

CHAPTER 9: NATURAL RESOURCES

Introduction

The region's natural resources are a complex system of individual components and physical characteristics that serve specific ecosystem functions and fulfill part of the region's economic and social needs. The wealth and variety of resources available within the region not only provided for its initial settlement and development, but now, hundreds of years later, still furnish its residents with the basic needs of life: food, water, power, and raw materials for human consumption. Most natural resources can be categorized as being either renewable or exhaustible and must be managed accordingly. Natural resources often act as both a physical constraint to development, as well as a commodity that enhances rural and urban environments by providing recreational, social, and economic opportunities. Individually and collectively, these resources also contribute to the region's overall 'sense of place' and 'quality of life' that is beloved by most of its residents.

Smart Growth statutes [66.0295(2)(e)] define the Natural Resources element as being comprised of the 17 sub-elements, of which 15 are addressed in the context of the regional plan. It should be noted that although they are technically part of this element, 'productive agricultural areas' and 'historical and cultural resources' are addressed separately in Chapters 7 and 9, respectively.

1. Groundwater
2. Forests
3. Environmentally sensitive areas
4. Threatened and endangered species
5. Stream corridors
6. Surface waters
7. Floodplains
8. Wetlands
9. Wildlife habitat
10. Metallic and nonmetallic mineral resources (note – no metallic resources in region)
11. Parks (regional)
12. Open spaces
13. Community (regional) design
14. Recreational (regional) resources
15. Other natural resources

Cooperation

A majority of the identified issues concerning natural resources are regional in nature, and as such; require a comprehensive view from a variety of governmental and citizen levels. Based on the issues identified in *Milestone Report #1* and the fifteen natural resource sub-elements, five individual Technical Advisory Committees (TACs) were formed to further discuss regional concerns and further develop the regional plan's natural resources element. Each TAC was comprised of local, county and state agency staff and elected officials, as well as more localized and state-wide non-profit organization representatives and general citizens. A complete listing of entity representation and participation is contained on the East Central website (www.eastcentralrpc.org). The diverse representation and expertise present on the TACs allowed for variety of perspectives to be considered when discussing issues associated with natural resources.

It should also be noted that many natural resource issues are related to a combination of one or more of the fifteen previously mentioned statutory sub-elements. In many cases, these sub-elements relationships overlap and need to be addressed in more than one context. These

Table NR-1: Natural Resources Element Technical Advisory Committees

Natural Resources Sub-Element	Technical Advisory Committee (TAC)				
	Geologic Resources TAC	Groundwater & Water Supply TAC	Watershed Planning & Wastewater TAC	Ecological Resources TAC	Open Space, Recreation and Regional Character TAC
GROUNDWATER	X	X	X	X	N/A
FORESTS	N/A	N/A	X	X	X
ENVIRONMENTALLY SENSITIVE AREAS	N/A	X	X	X	X
THREATENED/ENDANGERED SPECIES	X	N/A	X	X	N/A
STREAM CORRIDORS	N/A	N/A	X	X	X
SURFACE WATERS	N/A	X	X	X	X
FLOODPLAINS	N/A	N/A	X	X	X
WETLANDS	N/A	X	X	X	X
WILDLIFE HABITAT	X	X	X	X	X
NON-METALLIC MINERALS	X	X	X	N/A	N/A
PARKS (Regional)	N/A	N/A	X	N/A	X
OPEN SPACES (Regional)	X	X	X	N/A	X
COMMUNITY (Regional) DESIGN	X	X	X	N/A	X
RECREATIONAL RESOURCES (Regional)	X	N/A	X	N/A	X
OTHER NATURAL RESOURCES (Regional)	X	X	X	X	X

linkages were considered in the creation of the five TACs. Table NR-1 lists the five TACs which were created and their relationship and responsibility to specific sub-elements.

Statements Interaction with Other Planning Elements

The generalized subject of Natural Resources, from a land use planning perspective, relates to all eight remaining 'smart growth' plan elements. As illustrated in Table NR-2, many natural resource relationships exist between the individual sub-elements and the major plan elements, including the two items which were separated from the natural resources element - agriculture and cultural/historic resources. Most of these relationships are based on their geographic proximity to development or some aspect of the resources function.

Vision Statement for Natural Resources

In preparation for forming a vision statement, the individual Technical Advisory Committees were asked to consider three questions: "What would you like to see preserved in the region?", "What would you like to see changed in the region?" and "What would you like to see created in the region?". The committee's responses have been summarized into vision and goal statements for each sub-element of the Natural Resources Element and are listed at the end of this section.

Natural Resources Sub-Element	Smart Growth Planning Elements									
	Issues & Opportunities	Agriculture*	Cultural Resources*	Economic Development	Housing	Transportation	Public & Community Facilities	Land Use	Intergovt. Cooperation	Plan Impl.
GROUNDWATER	ASSESS DEMANDS, CAPACITIES, VALUES, VISIONS AND EXISTING PROGRAMS	Irrigation / contamination / rural development	N/A	Water quality / quantity / development of recharge areas	Drinking water quantity / quality / development of recharge areas	Development of recharge areas	Public and private drinking water quality / quantity / wastewater treatment	Avoid recharge areas / limit withdrawals / avoid & reduce contamination	DEVELOPMENT OF CONSISTENT/COOPERATIVE PLANS, AGREEMENTS, TASKS, POLICIES & PROGRAMS	DEVELOPMENT OF TASKS, POLICIES & PROGRAMS
FORESTS		Windbreaks	Lumber history	Lumber industry	Forest fragmentation	Forest fragmentation	Encroachment on / development of	Preserve / create corridors		
ENVIRONMENTALLY SENSITIVE AREAS		Non-point source pollution / water quality	Archeological / historical sites	Quality of life / tourism	Water quality / habitat impacts	Encroachment on / development of	Stormwater management	Preserve / create corridors		

TABLE NR-2: Relationship of Natural Resource Sub-elements to Other Plan Elements

THREATENED & ENDANGERED SPECIES	Habitat impacts	N/A	Quality of life / tourism	Water quality / habitat impacts	Encroachment on / development of	Encroachment on / development of	Preserve habitats
STREAM CORRIDORS	Non-point source pollution / water quality	Archeological / historical sites	Quality of life / tourism	Water quality / habitat impacts	Encroachment on / development of	Stormwater management	Preserve / create buffers and corridors
SURFACE WATERS	Non-point source pollution / water quality	Lock and dam systems / mills	Water quality / quality of life	Non-point source pollution / water quality / water quantity	Water quality / quantity	Stormwater management / recreation	Point & non-point source pollution / water quality / recreation / aesthetics
FLOODPLAINS	Water quantity / flooding	Archeological / historical sites	Quality of life / tourism	Water quality / habitat impacts	Encroachment on / development of	Stormwater management	Water quantity / flooding
WETLANDS	Water quantity / quality / flooding / habitat / restoration	Archeological / historical sites	Quality of life / tourism	Water quality / habitat impacts	Encroachment on / development of	Stormwater management	Water quality / flooding
WILDLIFE HABITAT	Idle acreage	Hunting history	Quality of life / hunting / tourism	Encroachment on / development of	Encroachment on / development of	Encroachment on / development of	Preserve / hunting
NON-METALLIC MINERALS	Preserve deposits / site reclamation	Historical / educational values	Necessity for development / industry sector	Encroachment on / development of	Future material needs	Encroachment on / development of / future needs	Preserve access / expansion / reduce conflict
PARKS (Regional)	N/A	Archeological / historical sites	Quality of life / tourism	Recreation sites / needs	Encroachment on / development of	Supplement local recreation	Identify areas / create networks
OPEN SPACES (Regional)	Aesthetic value / rural character	Archeological / historical sites	Quality of life / tourism	Encroachment on / development of	Encroachment on / development of	Encroachment on / development of	Preserve agriculture / development patterns
COMMUNITY (Regional) DESIGN	Aesthetic value / rural character	Archeological / historical sites	Quality of life / tourism	Housing style / lot size	Aesthetics / quality of life	Aesthetics / quality of life	Identify / create greenbelts / design guidelines
RECREATIONAL RESOURCES (Regional)	Snowmobiling / hunting / hiking	Tourism	Quality of life / tourism	Recreation sites / needs	Encroachment on / development of	Supplement local recreation	Preserve existing / create buffers / build networks
NATURAL RESOURCES (Regional)	N/A	Archeologic and historic sites	Quality of life / tourism	Encroachment on / development of	Encroachment on / development of	Encroachment on / development of	Identify / preserve / create buffers

* This element is actually a sub-element of the Natural Resources element, but is addressed in a separate chapter

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Committee members generally envisioned a future where the region's natural resources are placed high on the list of individual and community values. They had recognized that these resources are an integral part of the economy and quality of life and that much of the variation in character and identity of the region is due to the natural environment. Major river and lake systems, large blocks of natural areas, woodlands and wetlands, and even the smaller isolated or unique features were all identified as being part of a well functioning ecosystem that, if preserved and managed correctly, can provide the region with benefits associated with their inherent 'natural capital'. The resources themselves would provide both environmental services and economic value in the form of tourism and quality of life.

It was also recognized that the region's resources are used on a daily basis to support the actual development of the region. The region's mineral, wood, and water resources are all prerequisites to development and are a necessary commodity for urbanizing environments. It is also an accepted fact that natural resources are often considered as a major factor in locating development in the first place. Rural development occurs largely because of the individual's desire to have open space and a natural environment surrounding them, but usually at a cost to the community overall. The TAC recognized that these demands need to be balanced with the ecological needs of the region and that a move towards sustainability is warranted.

The vision expects that natural resources are meaningfully integrated into regional, county, and local level plans as a foundational element from which to build the rest of the plan upon. The TAC's acknowledge that each resource is not only an independent system, but is also functional part of a larger ecosystem. Each resource needs to be planned for in a manner which is best suited to its particular values and functions, as well as for its role and value within region overall. Identifying and acknowledging these relationships, along with the impacts of development, will lead to more sustainability within the region. Most importantly, the envisioned future relies on coordinated regional planning efforts which go beyond political boundaries and more closely match the natural boundaries of the environment. New tools and techniques for implementing the vision, such as watershed management and green infrastructure, will ensure that the region retains and improves its ecological 'sense of place' and moves towards sustainability.

Lastly, the vision assumes that state agency and local government entities would be responsible for more efficient and coordinated decision-making, but that the general public plays a large role in the management and stewardship of our region's resources. These concepts and ideas are summarized in the following Natural Resources Vision Statement:

"In 2030, the importance of natural resources, including their link to the regional economy, quality of life, and cost effective service provision is recognized. Natural resource planning is sustainable, consistent and coordinated in order to protect and build a strong sense of ecological place. The Winnebago Pool Lakes and the Fox/Wolf River systems are recognized as the backbone of the region's ecological resources. Geologic resources that are significant from an aesthetic, scientific, cultural, historic, educational, or commercial extraction purpose, have been identified, inventoried, preserved and protected to meet the development and societal needs of the region. The region has proactively addressed public access, recreation, open space, and trail facilities in order to meet the needs of its citizens; enhance the quality of life and environment; realize tax savings and other economic benefits; and to maintain and improve the region's tourism economy. The region is comprised of well-defined urban and rural spaces

which improve the individual's perception of 'sense of place', while communities within the region have maintained their individual character and identity. Within the region, surface water resources are planned for in a watershed-based manner that embraces and encourages the use of 'green infrastructure' concepts. The proactive protection of natural features not only contributes to water quality, but also to the long term sustainability and economic benefit of the region".

Issue and Opportunities

TAC members generated numerous statements regarding individual natural resource issues and opportunities. Wherever possible, similar statements were combined into a single idea. The TACs also discussed current natural resource related activities and regulatory topics in an effort to identify and develop core goals to address each regional issue. The identified natural resource issues fell into six broad categories which relate to some aspect of the fifteen statutorily required sub-elements:

- 1) Non-metallic mining / unique geologic features
- 2) Groundwater management and protection
- 3) Surface water quality / watershed based planning
- 4) Wildlife habitat / fragmentation
- 5) Regional open space and recreation
- 6) Regional aesthetics and character

A review of these major issue areas, as compared to the 2002 Focus Group results and the TAC visioning exercise results, show that little, if any of the identified issues will not be addressed under these headings. Issues and opportunities originally identified will move forward through the process and will be discussed in more detail as plan goals and policies are developed. The only exception to this is with regard to the topic of air quality. This environmental aspect is not going to move forward through the natural resources element for several reasons: 1) it is not required to under current smart growth statutes, and 2) it is more directly related to actual land use and transportation functions. Air quality issues will likely be addressed at some level within these two plan elements.

A series of fact sheets which summarize each issue more comprehensively are presented in the next section of the document and are titled as follows:

- Geological Resources & Non-Metallic Mining
- Do You Know What You're Drinking?
- Water Quality, Stormwater & Watershed Management
- Wildlife Habitat, Forests, and Ecological Resources
- Regional Open Space & Recreation
- Regional Character & Aesthetics

GEOLOGICAL RESOURCES & NON-METALLIC MINING

FACT SHEET: NR1

The East Central Wisconsin Regional Comprehensive Plan 2030

Key Facts

During the Pleistocene period, between 15,000 and 25,000 years ago, several separate glacial advances and retreats took place over northeastern and central Wisconsin. These glaciers deposited large amounts of unsorted tills and stratified gravel, sand and clay materials throughout the region. Lying below these glacial sediments is a series of much older bedrock layers ranging from highly fractured limestones and sandstones, to shales and granite.

The bedrock geology of the region provides high quality materials - stone and aggregates - which are used in road construction, housing and commercial developments, as well as agricultural products. Approximately 400 active and inactive stone quarries, sand and gravel pits, and topsoil/clay borrow areas exist within the region and are important sources of the raw materials necessary for its continued development. These sites are typically located in close proximity to the major urban centers of the region due to the high transportation costs.

As a result of encroaching urban and rural development, it has become increasingly difficult for existing mining operations to expand, or to site new operations, due to real or perceived conflicts such as noise, traffic, dust and private well impacts. Many of the glacial and bedrock features which provide these materials also exist within landscapes that are somewhat unique to the region and give it much of its character, thereby threatening some of the social values.

So What! ¹

Access to aggregates is critical to Wisconsin's and the region's economy. While there are literally hundreds of uses of aggregates, most are used as a raw material for construction. Over 90% of asphalt is aggregate. In addition, about 80% of concrete - a key component of homes and commercial buildings - is aggregate. Approximately 38,000 tons of aggregate are used in building one lane mile of interstate and 400 tons are used in constructing the average new home.

Because they are heavy and bulky, it is often cost prohibitive to transport these materials long distances. Consequently, high transportation costs generally dictate that the material source be near the market where it is actually used.

While most agree that these materials are important to society, the mining industry is still facing major challenges in protecting access to these deposits. Currently, it appears that the permitted non-metallic resources are being used faster than approvals can be obtained for opening new resource deposits. Some areas containing significant deposits are being re-zoned to prevent mining or are being built over, which effectively prohibits their extraction in the future.

In the absence of long-term comprehensive planning for non-metallic resources, it is possible, and perhaps even likely that zoning or growth will prohibit the use of these materials when they are needed.

1 - Adapted from Wis. Transportation Builders Assoc. - Wisconsin's Comprehensive Planning Law and its Implications for Non-Metallic Mining, Oct., 2003).

Current Action

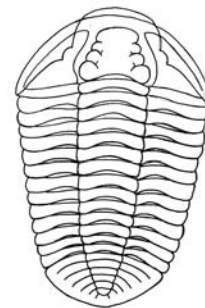
Other than local zoning regulations and the WDNR's new NR-135 Non-Metallic Mining Reclamation and Mineral Registration Program, little if any action is being taken to ensure that the remaining, marketable deposits will be available for use in the future development of the region. Zoning approvals are typically given in the form of 'conditional uses' rather than as a 'use by right' which makes siting or expanding a quarry somewhat difficult and time consuming - although these procedures do allow for significant oversight by the community. The NR-135 Mineral Registration Program is voluntary and allows sites with marketable deposits to be protected from development via the issuance of building permits.

The Wisconsin Geologic & Natural History Survey (WGNHS), an advisory academic agency, has done much work in this field and is one of the agencies being relied upon to inform and educate decision makers so that social needs and land use conflicts are balanced. Private educational efforts are, also becoming more common as the annual 'Quarry Quest' event and Menasha's Weis Earth Science Museum provide hands-on venues for children to learn about these materials and needs. East Central staff will be working with these agencies, other academic institutions, industry, and county representatives to further assess these issues and find balanced solutions through the regional planning process.

Core Goals

1. Preserve and protect unique geologic sites within the region for aesthetic, cultural/historic, scientific, and educational purposes.

2. Preserve and protect mineral resources within the region to meet projected short and long-term needs.
3. Emphasize non-metallic mining activities as a 'transitional' and 'interim' use of the land and achieve maximum benefits from the reclamation of these sites.
4. Develop and support County and local plans which support and emphasize the regional context associated with non-metallic mining activities and needs.
5. Promote the regulation and operation of non-metallic mining in a manner, which balances the needs of the region, minimizes the effects on the environment, and maximizes compatibility with nearby land uses.
6. Collect, develop and distribute regional level information to assist counties and communities on non-metallic mining issues.
7. Achieve better communication and intergovernmental coordination / cooperation amongst local officials, citizens, and operators on non-metallic mining issues.
8. Educate the region's local officials and citizens on distribution of, access to, uses of, and the extraction process of non-metallic mineral resources.



DO YOU KNOW WHAT YOU'RE DRINKING?

FACT SHEET: NR2

The East Central Wisconsin Regional Comprehensive Plan 2030

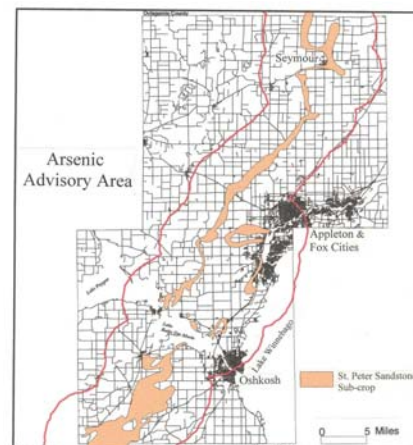
Key Facts

Groundwater represents one of the most abundant and treasured resources within Wisconsin as it is used not only for domestic consumption, but also to serve the needs of industry and agriculture, as well as tourism associated primarily with recreational fishing activities. The region is comprised of a system of five distinct groundwater aquifers which, are recharged through surface runoff or the movement of groundwater between aquifers. The numerous bedrock layers and compositions cause many variations in both the vertical and horizontal flow of this groundwater throughout the region.

According to a recent report by the U.S. Geological Survey (USGS), Wisconsin has approximately two quadrillion (2×10^{15}) gallons, or about one-third the volume of Lake Superior, stored as groundwater. Groundwater use in Wisconsin has increased steadily overall for most use categories since 1950. Irrigation water use more than doubled between 1980 and 2000 as irrigated acreage increased. In general, groundwater use has increased within the region as urban areas continue to grow and require significant quantities of water for residential, commercial, and industrial users. The use of groundwater within the region has reached an upper end estimate of more than 170 million gallons per day (this figure soars to 253 million gallons per day if surface water sources - such as Lake Winnebago - are taken into consideration for municipal water supplies). In 1990, the Fox Cities was estimated to withdraw approximately 5.6 million gallons per day.

In general, the quality of the groundwater used for domestic purposes is relatively good throughout the region, although specific locations may have localized problems due to the geologic or aquifer characteristics. Some areas within the region are subject to certain types of natural and artificial contaminants such as arsenic, radon, total dissolved solids, nitrates, and bacteria. Many of these problems are of a highly serious nature.

For example, the WDNR has recently identified portions of the central part of the region in Winnebago, Outagamie, and Shawano Counties as an "Arsenic Advisory Area" and special casing regulations exist which call for stronger, deeper wells with extra steel casing that can reach as deep as 260 feet where necessary. Ingested arsenic is a known cause of cancer, including cancer of the skin, lungs, bladder and kidneys. It was recently determined that about 18 percent of all private wells in Outagamie and Winnebago County exceed the Federal EPA's 10 parts per billion limit which applies to all municipal water supplies!



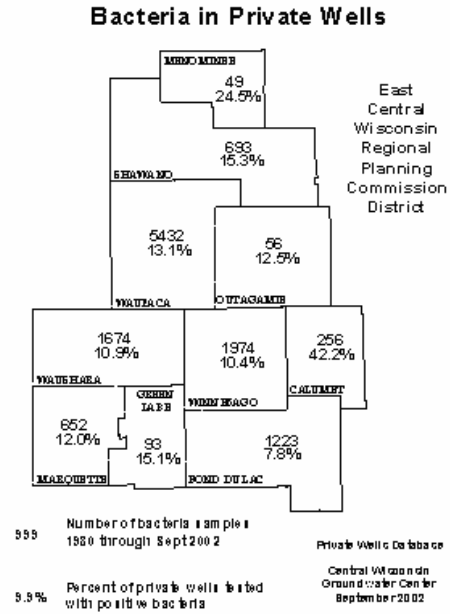
Many of the region's areas are considered to be highly susceptible to aquifer contamination based on conditions such as sandy soils, thin soils or fractured bedrock.

So What!

Groundwater resources can be significantly altered or damaged by human influence on the land. Over the years, more and more research has shown that land use activities affect groundwater quality and quantity. Some impacts occur in a relatively short period of time, while others may take years or decades to show up. These impacts fall under three general categories: quality, quantity, and surface/groundwater interactions:

- **Quantity** - While the amount of available water is not of concern immediately, the future supply is being diminished rapidly due to continued urbanization. A report produced in 1998 by the U.S. Geological Survey estimated that the deep sandstone aquifer system which serves the Fox Cities is being lowered by two feet per year, mostly as a result of increased pumpage by municipalities and industry, but also as an effect of interfering cones of depression from high capacity wells. The main recharge areas for this aquifer system lie in the western portion of the region, and in some cases, outside of the region; thereby stressing the importance of future regional development patterns and intergovernmental cooperation. Municipal and private well placement, density, and pumping rates contribute to these drawdown levels as well as to groundwater quality problems.
- **Quality** - Groundwater quality and susceptibility to contamination is of concern in numerous parts of the region due to the presence of highly fractured bedrock deposits and karst topography. Arsenic, nitrate, and bacteria

contamination negatively affect the health of individuals and therefore, may also have long term impacts on both the economy and quality of life associated with the region.



- **Surface/Groundwater Interaction** - The addition of impervious surfaces as a result of development and urbanization can negatively affect groundwater recharge as well as stream-base flow and horizontal/vertical groundwater flow. With many streams being used for recreational fishing and other recreation activities, a portion of the region's economic future (tourism) may be at risk strictly due to our desire for accommodating development.

The East Central region has the greatest extent and variety of groundwater problems within the State and as such, its residents should be concerned about the future of this resource. If concerns are not acted upon quickly and comprehensively, irreversible damage can occur to this important and necessary resource.

Current Action

Groundwater issues have become more prominent across the region and state as a whole and, as such, more efforts have been directed to assessing and dealing with problems in a proactive manner. A major component of current actions relates to the provision of information and education by entities such as the State's Groundwater Coordinating Council, Resource Conservation & Development Councils (RC&Ds), UW-Extension, Wisconsin Dept. of Natural Resources and the Wisconsin Geologic & Natural History Survey.

More specific programs and research activities have been initiated within the region over the last few years and including, but not limited to: Calumet County groundwater testing and mapping; Fox Cities & Fond du Lac area hydrologic studies and; arsenic testing and modeling.

From a regulatory and funding perspective, new legislation has been, or is being, developed by the WDNR related to special well construction zones/requirements, municipal well-head protection, and high capacity wells. Groundwater remediation and clean up activities are also of high priority and funding has been made available in the past to assist public and private entities with such remediation projects.

Core Goals

1. To preserve and protect the quantity and quality of the region's groundwater supply.
2. To support existing state level groundwater regulations and their continued improvement.
3. To support and assist in the development of new state, regional, county, and local programs and regulations that protect

groundwater resources in a consistent manner.

4. To identify, protect and integrate aquifer recharge areas into the development patterns of the region
5. To support existing and foster new, efforts to improve multi-jurisdictional planning, assessment, and management projects for the region's aquifers.
6. To support the development and use of existing and new programs to educate landowners and decision-makers within the region on groundwater issues and solutions.
7. To assist in the coordinated development and distribution of new data, mapping, and other information pertaining to the region's groundwater resources.



WATER QUALITY, FLOODING & WATERSHED MANAGEMENT

FACT SHEET: NR3

The East Central Wisconsin Regional Comprehensive Plan 2030

Key Facts

Watershed management is defined as an ongoing process of integrated decision-making regarding uses and modifications of lands and waters within a geographic drainage area so as to balance diverse goals and uses for environmental resources, and to consider how their cumulative actions may affect long-term sustainability of these resources. Stormwater management is often a sub-component of any watershed-based plan that is typically carried out by individual governmental entities. Stormwater management is typically defined as addressing functions associated with planning, designing, constructing, maintaining, financing, and regulating the facilities (both constructed and natural) that collect, store, control, and/or convey storm water. Stormwater management deals with both water quantity and water quality issues.

Within the region, numerous areas are subjected to seasonal flooding. Many of these areas are located within urban environments and, to some degree, are caused by the displacement of water due to development. Examples of flooding resulting from development have been apparent in the Fox Cities over the years. Stream flows through ravines in the Village of Combined Locks, for example, have been exacerbated by the 'upstream' development that occurred in the Darboy area.

Surface water quality problems also exist within the region, but vary drastically. Many of the smaller 'headwater' streams in the northern and western portions of the region have good to excellent water quality, while the main river and lake systems (Fox River,

Wolf River & Winnebago Pool Lakes) have serious water quality problems related to sediment and nutrient loadings. These problems are often referred to as 'non-point source pollution' which stem from contaminated runoff generated by agricultural lands and urban areas. These loadings can have significant impacts on stream and lake systems.

The health of the region's sixty watersheds have been measured and monitored to varying degrees over the years and the most prominent impairments are related to elevated levels of phosphorus, sediments and toxins. For example, it is estimated that sediment loadings to Green Bay from the Fox-Wolf Basin are in excess of 165,000 tons per year, or more than 27 dump trucks per day (UW-Sea Grant, 2003)! Another example is that 55% of the phosphorus load (a common nutrient responsible for algae blooms) at the mouth of the Lower Fox River (Green Bay) originates in the 'upstream' sub-basins of the Upper Fox and Wolf Rivers (UW-Sea Grant, 2004)!

Of additional note, the topography of the East Central region is such that all surface waters eventually drain into Lake Michigan via Green Bay, with the exception of southwestern Fond du Lac County and northwestern Waushara County, which flow to the Wisconsin/Mississippi River system. The Fox-Wolf River Basin is, in fact, the largest tributary to Lake Michigan and 3rd largest to Great Lakes. Unfortunately, it is also the largest source of pollutants to Green Bay and Lake Michigan.

So What!

The water quality of the region's streams and lakes are directly linked to the economy and quality of life. Without clean water, recreation and fishing opportunities will be limited for both residents and visitors.

In the future, as development and the associated impervious (non-absorbent) surface areas increase, water quality will be negatively impacted. This in turn will influence natural system functions drastically. According to studies by the Center for Watershed Protection, as little as 10% impervious cover (streets, roofs, parking lots, etc.) within a watershed can negatively impact fish habitat, while 25% cover overloads the natural functions of the watershed and can permanently degrade stream quality. If stormwater is not managed properly, the streams and lakes will become choked with algae due to excessive nutrient inputs, or they will resemble 'chocolate milk' due to sedimentation problems. Fisheries and habitats will also become unproductive. This in turn will affect a significant sector of the tourism economy within the region.

Watershed planning and stormwater management is an expensive, but necessary, activity that addresses problems created by nearly every person and entity within the region. The future of water quality within the region is dependent on solutions at every level, from the individual to the federal government. Communities of the region must also remember that a majority of their water drains to Lake Michigan and, therefore; they must be particularly conscious of the fact that they are part of a larger scale system and larger-scale water quality problems.

Current Action

Stormwater management and watershed planning have begun to gain more attention as an environmental concern. As such, numerous actions are being taken by all levels of government to address problems.

WDNR Basin Plans and 'Partnership' Teams exist for each basin and information regarding inventories, assessments, and rankings, of individual watersheds for both surface and groundwater quality and impairments were generated as part of these efforts.

EPA Phase I & Phase II Stormwater regulations were developed and are being implemented by the WDNR through Wisconsin Administrative Codes NR 216, NR 151, and Trans401. Along with a state-level permitting process, municipalities primarily associated with the Fond du Lac, Oshkosh, and Fox Cities urbanized areas will be required to have adequate stormwater provisions and programs in place.

A number of regional efforts have also been made to control and manage stormwater runoff resulting from urbanization. Two such examples include the Garner's Creek Stormwater Utility - a watershed based utility - and the Northeastern Wisconsin Stormwater Consortium (NEWSC) which is leading efforts on consistent information and education for citizens and officials.

At the local level, many county and local level ordinances or rewrites, have occurred or are proposed to address both urban and rural stormwater issues. While individual communities have done much already along the path of stormwater management, many have done so only within the defined area of their own municipality.

Although some multi-jurisdictional watershed plans have been created, much more needs to be done in terms of linking the region's land use and development decisions with water quality and thus, creating true 'watershed plans'.

Core Goals

1. Maintain and enhance surface water quality within the region's streams, rivers, and lakes.
2. Preserve and protect the region's natural resources, and their related programs, which directly, or indirectly relate to the protection and enhancement of surface water quality.
3. Invest in, and promote, water quality management activities that are cost-effective and obtain significant, short-term and long-term improvements.
4. Achieve better integration of watershed planning concepts and existing watershed-based plans into local/county smart growth comprehensive plans.
5. Promote consistency amongst communities' and counties' stormwater management regulations and programs.
6. Improve inter-governmental coordination to reduce stormwater impacts and management costs.
7. Improve education efforts on stormwater and water quality planning issue for communities and landowners.
8. Increase water quality monitoring for streams that are, and are not, impacted by wastewater discharges.

WILDLIFE HABITAT, FORESTS, & ECOLOGICAL RESOURCES

FACT SHEET: NR4

The East Central Wisconsin Regional Comprehensive Plan 2030

Key Facts

The region's ecological resources are made up of many individual, yet inter-related, aquatic (water-based) and terrestrial (land-based) features and habitats. Ecological resources include forests, woodlands, wetlands, stream corridors, savannas, prairies as well as other unique habitats, sensitive areas, and their associated common and unique species of plant and animal life.

The region contains seven (of sixteen) distinct ecological landscape types. Based on a system of land classification developed by the Wisconsin Department of Natural Resources (WDNR), each landscape type has numerous smaller 'natural communities' defined by the presence of certain types of common and rare plant and animal species. Each natural community has different characteristics and as such, different issues associated with their management and protection. Land use impacts in particular can have significant effects on these natural community systems and can occur at a site level, or at a regional level as a result of cumulative development over time.

Within the region's remaining habitats, a total of 2,317 'known occurrences', representing 615 different species and natural community types, had been listed in 2003 by the WDNR as 'endangered' or 'threatened' within the region. The highest concentrations, in terms of both number of species types and occurrences, are located in Marquette, Waupaca and, Waushara Counties. Four of these species types, with 87 'occurrences', have been listed as federally endangered or threatened within the region.

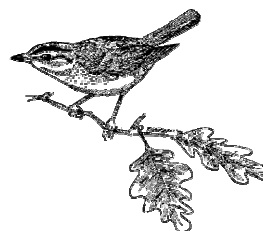
So What!

Small, individual changes in the landscape resulting from development may not necessarily impact wildlife and their respective habitats immediately. However, the cumulative impacts (many small changes over time) can have significant implication on both animal and plant communities, as well as the resources they depend on such as wetlands, stream corridors, and groundwater.

Many ecological resources are also related directly or indirectly to sectors of the regional economy. Large and small-scale commercial forestry and silviculture remain a prominent land use and economic activity within the northern and western portions of the region, while significant areas of remaining woodlands provide ideal habitats which contribute to recreational hunting activities.

In addition to direct losses of the existing ecological resources, other threats include non-native invasive species introduction; forest fragmentation; habitat and resource mis-management, and; wildlife barrier creation resulting from new development or road construction.

Unless landscape scale ecosystem management concepts are successfully integrated into regional, county, and local level land use plans and regulations, these concerns will persist.



Current Action

No specific responsibility exists for 'ecological management' within Wisconsin, however; within the state and region, the WDNR has taken much of the lead in this arena. Coupled with Federal agency regulatory programs through the U.S. Environmental Protection Agency (USEPA) and U.S. Fish & Wildlife Service (USF&W), these efforts are being directed to sustainable forestry, public ownership and management, fisheries management, endangered species, and habitat restoration. These programs often complement the many wildlife related projects which occur at the local level, mostly through volunteer efforts of sportsman's clubs and civic organizations and private land stewards.

However, many of the ecological desires held by citizens of the region conflict with those of the development community and citizen landowners when it comes to land use planning. For example, hunting is a common recreational activity which requires that safety prevail. New housing developments located in rural areas can conflict with this use of neighboring lands and, in some cases, safety can be jeopardized.

Some county and local level land use plans have not adequately addressed these types of issues and much more needs to be done to achieve a better balance between the ecological and wildlife needs with those of region's human population.

Core Goals

1. Protect the integrity and biodiversity of the region's main ecological corridors.
2. Preserve and enhance the region's remaining natural shorelines along lakes and river corridors.

3. Preserve existing quasi-public lands, or at least the ability to access and use them in the future and/or bring them into public ownership.
4. Promote the protection and enhancement of urban wildlife areas and corridors.
5. Promote additional non-consumptive, nature-based tourism (eco-tourism) development programs.
6. Create and promote more comprehensive efforts on controlling exotic and invasive species.
7. Better integrate wildlife habitat protection and enhancement with storm-water management planning activities.
8. Better emphasize the creation / maintenance of the local and regional 'ecological sense of place'.
9. Better incorporate ecological issues and opportunities associated with agricultural uses and activities.
10. Promote more coordinated planning efforts to reduce the effects of development on natural areas.
11. Promote wildlife habitat preservation and enhancement through additional public/private partnership.
12. Create and support adequate levels of programming and funding for education regarding ecological features and land use issues for elected officials and other decision-makers throughout the region.

REGIONAL OPEN SPACE & RECREATION

FACT SHEET: NRS

The East Central Wisconsin Regional Comprehensive Plan 2030

Key Facts

About 125,000 acres of public recreation and open space lands are available within the region (excluding local parks) to meet the needs of its existing 610,000 residents. There is also an excellent distribution of public open space throughout the region, even though the largest tracts are resource-based. All counties except Menominee, which is heavily forested, have at least 5,800 acres of regional open space.

These lands equate to about 200 acres per 1,000 residents, which is twice the standard that was adopted in the *Open Space and Outdoor Recreation Plan for East Central Wisconsin* in 1977. However, if the 91,000 acres of WDNR wildlife and fisheries areas, along with the 3,000 acres of federally owned lands (Horicon Marsh and Fox River National Wildlife Areas) are removed from this total, it effectively leaves only 31,000 acres to accommodate some of the most common recreational activities. This lowers the average to about 50 acres per 1,000 persons - far below the current adopted standard.

Based on the standards, and with the addition of the numerous local recreation facilities, the East Central region has a fair to ample amount of recreation opportunities for its current residents.

So What!

Regional recreation and open space areas serve many purposes, but a prime reason that many of these sites exist in public ownership is to ensure that important scenic features, natural and cultural resources, and habitat areas are preserved for the enjoyment of both

present and future generations of Wisconsin residents and visitors. With minor exception, the vast majority of available recreation/open space acreage is virtually undeveloped, providing opportunities for passive (less intensive) forms of recreation; i.e., activities such as hunting, fishing, and hiking, which typically do not seriously tax the resource base.

Many forms of active recreation (hiking, biking, soccer, etc.) occur within the region and demands are expected to increase in the future. Gaps in lands availability for such uses may be of concern in the future, but mostly at a local level. The ever-increasing mobility of the large 'baby-boomer' sector of the population, coupled with the projected addition of 50,000 residents (by 2020), will also change the types and locations of recreational activities. Recreational features have become an important amenity to those that live within the region as well as those who may move here in the future.

Although the standards indicate no measurable deficiency at current or projected levels, continued demands for public open space and recreation areas, as well as trails, will continue to occur throughout the region, particularly within and near areas of more dense population. At a time when demand is increasing, the opposite is occurring regarding funding for such facilities. Declining levels of funding from all sources will need to be overcome in order to provide and maintain existing open space and recreational opportunities much less the development of new sites and facilities.

Lastly, many of the remaining opportunities which capitalize on larger tracts of

undeveloped/natural areas, may be in jeopardy due to the high levels of rural development occurring throughout much of the region. As equally important are the regional networks which have been, or need to be, created that link individual features. Identifying and preserving these suitable sites and network linkages until the 2030 plan horizon will be critical if they are to remain as an option to server longer-term (40-50 year) needs.

Current Action

At the State level, funding continues to be available through the WDNR to assist counties and communities in the acquisition of lands for recreation and open space purpose. However, as with most programs, these funding levels have been decreasing and more burdens are being placed on county and local units of government to fund these activities.

The WDNR recently released its 'Land Legacy' report which utilized significant state-wide public input in order to identify major natural resource areas and recreation opportunities that should be considered for preservation or incorporated into recreation and open space plans by county and local units of government.

In 1977 the Commission adopted the Open Space and Recreation Plan for East Central Wisconsin. This report outlined the master plan for the development of regional park and (trail) facilities throughout the 10 county area based on a number of factors, including population distributions / projections; assessments of existing regional facilities, and; natural resource characteristics. Many of this plan's recommendations were implemented since its creation and the new Regional Plan will replace this document once completed.

County and local park/open space plans are prepared and updated regularly throughout

most of the region. These plans, however, are typically directed to locally driven needs, although some local recreation facilities draw users from extensive distances and, in some ways, may be considered 'regional' in nature, particularly those located along water features.

Core Goals

1. Preserve and protect the region's important and unique parklands, natural features and open spaces in order to maintain and enhance the quality of life within the region.
2. Create a common vision for a highly accessible regional trail network which includes both land and water features.
3. Develop creative solutions for the funding and implementation of park, recreation, and trail facilities.
4. Inform and educate the general public and elected officials on the financial and social benefits of open space and recreation.
5. Foster increased levels of intergovernmental cooperation and coordination with regard to the planning for, and protection of, regional and local natural areas, open spaces, and trail networks.



REGIONAL CHARACTER & AESTHETICS

FACT SHEET: NR6

The East Central Wisconsin Regional Comprehensive Plan 2030

Key Facts

The region has a variety of resources which contribute to its aesthetic or 'scenic' character. Some of the most prominent features include the bluffs of the Niagara Escarpment in Calumet and Fond du Lac Counties; the woodlands of the more northern Menominee and Shawano Counties, and the glacial moraines located in western Waushara County. Scenic resources are comprised of many natural and man-made features and can be difficult to define due to the subjectiveness of the term. For the most part, aesthetic resources can be divided into two major categories: rural character and urban design.

Rural character is typically comprised of topography, farmlands, woodlands, wetlands, prairie, and other open spaces. Many of the region's natural resources or open spaces are large enough to be considered 'regionally significant'. As such, they contribute to the overall aesthetics of both the region and their associated communities.

Urban design relates to aspects of urban development such as tree planting, signage, neighborhood density and design, street patterns, building setbacks, architectural style, and construction materials. These factors contribute to the overall feeling and uniqueness, or livability, of an urban community or neighborhood.

Of mutual concern to both rural and urban areas are those types of man-made facilities which, in some person's eyes, result in the blight of the landscape. These include structures such as telecommunication towers,

wind power generation facilities, and billboards.

Substantial amounts of both urban and rural growth have occurred throughout the region in the last several decades. The land uses, densities, locations, and styles of this development have noticeably begun to affect the 'scenic resources' of the region. Debates on such issues as rural subdivision development, 'big box' retail stores, strip commercial development, housing designs, and billboards have become more commonplace in the region.

So What!

Lands with high environmental or aesthetic qualities have historically been those most sought after for homesites and development. The region is rich with unique glacial and geologic features that have been, and continue to be, threatened by development. The region also has extensive surface water and shoreline resources which have been prime areas for residential or seasonal development. These areas are an important part of the region's economy and quality of life.

At a regional level, the patterns and spacing of development and preserved agricultural and natural areas play a large role in defining its character. Many highway corridors contain valuable natural and visual resources, which leave positive impressions on those visiting the region or passing through. Although much value is placed on the region's 'scenic resources' it is difficult to plan for them in a local context as many traverse the man-made political boundaries of

municipalities and counties. Billboards, cellular communication towers, strip commercial development and monotonous, cookie cutter houses and subdivisions persist in many communities and along rural highways and affect the overall aesthetic qualities of the region. This type of development can often lead to a sense of 'nowhereness'.

Urban design issues are commonly addressed at the local level, primarily by larger communities that contain significantly sized downtowns or other historic resources. Design aspects of newly developing areas however, have not been considered to a great degree in most areas. Residential developments alone have many components which affect community character. Street and road widths, lot size, building setbacks and orientation are all design features which determine whether or not livable, healthy neighborhoods are created. Developments that are more pedestrian friendly and aesthetically pleasing can translate into healthier (and wealthier) communities that have a distinct 'sense of place'.

Current Action

Few examples exist of actions taken to plan for, protect, or enhance community character or that of the region. Several communities have design standards or guidelines developed and implemented at the local level, however; broader, landscape scale efforts have not been initiated.

Most of the land use or facility types which have the most impact on scenic resources are regulated at the local level with the exception of those that are precluded by federal and state laws. For instance, the regulation and siting of telecommunication facilities are typically handled at the local level, but under strict guidance from the FAA and FCC. Billboards can also be regulated at a local level; however several billboard related

provisions are being debated at both the federal and state level and may restrict the ability of communities to do so.

Some initiative however, has begun at the national level on this subject. In 2002, the Senate Environmental and Public Works Committee recommended passage of Senate Bill 975, the Community Character Act which would authorize up to \$50 million per year in grants to state, tribal and local governments to help them update and improve their land use plans. Among the criteria for awarding grants is that the proposed plans "...to the maximum extent practicable...enhance community character and conserve historic, scenic, natural and cultural resources."

Statewide efforts include the new WDNR Land Legacy program which has identified statewide features of concern for either environmental or aesthetic reasons. Additionally, the Scenic Wisconsin Chapter of the nation-wide organization, Scenic America, was formed to build awareness and promote actions by the state and communities to limit impacts on scenic resources.

Core Goals

1. To protect and improve the aesthetic qualities and features of the region and its communities while balancing the needs of private industry, government, and the general public.

Natural Resources Key Findings

Vision for Natural Resources

“In 2030, the importance of natural resources, including their link to the regional economy, quality of life, and cost effective service provision is recognized. Natural resource planning is sustainable, consistent and coordinated. The region's ecological resources are planned for and protected; there is a strong sense of ecological place. The Winnebago Pool Lakes and the Fox/Wolf River systems are recognized as the backbone of the region's ecological resources. Geologic resources that are significant from an aesthetic, scientific, cultural, historic, educational, or commercial extraction purpose, have been identified and inventoried, and are preserved and protected to meet the needs of the region. The region has proactively addressed public access, recreation, and trail facilities in order to meet the needs of its citizens; enhance the quality of life and environment; realize tax savings and other economic benefits; and to maintain and improve the region's tourism economy. The region is comprised of well-defined urban and rural spaces, which improve the individual's perception of 'sense of place', while communities within the region have maintained their individual character. Within the region, surface water resources are planned for in a watershed-based manner that embraces and encourages the use of 'green infrastructure' concepts. The proactive protection of natural features not only contributes to water quality, but also to the long term sustainability and economic benefit of the region”.

Geologic Resources & Non-Metallic Mining

“The East Central region has inventoried and identified the significant geologic resources which are to be preserved and protected for aesthetic, scientific, cultural, historic, educational, and commercial extraction purposes. Local and county plans adequately and realistically address the future local and sub-regional needs for non-metallic minerals, while balancing the concerns of its citizenry. Plans incorporate non-metallic mining uses as transitional land uses – one that is regarded as critical to the future economic development of the region and which may add value to the site, once reclaimed. Mining sites are operated and managed in an environmentally sound and sustainable manner, with long-term reclamation of sites integrated into the planned needs of the community and region. Local plans clearly identify existing sites, expansion areas, and future marketable deposits so as to reduce future conflicts in rural and urbanizing areas. The access to these resources has been preserved and enhanced to aid in their removal and transport within, and outside of, the region. Decisions regarding the siting of new mines, or expansion of existing sites, are: 1) sensitive to the environment; 2) more uniform throughout the region, and; 3) based upon factual and objective information. This vision was achieved through improved intergovernmental coordination, communication, and education of local officials, citizens, and the mining industry”.

Groundwater Resources

“The groundwater resources of the region are managed, planned for, preserved and/or enhanced to meet the current and future needs of its citizens and environment”

Water Quality & Watershed Management

"In the east central region surface water resources are planned for in a comprehensive, watershed-based manner that embraces and encourages the use of 'green infrastructure' concepts. This has been achieved by improving intergovernmental cooperation, creating more uniform and cost-effective programs for water resource management, which include the proactive protection of natural features that not only contribute to water quality, but also to the long-term sustainability and economic benefit of the region. This occurs through a comprehensive and targeted educational strategy that emphasizes 1) local responsibility and investment; 2) the need to look at the whole picture and not just special or individual interests when making decisions related to water quality, and; 3) the need for improved and maintained monitoring programs in order to gauge water quality changes over time".

Ecological Resources

"The East Central region plans for and protects its ecological resources through the implementation of balanced regional land use concepts such as corridors and buffers, for both private and public lands. The integrity of the region's biodiversity and the preservation of unique natural areas and features are addressed from a natural systems standpoint and are closely linked to the region's economy and quality of life. The consistent incorporation of planned green spaces and natural areas, including agricultural lands, by the region's counties and communities serve the needs for wildlife and recreation, as well as, contribute to the region's ecological sense of place. The Winnebago Pool Lakes and the Fox/Wolf River systems are recognized as the backbone of the region's ecological resources and are planned for and managed through coordinated efforts, using incentives wherever possible".

Open Space & Recreation

"The East Central region proactively addresses future public access, recreation, open space, and trail facilities in order to meet the needs of its' citizens; enhance the quality of life and environment; realize tax savings and other economic benefits through the usage of natural systems (natural capital), and maintain and improve the region's tourism economy. Future public and private open space and trails will focus on the physical connectivity of the existing natural resource base and the expansion of local and regional trail links. The region's open space and recreation system will be enhanced through continued education; the application of consistent recreation standards; the promotion of coordinated planning; the recognition for local responsibility in providing such facilities; the maintenance of existing funding sources, and; the application of creative financing techniques."

Landscape Character & Aesthetics

"The region is comprised of well-defined urban and rural spaces which improve the individual's perception of 'sense of place'. Existing rural hamlets, towns, villages, and cities have individually addressed their own community character assets and needs, while also considering the effects of development on the region that surrounds them. Regional and local plans consistently address, and balance, issues associated with the (perceived) need and desire to have growth, and the placement of utilities, communication facilities, and billboards which contribute to the 'visual clutter' along its highways and byways".

Match / Mismatch Between Envisioned and Probable Future

Geological Resources

- Unique geologic sites continue to attract development, yet these distinctive resources are highly appreciated for their scenic value;
- Currently, more materials are being used than sites are being approved;
- Mining sites must be strategically located to minimize material costs yet continued rural development near urbanizing areas cause more conflicts;
- The reclamation of quarry sites is based on zoning and not on longer term comprehensive land use plans, which communities are investing in;
- Mining sites are viewed as nuisances yet they provide materials necessary to nearly every resident in the region;
- Efforts have been made to allow for registering properties with significant mineral deposits, yet not many have taken advantage of this program;
- Many communities wish to accommodate development, but they also wish to determine mining activities and therefore create undue pressures on other communities within the region for this resource;
- Public perceptions about non-metallic mining sites and operations are typically negative and limited opportunities are given to meet educational needs;
- Information and data regarding potential mining sites is limited and additional mapping, assessments, and analyses need to occur for a community to make informed decisions.

Groundwater Resources

- Rural development continues to occur within much of the region regardless of the numerous, localized groundwater quality problems;
- Development continues at a rapid pace within the region's urban areas, yet communities have not acknowledged the regional impacts on the deep sandstone aquifer;
- Urbanization is paving over valuable groundwater recharge areas, yet no significant information exists to inform communities of where these areas are, and what impacts development will have on them;
- Local and county plans have not adequately acknowledged the regional nature of groundwater resources and the need for coordinated management and decision-making;
- Many problems exist in rural areas with respect to groundwater quality or quantity, yet few new homeowners seem to know of these problems or their associated health risks;

Water Quality & Watershed Management

- Numerous requirements are in place for controlling non-point source pollution resulting from construction and development, however, limited enforcement is in place to effectively implement practices.
- Many communities have embarked on stormwater planning efforts, yet little communication or coordination exists between those in the same drainage areas;
- Many environmental resources which provide for natural stormwater management continue to be developed or impacted by development rather than being preserved or integrated into developments;

- Scientific information continues to be generated regarding the effects of development on water quality, yet few communities assess these impacts (and alternatives) as part of their land use planning activities;
- Wetlands have been proven to be an integral part of the natural stormwater management system, yet permits continued to be issued on a regular basis to accommodate development activities.

Ecological Resources

- High value is placed on developing adjacent to public natural and wildlife areas, yet this development negatively affects the value of the protected resource;
- Wildlife resources are dependent on habitats that are comprised of interconnected corridors however; urban, rural, and transportation related developments continue to divide and fragment these networks;
- Undeveloped stream and lake properties are a high value commodity from a real estate perspective, but in many cases may have more value from a community perspective in terms of aesthetics, recreation, water quality, and habitat.
- Numerous, larger tracts of remaining habitat are threatened by development due to the lack of funding or organized grassroots (and government supported) initiatives.
- Biodiversity of the region's resources are threatened by new development and the introduction of non-native (exotic) species.

Open Space & Recreation

- The numerous economic and social benefits of trail systems, including that of alternative transportation, have been well document for years, yet many communities have not fully embraced the creation of trail systems through the development process;
- Rural development continues without much regard to well ingrained rural recreational activities such as snowmobiling and hunting;
- Park and recreation lands are in high use and demand throughout much of the region, however; funding levels for land acquisition and development have declined in recent years;
- Open space is often considered to be a high value amenity to rural and urban residents, yet more efforts are placed on accommodating development rather than directing it in a manner which preserves, protects, or enhances this valued resource;

Landscape Character & Aesthetics

- New highway and interchange plans are typically developed years in advance of construction, yet communities are slow to react in terms of setting standards and guidelines which address the overall character and design of these areas;
- Rural character is typically viewed as being an important resource, however; development continues at a rapid pace on many of the unique and scenic resources of the region;
- Urban redevelopment and revitalization has occurred in many communities, but more needs to be done to spur the use of brownfields rather than greenfields to accommodate new development;

- Major urban areas continue to expand and will, someday, connect in a seamless non-descript corridor of urbanization rather than being well defined and separated by multi-purpose greenbelts;
- 'Big Box' and strip development pressures continue to exist within the region, yet with an aging population, more pedestrian oriented communities and mixed uses will be needed in the future;
- Cellular communication and wind energy facility demands are steadily increasing, yet no one seems to agree on where these facilities should be located;

Core Goals

Fact Sheet 1: Geological Resources and Non-Metallic Mining

1. Preserve and protect unique geologic sites within the region for aesthetic, cultural/historic, scientific, and educational purposes.
2. Preserve and protect mineral resources within the region to meet projected short and long-term needs.
3. Emphasize non-metallic mining activities as a 'transitional' and 'interim' use of the land and achieve maximum benefits from the reclamation of these sites.
4. Develop and support county and local plans which support and emphasize the regional context associated with non-metallic mining activities and needs.
5. Promote the regulation and operation of non-metallic mining in a manner which balances the needs of the region, minimizes the effects on the environment, and maximizes compatibility with nearby land uses.
6. Collect, develop and distribute regional level information to assist counties and communities on non-metallic mining issues.
7. Achieve better communication and intergovernmental coordination / cooperation amongst local officials, citizens, and operators on non-metallic mining issues.
8. Educate the region's local officials and citizens on the distribution of, access to, uses of and the extraction process of non-metallic mineral resources.

Fact Sheet 2: Do You Know What You're Drinking?

1. Preserve and protect the quantity and quality of the region's groundwater supply.
2. Support existing state level groundwater regulations and their continued improvement.
3. Support and assist in the development of new state, regional, county, and local programs and regulations that protect groundwater resources in a consistent manner.
4. Identify, protect and integrate aquifer recharge areas into the development patterns of the region.
5. Support existing and foster new, efforts to improve multi-jurisdictional planning, assessment, and management projects for the region's aquifers.
6. Support the development and use of existing and new programs to educate landowners and decision-makers within the region on groundwater issues and solutions.
7. Assist in the coordinated development and distribution of new data, mapping, and other information pertaining to the region's groundwater resources.

Fact Sheet 3: Water Quality, Flooding and Watershed Management

1. Maintain and enhance surface water quality within the region's streams, rivers, and lakes.
2. Preserve and protect the region's natural resources, and their related programs, which directly, or indirectly relate to the protection and enhancement of surface water quality.
3. Invest in, and promote, water quality management activities that are cost-effective and obtain significant, short-term and long-term improvements.
4. Achieve better integration of watershed planning concepts and existing watershed-based plans into local/county smart growth comprehensive plans.
5. Promote consistency amongst communities' and counties' stormwater management regulations and programs.
6. Improve inter-governmental coordination to reduce stormwater impacts and management costs.
7. Improve education efforts on stormwater and water quality planning issue for communities and landowners.
8. Increase water quality monitoring for streams that are, and are not, impacted by wastewater discharges.

Fact Sheet 4: Wildlife Habitat, Forests, & Ecological Resources

1. Protect the integrity and biodiversity of the region's main ecological corridors.
2. Preserve and enhance the region's remaining natural shorelines along lakes and river corridors.
3. Preserve existing quasi-public lands, or at least the ability to access and use them in the future and/or bring them into public ownership.
4. Promote the protection and enhancement of urban wildlife areas and corridors.
5. Promote additional non-consumptive, nature-based tourism (eco-tourism) development programs.
6. Create and promote more comprehensive efforts on controlling exotic and invasive species.
7. Better integrate wildlife habitat protection and enhancement with stormwater management planning activities.
8. Better emphasize the creation / maintenance of the local and regional 'ecological sense of place'.
9. Better incorporate ecological issues and opportunities associated with agricultural uses and activities.
10. Promote more coordinated planning efforts to reduce the effects of development on natural areas.
11. Promote wildlife habitat preservation and enhancement through additional public/private partnership.
12. Create and support adequate levels of programming and funding for education regarding ecological features and land use issues for elected officials and other decision-makers throughout the region.

Fact Sheet 5: Regional Open Space and Recreation

1. Preserve and protect the region's important and unique parklands, natural features and open spaces in order to maintain and enhance the quality of life within the region.
2. Create a common vision for a highly accessible regional trail network which includes both land and water features.
3. Develop creative solutions for the funding and implementation of park, recreation, and trail facilities.
4. Inform and educate the general public and elected officials on the financial and social benefits of open space and recreation.
5. Foster increased levels of intergovernmental cooperation and coordination with regard to the planning for, and protection of, regional and local natural areas, open spaces, and trail networks.

Fact Sheet 6: Regional Character and Aesthetics

Protect and improve the aesthetic qualities and features of the region and its communities while balancing the needs of private industry, government, and the general public.

Conclusion

The vision, major issues and core goals will be carried forward into the next report, *Milestone Report #3: Policies for Action*. During the Milestone #3 process, we will develop policies for action to achieve the identified goals, and develop targets, or performance measures, to evaluate the effectiveness of these policies.