THE LAST GREAT PLACES ON EARTH