

# ECOLOGY REPORTS

THE OFFICIAL PUBLICATION OF THE ECOLOGY CENTER  
VOLUME XXIX, NUMBER 1 • SPECIAL LAND USE ISSUE 1997

## Creating Livable Communities: Alternatives to Urban Sprawl



### A SPECIAL LAND USE EDITION OF ECOLOGY REPORTS

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## ECOLOGY REPORTS



*Ecology Reports* is the official publication of the Ecology Center of Ann Arbor and is published five times a year. The Ecology Center is a membership-based, nonprofit community organization founded following Earth Day 1970. Annual membership fees for the Ecology Center include a subscription to *Ecology Reports*.

The Ecology Center develops and conducts education, advocacy, information and technical programs on a wide range of issues which encourage the development of sustainable communities. Recycle Ann Arbor is a subsidiary of the Ecology Center. The Ecology Center is a member of the Michigan Environmental Council.

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## It's a Special Edition of Ecology Reports

Many of our readers live in Ann Arbor, Washtenaw County, and the rural suburban areas of Oakland, Wayne, and Livingston County. Lots of us enjoy the small-city or semi-rural, "not-too-fast" pace of life in these communities. You don't have to look too hard, however, to realize that southeast Michigan is changing fast.

In the past ten years, residential subdivisions and commercial developments have proliferated on the outskirts of Ann Arbor, Brighton, Plymouth/Canton, and many parts of Oakland County. Several of the region's communities rank among the fastest growing in the state. The area's farms and open spaces are rapidly disappearing. In fact, Washtenaw County loses nearly 4,000 acres of farmland each year to residential development. These trends are expected to continue. With them, area residents will see even more congested traffic, increased air pollution, soil erosion, degradation of the Huron River and its tributaries, and higher infrastructure costs. Too soon, the entire region, from the northeast suburbs of Detroit to Ann Arbor to Lansing may resemble the sprawl that already overtook once beautiful areas of Oakland County.

It doesn't have to happen!! Communities across the United States have enacted measures to effectively control these trends. Boulder, Colorado now protects more than 20,000 acres of open space around the city through a growth management and open space preservation policy. Another university community, Austin, Texas, has worked with its county government to save wildlife habitat and open space around the city. Residents in these and other areas have taken concrete steps to preserve their quality of life.

This special edition of *Ecology Reports*, produced in conjunction with the Huron Land Use Alliance, examines urban sprawl in southeast Michigan. We look at current trends in land development, legal issues, local reform initiatives, and alternative patterns of land use. Most of the articles focus on Washtenaw County, which is seriously discussing ways to rein in the out-of-control loss of rural spaces. We hope that the issues there will also interest people in the larger region, who might try to adopt some of the solutions in their communities.

It's not too late. If we act today, we can still maintain the best of what remains.



**Special Guest Editors:** Jeff Kahan and Kris Olsson,  
*Co-Chairs of the Huron Land Use Alliance*

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# Houses in the Fields

by Kris Olsson, Co-Chair of the Huron Land Use Alliance and Water Resources Specialist for the Huron River Watershed Council

"It takes an extra 15 minutes to get to work these days."

"Lately, it seems like everywhere you look there's another shopping mall going in, or another subdivision."

"They had to raise our taxes to build a new school this year."

"I can remember when it was all farmland and woods from just south of the Stadium all the way to Saline."

These often-heard comments attest to a trend in land use. In Michigan's Relative Risk Report (a report commissioned by Governor Engler), unmanaged growth ranked among the highest risks facing Michigan's future.

We are losing our agriculture lands and open space at a tremendous rate. Between 1982 and 1992, Michigan lost 854,000 acres of farmland. This translates to 10 acres every hour of every day. Since 1969, Washtenaw County has lost nearly 112 square meters of farmland. That's equivalent to about four cities the size of Ann Arbor or the area of about three townships.

This loss of farmland is a result, not of population growth, but of population expansion. The Michigan Society of Planning Officials has projected that our subur-

ban areas will expand between 63% and 87% over the next 25 years to accommodate a modest 11.8% population growth. This is about 1.4 million acres to accommodate about 1.1 million people. In contrast, Michigan's 1978 population of 9.3 million people occupied about the same amount of land.

Americans are spreading out, living in larger homes, and on larger lots. In the 1960's, the average homestead took up about a quarter acre. In the 1990's that has increased to about a half acre. In 2010, if trends continue, every home will take up nearly an acre of land.

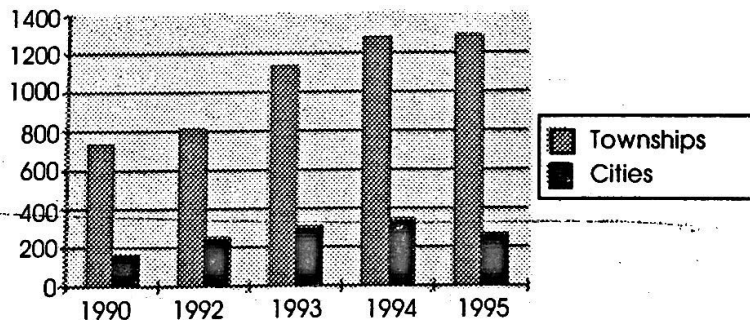
One of the major factors driving this expansion is our dependence on the automobile. With limited or no access to public transportation and with new homes sprouting up farther and farther from work, shopping, and school, we increasingly depend on our cars for nearly every venture away from home.

By the end of the century each of us will own our own car. We are driving longer distances to get to work, on more congested roadways. We are making more car trips per day. This all means we are spending more time in our cars — 40% more time in 1990 than in 1970.

Without a concerted effort on the part of local communities, the State legislature, and Michigan's businesses and citizens to promote more efficient use of land, farmland and open space will continue its conversion into subdivisions, shopping centers and multilane roads.

## Building Permits Issued in Washtenaw County

Development is largely taking place in Washtenaw County townships, not the cities or villages



# Eight Myths About Land Use and Sprawl

by Jeff Kahan, Co-Chair of the Huron Land Use Alliance and a local City Planner

Myths have been a part of the human experience for as long as we have communicated. Myths affecting land use decisions are particularly dangerous because they help perpetuate suburban sprawl. The following are common land use myths:

**Myth #1: Converting agricultural land to land that allows lots of 1 to 3 acres is the best way to accommodate growth.**

Scattering new residents in 1- to 3-acre lot subdivisions is the worst way to accommodate growth. This density requires more services than it pays for in taxes, consumes tremendous amounts of farmland per home, does not allow land to be developed efficiently, damages wildlife habitat, worsens water quality, increases the cost of farming, does not allow most children to walk to school, does not encourage a variety of housing options (including modest priced housing), requires residents to drive their vehicles almost everywhere, exacerbates traffic congestion and does not preserve rural character.

**Myth #2: Clustering prevents sprawl.**

Clustering can make suburban sprawl somewhat less damaging, but it does not make a turkey a dove. Converting agricultural lands in the master plan to lands that allow subdivisions is the more critical land use decision. Clustering does not make bad land use decisions good. Clustering can preserve some natural features on a site, but does nothing to mitigate the increased traffic congestion, worsening air quality, expensive infrastructure costs, auto-oriented development, inefficient use of land and the loss of large tracts of farmland that accompany 1- to 3-acre lot development.

**Myth #3: Township master plans must satisfy market demand for large lot subdivisions.**

Many area townships have responded in a short-sighted manner to market pressures by saying, "growth is coming, let's accommodate it by converting agricultural land to land that permits 1- to 3-acre lot subdivisions." Planning officials must do more than satiate market demand for a product; they must balance market de-

mands with environmental, fiscal and social costs. Current market trends alone should not drive long-range master planning. Townships are in fact attracting unhealthy development by converting vast tracts of agricultural land to land that allows low density subdivisions. The 7-county Detroit metropolitan area lost 2% of its population between 1980 and 1990. Most of the new growth in the region is driven by people moving away from existing communities into townships that have opened themselves up to rapid growth. Rural townships can choose to remain primarily rural, accommodate new residents in livable communities, or allow the entire township to be consumed by subdivisions.

**Myth #4: Agriculture is no longer a viable use.**

The agricultural industry contributes more than \$50 million in gross annual sales of agricultural products to the Washtenaw County economy. Washtenaw County ranks as one of the top 20 counties in the state in the production of corn, soybeans, wheat, oats, hay, cattle, milk cows, hogs, and chicken, and is #1 in sheep production. The Michigan State University College of Agriculture reports that from 1995 to 1996, the value of corn, hay and soybean land in southern lower Michigan increased by 6.8% for low quality land and 8.1% for high quality land due, in part, to strong commodity prices. Converting agricultural land to land that allows subdivisions increases the price of farmland, making farming more expensive and creating a tremendous disincentive to farm. Thousands of acres of prime farmland exist in the region and should not be considered merely a holding zone for future development.

**Myth #5: A master plan is just a guide.**

A master plan is the most significant document a community has in determining how property will be developed in the future. It determines whether land should remain farmland or whether subdivisions should be allowed. It determines the amount and location of future residential, commercial, office, industrial and public land. It determines whether 1,000 or 50,000 new residents should be accommodated and more importantly, how they should be accommodated. A master plan is far more than just a guide; it is the blueprint for the future.

**Myth #6: You can't deny property owners the right to do what they want with their land.**

Courts have told communities for over 70 years that local governments have the right to reasonably determine the pattern of growth and the land uses permitted on private property. Many land use laws were enacted to protect communities at-large from the decisions of a few. It is why a factory can't be built in a residential neighborhood and why a farmer can't build a shopping mall without proper zoning. Townships have the right to determine that agriculture is a viable and important part of the community. Maintaining agricultural land does not take away the right of a landowner from using the property as it is master planned and zoned.

**Myth #7: New residential development is good for the tax base.**

Low density single family development requires more public services than the tax dollars it generates. A recent University of Michigan study reported that for every tax dollar raised in Scio Township from agricultural land, 62 cents in service are provided. For every tax dollar raised from low density single family subdivisions, the community will spend \$1.40 in services. Most new subdivisions are subsidized by other taxpayers.

**Myth #8: Nothing can be done to stop sprawl.**

The State of Michigan gives local governments tremendous authority to accommodate growth as they see fit. Rural townships can adopt techniques to preserve farmland, and accommodate growth pressures by concentrating development in village communities and in areas with existing infrastructure. Communities that prefer modest or rapid growth can encourage compact development patterns that utilize land and infrastructure efficiently. No law, no rule, no ordinance requires a community to open up the flood gates to low density suburban sprawl.

Local leaders are futurists. They make land use decisions that will dramatically impact the character of our communities for hundreds of years. We can no longer afford to house most new residents on 1- to 3-acre lots. We can do a much better job at accommodating growth in a more fiscally, environmentally and socially sound manner. The question we face is not "to grow or not to grow"; the question is how to grow intelligently.

### *In Sweden:*

Residential areas are built only where train access, bus stops, bike and walking paths are provided. Important services, such as grocery stores, health clinics, post offices, schools and day care centers are located in every neighborhood.

Separated bike and pedestrian paths connect every neighborhood in small towns and cities. Underpasses allow bikes and pedestrians to safely avoid major intersections.

Wetlands are legally protected from development. Agricultural lands bordering cities are preserved.

Uppsala, Sweden, a university city about the same size as Ann Arbor, has 2,500 parking spaces in its downtown. Ann Arbor has 12,000. Most residents use bikes, buses or trains for local transportation.

Forty percent of local government employees bike to work in Örebro, Sweden. Seventy five percent of Washtenaw County workers drive to work alone (SEMCOG).

### *Also in Örebro:*

Employees are given company bikes instead of company cars—no trips under 4 kilometers by car will be reimbursed. Long trips must be made by train.

Some apartment complexes own cooperative cars so residents don't have to purchase their own.

Compiled by Sarah Gramlich

# Who is Shaping the Future of Your Community?

by Anne Monnelly, MS, Natural Resources, University of Michigan School of Natural Resources and Environment

Residents of cities, villages and townships in Washtenaw County are grappling with one of the most important questions they will ever address: what kind of community do we want in the future? Communities are asking: What kind of housing should be provided? Do we want a shopping mall? Should industrial development be encouraged? Are there enough recreational areas? Should farmland be preserved? How will we protect water quality as we develop? The answers to these land use questions will shape the future of our communities. They will determine the quality of our air, water, land and our lives.

Many people lament the type of development occurring in their communities; they mistakenly regard the changes as inevitable outcomes of growth that are

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*"Many people lament the type of development occurring in their communities: they mistakenly regard the changes as inevitable outcomes of growth that are beyond their control."*

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beyond their control. On the contrary, development decisions are being made right under our noses at local meetings that are open to the public. The best way to assure that your community retains clean air, clean water, and a high quality of life as it develops, is to get involved in the local decision making process. Here's an overview of how the process works and how you can get involved.

## Who is making development decisions in your community?

In Michigan, state planning laws give tremendous decision-making power to local governments- townships,

cities, and villages. Consequently, local officials are the primary land use decision makers. Who are they?

Townships have a Township Board, villages and cities have Village and City Councils. Boards and Councils are composed of 5-9 citizens who are elected and have regulatory powers. In addition, all municipalities have a Planning Commission. Planning Commissions are composed of 5-9 residents who are appointed and play an advisory role to Boards and Councils. Together, these local officials make the bulk of the development decisions that will affect the quality of life in your community.

## What does the land use decision making process look like?

The Planning Commission and the Board/Council review development proposals and hear re-zoning requests. They address these and other important land use issues at monthly meetings that are open to the public. Throughout the process they are guided by two primary documents: the Master Plan and the Zoning Ordinance.

A Master Plan is often described as a comprehensive guide to future development of a community. It is a statement of a community's goals for the future, it serves as an aid for local government officials in day-to-day decision making, and it provides a basis upon which zoning decisions are made.

Zoning designates the land uses that can take place on a piece of property. It is a legal tool that local governments can use to control land use. A Zoning Ordinance is the legal document that contains all the rules about zoning for a particular community.

Using the Master Plan and Zoning Ordinance as guides, local officials decide how development will occur in a community.

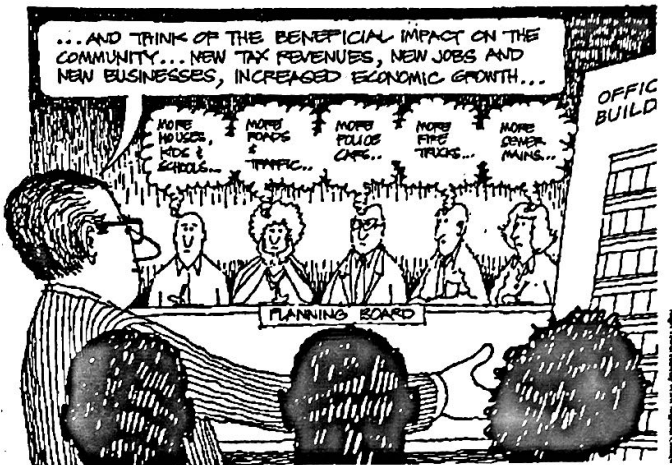
## Land use decisions are made in public and there is a role for you!

All of the Planning Commission, Township Board and Village/City Council meetings are open to the public. Providing opportunity for public comment during meetings is required by state law. If you want to help shape

the future of your community you can begin by attending these meetings.

There are many roles to play, they include: providing comments or asking questions about specific development proposals, suggesting amendments to the Zoning Ordinance, or getting involved in Master Plan revisions. You may find land use decision making so important that you decide to serve on your community's Planning Commission, Township Board, or Village/City Council!

Above all, remember that your voice counts. By participating in the land use decision making process you will let your local officials know that people are concerned about how development is occurring. Most importantly, you will gain the opportunity to help shape the future of your community.



The Huron River Watershed Council is developing a guide to help citizens 1) understand what land use is and how our current land use practices affect water quality and 2) learn what they can do on a local level to protect water quality, preserve open space, and promote livable communities. The guide explains the role of the land in the water cycle and guides citizens in reviewing their local zoning ordinances and master plans. To find out more call the Huron River Watershed Council at (313) 769-5123.



Early American towns evolved with a town center that concentrated shopping, working and civic activities. Neighborhoods were a short walk from the town center. Streets with sidewalks, paths through squares, parks and mid-block alleys let people move about the town quickly. Houses with porches, close to the street, encouraged friendliness and safety.

Today, new subdivisions are sterile cookie cutter developments. Residents need their cars to conduct the simplest of errands. Many residents have never met their closest neighbors.

"The values of community demand a place where people can see and know each other, where children can play and adults work together and join in the pleasures and responsibilities of the place where they live."

- John F. Kennedy

From Shirley Axon, Chair, Natural Resources Committee, Ann Arbor Area League of Women Voters



# The Impacts of Sprawl on Water Quality

by Kris Olsson, Co-Chair of the Huron Land Use Alliance and Water Resources Specialist for the Huron River Watershed Council

What is the impact of the conversion of open space to subdivisions, strip malls, and parking lots?

Open space - woodlands, wetlands, meadows, farm fields - provides a panoply of benefits to wildlife and water quality. Open lands filter pollutants from stormwater runoff and allow it to percolate slowly into the ground instead of running directly into surface water. Open space provides groundwater recharge to drinking water aquifers and to freshwater springs that keep streams cool and clean and stream flow constant. Wetlands, woodlands, and even farm fields provide wildlife habitat and a place to recreate.

As open spaces become paved over or covered with roof tops and lawns, rainwater runs directly into streams and lakes. The water is no longer filtered through the ground.

This drastically changes the hydrology of our waterways. As evidenced by the recent flooding in Seattle and other parts of the Northwest, flood volumes have increased up to 5 times in developed watersheds. The frequency of high flows in developed watersheds increases from 1 or 2 times/decade to several times a year. Streams in developed areas experience higher spring floods and lower summer flows. These more frequent, larger floods erode stream channels.

Increases in development bring higher levels of pollution to our lakes and streams.

Urban runoff has been shown to contain concentrations of pollutant as great or greater than treated sewage effluents. Five to ten times as much phosphorus flows from residential watersheds as forested watersheds. About ten times as much suspended solids flow from developed areas as from secondarily treated sewage. Runoff can contain heavy metals like zinc, copper, lead, nickel, mercury. Up to 77 priority pollutants have been found in stormwater discharges.

Development of urban land generates 1000-100,000 tons of sediment per square mile per year. Existing developed land generates 200 - 500 tons of sediment per square mile per year (forests generate 15 -

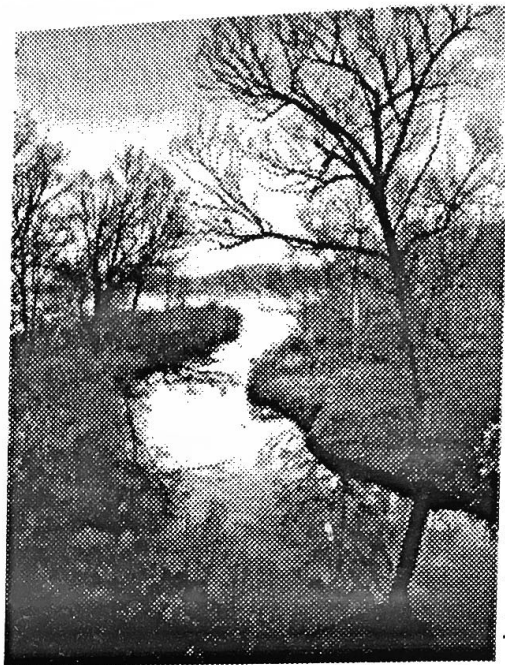


photo: Ann Sibole

*Open spaces provide recharge water that keeps streams cool, clean, and able to support wildlife.*

100 tons). Nitrate/nitrogen levels increase with residential development due to septic tanks and fertilizer use.

Sensitive fish and other wildlife and plant life cannot survive these drastic hydrological and chemical changes. These changes lead to the loss of diversity and native species of our lakes and streams, leaving waterways that can support only the toughest of species, like carp and other "bottom feeders," that can withstand warmer water, low levels of oxygen, and mud-clogged creek bottoms.

Studies have shown that decreases in watershed quality become apparent when about 10 - 15% of a basin is paved over, or become impervious. Many of the creek basins in Washtenaw County are still below this threshold. Some are near the threshold. The County still has the opportunity to maintain the quality of these areas. The County's Agricultural and Open Space Preservation Task Force is researching ways the County may be able to do this. The Huron Land Use Alliance, the Huron River Watershed Council, and other local groups (see page 22) are working with local governments and citizens groups to develop local strategies to preserve open space and promote sustainable communities.



## Buying the Right to Build: The Benefits of PDR

by Barry Lonik, Executive Director of the Potowatomi Land Trust

Washtenaw County is at a land use crossroads. Every year, some 4,000 of its farmland acres alone are converted to other uses, primarily residential. As people flee the urban morass and seek a better life, they see the lands surrounding Ann Arbor and Ypsilanti as unused, undeveloped and waiting for new subdivisions, shopping malls and office parks.

This sprawling development is having numerous detrimental effects on the county's agricultural industry. Without the land, farmers cannot grow the crops they need to operate their businesses. Over 300 acres that used to be used to grow corn south of the intersection of I-94 and Ann Arbor-Saline Rd. is now covered by asphalt. The farmers who rented and depended on that land are now selling their dairy farm as a direct result.

Last summer, a group known as the Citizens Task Force for Farmland and Open Space Preservation brought before the Washtenaw County Board of Commissioners a proposal to establish and fund a program that would help alleviate this most pressing issue. Called Purchase of Development Rights, or PDR, the program involves a

government agency or nonprofit organization (such as a land trust) using public funds to purchase the residential development potential, surface mining rights and other such capacities on qualified land and recording a conservation easement with the deed. The easement limits future use of the land to agriculture, natural area or open space. In essence, the landowner is compensated monetarily for the development rights in exchange for agreeing not to develop the property or sell it for development. The property remains in private ownership, can continue to be farmed and can be sold or passed on to heirs subject to the easement agreement. PDR programs have been in operation for 20 years, preserving over 400,000 acres of farmland across the U.S.

The County Board's response was to create a special Agricultural Lands and Open Space Task Force to study the variety of ways those lands can be protected and to produce a plan for doing so by November, 1997. Research indicates that any truly successful land preservation program must include funds for PDR.

For more information on PDR or the Citizens Task Force, contact Barry Lonik at (313) 426-3669.



*"Acreage For Sale" signs are a common sight in the townships and rural areas of southeastern Michigan.*

# Models for Livable Communities

by Kim Hill, Treasurer, Huron Land Use Alliance

As the suburban regions of Southeastern Michigan continue to expand, land that was previously open space is being developed. The impact of this growth has confronted many communities with difficult decisions: Should they continue to allow sprawl development, or limit development to specified areas while preserving land in other areas? If a community wishes to practice planned growth, what are the options available? These and other questions require knowledge and expertise usually lacking within any single local government. A comprehensive, region-wide growth plan that includes many facets of land preservation techniques will be required to effectively manage the expansion of communities in the future.

In Michigan, the power to make land use decisions is in the hands of about 1800 townships, cities, villages and counties, compared to an average of 400 municipalities in other states. Rarely do any of these 1800 units consult one another when making development decisions. Townships attempting to plan for growth are often overrun by traffic generated by the unplanned growth in a neighboring community. This can result in five lane boulevards running into two lane country roads at the township borders. Giant superstores and sprawling neighborhoods oftentimes abut the township border, placing these developments across the street from farming communities in neighboring townships. Clearly, coopera-

tion among municipalities would ease the transition from rural to developed areas and enable a region to more efficiently plan for growth.

Many regions across the country have recognized the inefficiencies, environmental degradation, and reduced quality of life associated with unplanned growth and are making attempts to counter these negative effects. Most notable is the state of Oregon. In the 1970s, the Oregon state legislature passed a law that mandated municipalities to draw growth boundaries. These boundaries defined where development is allowed and where open space is protected. Portland drew their boundary and is being hailed as a success story on the containment of growth. This does not mean that Portland stopped building or lost jobs and employers. On the contrary, they added many new employers who came to the region specifically because of the quality of life offered by the open spaces beyond the growth boundaries. Because cities and villages are relatively compact, many services can be reached by walking or a short ride on their mass transit system. Portland's population also grew, but in an efficient manner in compact neighborhoods with a wide variety of housing options.

Other regions are combatting the negative effects of sprawl by a variety of methods. Orlando, FL, Madison, WI, and Sacramento, CA have revised their parking standards. New developments are allowed to provide

(Continued on page 15, Communities)



*The photograph at left shows a typical new development—a subdivision with houses set far from the street on lots of 1 or more acres. At right, the older Burns Park (Ann Arbor) neighborhood is much more land efficient and community-friendly.*



# ECOLOGY REPORTS

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## NEWS BRIEFS

### Campaign Against Fishy Health Warnings

Working with the the National Wildlife Federation, the Michigan Environmental Council, and other environmental groups, the Ecology Center has pressured the State of Michigan to adopt more restrictive health advisories about the risks of eating Great Lakes fish. Ten years ago, each of the Great Lakes states and the province of Ontario agreed to establish a uniform advisory for fish consumption, and today, all of the other governments have adopted the standard — all except Michigan. The U.S. Environmental Protection Agency recently told Michigan it would send out its own warning if Michigan did not act itself. The Center supported Rep. Mary Schroer's bill to force the state to adopt the Uniform Advisory, and in a surprise vote, the bill passed the State House 101-4. It now awaits action in the state Senate. We're asking people to decorate a paper plate with the message to keep fishing safe in Michigan, and send it to the Governor's office. Inside sources say the Governor's been swamped with fish plates.

### Send the Trash Back to Canada

The Ecology Center has helped organize a bi-national coalition to persuade the City of Toronto to overturn a decision to send its garbage to a landfill in Washtenaw County, and to restrict landfill siting in Michigan. We're working on two fronts. For Toronto, we've started a "Send It Back" campaign. Just write a letter opposing the trash shipment to the Ontario official below, and send it to the Ecology Center. We'll place it with thousands of other letters in a trash can which we'll deliver to Toronto personally. In Michigan, the Ecology Center, Michigan Environmental Council, and other groups are working with state legislators Liz Brater, Alma Wheeler Smith, and Loren Bennett, and with U.S. Senator

Carl Levin and Rep. Lynn Rivers, to stop out-of-state waste and tighten up landfill siting standards.

Address your letter to:  
Norman Sterling  
Minister of the Environment  
Toronto, ONT

Send your letter to:  
Ecology Center  
117 N. Division  
Ann Arbor, MI 48104

### Repeal Michigan's Polluter Secrecy Law

The Ecology Center supported Rep. Greg Kaza's bill to repeal one of Michigan's worst anti-environmental statutes, the Polluter Secrecy (aka Environmental Audit and Privilege) Law. Enacted in 1996, Polluter Secrecy allows polluting corporations to keep evidence of environmental violations secret from state enforcement officials. One of the first facilities to invoke the new law was the General Motors Truck complex in Pontiac. The Ecology Center uncovered GM's use of the new law while assisting community activists in Pontiac seeking improvements in the plant's operations.

### Theo Colborn at the University of Michigan

Theo Colborn, the noted expert on hormone disrupting chemicals, gave two public lectures in Ann Arbor as part of her recent book tour. Dr. Colborn is the co-author of Our Stolen Future, the widely-acclaimed expos of the effect of toxic substances on human and wildlife reproduction. The book has been called the the Silent Spring of the 1990s, and has recently been issued in paperback. The Center organized a breakfast meeting of area legislators with Dr. Colborn during her visit.

### Ecology Center Stops Bad Asphalt

Michigan's roads need a lot of help, but the proposal of the Thompson-McCully asphalt company is no

MORE NEWS BRIEFS ON FOLLOWING PAGE

favor to anyone. The company proposed to burn highly toxic waste oil as fuel in their six Michigan asphalt plants, including one in Whitmore Lake. The Ecology Center requested a public hearing on the proposal, and testified before the Department of Environmental Quality against the permit. Ecology Center Senior scientist Dr. Hans Posselt raised enough concerns with the scheme that the DEQ has so far refused to grant the permit. In Whitmore Lake, neighbors had complained about odors from the plant for years, and now a community group is organizing to stop the new waste oil proposal. Another public hearing is to be scheduled.

### Center Helps Lansing Activists Get Relief

Lansing activists recently won a big victory in their long-standing fight with the local General Motors assembly plant, with help from Ecology Center staffer Jeff Gearhart. The Michigan Department of Environmental Quality denied GM's request to begin construction of a so-called "pollution control device" before receiving their state permit. The pollution control is merely an enormous stack which would blow the factory's toxic emissions into other neighborhoods. The Center has been proposing pollution prevention alternatives to GM and the DEQ.

### Labor and Environmental Groups Work for a Just Transition

The Ecology Center is participating in key strategy discussions about a "Just Transition" during a proposed phase-out of persistent toxic substances. Organized by Great Lakes United, the discussions between environmental groups and labor unions focus on the economic and social impacts of workers in the chemical and related industries if the Great Lakes region were to adopt phase-out policies.

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### The Never-Ending, Never-Starting Groundwater Cleanup

The Ecology Center joined hundreds of Washtenaw County residents and other groups in testifying against a proposed groundwater clean-up plan for the Gelman Sciences site. After ten years of fighting and stalling, the company agreed in 1995 to meet community demand that it detoxify the polluted water completely before discharge. One year later, it pulled a bait-and-switch on the exhausted community opponents, and reverted back to its former inadequate treatment proposal. Then, in a second switch, Gelman announced plans to merge with an Australian firm. When that deal fell through, the company was bought out by its largest competitor, the Pall Corporation. The DEQ is backed into a corner on the company's proposal, since residents have proven that the proposed discharge stream, Honey Creek, is hydrologically connected to the underlying groundwater, and therefore requires a stricter permit.

## SPECIAL LAND USE AND OPEN SPACE EVENT FOR ECOLOGY CENTER MEMBERS

### *Come play the Ecology Center's new LAND USE GAME*

*it's fun, it's informative, plus... you can let us know  
how to make it useful for adult workshops on land use*

*Then... hear from Barry Lonik, coordinator of the  
Coalition to Protect Farmland and Open Space in  
Washtenaw County. He will give an update on  
land use happenings in Washtenaw County.*

MAY 14, 1997 • 7:30-9:30 P.M.  
LESLIE SCIENCE CENTER  
1831 TRAVER ROAD • ANN ARBOR

*Refreshments will be served • call 761-3186  
to RSVP or for more information*

## It's Back. . .Another Earth Machine Compost Bin Sale

Last spring, the Ecology Center hosted a compost bin sale and it was a huge success. This year, the Ecology Center is sponsoring a **one day only — rain or shine — Earth Machine Compost Bin sale on Saturday, May 10 from 9 a.m. - 4 p.m.** The sale will take place in the parking lot of Pioneer High School in Ann Arbor (located at Main St. and Stadium Blvd.).

The Earth Machine is a black, dome-shaped, composter made of up to 60% recycled plastic with as much as 50% post-consumer content. Side vents allow for air circulation and a side door provides for access to the compost pile. The Norseman Plastics bin has a 10-year warranty and its retail price is \$90. **At the May 10 sale the bin will sell for \$35 + tax.**

If you are already composting and don't need a bin, you should still stop by. Master composters will be available at the sale to answer your composting questions. Bring the coupon below and you will receive a free copy of *Backyard Composting, Your Complete Guide to Recycling Yard Clippings* by Harmonious Technologies.

Volunteers are needed to help at the sale. Contact Rebecca Kanner at 995-5888 x 115 for more information.

### **EARTH MACHINE COMPOST BIN SALE**

*Saturday, May 10, 1997, 9 a.m. - 4 p.m.  
Pioneer High School parking lot, Ann Arbor*

**Bring this coupon to the sale for a  
free guide to backyard composting**

*No purchase necessary. Sponsored by The Ecology Center*

## *Celebrate Earth Day at the Earth Day Festival*

Join us on Sunday, April 20 at the Leslie Science Center to celebrate Earth Day. This fifth annual community event features music, storytelling, games, educational displays, wildlife, demonstrations, arts and crafts, refreshments and prizes for all! The festival will run from 1-5 p.m. There will also be an All-Species Parade from Wheeler Park to the Earth Day Festival. Be sure to be part of the excitement!

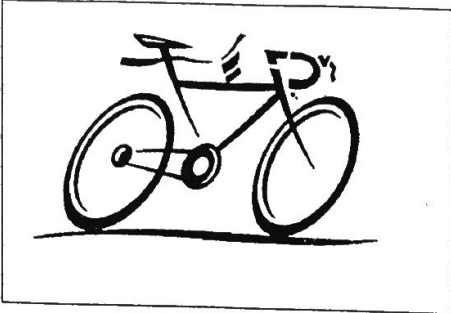
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## Rollin' on to June: The Bike-a-thon Moves to June 8

After years of May Bike-a-thons, the Ecology Center's biggest fundraiser will be held on Sunday, June 8 this year. The Ecology Center is trading in May's showers and cool weather for June's flowers and great biking weather!

There will be three routes: 12, 28, and 57-miles, all starting out from West Park in Ann Arbor, and then winding along the scenic Huron River. Riders can pay a registration fee or get sponsors and compete for incentive prizes. Festivities will follow at West Park. More information on the Bike-a-thon will be in the next edition of *Ecology Reports*. Mark your calendar now for the 26th annual Bike-a-thon, Rollin' Along the River on June 8, 1997. All funds raised at the Bike-a-thon go towards supporting the Ecology Center's environmental education and advocacy work. Don't miss out on the excitement of this fun fundraiser!

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*"Kentlands" in Gaithersburg, Maryland (suburban Washington D.C.) has adopted design standards that helped create a community reminiscent of 19th century villages. The neighborhood includes parks, a school, businesses and transit stops within walking distance. Land is used efficiently by locating homes on smaller lots.*

## Communities — Continued from page 10

fewer parking spaces than was previously mandated, in order to reduce paved surfaces. Seattle allows builders to construct houses on much smaller lots to encourage denser, more efficient neighborhoods.

Closer to home, Peninsula Township (in northern Michigan) voters approved a plan to purchase development rights to farmland as a way of preserving the cherry orchards that were in danger of being lost to residential development (see page 9 for more information). Another method officials want to use is the transfer of development rights from farmland to designated growth areas in the township, closer to Traverse City. This could have the effect of preserving more farmland while encouraging growth in urban areas that can more efficiently accommodate it.

One of the more promising ideas for growth management is occurring in Traverse City and the surrounding counties. Led by the Traverse City Area Chamber of Commerce, a coalition called New Designs for Growth has formed. This nonprofit organization is comprised of representatives of many local units of government, business, and the environmental community. This group hopes to educate elected officials, businesses, builders, and area citizens about efficient, environmentally sensitive methods of growth. The group commissioned a guidebook that shows development standards that will result in a more livable community. Many municipalities

have adopted the standards, and many are considering adopting them. Public/private partnerships such as this offer a great opportunity to manage growth. This represents a unique example of cross jurisdictional cooperation that could result in tremendous benefits to all residents of the region.

There are many reasons to advocate for planned growth, such as efficient delivery of municipal services, lower taxes, and less environmental degradation, but the simplest reason is before our eyes. We live in an area of pleasant towns surrounded by farms, lakes, and open spaces. This is in danger of being lost forever unless action is taken soon.

Recognizing that growth will occur and planning for it, while at the same time recognizing the unique aspects of the region that attracted people there in the first place is the framework for successful, livable communities of the future.

# Meeting the Growth Challenge

by Kurt Brandle, Professor at the University of Michigan's Department of Architecture and Urban Planning

If growth is inevitable, as it is in the townships around Ann Arbor, we must carefully evaluate how its impact can be minimized. What level of densities should be allowed in new developments is a central question, not only important for particular target areas but for the whole region, whose social, fiscal and ecological conditions are influenced by decisions on density.

Growth in the townships is now largely limited to low density development by means of zoning, that is for housing one house per one, two or even five acres. This limitation perpetuates suburban sprawl and the associated problems that we can observe in so many places across the country. Buildings for commercial, industrial and residential use are spread over large tracts of land. This results, especially for low density single-family residential development, in high costs per dwelling unit for roads, utilities, fire protection, etc., and therefore, high taxes. The distances between homes are larger than needed for privacy but not large enough for agricultural use of the land.

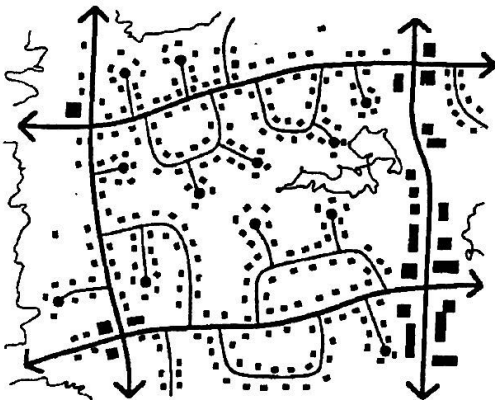
Recent research found that in Scio Township expenditures for infrastructure and services versus tax

revenues are much higher for low density residential developments than agriculture.<sup>1</sup> There is no doubt that this is mainly due to the low densities of such developments. Higher densities, while requiring additional investments, will produce comparatively more tax revenues. This is confirmed by several studies, among them research at Rutgers University which found that a hierarchy of increasingly negative fiscal impacts of land use exists from office parks, industrial development, apartments, retail facilities, townhouses to detached homes.<sup>2</sup> Open space, that may be assumed to include agriculture, was listed on the positive side.

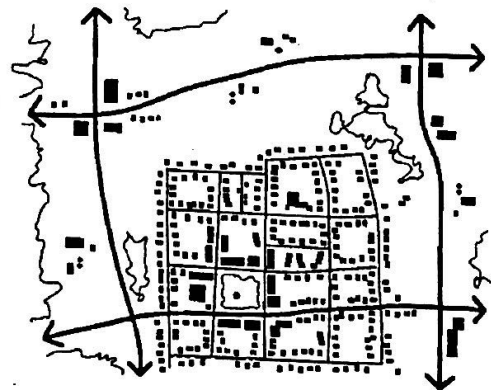
Efficient land use requires that reasonably high densities are allowed to happen. Such higher densities should occur in towns and villages, and other areas where infrastructure exists or can be economically provided.

A planning approach is necessary with discussions among the many small political entities to produce satisfactory solutions for the whole region. If a low density area experiences strong growth pressures, density allocation elsewhere in the region may reduce such pressures.

On a more detailed level, growth management may occur on two levels: township-wide and for particular neighborhoods. Central to concerns of the



1. Urban sprawl with low density subdivisions. Exclusionary zoning for housing, work and service functions. Very little open space. Extensive roads. Full dependency on individual automobiles.



2. Nuclear character through medium density. Mixed-use zoning. Preservation of open space and farmland. Pedestrian and public transit orientation without neglect of private automobiles.



townships are master plans and related zoning requirements. Performance zoning, rather than highly prescriptive zoning within the districts of the master plan, can provide flexibility. That is, density may be specified as an overall requirement with details left to neighborhood design. In such a way rather large parcels of land can be developed satisfactorily, taking local concerns into account.

One way to accomplish this is through cluster zoning that states an overall density but does not specify where within the particular area high and low density may happen.

Rural Livingston County recently adopted an open space planning approach, PEARL, to Protect Environment, Agriculture and Rural Landscape.

"This type of development consists of housing clustered on cul-de-sacs or other street configurations that organize 8-10 homes in a group. Surrounding the clustered housing is a dedicated open space; street and property lot configuration is designed to maximize this open space and to avoid environmentally-sensitive features within the tract of land, such as wetlands. Most often the open space is left as it occurs naturally, but may include some improvements such as trails."<sup>3</sup> Or, the open space can be used for agriculture. The ordinance states that lots not served by a public or common sewer shall be at least 30,000 sqft., with public or common sewer and served by a public water system at least 15,000 sq.ft.

Cluster zoning, though desirable to preserve open space in a particular area, does not necessarily reduce suburban sprawl. Only reasonably high overall densities will accomplish this, for example, 6 to 12 dwelling units per acre. Such densities may lead to very desirable village developments that can support neighborhood schools and service infrastructure, possibly even public transportation within the metropolitan area.

An even more flexible growth management tool is Planned Unit Development (PUD), which allows for decision making on the merit of particular proposals for land use. PUD proposals are not bound by any existing zoning but are subject to approval by planning commissions and city or township boards, based on local

concerns typically voiced in public hearings. Sometimes PUDs may contain a mix of residential, office, retail and commercial uses, that tend to strengthen each other economically. Such an integrated development could for example be advantageous as a municipal center for Scio Township at Jackson and Zeeb Roads. PUDs have been in use for quite some time.

*"Cluster zoning, though desirable to preserve open space in a particular area, does not necessarily reduce suburban sprawl. Only reasonably high overall densities will accomplish this. . . Such densities may lead to very desirable village developments that can support neighborhood schools and service infrastructure, possibly even public transportation within the metropolitan area."*

A major factor in determining densities is the availability of sewer services. Septic fields typically require lots of one acre or more, depending on soil percolation conditions. Municipal sewer installation costs can usually be recovered from connection and service fees at densities of two or

more dwelling units per acre. This fact provides a strong argument for increased density in certain areas and for granting permits for such densities where public sewers exist.

When development pressures exist, reasonably high densities with open spaces in between are economically more efficient than suburban sprawl with low density throughout. This would mean for Washtenaw County the development of a regional master plan that emphasizes high density at particular points, often with mixed use allowance, and low density beyond such concentrations in combination with open space planning. It is crucial and only fair that we let those who want to live in reasonably high density areas to do so—as much as we must allow those who want to live in more rural environments to enjoy their choice.

<sup>1</sup> Crane L. P., Manion M.M., Spiecker K.F., "The Cost of Community Services Study of Scio Township", Potawatomi Land Trust, Ann Arbor, MI, July 1996.

<sup>2</sup> As reported in Burchell, R.W., "Economic and Fiscal Impacts of Alternative Land-Use Patterns", in Land Use Decision Making - Its Role in a Sustainable Future for Michigan, Conference Proceedings, Michigan State Land Use Forum, January 1995.

<sup>3</sup> "Open Space Planning", Volumes 1 and 2, Livingston County Department of Planning, July 1994, p. II-2.

# Creating Livable Places

by Rob Pulcifer, Huron Land Use Alliance

We live in a time that offers many interesting options. The choices we make about land use will affect our region and our country for many years to come.

In recent years, our choices have distanced us from our daily needs. Most of us climb into our cars to perform simple errands, and the way development patterns are slated to continue, this will only increase. Yet, not all that long ago, nearly every residence, service, activity, form of entertainment, or job was a short trek from one another. It wasn't only because there were fewer cars and car owners to travel the longer distances necessary to reach places far from their front doors—though that did certainly play a role. The automobile gets blamed for much these days, and in some ways it should, but it's only a means of separation. It's not the cause.

There was another reason. Somewhere along the line, we decided that the worst thing you could have near your house was a use other than housing. Zoning codes were written that mandated this separation. Subdivisions, as these types of development became known, sprouted on the peripheries of cities and towns. But, people still depended on the nearby town for their livelihood and their needs.

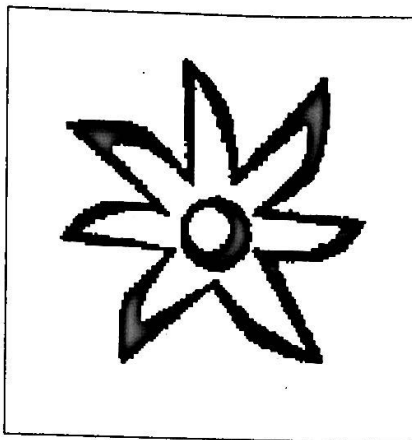
Services began to move out near, but not too near, the subdivisions. Convenience stores and service stations became a common sight. With their success, more services filled in along the roads that led in and out of town. Since these businesses were lined one after the other along the highway, they became known as strip developments. Zoning codes took this into account and designated certain areas for this use. These strips of commerce were convenient. They were a short car hop away, or a place to drop by on the way home from work.

Then, one of the greatest commercial movements of our time swept through the country. The outlying

shopping center was born. Catering to the automobile craze and to an affluent post-war society, these mega-shopping centers offered large expanses of free parking along with large well-known anchor stores surrounded by smaller stores.

In many parts of the country, and in Detroit in particular, this movement out of the metropolis coincided with a dismantling of a once-successful mass transit system. The car gave us the freedom to go where we wanted when we wanted, and our movement away from central areas of population reduced the critical mass needed to allow a transit system to be viable.

Auto dealers moved out to the periphery; schools needing to expand moved out; major discount chains found the space they needed to sell volume merchandise; office



complexes sprouted at the edges of town; fast food restaurants catered to the quick stop and go opportunity; and religious institutions now stand where once there were thriving farms. Why? There was room, taxes were cheaper, outlying townships converted farmland to developable land, our cars could take us anywhere, and few people thought about the social, environmental, and fiscal costs and consequences.

So, how do we go about creating livable places? Since our current path of separation of uses is alienating us, as well as sending us farther "afield" in our voracious appetite for more land, I suggest we encourage more compact development patterns that allow a mixture of land uses. Housing of various sizes, styles, and prices can be built within a single neighborhood. This includes apartments built over garages and stores. Such consolidation allows for another advantage—mass transit. Mass transit is economically viable when there is a critical mass of people to use it. A further gain is that lands best kept undeveloped—wetlands, natural areas, farmlands, and so on—are retained. Infrastructure (roads, sewers, utilities) is consolidated and more easily maintained. The

list of benefits goes on and on.

There are national organizations we can draw from with experience in these issues. The Congress for the New Urbanism in San Francisco is comprised of a group of people interested in encouraging more livable communities. They've adopted a Charter of the New Urbanism stating that "metropolitan regions are finite places with geographic boundaries derived from topography, watersheds, coastlines, farmlands, regional parks, and river basins. The metropolis is made up of multiple centers that are cities, towns, and villages, each with its own identifiable center and edges." The Charter goes on to address the importance of mixing uses in neighborhoods; allowing for a broad range of housing types; respecting the history of an area; making neighborhoods compact and pedestrian friendly; introducing transit corridors, and building with enough density to make it all workable.

Not one of these ideas is far-fetched. They're being done in a number of communities throughout the U.S. Local residents have to prove to city, county, township, and state officials; to developers and builders, that a demand exists for more livable communities.

It won't happen overnight. Land is getting consumed at alarming rates in haphazard ways. We need to understand that there are more options available than we have been given. We need to educate ourselves as a citizenry to know a good thing when we see it. And we need to find common ground to bring our ideas to fruition.

For those interested in further reading there are a number of good books. Here are my recommendations:

Rural By Design, by *Randall Arendt*. Written by the planner whose name everyone drops if they're interested in good land use policy. This book should be read and reread.

The Next American Metropolis: Ecology, Community, and the American Dream, by *Peter Calthorpe*. This book emphasizes our need for compact, walkable/mass-transit, mixed-use communities that work to enhance the environment.

Towns and Town-Making Principles, by *Andres Duany & Elizabeth Plater-Zyberk*. The couple who spearheaded a movement to find the best that traditional American towns have to offer and then apply them to today's world.

- [www.dpz-architects.com/philosof.htm](http://www.dpz-architects.com/philosof.htm)
- [www.dpz-architects.com/educate.htm](http://www.dpz-architects.com/educate.htm)

The Death and Life of Great American Cities, by *Jane Jacobs*. An all time classic. She saw it all happening back before 1960. Still as valid today as it was then.

The Geography of Nowhere, by *Howard Kunstler*. A good place to begin. An accessibly written overview of how we got ourselves where we are today.

Home From Nowhere, by *Howard Kunstler*. An emphasis on positive ways we can redirect ourselves.

"A Good Place To Live," by *Philip Langdon*, *Atlantic*, March, 1988. A well written article that got the general public talking.

# A Builder's Perspective on Subdivision Design

by Bob Murray, President of the Washtenaw County Homebuilders Association

Why do many housing projects being built on the urban fringe today fail to preserve open space or the natural lay of the land? Most developers attempt to design their sites to coordinate the natural features of the land with the economic factors present and the zoning regulations applicable. This means many variables and constraints must be explored with each decision. Protecting the natural features of a site has become important in today's market because it is those natural features that set a particular site apart from other developments. Buyers are more aware and more sensitive to their surroundings and the management of the natural features will make a big difference in the marketing and success of any development.

*"Protecting the natural features of a site has become important in today's market because it is those natural features that set a particular site apart from other developments."*

This leaves the developer with the task of reaching the proper balance of economic factors and zoning constraints that will allow for preservation of natural features. Flexibility in these areas would be very helpful in reaching the proper balances. Which brings me to the heart of my subject. Current zoning ordinances allow for very little flexibility of design. Most zoning ordinances are written as prescriptive numbers, things like lot size and shape, density limits, setback distances, road design, parking standards, and building design. Rules of this type may work fine for a traditional grid type subdivision, but they are a roadblock to a design that is trying to preserve natural features which seldom follow a human-made grid. In order for a developer to meet the prescriptive rules of the ordinance, s/he must either ignore the natural features for the economy of the grid, or give away a number of lots for the natural features. Losing the lots has a huge effect on the economic factors of the project and greatly increases the costs to the consumer.

If zoning ordinances could be established around a set of performance standards, rather than prescriptive rules, the developer would have the flexibility to modify the plan to reshape lots around the natural features, thereby saving the natural features while retaining lot

numbers and economic viability. Standards could include natural features preservation, efficient use of land, and pedestrian-friendly design. Performance codes are written with end results in mind rather than imposing specific dimensions. If you look back at the process of developing prescriptive rules, you see that the creators had end results in mind

and they wrote the rules to try to create the end results, which may work fine in the traditional grid type development. In the less traditional subdivision it would be better to get back to the original intent of the zoning rules and allow the designer to determine how best to accomplish a suitable development.

Understandably, the performance standards are more difficult to administer and enforce. It requires reviews and analysis by professional planners and engineers rather than by township boards and community groups. The reviewer needs to be able to understand what is being accomplished and see how the specifics of the design will help meet the goal. The possible results are well worth the effort required. Preserving natural features is a benefit to all of society, not just the developer or the end user. Natural features provide safe water, heritage, and natural beauty for everyone.



## Burns Park

is an Ann Arbor neighborhood that is considered, by many, to be a desirable place to live. Duplexes and apartments are scattered within the primarily single family neighborhood. Children can walk to school because the density is high enough in the neighborhood to warrant an elementary school. What residents give up in terms of large yards, they make up with modest size yards and a beautiful neighborhood park that includes ball fields, basketball and tennis courts and play areas. Neighborhood commercial uses and bus lines are within walking distance. Sidewalks allow all residents, including seniors, small children and persons with disabilities to walk safely.

However, municipalities in Washtenaw County have taken steps to ensure that neighborhoods like Burns Park aren't built anymore. They have adopted master plans and ordinances that prevent the integration of multi-family with single-family housing, require that densities for single family neighborhoods be so low that schools, parks and commercial uses are no longer within walking distance, require that streets, right-of-ways and setbacks be large, require that residential uses be segregated from commercial uses, discourage mass transit by requiring densities that cannot support transit, do not encourage streets to be linked or require that sidewalks be provided.

Burns Park is one of the most desirable neighborhoods in Washtenaw County. One of the reasons that homes in Burns Park tend to be expensive is because the demand for homes outstrips the supply. Neighborhoods like Burns Park can be built again if community leaders have the foresight and the initiative to take the steps necessary to revise master plans and ordinances to encourage more livable neighborhoods.

## Washtenaw Area Groups Working on Land Use

**The Huron Land Use Alliance** is a group of area residents and representatives of a variety of civic and environmental organizations in Washtenaw, Livingston and Wayne Counties. The Alliance provides information to citizens and local leaders on alternatives to traditional urban sprawl development patterns. For more information, call (313) 769-5123.

**The Superior Land Conservancy (SLC)** works to safeguard the natural environment, farmlands, and historic legacy of Superior Township in Eastern Washtenaw County. Over the past six years, the conservancy has published three significant studies of local natural and historic features, founded three nature preserves, and sponsored ongoing educational and recreational activities. Through close interaction with government agencies, the private sector, and other non-profit groups, the SLC keeps residents abreast of unfolding development issues. For more information, call (313) 482-5957.

**The Huron River Watershed Council** is a coalition of Huron Valley residents and local governments established under Michigan's Local River Management Act. The mission of the Council is to inspire attitudes, behaviors, and economies that protect, rehabilitate, and sustain the Huron River System. Services of the Council include hands-on citizen education, technical assistance in policy development, direct river protection projects, and land use planning assistance. For more information, call (313) 769-5123.

**The Potawatomi Land Trust's (PLT)** mission is to preserve farmland, natural areas and open space in Washtenaw County. PLT accomplishes this by acquiring land outright, by donation or by purchase and managing those lands as nature preserves; and by negotiating voluntary, permanent deed restrictions with private landowners to preserve the unique aspect of their property through Conservation Easements. PLT also works to educate members, citizens and government officials about land use issues and viable options to protect natural features. For more information, call (313) 426-3669.

**The Coalition to Protect Farmland and Open Space in Washtenaw County's** mission is to protect significant and high quality natural and agricultural resources in Washtenaw County. The Coalition is comprised of citizens and organizations working to educate residents, businesses and governmental decision-makers on ways to make sound, informed land use policies. The primary goal is to advocate for the establishment of a democratically-determined, county-wide, voluntary Purchase of Development Rights (PDR) program. For more information, call (313) 426-3669.

**The Ann Arbor Area League of Women Voters (LWV)** is a nonpartisan organization which encourages citizens to participate in their government. Small study groups learn the facts about issues and decide how League goals can be achieved through positive action. Land use is a priority issue for the league. The LWV Natural Resources committee meets monthly. For more information, call (313) 665-9349.

## A Prescription for Livable Communities

What can we do as individuals and citizens to promote more efficient use of land, open space preservation, and sustainable communities? Below are a few suggestions for individuals as well as communities:

### Communities can:

- Adopt master plans that utilize land and infrastructure efficiently, encourage communities instead of subdivisions, integrates land use and transit, preserves large tracts of open space, establishes regional and neighborhood parks and allows a variety of housing options.
- Guide growth into areas of your community that have the infrastructure to support it.
- Preserve open space and agriculture through maintenance of agricultural land uses in the master plans, conservation easements, purchase of development rights, and many other tools.
- Revise standards to allow narrower roads and right of ways with pedestrian and bike lanes.
- Change design standards to minimize pavement; e.g., allow narrower roads, smaller setbacks from houses to the road, smaller parking lots, etc.
- Zone for a wide range of housing options including smaller lot single family homes.
- Promote density in areas with access to public transportation.
- Allow higher residential densities to take place in communities with infrastructure that can handle more intense development. Communities without adequate infrastructure (no sewer, water or adequate roads) should remain primarily rural.
- Enact wetlands and other natural features protection ordinances.

## About the Ecology Center

### Who are we?

The Ecology Center is a 27-year-old non-profit environmental organization based in Ann Arbor, Michigan. Founded by community activists after the country's first Earth Day in 1970, the Center is now a regional leader in the struggle for clean air, safe water, healthy communities, and environmental justice. We're an organization of members throughout southeast Michigan, and we invite you to join us!

### What do we do?

Environmental education and citizen action to protect the environment! Today, our major programs are:

- the GEE-WOW! environmental education program — reaching 10,000 K-12 students and teachers in southeast Michigan every year;
- the Toxics Project — giving technical assistance to communities fighting toxics problems in their backyards in every corner of the state;
- the Environmental Health Project — uncovering the connections between environmental pollution and human health; and,
- the Auto Project — promoting real-world solutions to reduce and eliminate pollution from automobile manufacturing.

### Recycle Ann Arbor

Recycle Ann Arbor is a wholly-owned nonprofit subsidiary of the Ecology Center. RAA is Michigan's largest nonprofit recycler, and one of the largest in the country. It offers a variety of recycling and reuse services for households, businesses, and municipalities. RAA's curbside collection service and drop-off station in Ann Arbor have both been recognized nationally. It recently opened a Reuse Center to salvage and sell reused building materials.

ES6  
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# Join the Ecology Center

Yes! I want to join the Ecology Center and help support community action to improve our local environment. As a member, I understand that I will receive discounts on Center merchandise, including publications. I will also receive five issues/year of the Center's Ecology Reports newsletter to keep me posted on local and regional environmental issues and ways that I can help our planetary predicament by "thinking globally, acting locally." I will also receive environmental alerts and announcements of Ecology Center events, and have voting rights to elect board members.

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Recycle Ann Arbor • Offices, Buy Back and Reuse Center • 2440 S. Industrial Hwy. • Ann Arbor, Michigan 48104

(313) 662-6288 • Office Hours: Monday-Friday, 8:00 - 5:00

Recycling Drop Off Station • 2950 E. Ellsworth • Ann Arbor, Michigan • 662-6288

Hours: Monday-Friday, 10:00-7:00, Saturday 9:00-5:00

## ECOLOGY CENTER

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