BEST PRACTICE AREA 11: HEALTHY RURAL AND URBAN LANDSCAPES

Vision

The Joint Planning District supports healthy, abundant, and diverse landscapes that enrich communities and provide environmental and economic benefits to the region.

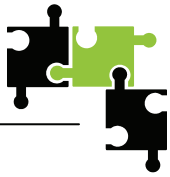
Background

The landscape of the St. Cloud Region has changed dramatically since European settlement. The Region sits in the zone of transition from prairie to the west, and hardwood forests to the east and soils, topography, hydrology, and the influence of fire played a large role in determining the pre-settlement ecosystems. These conditions created a diverse mosaic of ecosystems across the region including prairie, oak savannah and oak openings, and forests along waterways and in protected areas.

However, as European settlement began to dominate the region, this rich mosaic turned almost exclusively to agriculture. Agricultural lands have evolved over time into single species monocultures of mainly corn and/or soybeans. More recently, rich agricultural lands are being converted to residential, commercial, and industrial development as the Region's cities expand outward. This new landscape is generally made up of impervious surfaces, turf grass, and selected plantings of deciduous overstory, coniferous evergreens, and ornamental trees. Additionally, new development often impedes on and destroys some of the remaining healthy landscapes and ecosystems that had not yet been plowed under.

Both the agricultural and developed landscapes currently require a significant amount of inputs to make their landscapes productive and appear healthy. These inputs consist of massive amounts of fertilizers, herbicides, and pesticides, as well as the embodied energy to create, transport, and apply these inputs on the landscape. Additionally, the rich soils of the prairie and forest landscapes have been mined of their nutrients and are often compacted to the point that they function as an impervious surface. The continuing cycle of added inputs and poor soil structure leads to large amounts of contaminated runoff reaching surface waters. Additionally, the poor root structure of turfgrass, and the often bare soils of agricultural areas often speeds up erosion and runoff and provide minimal habitat opportunities.

The goal of this BPA is to protect the remaining healthy landscapes and begin to improve the overall landscape by creating opportunities to reintroduce beneficial elements of the pre-settlement landscape that will provide environmental services to the community. Creating



Healthy Rural and Urban Landscapes will provide a number of benefits to the Region by 1) reducing the need for toxic inputs into the landscape (e.g. fertilizers, pesticides, and the use of gasoline engines) and 2) creating landscapes that provide multiple functions to their communities. A few of the sustainable benefits that healthy landscapes provide include improving air quality, treating stormwater, mitigating urban heat island effects, protecting biodiversity, absorbing carbon dioxide, and adding an aesthetic that celebrates the uniqueness of the St. Cloud Region.

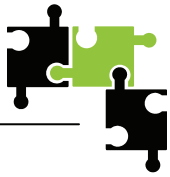
The initial focus of this BPA was limited to Urban Forests but was expanded to include rural and developing areas because of the historically strong agricultural community and the development pressures throughout the region. As development occurs, there are many impacts to landscapes as they change between land uses. Protecting and creating healthy landscapes is an important part of sustainability throughout the region.

The areas of greatest concern are protecting the remaining high quality landscapes and increasing the health of existing landscapes that currently deliver few environmental services to the community. This BPA overlaps with several others, especially BPA's 13 and 14, and can be combined to produce dramatic sustainability results. An example of a simple, high quality stream buffer in an agricultural area has the potential to protect the Mississippi and it's tributaries, provide habitat corridors through agricultural areas, and increase the sustainability of that farm field. High quality urban trees have the ability to absorb stormwater, improve air quality, capture greenhouse gases, lower cooling costs, and prolong the life of pavements.

A valuable resource for creating healthy landscapes, whether retrofitting or new development, is the Sustainable Sites Initiative (SSI) – "an interdisciplinary effort by the American Society of Landscape Architects, the Lady Bird Johnson Wildflower center at the University of Texas at Austin and the United States Botanic Garden to create voluntary national guidelines and performance benchmarks for sustainable land design, construction and maintenance practices" (from http://www.sustainablesites.org/). The guidelines provide a wealth of information on the planning, design, materials selection, construction, and maintenance of sustainable sites and landscapes. SSI is anticipated to be incorporated into future versions of LEED.

Goals

A. Gather data to support urban forestry and natural resources protection and to quantify economic and other benefits to communities (ex. Create and maintain tree inventories for all municipalities, complete Natural Resource Inventories NRI).



B. Protect Environmentally Sensitive Areas (ESA), high quality existing trees and preserved forest patches threatened by development.

C. Increase the percent of tree cover and the diversity of native tree species in urban and suburban areas and in agricultural hedgerows and existing woodlots.

D. Increase the amount and quality of native prairie patches throughout the region including aquatic buffers, transportation corridors, parks/open spaces, and agricultural conservation areas.

E. Increase the number and type of gardens and natural landscaping in urban and suburban areas (e.g. backyard and community/neighborhood food gardens, permaculture gardens, raingardens, native landscaping, woodland gardens, etc.)

F. Reduce and control the establishment and spread of invasive species in all landscapes.

G. Reduce the amount of high input landscapes that depend on pesticides, herbicides, and regular irrigation, like turf grass, by promoting the use of native vegetation.

H. Enhance open spaces to function as ecological systems providing benefits to the region's biota as well as humans.

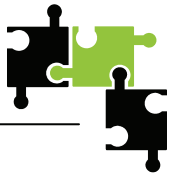
I. Protect agrarian nature of rural areas including viewsheds.

Initiatives and Action Steps

The following three initiatives for action were identified through public input and reflect local stakeholder views of which goals would have the most profound effect on moving the Joint Planning District toward sustainability. These initiatives were identified as important to protect and make the St. Cloud Region's landscapes healthier. Public input participants noted that much work has already been done throughout the region to identify and protect Environmentally Sensitive Areas (ESA's) with the use of Natural Resource Inventories and County Biological Surveys. The group agreed that further improvements could be made in protecting these resources; however, they felt that addressing more highly degraded landscapes would greatly improve the overall health of the Region's landscapes.

Several members of the group also felt that timing was important, and the following initiatives could take advantage of the public's perceived interest, level of education, and desire to address landscape issues in the community. Generally, people are more conscious of raingardens, xeriscaping, and/ or native landscaping than they have been at any other time.

1. **Healthy Parks Build Healthy Communities:** Reduce and control the establishment and spread of invasive species in all landscapes and enhance open spaces to function as ecological systems, providing benefits to the region's biota as well as humans. Resources such as the Sustainable Sites Initiative contain guidelines, benchmarks, and



resources for creating sustainable landscapes - *The Sustainable Sites Initiative: Guidelines and Performance Benchmarks 2009,* from http://www.sustainablesites.org/.

a. Integrate native landscaping into existing publicly owned parcels: a) create a policy that new public projects and replacement landscaping must have 70% of plants be native or non-invasive drought tolerant species b) create new landscaping areas within publicly owned areas that contain a minimum of 70% native plant or non-invasive drought tolerant species.

b. Invasives: Incorporate an active multi-year invasive species management plan with an integrated pest management strategy as defined in Prerequisite 4.1 of *The Sustainable Sites Initiative: Guidelines and Performance Benchmarks 2009,* from http://www.sustainablesites.org/. This approach focuses on combining biological, cultural, physical and chemical tools in a manner that minimizes risks. Require all new developments preserving or creating natural resource based open spaces, as a part of their development, to develop and implement an active multi-year invasive species management plan.

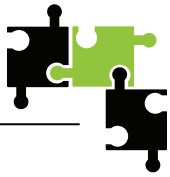
    i. Example- buckthorn control strategies:

        1. Organize regular volunteer buckthorn removal events.
        2. Plant more native fruit producing trees and shrubs to provide alternate bird food to invasive buckthorn berries.

c. Planting: Discourage or ban the sale and planting of horticulturally popular, invasive species such as Norway and amur maples, black locust, Russian olive, Siberian elm and other shrubs and perennials from the MnDNR Invasive Species Lists.

    i. Use only plants with a minimum nursery standard of ANSI Z60.1-2004 American Standard of Nursery Stock. Use only plants that are nursery grown, legally harvested, or legally salvaged for reuse.

d. Soils: Enforce existing MS4 requirements for erosion and sedimentation control. Eliminate or reduce the use of heavy machinery that compacts soil, most notably under existing trees. Encourage the use of BMPs that loosen the soil and incorporate organic matter into the soil prior to planting, or aerate soils in existing landscapes that show signs of compaction. Soil improvement BMPs can be incentivized within stormwater utilities and appropriate Low Impact Development Ordinances (see BPA 13).



2. **Just Say No To Drugs for the Landscape:** Reduce the amount of high input landscapes that depend on pesticides, herbicides, and regular irrigation, like turf grass, by increasing the number and type of gardens and natural landscaping in urban and suburban areas (e.g. backyard and community/ neighborhood food gardens, permaculture gardens, raingardens, native landscaping, woodland gardens, etc.)

    a. Ordinances: Change local zoning ordinances to allow native landscaping and the use of native grasses across all land uses. Many current regulations require mowing before grasses reach a certain height or go to seed – this prevents native plantings.

        i. Revise any ordinance that would disallow the use of natives or the installation of small scale stormwater management facilities. Model ordinances are available as tools to define native plants as separate from weeds and to separate native landscaping from one that is overgrown in ways that adversely affect human health and safety. Example model municipal ordinances include the following:

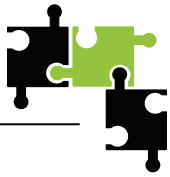
            1. Wild Ones – Model Municipal Ordinance, from http://www.for-wild.org/weedlaws/model_ord.html
            2. CR Planning – Ross, Brian Community Resources Planning, Inc., "Model Ordinances for Sustainable Development – Landscaping and Maintenance of Vegetation", from http://www.crplanning.com/pdfs/susdo6_09/landscaping.pdf

    b. Education: Create an educational demonstration site(s) for different types of gardens to educate homeowners, business owners, and the general public. Continue constructing in public places or an "adopt a street or block" strategy that could retrofit public streets with raingardens. Projects could occur as streets are being reconstructed or repaired. Universities in the region are a potential partner for assistance including: design, student labor, funding, education, etc.

    c. Create a "Green Team" of educated volunteers to help implement and maintain one to three high profile healthy landscape projects that can be used as an educational tool to teach the rest of the community.

    d. Incentives: Facilitate existing SWCD, Watershed Districts, and Counties' cost share and education programs and consider supplementing. Provide incentives through stormwater utilities and regulations to reduce the amount of turf and impervious surfaces. Consider a tiered pricing structure for water use to encourage reductions in irrigation.

    e. Resources: Create a single resource that acts as a clearinghouse of information, directing people to local sources of compost, mulch, and other landscape materials, as well as sources of existing cost share and grant funding from SWCDs, Watershed Districts, and other agencies. Provide links to education for homeowners,



contractors, and designers. This resource should be web based with critical links to other information. Signage at demonstration sites as well as links from community newsletters could all refer back to this information clearinghouse.

3. **More Trees for Healthy Streets:** Increase the percent of tree cover and the diversity of native tree species in urban and suburban areas, specifically linear roadway corridors, and in agricultural hedgerows and existing woodlots.

   a. Tree Planting - Quantity: Begin an aggressive tree planting program on public rights-of-way or adjacent private property planting easements and greenways with goal of increasing aerial tree cover 30% within 10 years. Increase the proportion of vigorous native or non-invasive species where appropriate. Increase the proportion of overstory trees to ornamental trees and balance the diversity of tree species so that no one tree is dominant.

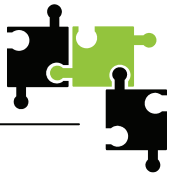
   b. Tree Planting – Quality: Create design standards and planting number minimums for each class of street, as well as communities in commercial areas, residential areas, natural areas, and agricultural areas. Planting goals should be based on species mix and percent canopy cover. Coordinate with utilities mapping and design to minimize conflicts. Create tree planting standards that include minimum soil volumes per tree, and standard details showing tree pit dimensions, planting techniques, cover type and subgrade drainage. See BPA 11 Initiative 1c for minimum quality of plant material.

   c. Tree Planting – Maintenance: Reject low quality, "park grade", and trees with girdled roots. Choose trees with lower maintenance needs, such as choosing common varieties instead of specialty cultivars when appropriate. Conduct formative pruning after tree establishment to reduce pruning needs when trees are mature. Use locally grown materials when possible. Create design standards that include minimum distance from existing and proposed utilities to minimize conflicts. See BPA 11 Initiative 1c for minimum quality of plant material.

   d. Develop a significant tree protection and replacement ordinance for all communities that protect significant trees and requires significant replacement ratios. Realistically assess proposed tree impacts on site development plans submitted for review and provide stronger follow-up during construction phases to ensure existing and planted tree survival.

   e. Incentivize tree planting - develop additional ordinances to protect and plant trees – e.g.- giving stormwater credit for trees on a site (see the Watershed Forestry Resource Guide for links to municipalities giving stormwater credit for trees http://www.forestsforwatersheds.org/storage/stormwater%20credits.pdf).

General Actions



The following general actions have been identified as measures that will allow the Joint Planning District to move toward the goals for this Best Practice Area that were not selected as "initiatives" above. These actions are based on the input of stakeholders throughout the planning process.

I. Gather data to support urban forestry and natural resources protection and to quantify economic and other benefits to communities

   a. (ex. Create and maintain tree inventories for all municipalities, complete Natural Resource Inventories NRI).Contact agencies (DNR, County parks, Extension Service, others) to identify and compile list of existing inventories of rare/critical/vulnerable natural resource areas.

   b. Create a web based interactive mapping tool to keep information current. A tool like GEOMOOSE allows queries, uploading, text, and maps that could be accessed by a broad range of users.

II. Protect Environmentally Sensitive Areas (ESA), high quality existing trees and preserved forest patches threatened by development.

   a. Create a Tree Preservation Ordinance – penalty for removing significant trees and woodlands.

   b. Public purchase and enhancement of parcels as they're available – continue throughout region, not just St. Cloud.

   c. Use soil surveys and natural resources to frame development.

   d. Promote Conservation Design Developments and Low Impact Development – provide density incentives for protecting Natural Resources areas.

III. Increase the amount and quality of native prairie patches throughout the region including aquatic buffers, transportation corridors, parks/open spaces, and agricultural conservation areas.

   a. Agriculture – farm visit demonstration site for other farmers and the public – tours of sustainable farm techniques as well as buffers, composting, etc.

   b. Provide training for contractors, installers, designers, maintenance construction practices – Part of a Job Training program.

   c. Build/ expand upon current County, State, and National conservation programs such as Conservation Reserve Program, buffer and shoreline cost-shares.

IV. Protect agrarian nature of rural areas including viewsheds.

   a. Conservation design ordinances that protect natural resources and Prime Ag. Land – consider density bonuses for protection.

   b. Create other ordinances and easements to preserve important viewsheds – Conservation and Scenic Easements.