A G E N D A

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METRO

Meeting: **FUTURE VISION COMMISSION**

Date: January 24, 1994

Day: Monday

Time: 4:00 p.m. - 6:30 p.m.

Place: Metro, Room 370

	Approximate Time
1. CALL TO ORDER	5 minutes
2. ROLL CALL	
3. PUBLIC COMMENT (*two minute limit, please*)	
4. MINUTES Approval of January 10, 1994 Minutes	
5. COMMENTORS - AGRICULTURE Ken Buelt, Ron Mobley	130 minutes
6. OTHER BUSINESS	10 minutes
7. PUBLIC COMMENT on Items not on the Agenda	5 minutes

Other materials in packet:
Second Draft of Vision Document
Information provided by Ron Weaver

Please R.S.V.P. to Barbara Duncan at 797-1750 by January 21st if you are unable to attend

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FUTURE VISION COMMISSION
Meeting Summary, January 10, 1994

Members in attendance: Len Freiser, Chair; Lisa Barton-Mullins, Judy Davis, Mike Gates, Wayne Lei, Robert Liberty, Peter McDonald, Susan McLain, John Magnano, Ted Spence, Rod Stevens, Fred Stewart and Robert Textor.

Others in attendance: Karen Buehrig, John Charles, Angus Duncan, Barbara Duncan, Rosemary Furfey, Ken Gervais, Steve Pettit, Gail Ryder, Ethan Seltzer, Larry Shaw, Lorna Stickle, Marisa Textor and Ron Weaver.

I. Call to Order and Roll Call

The meeting was called to order at 4:12 by Chair Freiser and a quorum was declared.

II. Public Comment

There was no public comment.

III. Minutes

Minutes of the December 20th meeting were accepted as submitted.

IV. Environmental Commentors

Rosemary Furfey, a water resources planner with Metro, stated that some important items in the environmental draft include the farmers markets and access to agricultural resources, water conservation, urban streams and the relationships between short term payoff versus long term sustainability. Some items which could be added to the draft are the importance of a sustainable economy. Farming needs to be sustainable, and suburban/rural fringe conflicts can arise between suburban households and farming activities. A coalition between neighborhoods, businesses and environmental leaders could be formed to promote environmentally sustainable business. Another issue not mentioned in the draft is that of environmental equity, a statement that all neighborhoods will have access to parks and greenspaces should be added. Air quality needs to be treated as a resource and protected, the condition of the air shed can be a factor in attracting businesses to the area.

Ms. Furfey stated that groundwater resources are another major environmental issue that the vision document should address. Control and prevention of ground water pollution should be pursued as the pollution is very costly and difficult to reverse once the groundwater is contaminated. Stewardship and community involvement can be tools in this effort.

Members discussed the meaning of sustainable development or sustainable economic development. It can be defined as economic activities that don't make it impossible for the following generations to continue similar activities.

Robert Liberty stated there is a problem of mentioning goals without having clear definitions. "Sustainable" is often linked to carrying capacity, which also then needs to be defined.

Chair Freiser asked if the draft addresses degradation of the built environment and building preservation?

Ms. Furfey stated that in other areas air pollution has degraded historically significant buildings. She mentioned the icon of a salmon could be added to the list.

The next environmental commentor Angus Duncan stated that he works with the Power Planning Council which is a coalition of members from Oregon, Washington, Idaho and Montana, who all share the Columbia basin. In looking at the materials, the vision shows a nice place to live, but seems to side step some difficult issues. Mr. Duncan stated that balancing a multiple of uses can be difficult, as in the attempts to balance human uses (power, fishing, flood control, recreation) vs. salmon needs. There are no guidelines in the vision for what tradeoffs will have to be made to achieve the vision. Establishing thresholds for living systems is necessary to avoid species populations getting smaller and smaller until they are no longer viable. You can shift the benefit of the doubt to the species we're sharing the region with, and shift the burden of proof to us, to prove that our actions will not damage the habitats.

Mr. Duncan also stated that values can be introduced into planning. The vision focuses on the Portland environs, but the watershed starts in Montana and ends at the ocean in Astoria. Some elements should be looked at on a larger scale. The actions taken in Portland effect the whole watershed. Links need to be spelled out between the metropolitan area with the other species in the region and the people in the entire watershed. Also floodplain issues should be addressed, a lot of the recent building has happened in the floodplains, we may need to look at 'buying back the floodplains'.

The probability and potential damage of a 150 year flood were discussed. Fred Stewart asked for a map showing the metropolitan floodplain areas. Mr. Duncan stated that the cheapest way to protect from flood dangers is to prevent building on that land rather than constructing levees and dikes, or dealing with insurance costs in the event of a disaster.

The question of authority and enforcement was discussed, and the difference between drawing up a plan and providing for implementation.

Mr. Duncan stated that in the next 50 years some of the changes expected in the power supply field will be in regulation, multiple providers, and multiple services offered, differences in power prices depending on the size of the user and big changes in technology.
Rod Stevens asked where development will conflict with most watershed preservation and salmon habitats?

Mr. Duncan responded that the Sandy and Clackamas rivers and the Lewis river in North Clark county are spawning and rearing grounds for salmon and are essential areas to protect. Also water quality in the Willamette and Columbia rivers is important for the health of the whole system.

Environmental commentor Lorna Stickle, who works with the Portland Water Bureau and is chair of the Oregon Water Resources Commission, stated that about half of the region's water supply today is from Bull Run, the other half comes from a variety of sources. The Bull Run water is one of the few major systems in the country that is not filtered, but only disinfected. The other water sources are ground water (Clark County's water supply is almost entirely groundwater), river water and surface water. Portland is looking at long range water supply sources. The region is blessed with a lot of water, but scarcity becomes an issue. The summer water use can be double the winter use, almost all of the increase is outdoor water use. The urban forms can effect the amount of water use. Ms. Stickle stated that values need to be addressed, how are we using what we have, how can it be used more efficiently, do we always need treated water for everything?

Rod Stevens asked if, to meet the future demand for water, land would need to be set aside as recharge basins or watersheds?

Ms. Stickle stated that the level of protection the Bull Run watershed has is very unusual, it would be difficult to acquire more watershed with similar protection. The region will need to look seriously at conservation and making more efficient use of the water we have. Another option is to store winter water for use during the summer. Ms. Stickle stated that water use can involve values. One of the attractions of this area is the green-ness, and education is needed on water saving methods and that xeriscaping (low water use landscaping) doesn't necessarily mean cactus. Water availability and costs is definitely an attraction for industry locating in the region.

John Charles from the Oregon Environmental Council stated that his comments to the Commission are as a citizen and not representing OEC. The environmental draft shows a neat place to live but does not address how to get there. He stated that Benchmarks have been in vogue but can seem arbitrary and do not say how we can achieve them. For example, the goal of a certain density of people within a half mile of a transit center does not guarantee that those people will use transit and the social engineering aspect can be resented. Mr. Charles asked who pays for sprawl, who subsidizes it? The issue of true cost development needs to be looked at. Costs and benefits of many community services are spread around the region to the general citizen. The gas tax, for instance is collected on a region wide basis and spent without regard to where it was collected, so Multnomah County revenues from gas tax may be used to subsidize rural roads that allow sprawl and do not follow the overall goals and comprehensive plans of the community. Mr. Charles stated that the public will ask how can we pay for this vision? He suggested that taxes be reduced or eliminated, and that services should not be subsidized by the whole community, but should be paid for on a specific fee basis by those who use the service. The true cost of infrastructure and services (schools, roads, libraries, drinking water and sewer) should be applied to the users and that we should not be blinded by egalitarianism.

Chair Freiser stated that he needs the roads whether he uses them or not so that people can access his house, he needs the schools even if his children are not attending because education is key to the society we want to live in, the libraries need to be there for others whether he uses them or not.

Mike Gates stated that social mobility is predicated on the access to resources, if you have to pay as you go you'll never advance.

Mr. Charles stated that ODOT and Metro are soon to announce a congestion pricing system. You can have people pay for the benefit of using a facility (a road or highway) during a peak time.

There was discussion on the equity of tolls. Will the higher cost be passed along to everyone?

Mr. Charles stated that regarding water supply, we can either have mandatory cutbacks and water police or let people decide with true cost pricing how much water they want to use. There could be lower rates for low income people. He stated that he would rather pay more to use the library, then it could afford be open more days per week and he is willing to pay for that privilege. John Charles stated that there are costs for growth borne by

society. With the costs shared by the whole society a family with no kids spends the same amount for schools as a family with four kids, why not have true cost fees?

Chair Freiser thanked the commentors for their time and input.

V. Update on Drafting Process

Chair Freiser stated that he has taken over the draft writing from Robert Liberty who has become too busy at work. The first draft of the vision document is complete and will be sent to Commissioners in the next packet.

VI. Other

Fred Stewart suggested that people who could address crime and public safety issues should be added to the list of commentors

The meeting was adjourned at 5:55 p.m.

Respectfully submitted by Barbara Duncan.

1ST DRAFT / FVC COMBINED EDIT

GOALS

In 1992, the region's voters established a Future Vision Commission to prepare a statement that will guide the area for the next fifty years. FVC's goals are a just, safe, and equitable society -- one that utilizes the land to sustain and enhance the natural as well as the built environment; that has rich cultural and effective educational programs; and that provides strong economic and employment opportunities.

Our vision statement centers on people -- all ages and circumstances. We sharpen this wide-angled view by focusing on children. Healthy communities, safe neighborhoods, wise use of land and stewardship of natural resources, a vital economy and strong workforce, responsive government and a high level of civility, will only come about over the next fifty years if the children of today and those yet to be born are in a society that recognizes that they are our future vision.

PLACE

For many of us, the area is defined by our place in nature: the snow-draped cones of Mt. Hood and Mt. St. Helens shimmering above sailboats on the Columbia, a silver-bright salmon pulled from the waters of the Willamette just steps away from office towers, clouds catching in the firs of the West Hills, the rich green patchwork of farms and forest lands of Sauvie Island and the Willamette Valley.

Our communities have grown on nature's foundation, developing the identity of our area. At the heart of the region is the bustle of people, the energy of the city, ringed by distinct neighborhoods -- tree-shadowed and close-knit. Today the vibrant urban center of the region reaches out to include older farm towns like Beaverton, Forest Grove, Sandy, Hillsboro, Newberg, lively with new industry and hard-working new residents as well as to the historic cities of Vancouver and Oregon City.

But the metropolitan region now extends beyond this central urban network. Already evident is an interlinked economic region stretching from Longview/Kelso on the north to Salem on the south, from the crest of the Coast Range on the west to the Cascade watershed on the east. (Our region is part of the urbanized Northwest stretching from Eugene to Vancouver, British Columbia, and most broadly of all, the Pacific Rim.) Many citizens within this region still feel far removed from the urban center; their life and work is tied to the land or small farming or timber

communities. Yet their neighbors may work in Vancouver or Wilsonville or Hillsboro.

Growth has brought new opportunities and prosperity to many citizens in the region. Growth also brings serious challenges. What we have today we may lose tomorrow. While our region is special today, some of the forces of growth acting upon it are the same as those which have diminished the quality of life in other parts of the West. Mt. Hood could disappear behind a pall of smog, the Willamette could run with pollution instead of salmon, the hills and buttes be identified by their rooflines instead of their trees. Fewer and fewer of us may be able to walk to the neighborhood store instead of driving to the nearest strip mall.

As housing creeps north to Longview, south to Salem and covers the foothills of the Coast and Cascade Ranges, our dreams of a fulfilling city, suburban, or rural life, will give way to the reality of traffic jams, social and economic segregation and the impersonal ugliness of sprawl. The centers of our cities will decay and the countryside will recede over the horizon, a place reserved for special holidays. We will have neither the stimulation of urbanity nor the perceived benefits of the country.

We can plan a better future, a future in which we will talk to each other on the sidewalk instead of fume at each other in gridlock. We will enjoy the countryside and nature in our daily lives. Driving to work or to the store will be a choice not a necessity and we will live in neighborhoods instead of residential zones.

That future is possible if we choose to make the best use of what we have, by growing up instead of out. We can maintain and develop our cities instead of sprawling onto the farm and forest-lands on the edge of the metropolis. And we can do this with only modest changes in the ways we grow and invest the public's resources -- there is no need for us to abandon our cars or our dreams of having our own home and yard.

We can build our future the way we built the best of our past, supplementing the supply of large-lot single family residences with a mixture of homes on traditional sized lots, townhomes and apartments that serve the needs of the households of the future.

Our neighborhoods, like the cities within the region, can maintain or acquire an identity by mixing commercial, community and residential uses along important transportation corridors. This form of growth can reduce our dependence on the automobile, and by keeping our streets and sidewalks lively we can increase public safety. We can encourage the development of community centers, where adults as well as children can take an active role in art, dance, drama, music, nature, science, and publishing programs.

Knitting our urban life together will be light-rail, streetcars, and a completed framework of arterials, streets and sidewalks to accommodate our transport, bicycles and pedestrians. Our children will have more choice in the ways they get to their work, to the store, community center, school or to visit friends.

A generous number of public parks and open spaces will keep

the outdoors and nature close to our daily life. And the urban part of the region will have its identity created by a boundary, an edge, beyond which the country begins, continuing its contribution to our economy and quality of life.

PEOPLE

The foundation of Future Vision is our plan for children -- a plan that will affect their lives, their play and learning, their work and livelihood, their families, their homes and communities, their health and environment, their sense of place, their government. Should we fail here, there is no vision. Children born today will be middle-aged by the end of the fifty-year plan and today's eighteen year-olds will be senior citizens. This Future Vision is for them and those yet to be born, as well as for ourselves.

First, a vision for children; second, for everybody:

Children:

Oregon today, like the rest of the nation, has an urgent concern for the nurture of infants. The first six months of infants are crucial to their language development, and when the Carnegie Foundation finds that 32% of the state's children are not ready to learn when they enter Grade One, we realize that our vision for children is the foundation for our vision for the region.

We envision for all infants:

* Love and proper care
* Stable and safe home environment
* Clean air, clean water, safe and nutritious food
* Effective health care
* Play, songs, storytelling

We envision for all pre-schoolers --- ALL OF THE ABOVE AND:

* Safe streets, neighborhoods and shopping places
* Access to direct, not passive, participation in language, art, craft, dance, drama, music, nature, and science activities.
* Free play --- time apart from scheduled activities
* Protection from commercial exploitation

We Envision for All School Age Children -- THE ABOVE AND:

* The right to be a child
* Freedom from becoming homeless
* Disciplined social and education environment
* Freedom from threatening and violent environments
* Schools, facilities, and resources that provide an education that ranks with the best in the world.
* Convenient access to community centers, libraries, museums, and community performing arts groups
* Understanding of the built and natural environments

Community as a Whole -- Individuals, Families, Neighborhoods, Groups

We Envision:

* Successful implementation of the agenda for children will be the strongest foundation for a healthy region
* Revitalization of decaying neighborhoods
* Government, school, business, and community will work together to provide training and work opportunities for all who require them
* Safe communities and neighborhoods, each within a four-minute ambulance, fire, and police response time
* A mix of vital liveable city, rural and suburban communities, scenic wonder, and agricultural area -- a good level of mutual respect and a high level of civility, effective public transportation, and public participation in government. Our communities and neighborhoods will each have individual flair and active communal life; a number of main streets busy with theaters, galleries, restaurants, music clubs, small businesses, residences -- people of all ages; and an increasing number of volunteer organizations working to solve community problems. The area will be very strong in the arts with a great variety of public programs, festivals and celebrations.
* With one of the strongest records in the country for citizen involvement in solving community and regional

problems, we will have increasing numbers of people who come together to talk about common concerns -- thereby gaining a deeper understanding of the pain and experience that have led others to aspirations that seem to be different than their own.

* The world of work will be re-examined. How we feel about our jobs affects our health, our families and thereby our communities and economy. We will encourage appropriate public agencies as well as employer and employee groups to provide educational opportunities that lead to mutual understanding and respect in the workplace. (Working at home at their modems does not shield people from poor personnel management.) Economic health and the health of individuals and families must go hand in hand.

* Timely, accurate, accessible, and free information is recognized as a requisite for a democratic society. New technologies expand our access to articles, databases, books, videos, and to people around the world. New technologies lead to unexpected social changes. We will be better prepared to meet these challenges by building a strong educational foundation for all, and by recognizing that public reader and information services are an essential part of the foundation. Special attention will be paid to who controls communications and the"Information Highway" and to questions of equitable access.

* Availability of lifelong education. Training, and retraining -- with special attention to those who can not reach family-wage jobs, or are unable to respond to further training.
* Employment and volunteer opportunities, as well as dignified health and social services for an aging population, as well as for the handicapped
* All individuals, communities, public institutions, private organizations and businesses being part of the social contract
* The area will respond in times of need to other areas in the Northwest and in the country

ECONOMY

A healthy community and a healthy economy go hand in hand. The key to economic vitality is communities that are attractive to people. The region must protect and enhance its spectacular natural environment, its vital downtown core, and human-scale communities.

In addition, economic vitality requires:

* Public policies that support partnerships with business and recognize their need for information, profitability, revitalization, expansion, access to products and markets, productive

workers, safety, livability, healthy environment, and a sense of place

* Partnerships between government and business that enhance and support economic development. An efficient, equitable, and responsive system for financing and providing infrastructure and other government services.
* Recognition that businesses are an integral part of the social contract with responsibilities for building healthy communities and enhancing civility
* Policies that recognize the interrelationships of housing, jobs, and transportation that foster communities where people can choose to live and work in close proximity
* A graduate research university
* A strong educational and community center network that helps every child to reach her full potential, to be a responsible and productive member of society, and that provides life-long learning and arts opportunities for all
* Efficient regional, national, and international intermodal transportation hubs and communication systems serving both businesses and individuals
* Strong local and international business services
* Diverse economic opportunities
* Vital regional performing arts organizations

THE NATURAL ENVIRONMENT FIFTY YEARS FROM NOW

2040: For the past two decades, development patterns have reflected and sustained the region's distinctive landscape features: forested volcanic buttes and ridgetops, broad riparian plains and low oak and fir-clad hills. The region is viewed as a unique ecosystem in which people and the built environment are recognized to be integral parts. Mixed office-commercial, residential and transit-oriented developments are clustered, looking out on the still-forested knolls and wildlife-rich floodplains. Habitation sites follow essentials of landscape design that allows the region to house the increased population while retaining the area's distinctive landforms.

Productive agricultural lands border the sinuous Tualatin River floodplain where a series of national refuges are managed for their agricultural, wildlife, water quality and amenity values. Riparian stewardship and water quality-oriented land use incentives have created added economic value to the agricultural landscape and have promoted the maintenance of farmland throughout the Tualatin River and Willamette River basins. Carefully selected agricultural plots have also been maintained within the urban core to provide for community gardens and everyday contact with neighborhood farm cooperatives and markets.

Elsewhere, the Sandy, Clackamas and Willamette Rivers are managed for their multiple values to the growing metropolitan region. While redevelopment and reclamation of downtown Portland's

riverfront has accommodated much of that city's population growth, close in to the increasingly vibrant downtown core, river corridors have been managed and restored to enhance their fish and wildlife, water quantity and quality, and flood control values. From the air one can see that the majority of these Columbia River tributaries have retained substantially intact watersheds, with residential, agricultural, industrial, and forest practices evident in a scattered pattern of development.

It is commonplace for families and schools to put their canoes or kayaks into the Willamette River, at publicly-owned access points on both the east and west banks of the Willamette, from Kelley Point Park and Smith and Bybee Lakes to downstream sites at Wilsonville. It is possible to tour the Willamette, Columbia, Tualatin and Clackamas Rivers. Despite increased population, water conservation has ensured an exciting, rapids-filled raft and white-water kayak trip through the expanded Wild and Scenic stretches of the Clackamas and Sandy Rivers.

The region's urban streams and sloughs have been managed for water quality, recreation, fish and wildlife habitat, and this has enhanced economic values of adjacent properties and open space. Unlike most metropolitan centers, which have eliminated or diverted their urban streams, our waterways have been retained and restored as part of the urban infrastructure -- "Greenfrastructure."

Over fifty-percent of these green areas are managed as an integrated regional system of green and open spaces and wildlife

refuges which are, in turn, connected by the regional trail system. This network, known as the Regional Greenspaces System, was developed in the early 1990's to ensure that significant natural resources were managed, restored and utilized according to established standards.

The Greenspaces trail system, part of a regional multimodal transportation system, ensures that every resident lives within walking distance of an active recreation, neighborhood park and public gathering site and close to a natural or restored Green--space. Other stream corridors, too ecologically sensitive for any intrusion, have been retained for their fish, wildlife, and water quality functions.

Corporate parks, private residences and public spaces have been xeriscaped, planted with drought-tolerant native and, where appropriate, non-native vegetation that also provides wildlife habitat and a naturalistic landscape. Through public education and economic benefit analyses it has been demonstrated that both water and energy intensive landscaping, especially large rolling lawns, are inappropriate for the growing population of high tech industries which have relocated into the region. Native and xeriscaped backyard habitats contribute to a sense of "nature nearby" through the metropolitan region as well as contribute to energy savings, a cooler urban environment, cleaner air and enhanced property values.

Innovative regional design guidelines, which have been adopted by local jurisdictions and Metro, have resulted in the creation and

retention of villages throughout the metropolitan area. Each of these is different in character by virtue of unique landscape features which have been retained to separate it from neighboring communities. There are natural "gateways" between each village, and "feathered" gradients between the more densely populated urban and suburban centers and outlining rural, agricultural lands which provide a transition zone based on natural features like floodplains and steep hillsides. This transition zone when viewed from the air greets the visitor flying in to Portland with a vision of an intricate mosaic of greenway networks, and by urban rivers and streams which have naturally functioning riparian zones and wetlands. They will see forests of green, mixed native deciduous and coniferous forests that have been retained on the region's volcanic buttes and prominent ridgelines -- Tualatin Mountains, Parrett, Cooper and Chehalem Mountains, and the foothills of the Cascades and Coast mountain ranges. And finally, the visitor will see the area's communities and central city, like stars vibrant in a green firmament.

Word Count: 2,942

M E M O R A N D U M

METRO

January 19, 1994

Future Vision Commission:

The following information, the Gaylor Nelson interview and "Why Excess Immigration Damages the Environment" were provided to the Commission by Ronald Weaver, a Habitat Conservationist with the U.S. Fish and Wildlife Service, 231-2046.

ECONOMICS

Flooded riparian farmlands

Scientists show large savings in tax money, increased uses of land

By EDWARD FLATTAU

As record-breaking flood waters recede in the Midwest, discussion is intensifying on the economics of mitigating, if not preventing a repeat occurrence of the human tragedy.

When we're talking pure dollars and cents, it just may be that allowing as much of the rivers' floodplains as possible to revert to their original wetland state may make the most sense.

FLATTEAU

This would certainly be the case if we were to accept the economic appraisals of wetlands' worth by a number of eminent scientists over the past two decades. They have invariably concluded that the dollar value of the benefits wetlands confer upon society will almost always exceed the revenues realized when the natural areas are drained for developmental purposes.

Absorbent wetlands, with their inherent flood-control capabilities, gain an additional advantage by not requiring the considerable expenditures mankind must make for construction of barriers and impoundments to protect the developed land in time of overflows.

The idea that a mosquito-ridden swamp could be of greater material value to humanity than a field of corn or soybeans may initially seem farfetched.

But as far back as 1974, Eugene Odum, director of the University of Georgia's Institute of Ecology, extrapolated the dollar value of seafood resources that wetlands nurtured. He also calculated the worth of the waste assimilation, water purification and flood control functions marshes performed and determined that in sum, an average acre of wetlands provided $50,000 a year in goods and services to society.

At the same time, Professor William Mitsch of the Illinois Institute of Technology was discovering that cypress wetlands near Gainsville, Fla., purified waste water at approximately one-seventh the cost that human-engineered facilities did.

More recently — in August 1992 to be exact — a team from the University of California's Graduate School of Public Policy at Berkeley conducted an economic analysis of the Golden State's remaining wetlands.

They concluded that the average annual flood-control benefit of an acre of wetlands amounted to $4,650; ground-water storage benefits, $6,800; water purification, $6,600; preservation of crucial habitat, $3,337; recreation, $347; and commercial fisheries, $199. That added up to a wetland acre being valued at nearly $22,000 a year for the functions it performs.

The authors also point out that they did not include in this estimate any dollar figures for biodiversity, which many would consider the most precious wetland attribute of all.

Since farmland bordering the large rivers of the Midwest sells at anywhere from $900 to $1,400 an acre, government purchase of such fields (where feasible) for the purpose of letting them return to their natural wetland condition would seem to be an excellent investment.

It looks even better when you take into account the government's no longer having to spend gobs of money erecting levees to protect those areas or to reimburse farmers for property damage sustained during floods.

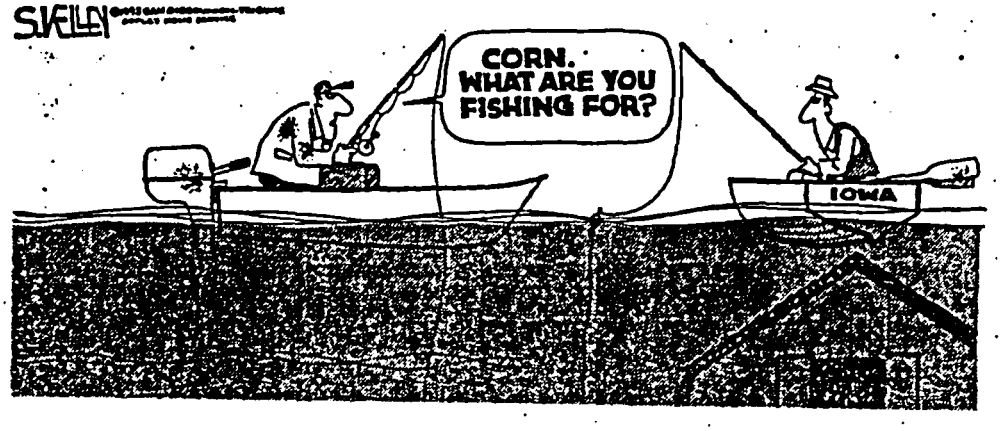
To be blunt about it, wetlands possess an enormous cost-benefit advantage over man-made efforts to wrest productivity from acreage in the most vulnerable floodplain areas immediately flanking the Midwest's major rivers.

Where it would be cheaper for authorities to acquire flood-prone riverfront tracts than keep on repairing levee systems and compensating repetitve search for willing sell earnest.

Clearly, the sites of large towns in the floo to be abandoned. In ad habitants with flood-p erties will not want to all did, there would n public coffers to buy ou

But the fact remain 80 percent of the floo Midwest's major rive structure-free, being r

Edward Flattau writes his Global Horizons environmental column from Washington, D.C.



Wetlan buyout underf

By MICHAEL ZIMME

Perhaps the m Agriculture committee ju glasses. I'm n plain their plan to sav tration proposal to f farmland into wetlan all, that members ju ence between "wet l and, knowing that th on favorably especiall ing, decided to vote a tive.

At issue is funding serve Program. Unde farmers with eligible store it to permanent change for a governm

The program wou bring about a host environmental benef while dramatically r ducing the amount money in federal dis ter aid that the gove ment would have spend in aid to peo whose properties ha been destroyed flooding.

Because of severe r derfunding last ye only a fraction of land that farmers v wetlands program v proximately 54,000 a year is under water consin and Minneso ernment is going to dollars in disaster as

Environmental News

Briefing

Vol. 1, No. 15 NEWS FOR THE WEST January 7, 1994

Council to ask N.W. for its idea of sustainability

By ENN staff

The President's Council on Sustainable Development convenes for the second time ever Jan. 13-14 at the Westin Hotel in Seattle.

This partnership of industrial, environmental, labor and civil rights organizations was formed by the Clinton Administration to explore and develop policies that encourage economic growth, job creation and effective use of natural resources.

The council is guided by its own definition of sustainable development, which is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs. This means improving the quality of human life while living within the carrying capacity of supporting ecosystems. Sustainable development has four dimensions: economic, human, environmental and technological."

The definition includes the following goals or benchmarks:

- Integration of environmental protection and economic development in policy and decision making at all levels;
- A long-term perspective for planning, policy development and project design and assessment; and
- Intra- and intergenerational equity (environmental justice for people living now, equity for future generations and consideration for cultural heritage).

The Environmental Protection Agency, one of the agencies represented on the council, has for its own purposes, added the following elements to the definition:

- Development or use of progressively cleaner, more efficient and natural resource-conserving technologies, processes and products;
- Increased use of market approaches and incentives to motivate environmentally benign corporate and individual behavior;
- Development and application of economic assessment and environmental accounting procedures that incorporate the impacts on and benefits from natural systems;
- Include processes that allow for informed and involved participation of all stake holders (public-private partnerships and affected local communities); and
- Conservation, and more efficient use, of renewable resources.

The council was established June 29, 1993, and it will exist for at least two years unless extended by the president.

The council's 25 members comprise the elite of American government, industry and environmental groups. Included are CEOs from America's largest companies: Kenneth Derr of Chevron, Pete Correll of Georgia Pacific Corp. and William Ruckelshaus of Browning-Ferris Industries. Heads of environmen-

See **COUNCIL** on Page 2

Highlights

INDEX

American Farmland Trust Northeastern Office Herrick Mill One Short Street
Northampton MA 01060 (413) 586-9330

Farmland Is a Good Deal for All Kinds of Massachusetts Towns

Cost of community services (COCS) studies are a useful way to look at a community's financial records to find out how much it spends to provide services on a land use basis. They are snapshots of the net contributions of land uses, including farm and open land, that compare town income and expenses to arrive at a ratio.

The American Farmland Trust (AFT) recently completed COCS studies on three Massachusetts towns in the Pioneer Valley. These towns have grown at different rates and range from rural to almost urban.

The first town studied was Gill. In the north-central section of Franklin County, it is small and rustic. Residents want to keep it that way. For example, they voted unanimously to set aside funds for development rights on farmland.

Also in Franklin County, the town of Deerfield is further along the rural-urban continuum. A short commute from the University of Massachusetts, the town has been under enormous development pressure for the past twenty years. Home to many new businesses yet with some of the best soils in the region, Deerfield still maintains its agrarian character.

Some of Deerfield's citizens believe that unmanaged growth threatens the resources that make their town unique. An open space committee was formed in 1986, a land trust in 1990, and residents have twice tried to strengthen their zoning.

Agawam is the most developed town of the three. A suburb to both Springfield, Massachusetts, and Hartford, Connecticut, it is legally incorporated as a city.

COCS studies focus on isolated fiscal years. They are intended to help town officials and boards understand the fiscal impact of different land uses in their towns. The data can be used to plan responsibly for growth. It may also be used to support farmland protection, not for emotional, but for economic reasons.

Although straightforward in theory, COCS studies are time consuming. Before AFT will even begin a study, we must be invited or sponsored by a town board or committee. Then we follow the basic steps of: meeting with sponsors, data collection, allocation of revenues and expenditures, and calculation of the ratios.

The results of the recent Massachusetts studies echo the pattern of findings from previous studies in New York and Connecticut. For every dollar raised from all residential revenues, the towns spent an average of $1.12 in public services. In other words, residential income was short 12 cents on the dollar. For every dollar from farm, forest and open land, towns spent an average of 33 cents. Commercial and industrial combined cost an average of 41 cents. The ratios are summarized as follows:

	Residential	Commercial	Industrial	Farm/Open
Agawam	1 : 1.05	1 : .47	1 : .40	1 : .31
Deerfield	1 : 1.16	1 : .42	1 : .34	1 : .29
Gill	1 : 1.15	1 : .43*	—*	1 : .38

* In Gill commercial and industrial activities were so limited they were combined.

Clearly, farm and open lands more than paid for themselves. Beyond the positive contribution to town budgets, farmland contributes to local economies by providing jobs and supporting other businesses. And it has other benefits that are harder to quantify. These include: locally-grown food, quality of life, cultural heritage, open space protection, wildlife habitat, and increased property values.

It doesn't seem to matter what size the town is, or how much development has occurred. The pattern of these studies is clear: residential development costs more in services than it produces in revenues. Other land uses help offset this imbalance. Towns would do well to heed this type of data. For example, in fiscal 1990, Agawam relied on state funds for nearly 30% of its budget, almost all of which was used for residential services. It is not hard to imagine what would happen to these ratios with a significant reduction in state aid.

COCS studies can help dispel the myth that farmland, especially if enrolled in a differential assessment program, receives an unfair tax break. While tax-payer revolts may be limiting the ability of local governments to raise revenues, it would not make sense to shift this burden onto farmers. In the region's current economic climate, farmland protection is important for more than aesthetic or cultural reasons. It is part of the balance that keeps towns solvent.

For more information, contact AFT's Northeastern Office, One Short Street, Northampton, MA 01060 (413) 586-9330.

on death rates due to outside and in-transit mortalities. Migrations involving permanent movements into (immigration) or out of (emigration) a given area can be caused by shifts in internal or external population size, changes in the carrying capacity of the area, or any number of other factors.

3.4.3 External Population Factors. As mentioned in reference to migrations, a number of factors outside the immediate population's environment can influence that population. Increased density above the carrying capacity in a neighboring population can cause spill over (immigration) into the area of the population in question. Mortalities of migrating species outside the given population area have a strong influence on death rate and other factors of the study population.

3.4.4 Reproductive Rate. The fecundity of individuals, the age distribution of the population, and a number of environmental factors all influence the net "natality" (E. P. Odum, 1971) of a population - the ability to increase numbers internally.

3.4.5 Growth Rate. Growth, as indicated in the model, is the physiological growth rate of individuals and is principally determined by the resources available to the population as measured by the carrying capacity and by the inherent growth capability of the species. Information on food habits is presented under this section.

3.4.6 Death Rate. The mortality of individuals in a population is influenced by the species' theoretical longevity (senescence and "natural" death) and by environmental and external factors such as disease, predation, poisoning, etc.

3.4.7 Carrying Capacity. For the purposes of this model, carrying capacity is defined as the number of organisms which can be sustained in a given area. The concept of carrying capacity identifies the theoretical number of organisms an environment can support, and is determined by available food and energy and by space and suitable habitat. The difference between actual population and carrying capacity of the area is defined as environmental resistance. Essentially it is a measure of deficit or surplus resources (food, energy, suitable habitat, space) available to individuals of the population. If the population is below carrying capacity, individuals have a surplus of resources available to them and vice versa. The magnitude of the surplus or deficit of resources strongly influences the reproductive and death rates of a given population. Essentially, where surplus resources are available, a population will expand through vigorous growth, increased reproductive rate, and a decreased death rate. Under conditions of deficient resources, when the population is above its carrying capacity, growth rates decrease, and mortality rates increase; consequently, the population is reduced. In effect, the population equilibrates with the resources available to it.

3.4.8 Limiting Factors. Any environmental factor which is of prime importance in the regulation of population size is called a limiting factor. These limiting factors include:

(1) Available food and energy

(2) Space/suitable habitat (which may differ between breeding and non-breeding periods)

(3) Temperature, pH, dissolved oxygen, moisture patterns, and other habitat-specific, physical variables

(4) Competition (limiting the availability of the above factors)

(5) Predation (including harvesting)

(6) Toxins (acute and chronic)

(7) Direct mechanical effects (e.g. sedimentation, roadkills)

The combination of the first two of these factors determines the carrying capacity of the habitat for a species of interest.

The fourth factor, competition with other species or other members of the population, results in reduced availability of the first two factors. The classic example of competition within the study area is the case of elk versus deer. Elk out-compete deer and if introduced into a new area with existing deer populations at or near carrying capacity, the deer populations drop, due to the reduced availability of food and space.

Predation, which includes harvesting by man, does not affect an area's carrying capacity but does affect the mortality rate of a population and can result in maintenance of prey populations considerably below carrying capacity, as well as increase food resources for the animals which survive.

Temperature, pH, dissolved oxygen, etc., toxic effects, and direct mechanical mortality, (e.g. suffocation, sedimentation, and roadkills), can affect both the mortality rate and carrying

 Principles of Ecology Richard Brewer 1979

weigh more than the earth. In addition to the logical difficulties of infinite growth in a finite world, our experience with other species shows that the absence of population limitation would be ecologically unique.

If growth cannot continue forever, the appropriate question is when should it stop? Or, a better way of putting the same question, what human population size is optimal?

There is no simple answer but we can begin by realizing that it is a different question from, what is the maximum population that the earth can support? The earth could probably support a higher population living in poverty and distress than in comfortable circumstances, but few would claim that the former are optimal conditions. A second step is in realizing that there is no one answer, no one optimal population, because human preferences are involved in parts of the equation. For example, we might be able to specify an optimal population for a world population living on an almost exclusively vegetarian diet (*almost*, because it may be true that optimal development of children requires fatty acids or other materials found in meat). We might consider safeguarding the land against overuse, preventing pollution of air and water, and take into account the caloric and other nutritional requirements of individuals—and then perhaps we might say that the earth could comfortably support so many billions or millions of people. To allow some fairly substantial part of the world population to include meat in their diet would necessitate a lower population than could be supported—optimally, in purely nutritional terms—on plant material. The freedom to choose a way of life, whether as to diet, religion, or hairstyle, would be held by many persons to be an essential part of an optimal population size.

Although we have been talking on a worldwide scale, three different population sizes are important to humans. The population size of the whole earth is important but so also is the population size of individual nations and of local communities. Determining and achieving optimal populations at each level are separate problems.

For local communities an optimal size is one that is large enough to provide such things as a consumer base for specialized shops and businesses and a social life and clientele for cultural events, and one small enough to avoid the higher crime rates, excessive highway building, destruction of farmland and open space, congestion, and other disadvantages of urban life. Exactly what this optimum may be has not yet been clearly defined. Athens in its golden age had a population of about 40,000 and London in Shakespeare's time was about 180,000. Today in the U.S. it appears that an urban area having 100,000 persons can provide a sufficient audience for most cultural and sporting events, and that per capita taxes for police, education, and welfare go up sharply at a population somewhere between 100,000 and 500,000 (Fig. 6–4).

At some point between one and five million population this trend seems to produce a situation in which a city can no longer support itself.

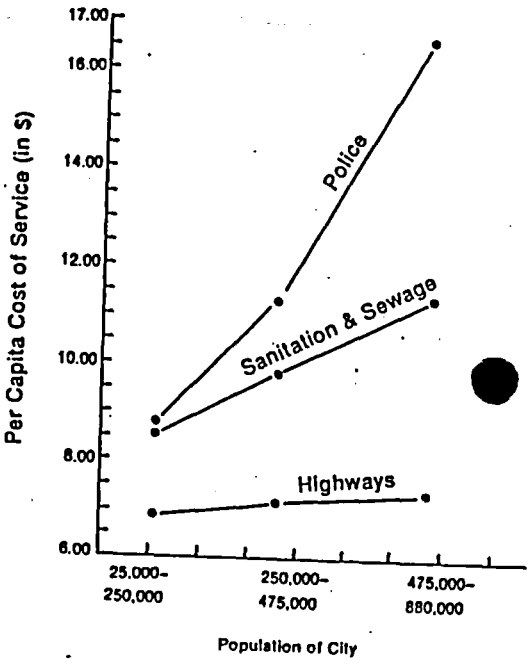


Figure 6–4. The diseconomies of scale. The per capita costs of police, sanitation and sewage, and highways in Ohio cities are graphed against size of the city. Such services do not just cost more as the size of the city rises; they cost more for each individual, despite the fact that there are more people paying taxes. The biggest city in Ohio is Cleveland with a population of 876 thousand, but the upward trends continue at higher populations. For Los Angeles, with a population of 2.8 million, per capita cost of police protection was $22.39. (Data from Advisory Commission on Intergovernmental Relations, 1968.)

The city's problem then becomes a problem of the rest of the region or of the nation. New York City's financial crisis in 1976 is a case in point. There are two advantages to the nation in having a city as large as New York: (1) certain professions and activities may be so specialized that only cities of a few million people provide a population base big enough to support them; and (2) by concentrating ten million people in a relatively few square miles many of their adverse environmental effects are restricted to a small area. For these reasons a nation may wish to subsidize one or a few very large cities.

Under any circumstances, city and countryside are interdependent in many ways. The city imports food and raw materials for manufacturing and its residents use the open spaces of the farms, forests, streams and lakes in various ways. The countryside is dependent on the city for such things as manufactured goods and services and cash for crops. (There are other sorts of exports, also: the city exports air pollution, after importing the fuels that produce it, and the countryside exports chemical residues in food after importing the pesticides and other compounds.) Here, as previously, the freedom of opportunity to live in rural, small town, or city surroundings is important. So too is the retention of diversity in the landscape so that dwellers in any one of these environments can make use of the unique features of the others.

Controlling local population size has proved particularly difficult in the U.S. for several reasons, despite its importance. Historically, mobility -

Population Growth Versus Fisheries Resources

Exploding human populations throughout the world have adversely affected fish and fisheries.

By C. Dale Becker

All living things evolving, flourishing, and disappearing from the earth since its primordial origin have been influenced by natural phenomena. One phenomenon now predominates. Its major effects might be expressed as

X = Exploitation
+ Habitat Destruction
= Loss of Cohabitant Species

The unspecified Factor X is the world's human population. Factor X inevitably is linked to loss of cohabitant species through exploitation and habitat destruction. Thus, an increasing human population will result in continuing loss of cohabitant life forms. Carrying this equation to its logical end indicates that we will eventually be living in a world with fewer and fewer "wild" species, and those species that survive will be far less abundant than they are today. Populations of freshwater and marine fish, representing two unique groups of cohabitant species, will be greatly reduced. Somewhere along the way, humans who have taken over this planet will have reverted to a nearly subsistent existence.

Our present understanding of how the biosphere operates and the functioning of freshwater and marine ecosystems clearly documents the symptoms of an exploding human population. Included are global warming, acid precipitation, ozone depletion, eroded and exhausted soils, loss of biological diversity, vanishing forests, expanding deserts, depletion of ground water, destruction of estuaries, and increased water pollution. As long as the human population continues to increase, various "solutions" for our deteriorating environment are doomed to failure. Unfortunately, most political and religious leaders remain blissfully complacent—one group blinded by the lure of economic development and the other by rigid theological doctrines.

In 1990, the world's human population numbered about 5 billion—10 times as many people as just a little more than 300 years ago. If current trends continue, this figure may rise to nearly 7.5 billion by the year 2000 and to between 10 and 12 billion by 2035. It is anybody's guess what level the population may ultimately reach. Even if the growth rate were to slow considerably, the near future promises to be very crowded indeed.

Many people believe that the earth's natural resources (including freshwater and marine fish) can be tapped continually to meet exponential demands. "Sustainable human growth" and "sustainable fisheries" are impossibilities unless someone can figure out how to make more land and more water.

The ultimate effect of human activity is extinction. During the past 100 years, 40 known taxa of North American fish have become extinct from activities related to occupation and development by humans, and their extinction rates are expected to increase. The AFS currently lists 364 North American freshwater fish as threatened, endangered, or in need of special concern. This includes 139 new taxa added to the list since it was first published a decade ago. Only 26 taxa have been removed from the original list, and 10 deletions were due to extinction. None of these taxa warranted removal because of successful recovery efforts. Recent reductions of fish stocks, which sometimes lead to near extinction, are rarely the result of a single cause. Yet almost all losses are associated with excessive exploitation and with alteration or degradation of fish habitat.

In the United States, the Endangered Species Act specifies that critical habitat must be designated and protected for any listed species. As human populations continue to increase, not only will more habitats used by fish be altered or destroyed but exploitation will intensify. This will lead to extended lists of threatened and endangered species and, eventually, to designation of more and more critical habitats. Continued population growth will bring more confrontations and eventually, because people vote their immediate needs for economic survival, an altered U.S. policy.

The increase in humans and decrease in freshwater supplies have now reached crisis proportions in California. Researchers recently stated that "sixty-five percent of the fish species native to California are either extinct, endangered, or in need of special protection." At the same time, shortages of fresh water have become so acute that purchase of water rights from agricultural permit holders is accepted as a viable option. Efforts to maintain instream flows to benefit fish and other

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Interview

Gaylord Nelson

National Chairman of Earth Day 1992, U.S. Senator from Wisconsin 1963-1980, father of the original Earth Day in 1970, and prime sponsor of the Wilderness Bill of 1964, CCN is pleased to announce that Senator Nelson will also be the keynote speaker at our National Carrying Capacity Issues Conference to be held in Washington, D.C., June 19-21, 1992.

"The population of the United States already exceeds its carrying capacity."

Nancy: Do you think the time has come for an Earth Day on the population issue? Do you think the public is aware that there is an over-population problem in the U.S.?

Gaylord: Yes. Population should be an annual Earth Day issue as well as an everyday issue — it's that important. The public remains uninformed about it because the press and opinion leadership of the nation have failed to bring the issue into the political dialogue of the country — mostly, I think, because of their own failure to understand the long-term implications of continued population growth.

In 1990 Congress significantly expanded the immigration quota without seriously debating the question of what is the optimum population level for the United States.* (see box.) There is controversy, of course, over the issues of optimum population and carrying capacity —what is it? How do we define it? All the more reason to address it. It is astonishing that neither the President nor Congress seems to appreciate the gravity of the issue.

When experts are asked to list the most serious environmental problems they are practically unanimous in ranking at the top of the list the calamitous consequences of continued exponential population growth. Even by the most optimistic scenarios world population will increase by 95 million every year during this decade adding a net of one billion to the current world population of 5.3 billion. Does anyone really believe this will be a better world with a billion more people ten years from now and better still when world population doubles in a few more decades, that the United States will be a better country with 100 million more people, or that New York, Miami, Chicago, Detroit and Los Angeles are better cities now than when they were half the size and will be better still when half again as large? The answer to these questions is obvious. Indeed the population of the United States already exceeds its carrying capacity — that is to say, our current population is being sustained by continued erosion of our resource base. This is not a sustainable situation over the long term.

Nancy: If you could elaborate on this point; I really think there is more land and enough food to bring more people in. I've heard the figure for a long time, that we only have less than 1/4 of 1% of all the land which could be classified as Wilderness. In other words, the land out there is being utilized already by humans. Could you give the current figure?

Gaylord: Obviously we could feed and house many more people—at a tremendous cost in reduced quality of life and standard of living as well as the sacrifice of many individual freedoms we cherish. In short we could probably support as many people as China at their standard of living.

Let's look for example, at the space available on our federal public lands: the national parks, national forests, wildlife refuges and Bureau of Land Management lands. They constitute 25% of the total land area of the U.S. That's 610 million acres, or almost a million square miles. We could sell all

that land. And get rid of our parks. And get rid of our wildlife refuges and get rid of the national forests. And put all kinds of people into those areas and fill them up. Of course all the beauty and the wildlife habitat and the recreation areas will disappear. But you could crowd more people in there. But does anybody with any common sense at all think that will improve the quality of life in the U.S.? It will degrade the quality of life. And not only that, the more people you crowd into any city, the more people you crowd into any country, the more freedom you have to take away from people in order to manage the number of people you've got. So sure, you could crowd in more, but you would destroy what makes America great in terms of its wonderful amenities and the quality of life here.

FOCUS
Ecofact

The 1990 Immigration Law went into effect in October 1991 and will raise legal immigration quotas by 40% to over one million a year, which will result in the highest level of immigration the U.S. has ever experienced. Already the United States is the fastest growing industrialized nation in the world, adding the equivalent of four Washington, D.C.s to our population every year. Projections based on Census Bureau statistics indicate that more than half of these newcomers will settle in states like California, New York, Texas and Florida, which already suffer from large scale population-related problems.

Nancy: How much ...

Gaylord: Well there are 90 million acres of wilderness. We're talking about designated, officially designated, legal wilderness. That is a little over 90 million acres, out of 2 billion 200 million acres of land base in the U.S. Designated Wilderness is a special term of course. There's lots of wilderness that hasn't been designated as such officially by law. But the land that is protected as wilderness totals 90 million acres.

Nancy: Why should we preserve wilderness when we.... Some people assume we've got all this land out there for people, we don't need wilderness, we need the land to house people.

Gaylord: If we want to double or triple the population and make it more crowded we can take all these federal lands. But that would leave few places for quiet and recreation and destroy most of the wildlife habitat in this country. The way we're going and draining wetlands and destroying wildlife habitat, I think 50 years from now, our great-grandchildren won't hear very many songbirds, if any, because their habitat will be gone. They won't be seeing very many ducks or wild geese fly over in the fall and back north in the summer. We're destroying valuable assets that are part of our lives and have been part of human history for a million years. And we're destroying it very rapidly. We could end up like Bangladesh. I've been to countries where it is incredibly crowded. You can't find a quiet place anywhere. There isn't any such thing as a secluded spot that somebody could go to and be alone. I don't think that is what we want.

Nancy: What is the carrying capacity then to have the quality of life and preserve wilderness?

Gaylord: Defining carrying capacity involves both subjective and objective considerations. I think we have already exceeded our carrying capacity. This country has already exceeded its carrying capacity because at anytime you have so much activity and so many people that you are eroding the soil, polluting the ground water, polluting the rivers, lakes, oceans, and cutting down the forests. When you reach that stage, you've exceeded the carrying capacity.

Nancy: How do you think you're going to be able to convince people that we have exceeded our carrying capacity?

Gaylord: We must regularly and continuously discuss and debate issues of population and carrying capacity just as we do all issues involving the state of our economy. That is a necessary part of the education process. The debate over the immigration law was outrageous, everybody supported it. The major newspapers in the country said, "Let's bring more people into the country." There was no significant debate on the issue at all in the Congress. Nobody was pointing out that we're already over-crowded, if you look at it honestly. We ought to be debating how we can stabilize the population as close to where it is now then reduce it in the future. Nobody talked about that. They just said, "We'll take more people in. We're the U.S., we ought to take them in." There are 5.3 billion people on the earth and if you opened up the doors to the U.S., I'd assume at least 2 billion of them would want to come here. We can't handle a large population influx and still maintain a decent quality environment. So there was no debate on the issue at all. The issue is how many people can we sustain in this country and maintain some of the amenities that came with the nation in the first place. Maintain the beautiful outdoors, the rivers, the lakes, the scenery and the wildlife habitats. That question wasn't even raised.

Nancy: You mentioned stabilizing the population and one of the ways, of course, would be to limit the number of people coming into the country. Could you give a sort of laundry list of how you would stabilize, dealing with family planning issues?

Gaylord: Family planning is a very important issue here, of course. I think what the Congress should have done is said, "We're seeking to stabilize the population. We will allow immigration in numbers that do not exceed emigration."

quality of life ← applies to City of Portland also —

Nancy: Could you address the resource issue and the impact issue? The over-population or the effects of population problems here in the U.S. now. Not just in the other countries in the world, particularly because of our impact on the resources throughout the world that we use here in the U.S.

Gaylord: Well of course we are by far the largest consumer of the world's goods. And by far, the largest polluter in the world. And as our population increases, we will increase our share of the consumption of course. Which will deprive other parts of the world of a share that would help make their lives better. But basically, my view is, that we already exceeded the optimum population of the country. And we ought to be aiming at stabilizing the population.

Nancy: Could you explain the importance of wilderness and controlling the population growth?

Gaylord: The loss of the tranquility of the out of doors. The loss of the wildlife habitats, the loss of the opportunity for us as citizens of this country to enjoy the beauty and the seclusion of wild places is a tremendous loss in terms of the quality of our lives. And the more people we have, the greater that loss will be. If you don't really care about that and it means nothing to you, that's one thing. But, I think most of the people in the country would like to have a place that they could go to, that is quiet and tranquil. Most people would like to preserve the wildlife habitat for songbirds and ducks and geese and other wild creatures. That is part of the environment that mankind has lived with for a million years. Are we just going to let it all go in order to have more people and more people and more people? I remember landing in Taiwan about four years ago and picking up a newspaper and the first news article was by a psychologist who said there is lots of tension in this country about the lack of space and the crowdedness of the country. They've got tremendous over-population, 18-20 million people. They were then living in a space that was very small. And no place to hide, none at all. Everybody is all crowded together. And the traffic is tremendous. Is that what we want in this country? I think not. I think if we had a real debate on this issue in the Congress, if the Congress had faced up to its responsibility and had some people there who had raised the issue and said, "Now what are we doing here about the policy? What is our objective? Is our objective to maintain some of the beauty and naturalness of this nation in the same condition it was in when our ancestors landed? Or are we just going to overrun it all?" I think the public would come down on the side of saying we're too crowded already.

Nancy: Why do you think that someone like you, for so many decades has seen the environmental destruction because there are too many people on the planet who are living in an improper ecological way? Why have you seen it for so long and yet, I don't get the sense when I'm out there, that the average person sees it to this day?

Gaylord: I don't think the question really is raised in such a way that people notice it. So they are born wherever they are born and as they grow up the changes are subtle. But they haven't had a chance to look at the big picture. When I was born in 1916 there were 1 billion, 700 million people on the earth. When I organized Earth Day, there were 3 billion, 700 million. Now there are 5 billion, 300 million. At the turn of the century, there will be 6 billion, 300 million. When I was born there were fewer than 100 million people in this country. Now there are 250 million. And depending upon projections of fertility rate, in another 50 or 60 years, there will be 300 million or 350 million. Are we going to be a better nation for everybody here with another 100 million people? And another tens of thousands of miles of roads and highways and traffic jams and crowded spaces all over this country? I think not.

" What's going to change people? Are you going to have a population Earth Day? The 20th Anniversary of Earth Day didn't even want to have the population issue on the platform."

Nancy: What's going to change people? Are you going to have a population Earth Day? The 20th Anniversary of Earth Day didn't even want to have the population issue on the platform.

Gaylord: I didn't know about that. I was honorary chairman of the 20th Anniversary. I have discussed the issue of population for many, many years. Because I think it is a very important issue. I think it is becoming more and more important every year and I had hoped that when the issue was up on the immigration laws that a good honest debate would occur. I talked to some of the members of Congress and they said there is no use in fighting the issue. You had the *N.Y. Times*, the *Washington Post*, and every major newspaper that I know of in this country endorsing the idea of expanding the quota. Both the Congress and the press shamefully defaulted in their responsibility to address this vital issue.

Nancy: Is there anything you would like to say about over-population in the U.S.?

Gaylord: What I'd like to say about over-population in the U.S. is that slowly, but surely, we're destroying some of the most important amenities of living in this country by overcrowding and we ought to start addressing that question in trying to stabilize the population in order to maintain a high quality environment.

Nancy: What do you see, just sort of as a summary? What do you see as the major environmental issue that needs to be addressed in the next few years?

Gaylord: I think if you ask any biologist or ecologist, they would be unanimous in saying that exponential population growth is the most important environmental issue. I would rank that along side another one that is rarely, if ever, mentioned. That is the absence of a conservation ethic in our culture. That is what has caused us to do so much damage because we don't have any ethical concept of our relationship to nature. Therefore, I would say exponential population growth and the absence of an ethical concept about nature are the two major environmental issues. That is to say—dramatically reducing population growth and raising a generation of young folks imbued in their hearts and minds with a conservation ethic is the vital challenge we face.

CCN would like to extend thanks to Board Member Nancy Pearlman, a noted environmental media personality in the Los Angeles area, who conducted this interview with Senator Nelson.

WHY EXCESS IMMIGRATION DAMAGES THE ENVIRONMENT

Population-Environment Balance

Our Board of Directors and staff are often asked why BALANCE, an organization committed to safeguarding our environment through population stabilization, places a major emphasis on limiting immigration into the United States. What, we are asked, does immigration limitation have to do with environmental protection? The answer is, a lot.

Stable Population Size Essential to Protect Environment

BALANCE's position is based on the realization that a stable U.S. population size is essential if we are to prevent further deterioration of the very system that supports us -- our environment and natural resource base. Regardless of how conservatively we use resources, the fundamental fact is that growing numbers of people unavoidably place increasing demands on our natural and social environment. More people mean more energy use, more traffic jams, more production of toxic wastes and increased tensions which result from living in crowded urban environments. However efficient we may be in the use of resources and however much we conserve in our attempt to preserve our environment, more people simply mean more stress on the ecosystem. The phenomena of crowding, deforestation, acid rain, global warming and the whole litany of environmental ills in the U.S. and elsewhere amply demonstrate that every person, however conservative, adds to the environmental burden.

Carrying Capacity, Not Land Area, is Key Consideration

In the United States, why don't we just disperse our population over the "wide open spaces" which (decreasingly) still exist in places such as Alaska, Utah, Nevada, some of the central states, and elsewhere? Doesn't our large land area provide the answer? Unfortunately, the answer is an emphatic: "No!"

The key to understanding this lies in the essential fact of "carrying capacity" -- the number of people who can be sustainably supported in a given area without degrading the natural, social, cultural and economic environment for present and future generations. Carrying capacity involves the capacity of the natural environment to provide the resources, food, clothing and shelter we need, and the capacity of the social environment to provide a reasonable quality of life.

While many factors (e.g., energy, forests, pollutants) could be chosen to illustrate carrying capacity limitations on population size, consideration of one striking example, water, brings home very quickly an appreciation of the importance and usefulness of the carrying capacity concept. The West, Southwest and certain central states; indeed, many areas of the United States (generally those experiencing the most rapid population growth), are afflicted either with water shortages or with the toxic pollution of water. Many areas have limited rainfall or few other naturally occurring sources of water, and many are depleting underground aquifers in excess of recharge rates and/or polluting them. Thus, since potable water is essential to life, the carrying capacity of limited-water areas extending over many states is extremely low for all forms of life, including humans.

Moreover, there are no cost- or energy-efficient ways on the horizon for increasing the supply. Desalination techniques are expensive and energy-intensive in an energy-short world, and the benefits of using conservation techniques, such as drip irrigation, while important, are not (and at current rates of population growth, will not be) sufficient to offset the demands of an increasing population.

Why Population Dispersal Will Not Work

Thus, regardless of what some may contend, we cannot disperse people to relatively unpopulated areas because the carrying capacity simply is not there. Expensive schemes to supply water to such areas or to others where burgeoning population is overrunning and/or polluting the water supply serve only to reduce the carrying capacity of water *source* areas, while, in the long run, allowing recipient areas to be overwhelmed once more by ever-increasing numbers of people. Many regions of the country are even now depleting underground aquifers at rates far in excess of their recharge rates because, in carrying capacity terms, they are already overpopulated.

Although emergency measures and unusually heavy rainfall may ameliorate the situation in the short term, such patterns of use are not sustainable in the long term as population continues to increase. In some areas of the country, on the East Coast, and especially in Florida, the toxic pollution generated by dense population is already permanently destroying underground aquifer reservoirs.

One can perhaps get a clearer understanding of this carrying capacity problem by seeing it essentially as caused by a population *longage* rather than a water *shortage*. Indeed, the list of carrying capacity factors

which limit and which are affected by population longages is extensive, including energy, prime agricultural land, timber, open space, and peace and quiet, just to name a few.

The point is simple enough: More people demand more of the shrinking resources and, in using them, create more pollution. Global warming, species extinction, acid rain, deforestation of the Tongass and other national forests are among the signals that the United States' and the world's population increase is pushing the environment beyond its ability to sustain a desirable quality of life.

The Ultimate Environmental Threat: Overpopulation

One result of overpopulation, therefore, is that resources are depleted and the environment is degraded to the point that an area loses part of its capacity to support population in the future. When the carrying capacity is exceeded, the environmental damage is usually so severe that the population carrying capacity for future generations is greatly reduced. This chain of events is not just true of the Amazon Rain Forest or of Central America or of Bangladesh or of deforested Nepal. It is also especially true for many areas of the United States *and* for the United States as a whole.

In Southern California, for example, absolutely limited amounts of imported potable water are becoming increasingly precious and there is pressure to build ever more aqueducts to bring water from ever greater distances. The public at large, stalled in gridlock and waiting for rain, is beginning to perceive the absolute limits on the population carrying capacity of such areas.

It is particularly important for the United States to stop its population growth because, while the U.S. contains only about 5% of the world's population, it uses disproportionately large amounts of the world's resources (e.g. approximately 25% of its fossil fuel) and produces over 25% of the world's CO2, which contributes to the greenhouse effect. Thus, stopping population growth in the United States is essential if we are to protect both the United States' and the world's environment.

Population Carrying Capacity is Adversely Affected by Excess Immigration

The United States' population is increasing by 3 million per year. Since immigration from foreign countries causes over 40% of the United States' population growth (and over 60% of the population growth of some states such as California and Florida), and since the United States too has a limit on its carrying capacity, excess immigration creates a significant environmental threat.

Worldwide, a common response to carrying capacity problems is to migrate to areas where the carrying capacity has not yet been pushed beyond the limit or is perceived to still provide opportunities. Many Central Americans, for example, have chosen that (apparent) solution recently. Since the world's population is now increasing at an alarming rate -- by about one billion people every 11 years -- these pressures will only increase.

The problem is that such migration not only threatens the carrying capacity of the destination countries, but also creates the harmful illusion in the sending countries that continued population growth is an acceptable option.

Numerous other present and historical examples can be cited of population size exceeding the sustainable capacity of the environment due in part to the false perception of an adequate carrying capacity. The result is almost always increased migration pressure as well as the other concomitants of overpopulation: unemployment, social disruption and environmental damage.

For example, the introduction of the potato into Ireland in the eighteenth century both increased productivity of the land and encouraged new estimates of how many people could be supported on a piece of land, and thus provided an "incentive" for large family size. However, no allowance was made for the momentum with which population began to grow or for less than optimal harvests. The result (of that "longage" of people or "shortage" of food, depending on how one looks at it) was the Irish potato famine.

Populations try to move out of countries where they have overwhelmed the carrying capacity. Today, the pressures from every continent continue to increase -- world population is growing by *97 million per year!* Many already have come to the United States, but no region, including the United States, has the capacity to absorb all those desiring to immigrate. It is doubly unfortunate, therefore, that the perception of opportunity in the U.S. acts as a disincentive for overcrowded countries to face and begin to correct overpopulation problems at home.

Thus, allowing too much immigration both creates an environmental threat and sends a misleading signal. Perhaps all countries should consider limiting immigration to levels within their carrying capacities in order to more effectively protect the environment. Allowing immigration in excess of carrying capacity ignores limits in both the sending and receiving countries. Such a disregard represents a serious threat to the environments of all countries involved.

Limiting Excess Immigration is Ethically Right and Environmentally Sound

People on the move always create moral dilemmas since it is natural to be sympathetic with the migrants. However, the practical and moral question is what to do about those wishing to come to areas like the United

States which are perceived, falsely, as affording virtually unlimited opportunities and resources. In our case, we are forced to carefully consider whether allowing continued or increased immigration is a net benefit or a detriment to the United States, to the immigrants themselves, and to the countries from which they come.

In addition to the carrying capacity of the natural environment already discussed, a number of social and economic carrying capacity factors are relevant here. Most immigrants to the United States are poor and either semi-skilled or unskilled. The fact is that they compete with our own poor, unemployed and homeless for housing, employment and opportunity. **It is not fair to our own poor and unemployed to bring in their competition** since we do not have unlimited natural and social resources or unlimited jobs or budgets. The cornucopian notion of unlimited bounty held by many abroad and by some Americans is, in fact, a myth to which our budget deficits, resource shortages, overcrowded cities and environmental ills amply testify.

Excess Immigration is Extremely Costly to American Taxpayers

The health of our social environment requires that we refrain from excessive spending. Immigration at current levels is, however, extremely costly given the limited ability of our economy to productively absorb large numbers of unskilled and semi-skilled newcomers, let alone to handle concentrations of people beyond carrying capacity limits imposed by nature. The costs of *illegal* immigration alone in unemployment and other transfer benefits have been estimated elsewhere by BALANCE to be in the range of $10 to $15 billion a year to U.S. taxpayers.

And legal immigration is itself very expensive. For example, according to the U.S. State Department, every 10,000 refugees admitted to the United States receive initial benefits that cost the taxpayers $70 million. Since current plans allow for the admission of over 142,000 refugees in 1992, and more in subsequent years, refugee costs to taxpayers for 1992 are expected to be over $994 million! These figures do not include the additional costs of bilingual education, new housing, hospital care, and other "downstream costs" which are often borne by states and municipalities, and which run into the billions of dollars annually.

Moreover, a number of persons who are presently admitted as refugees do not meet the traditional test for classification as a "refugee" -- that is, having a "well founded fear of persecution." This is because legislation was passed in the 101st Congress that substantially broadens the definition of "refugee" for certain Soviet, Eastern European and Southeast Asian citizens so that many are admitted who do not meet the traditional test. Indeed, some who are admitted as refugees would be more appropriately classified as persons fleeing economic hardship or environmental disaster. While it is natural to sympathize with such persons, it is questionable whether they should be called "refugees," with all the sympathetic connotations that term evokes.

The passage of the 1990 Immigration Act created additional funding obligations in many federal and local programs already experiencing dire funding shortages and slated for further cuts: Medicaid, AFDC, SSI, Food Stamps, School Lunch, Head Start, Housing Assistance, Student Aid, Unemployment Compensation, Earned Income Tax Credit, Low Income Energy Assistance, Public Higher Education, Bilingual Education, Compensatory Education, Adult Education, Vocational Training for SEP Students, Job Training, WIC, Elderly Nutrition, General Assistance, Criminal Justice and Community Block Grants.

The costs for the first year for public assistance for 1991 immigrants will be about *$3 billion and are projected to increase after that.* This $3 billion annual cost is, and will continue to be, borne largely by state and local taxpayers. In the past, states have continued federal programs even when federal budget deficits forced cuts in federal funding. Now, however, many states are facing the need to make severe cuts in their own budgets.

Excess immigration into the United States is, simply, very expensive, and victimizes our own poor and unemployed who compete for jobs, housing, health benefits, education and the like. And immigration contributes to population growth, which is threatening the carrying capacity limits of the natural environment.

Emigration Hurts the Countries from which Immigrants Come

Emigration does not benefit the countries from which immigrants come, either. It is often the politically dissatisfied or economically unfulfilled who decide to leave. Their feelings are understandable, but BALANCE believes that we should not encourage them to migrate. These dissatisfied people are precisely the ones who should stay at home because they are often the most motivated and best able to rectify the problems of their own societies. What, for example, would have happened to the Polish reform movement had Lech Walesa decided to emigrate to the United States? Although most immigrants to the United States are relatively unskilled, a small number are skilled. Is it fair to other countries to allow the brain drain to the United States to continue? Their exodus is their country's loss.

Perhaps most important, many of the countries from which prospective immigrants come are countries with very high and entirely unsustainable population growth rates. Many have population doubling times of between 20 and 30 years, large numbers of children per family, and an extremely large proportion of the total population which is very young. For example, *if* present trends continue, Central America (including Mexico) will *add* 50 million people by the year 2010.

Since many in these countries hold the illusion that the United States has unlimited resources and an unlimited capacity to accept immigrants, and will continue to accept large numbers of them, their governments have no real incentive to take steps to limit their own population by encouraging small family size and making contraception more widely available. The conclusion which they can justifiably draw from the present "open door" U.S. immigration policy is that a significant portion of their "excess" numbers can always go to the United States. This misconception only delays their attempts to slow their own population growth.

Other Countries' Experiences Demonstrate that Restricting Migration is Beneficial

China has recently instituted regulations aimed directly at limiting the migration from rural areas into overcrowded cities. An important aspect of this policy is apparently to encourage people in the rural areas to bear the burden of their excessive reproductive rates and thus induce them to adjust the number of children to a level consistent with realistic expectations of local economic and environmental conditions. Indeed, many present and historical examples indicate that people respond to perceived scarcity or opportunity by having fewer or more children, respectively.

In short, we are being unethical and unjust to our own people and to those from other countries by allowing excessive immigration and thus refusing to directly confront the carrying capacity problem. We send these countries the wrong signal, the signal that their high emigration and high birth rates can continue since the United States will provide a safety valve. This is neither good for other countries nor good for the United States.

We should be sending them another signal, namely that the United States will take a strictly limited number of immigrants who can be successfully absorbed within our population carrying capacity, but no more. This policy would send the right signal to other countries and, in the process, allow us and them to protect the environment. Each would limit its own population growth, so each could help its own poor and unemployed.

How much Immigration is "Excessive"?

Clearly, this brings us to the key issue: How much immigration is excessive? Answering this question involves considering what population size is "ideal" for the United States, given our population carrying capacity. Precise answers are difficult, but honest observation and common sense suggest that from a carrying capacity perspective the United States may well be overpopulated already.

The evidence for overpopulation is widespread, including our water shortages, our excessive pollution, our great pressures to cut ever more timber from our national forests, our decreasing wildlife habitat, our paving over of 1.5 million acres of farmland a year, our overcrowded recreation areas, crowding in our cities, and our inability to provide and maintain an adequate infrastructure of schools, roads and other physical facilities. All this and more point to the fact that the United States may already have exceeded the ideal population carrying capacity. After all, we must reemphasize that sparsely inhabited or open land does not necessarily signify additional carrying capacity.

To Protect the Environment, We Must Achieve "Replacement Level" Immigration.

Therefore, to safeguard our carrying capacity and maintain our quality of life, BALANCE believes that the most sensible course to take is to stabilize our population size as soon as possible. Although our total fertility rate is near replacement level, our population will still continue to grow for several decades because of the large number of women from the baby boom generation currently in their childbearing years (this phenomenon is known as "population momentum"). Consequently, *immigration* from other countries provides *the crucial variable* in our efforts to stabilize America's population.

In sum, achieving population stabilization must include a goal to reduce immigration into the U.S. from its current level (more than 1,000,000 legal immigrants and an estimated 500,000 illegal immigrants every year) to a "replacement level" immigration rate that would parallel replacement level fertility. We should have a replacement level immigration ceiling of no more than 200,000 because about 200,000 people leave the United States voluntarily every year. Balancing *immigration* and *emigration* will be instrumental in balancing our *population* with our *environment*.

An All-Inclusive Immigration Ceiling of 200,000 Per Year Will Make Long-term Environmental Protection Possible

This immigration ceiling should also be *all-inclusive*. That is, it should include refugees, asylees, relatives and all other immigrants. Anything short of an all-inclusive ceiling would risk discriminating against certain groups of people, would unfairly undermine the principle of replacement level immigration and would undercut our goal of attaining a stable population within carrying capacity limits.

While BALANCE is primarily concerned with *numbers only*, certain considerations should apply regarding who should be admitted under such a ceiling. While many people (and certainly more than 200,000) will claim that they should be admitted under such a ceiling, there will be those who should have special consideration -- those who are legitimate refugees facing imminent persecution, for example. *Some* of each of these

should be admitted, but only to the extent that the total does not exceed the "replacement" level ceiling of 200,000 annually. We must acknowledge, and others must recognize, that the United States simply cannot take in all of those who want to come to this country.

We must be fair to ourselves and to others by being realistic. We must enact a responsible immigration policy. This requires that we act now to stop illegal immigration and to limit legal immigration to replacement level, namely, *200,000 per year.* Those 200,000 places should be allocated in the best interest of the United States as determined by Congress and the American people. BALANCE does not take a position on who should be admitted to this country. We believe that the cornerstone of our environmental and immigration policies must be population stabilization.

In sum, overpopulation is the ultimate threat to the environment, and immigration is the critical component in our rapid population increase, which is the highest in the industrialized world. We owe it to ourselves, to our poor and homeless, and to other countries to act now to limit immigration into this country to replacement level in order to protect our environment and safeguard our long-term carrying capacity. By working first in the United States to stabilize our population, we can send a signal to other countries that says we have limits to our capacity to absorb immigrants. We can become a model of population stabilization for others so that we can each work toward safeguarding our own carrying capacity and thus safeguard the carrying capacity of our planet.

Population-Environment Balance is a grass-roots membership organization committed to stabilizing the population of the United States in order to protect its carrying capacity. BALANCE's goals are based on the inter-relatedness of population size, quality of life, and environmental impact.

TO: Members,Staff, Future Vision Commission

FROM: Len Freiser

DATE: January 24, 1994

RE: Committees and Assignments

Over the coming weeks, when our meetings are focused on our commentators, we will revise the first draft of the FVC Combined Edit and consider further detail, implementation, and recommendations concerning the 3(+) growth concepts.

Two new committees are needed, public Involvement, and Implementation, and there is some rearrangement of committee membership:

Economic Vitality:		Economy, transportation, energy, finance, telecommunications, research and education, education and training, government's role in all this.
	Members:	Ron Correnti, Len Freiser, Mike Gates, Wayne Lei, Robert Textor.
Environment:		Green spaces, energy, water, air, plant and wildlife
	Members:	Judy Davis, Len Freiser, Mike Houck, Peggy Lynch, Susan McLain, Alice Schlenker.

Sense of Place:	Urban form (including housing density), urban design, transportation, suburban form, rural form, green spaces. This committee will also have the responsibility for bringing a recommendation to the full Commission regarding the four growth concepts (or any others).
Members:	Len Freiser, Robert Liberty, Peter McDonald, John Magnano, Ted Spence, Rod Stevens, Robert Textor.
Community & Social Well Being:	Children, community centers, libraries, museums, schools, health, community and neighborhood identity, access to information, lifelong education and training, housing, work and the individual -- work and the family.
Members;	Len Freiser, Judy Davis, Wayne Lei, Susan McLain, Lisa Barton-Mullins, Fred Stewart.
Public Involvement:	Public Involvement for FVC and the elements of 2040 that are related.
Members;	Len Freiser, Peggy Lynch, Susan McLain, Lisa Barton-Mullins, Alice Schlenker.
Implementation:	Makes recommendations regarding implementation of the FVC document.
Members;	Len Freiser, Mike Houck, Robert Liberty, Ron Correnti, Susan McLain, John Magnano, Peter McDonald.

2nd DRAFT / FVC COMBINED EDIT

FOUNDATION OF FUTURE VISION

The Future Vision Commission has a mandate to prepare a statement that can guide our planning for the next fifty years. You and your neighbors, in public meetings, propose a just, safe, and equitable society -- one that utilizes the land to sustain and enhance the natural as well as the built environment; that has rich cultural and effective educational programs; and that provides strong economic and employment opportunities.

The foundation of Future Vision is our plan for children -- a plan that will affect their lives, their play and learning, their work and livelihood, their families, their homes and communities, their health and environment, their sense of place, their government. Should we fail here, there is no vision. Healthy communities, safe neighborhoods, wise use of land and stewardship of natural resources, a vital economy and strong workforce, responsive government and a high level of civility, will only come about over the next fifty years if the children of today and those yet to be born are in a society that recognizes that they are our future vision.

We propose that the arts are as basic to the education of all children as is the academic curriculum. Early and ongoing participation in the arts gives a child long-term enrichment, a sense of accomplishment, and confidence in developing skills. The arts have a singular power to reach all children and provide them with a shared background -- the arts can establish an even playing field.

We propose a regional partnership of business and arts groups, in cooperation with Metro and the area's communities, to establish enough performance groups and arts facilities to enable every child to participate.

Region-wide community centers, hospitals, and libraries can provide books and programs to help new parents, right from the start, to read to their infants. Nearby libraries and community centers provide pre-schoolers with ongoing language and arts enjoyment. Neighborhood arts groups, community centers, libraries, museums, nature centers, and schools become partners with parents and the community in helping all children to reach their full potential. Our region must provide cultural, educational, and recreational opportunities that rank with the best in the world.

OUR COMMUNITIES

It is very clear that we need safe communities We envision our region to be a mix of vital and liveable city, rural and suburban communities, scenic wonder, and agricultural areas, distinguished by a a high level of civility, and public participation in government. Our communities and neighborhoods will each have individual flair and active communal life; a number of main streets busy with theaters, galleries, restaurants, music clubs, small businesses, residences -- people of all ages; and an increasing number of volunteer organizations working to solve community problems. The area will be very strong in sports and in the arts with a great variety of public programs, festivals and celebrations.

With one of the strongest records in the country for citizen involvement in solving community and regional problems, we will have increasing numbers of people who come together to talk about common concerns -- thereby gaining a deeper understanding of the pain and experience that have led others to aspirations that seem to be different than their own.

We will revitalize decaying neighborhoods. Government, school, business, and community will work together to provide training and work opportunities for all who require them.

The world of work will be re-examined. How we feel about our

jobs affects our health, our families and thereby our communities and economy. We will encourage appropriate public agencies as well as employer and employee groups to provide educational opportunities that lead to mutual understanding and respect in the workplace. (Working at home at their modems does not shield people from poor personnel management.) Economic health and the health of individuals and families must go hand in hand.

Employment and volunteer opportunities, as well as dignified health and social services for an aging population and for the handicapped will be provided.

We recognize that timely, accurate, and accessible information is a requisite for a democratic society. New technologies expand our access to articles, databases, books, videos, and to people around the world. New technologies also lead to unex- pected social and business changes. We will be better prepared to meet these challenges by building a strong educational foundation for all, and by recognizing that free public library and information services are an essential part of that foundation.

We recognize that all individuals, communities, public institutions, private organizations, and businesses are part of the social contract.

OUR ECONOMY

A healthy community and a healthy economy go hand in hand. The key to economic vitality is communities that are attractive to people. The region must protect and enhance its spectacular natural environment, its cultural and educational strengths, its vital downtown core, and human-scale communities.

Government policies will support partnerships with business and recognize the need for a sound investment environment, access to products and markets, information, productive workers, safe and liveable communities, a healthy environment and a strong sense of place.

We will maintain efficient domestic and international inter-modal transportation hubs and communications systems, and promote domestic and international business, trade, and industrial services.

We recognize the need for a graduate research university to encourage the further development of information and high tech industries, to meet the needs of our college graduates, and to attract a diversity of creative people to our region.

We recognize that our economy as well as our communities require a vital arts environment.

OUR SENSE OF PLACE

For many of us, the area is defined by our place in nature: the snow-draped cones of Mt. Hood and Mt. St. Helens shimmering above sailboats on the Columbia, a silver-bright salmon pulled from the waters of the Willamette just steps away from office towers, clouds catching in the firs of the West Hills, the rich green patchwork of farms and forest lands of Sauvie Island and the Willamette Valley.

Our communities have grown on nature's foundation, developing the identity of our area. At the heart of the region is the bustle of people, the energy of the city, ringed by distinct neighborhoods -- tree-shadowed and close-knit. Today the vibrant urban center of the region reaches out to include older farm towns like Beaverton, Forest Grove, Sandy, Hillsboro, Newberg, lively with new industry and hard-working new residents as well as to the historic cities of Vancouver and Oregon City.

But the metropolitan region now extends beyond this central urban network. Already evident is an interlinked economic region stretching from Longview/Kelso on the north to Salem on the south, from the crest of the Coast Range on the west to the Cascade watershed on the east.

Growth has brought new opportunities and prosperity to many citizens in the region. Growth also brings serious challenges.

What we have today we may lose tomorrow. While our region is special today, some of the forces of growth acting upon it are the same as those which have diminished the quality of life in other parts of the West. Mt. Hood could disappear behind a pall of smog and the Willamette could run with pollution instead of salmon.

As housing creeps north to Longview, south to Salem and covers the foothills of the Coast and Cascade Ranges, our dreams of a fulfilling city, suburban, or rural life, will give way to the reality of traffic jams, social and economic segregation and the impersonal ugliness of sprawl. The centers of our cities will decay and the countryside will recede over the horizon, a place reserved for special holidays. We will have neither the stimulation of urbanity nor the perceived benefits of the country.

We can plan a better future, a future in which we will talk to each other on the sidewalk instead of fume at each other in gridlock. We will enjoy the countryside and nature in our daily lives. Driving to work or to the store will be a choice not a necessity and we will live in neighborhoods instead of residential zones.

That future is possible if we choose to make the best use of what we have, by growing up instead of out. We can maintain and develop our cities instead of sprawling onto the farm and forestlands on the edge of the metropolis. And we can do this with only modest changes in the ways we grow and invest the public's resources -- there is no need for us to abandon our cars or our dreams of having our own home and yard.

We can build our future the way we built the best of our past, supplementing the supply of large-lot single family residences with a mixture of homes on traditional sized lots, townhomes and apartments that serve the needs of the households of the future.

Our neighborhoods, like the cities within the region, can maintain or acquire an identity by mixing commercial, community and residential uses along important transportation corridors. This form of growth can reduce our dependence on the automobile, and by keeping our streets and sidewalks lively we can increase public safety. We can encourage the development of community centers, where adults as well as children can take an active role in art, dance, drama, music, nature, science, and publishing programs.

Knitting our urban life together will be light-rail, streetcars, and a completed framework of arterials, streets and sidewalks to accommodate our transport, bicycles and pedestrians. Our children will have more choice in the ways they get to the store, community center, library , or school.

A generous number of public parks and open spaces will keep the outdoors and nature close to our daily life. And the urban part of the region will have its identity created by a boundary, an edge, beyond which the country begins, continuing its contribution to our economy and quality of life.

OUR NATURAL ENVIRONMENT

We have been entrusted with a region that is blessed with spectacular natural beauty. Future generations will celebrate our preserving the area and leaving it for them in better shape than we found it.

To provide a context for the challenge we face in meeting this pledge, let us see what the area will be like in fifty years time.

Our Natural Environment Fifty Years From Now

2040: We have sustained the region's distinctive landscape features: forested volcanic buttes and ridgetops, broad riparian plains and low, oak and fir-clad hills; we see the region as a unique ecosystem in which people and the built environment are recognized to be integral parts.

Productive agricultural lands border the sinuous Tualatin River floodplain where a series of national wildlife refuges are managed for their agricultural and natural values. Riparian stewardship and water quality land-use incentives have created added economic value to the agricultural landscape and have promoted farming throughout the Tualatin River and Willamette River basins.

Elsewhere, the Sandy, Clackamas and Willamette Rivers are managed for their many values to the growing metropolitan region. While redevelopment and reclamation of downtown Portland's riverfront has accommodated much of that city's population growth -- close in to the increasingly vibrant downtown core -- river corridors have been managed and restored to enhance their fish and wildlife, water quantity and quality, and flood control values.

The region's urban streams and sloughs have been managed for water quality, recreation, and wildlife, thereby enhancing property values. Unlike most metropolitan centers, which have eliminated their urban streams, our waterways have been retained as part of the urban infrastructure -- "Greenfrastructure."

Over fifty-percent of these green areas are managed as an integrated system of open spaces and wildlife refuges which are connected by the regional trail system. This network, known as the Regional Greenspaces System, was developed in the early 1990's to ensure that significant natural resources were managed, restored and utilized according to established standards.

Each of the villages throughout the metropolitan area is different in character by virtue of unique landscape features which have been retained to separate it from neighboring communities. There are natural "gateways" between each village, and "feathered" gradients between the more densely populated centers that outline the agricultural lands.

The area when viewed from the air greets the visitor flying in

to Portland with a vision of an intricate mosaic of greenway networks, and by urban rivers and streams which have naturally functioning riparian zones and wetlands. They will see native deciduous and coniferous forests that have been retained on the region's volcanic buttes and prominent ridgelines -- Tualatin Mountains, Parrett, Cooper and Chehalem Mountains, and the foothills of the Cascade and Coast mountain ranges. And finally, the visitor will see the area's communities and central city, like stars vibrant in a green firmament.

METRO FUTURE VISION STATEMENT

PREAMBLE

WE, THE MEMBERS OF THE METRO FUTURE VISION COMMISSION, having been chartered by vote of the people, and appointed by the Metro Council, herewith submit to the Council and to our fellow citizens our Vision Statement for the fifty-year future of our Metro Community. While it is true that we Metronians[1] are subject to the authority of a federal republic and two of its states -- nonetheless, within broad limits, we **can** take charge of our common destiny -- design it intelligently, pursue it vigorously, and enjoy it fully. Within limits, we **CAN** be masters of our fate, and captains of our soul.

Most of us who have signed this document will be gone before A.D. 2040. We do, though, hold it to be our sacred duty to do all we can to bequeath to our children, and to their children, an overall Metro lifeway that will maximize the chances for all of them to enjoy a safe, free, humane, and fulfilling life.

SEEING IT WHOLE

We must see it whole, this future Metro lifeway. We must jointly envision an overall Metro **Culture** that will serve to preserve and enhance the good life for **all** Metronians, especially those as yet unborn. On behalf of the people of Metro, we here envision a Metro Culture that will **integrate** our basic ecological, political, legal, technological, economic, social,

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[1][The terms "Metronian" and "Metro Culture" are here used as temporary terms, pending the Commission's decision as to what terms to use. -- RBT]

and aesthetic values into a harmonious whole that will inspire the love and loyalty of all Metronians.

All cultures constantly evolve. Our future Metro Culture will be an evolutionary outgrowth of our present Culture, just as the present one has grown out of our past, dating all the way back to President Jefferson.

But here a serious problem arises. Many of the key values of our present culture were crystallized during a historic situation of low population density and wide open spaces. With the passage of time, as the population of our nation has grown, so has that of our Region -- and a fundamental challenge of this Vision Statement is to design ways to preserve the **essence** of our Metro Culture's key values **despite** the unavoidable future necessity to accommodate more Metronians.

USING OUR VALUES TO SHAPE POLICY

Some changes are beyond our control, such as our national demography. Most of them, though, are at least partially subject to our guidance.

How do we provide that guidance? We believe that we should use our cultural **values** to guide change. We believe that we should **NOT** sit by passively and allow demographic, technological, or economic factors to **force** us to surrender to the violation of our basic values, bit by bit. We believe that the following values of our present Metro Culture are of basic importance in guiding us as we chart our course toward A.D. 2040.

♦ Our Metro Culture will assign the highest priority to the preservation and enhancement of our deeply valued **livability** -- while also making plans and provisions for the

orderly **accommodation** of newcomers who move here, often attracted by that very livability.[2]

We don't need to give up our cars or gardens, and all of us can actually have more choices of whether we will drive, bike, or walk to the playground or a friend's house.

♦ Our Metro Culture will seek to preserve wide **options** for future generations of Metronians to make their **own** decisions as they seek to adapt to new challenges and create new opportunities -- while also preserving their opportunity to continue enjoying the best of our great Pacific Northwest tradition.

A few years ago, microbreweries were a new opportunity. Today they are already part of our Northwest tradition.

♦ Our Metro Culture will emphasize pride in our **special** Metro identity and sense of place -- while also encouraging our knowledge of **other** cultures and languages worldwide, with whose peoples we will be in increasingly close contact as the global economy expands inexorably.

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[2][In this series of bullet items, each value is **balanced** by a counterpoising value. This is as it should be, for no culture ever pursues a single value to the exclusion of all other values. For example, in the general American culture, the most emphasized and distinctive value is (in my view) individual freedom/autonomy -- yet virtually all Americans would agree that this must be balanced by individual and social responsibility. -- RBT]

Every Metronian child should be educated in state and regional history, and certifiably competent to conduct a serious, practical conversation in a foreign language.

♦ Our Metro Culture will allow the greatest possible **individual** liberty in politics, economics, ethnicity, lifestyle, belief, and conscience -- while also instilling **social** responsibility toward the Community as a whole.

A visit to the Japanese Garden in Tom McCall Park is enough to remind anybody that neither freedom nor responsibility can be taken for granted.

♦ Our Metro Culture will encourage the widest possible citizens' initiative and **participation** in governmental affairs -- while also requiring conscientious **respect** for the law.

Oregon was the first state to adopt the initiative and referendum, but also the first to pass a Bottle Bill. This same spirit will be harnessed to enable us to make and enforce firm decisions about keeping the open countryside close to the urban portions of our Region.

♦ Our Metro Culture will provide maximum economic **opportunity** for all our people -- while also offering suitable social mechanisms to insure **equity** for all, and **compassion** for those in need.

Homelessness is evil. Every Metronian will have basic food and shelter.

♦ Our Metro Culture will encourage the preservation and enhancement of the best possible **built** environment -- while also conscientiously protecting and preserving our **natural** environment.

Standing at any spot in our Region, one will be able to turn around and see green beauty somewhere.

♦ Our Metro Culture will allow and support **individual** choice in housing arrangements -- while also encouraging a settlement pattern creatively designed to provide maximum environmental, aesthetic, recreational, and other benefits for our entire **Community**.

Not every single family home with an enormous yard is socially desirable. Not every row house is socially undesirable. We will find ways to minimize land greed, and design reasonably compact housing to preserve and enhance the privacy, dignity, and beauty of our living arrangements.

♦ Our Metro Culture will minimize environmental degradation, in part by requiring that those who do the degrading will pay user's fees that reflect the true cost of such degradation -- while also insuring that such fees do not cause distress for the least privileged.

No more free rides for irresponsible developers who seek to "externalize" their costs. No more sleaze.

♦ Our Metro Culture will enable all our people to live an **abundant** life -- while also systematically **protecting** our people's right to an unpolluted workplace and environment, and unimpaired sustainable natural ecosystems.

We will be able to eat the fish we catch in the Willamette any day in the year.

♦ Our Metro Culture will **maximize** convenience and efficiency in transportation of persons and goods -- while also **minimizing** congestion, pollution, and environmental degradation.

Wise zoning rules, truly convenient public transportation, and liberal use of electric automobiles will reduce many "impossible" dilemmas to solubility.

♦ Our Metro Culture will embody the most creative uses of the new information **technology** for the economic, political, and personal benefit of all Metronians -- while also supporting the unique ambience of direct **personal** contact.

Metro's array of annual festivals for every imaginable purpose, and a few unimaginable ones, are a cultural resource to be cherished and nurtured.

♦ Our Metro Culture will encourage maximum intellectual and aesthetic **stimulation** and innovation -- while

also encouraging a **reflective** life that takes into account the wisdom of the past.

> *We are a reading culture. Our schools and libraries will be "state of the art" in providing electronic and human library services.*

♦ Above all, our Metro Culture will, through public and private schools and all other means, affirmatively seek to insure that every Metronian child -- regardless of gender, race, ethnicity, religion, family, wealth, or residence -- will enjoy the greatest possible opportunity to fulfill her or his **potential** in life.

SEEING THE CONNECTIONS

Each major element of the future Metro Culture we here envision is intended to support the other elements. It is the intelligent design of these **connections** among elements that will make the difference between excellence and mediocrity. For example:

♦ We cannot have responsible and equitable environmental policies if we have aloof, inaccessible, or purchasable political leaders.

♦ We cannot have true civic democracy -- especially in an era when there will probably be frequent electronic polling -- unless our schools teach citizenship with skill and passion.

♦ We probably cannot sustain our natural friendliness -- a point visitors quickly notice and rave about -- if we must suffer through many years of double digit unemployment and a scarcity of family-wage jobs.

♦ We cannot lead a truly examined life if we lack a vibrant system of lifelong learning opportunities.

OUR METRO REGION

Who are we? Our Metro Region has no single boundary, and should not have. To visualize our common future intelligently, we must conceive of the Region **flexibly**, guided mainly by demographic, ecological, logistic, and economic criteria.

- The **demographic** criteria have been shifting since Oregon City was founded during the 1840s, to the point where today Portland and Salem are in the same federal statistical area.
- The **ecological** criteria include our present watershed, which embraces territory from the Lewis River in the north, south to include the northern Willamette Valley, plus the valleys of the Clackamas, Tualatin, and Sandy Rivers.
- The **logistical** criteria include the high probability of new forms of transportation making it possible to travel from Roseburg or Seattle to Portland in about an hour. With the ever-increasing use of the new information technology, Metronians will be in ever closer contact with people worldwide, and telecommuting will become a major feature of our regional employment market.
- The **economic** criteria include the near-inevitability of a continuing trend toward regional and global integration of economic functions.

For reasons such as these, our Statement will regard our Region as one of multiple, flexible, and changing scope.

One point, though, is clear: the Region's present **government** jurisdictional boundaries often do not accurately reflect the above complexities. We here take no position on how these boundaries might or might not shift in the future. Rather, we simply assume that, one way or another, our political structures will evolve in ways that will allow our citizens to promote the essential values of our Metro Culture.

FACING THE DEMOGRAPHIC REALITIES

Whether we like it or not, it seems inevitable that the population of our Metro Region will grow, for at least the following reasons:

- The overall population of our nation is growing, and the demographic momentum is such that this net growth will persist for several more decades.
- We live in a federal republic which essentially guarantees freedom of movement from state to state (including the freedom of Metronians to move elsewhere).
- Our livability will attract people from elsewhere, including many who will choose to live here yet earn their living by telecommuting to distant places.

While Metro leaders may well find legal and practical ways of moderating net population inflow, the key to a satisfying future way of life for all Metronians clearly lies primarily not in preventing, but in **managing** demographic growth. Only by managing growth proactively and scrupulously, guided by the values of our Culture, we can we succeed in preventing growth from undermining that very culture.

Word count: 1931.

b/ Susan Wilcox

50 YEAR VISION (CONDENSED FROM DRAFT 1)

PREFACE

In 1992 the voters approved a Metro Charter which mandates a Future Vision, a fifty year, conceptual outlook for the region.

Our very existence as human beings in the world is dependent on wise use of our natural resources, clean air and water, and efficiently allocating land and energy.

A quality existence for human beings in our region is dependent on healthy communities, safe neighborhoods, a vital economy and strong workforce, responsive government, a high level of civility, and opportunity for the pursuit of happiness, all in an atmosphere which enhances the individual's spirit and soul.

The future of the region is in the hands of its children: us.

PLACE

The Portland Metro area is defined by snow draped Mt. Hood shimmering above sailboats on the Columbia, silver bright salmon broaching the waters of the Willamette only steps from towering office buildings, fog catching at firs in Forest Park, rich green patchworks of farms and forest lands bracketing Sauvie Island and the Willamette Valley.

Our communities have grown on nature's foundation and now reflect her in our identity. Our metropolitan region includes an interlinked geographic and economic area stretching from Longview/Kelso to Salem and from the crest of the Coast Range to the Cascade watershed.

For this region we envision housing for all with real

choices ranging from large-lot single family residences through compact lots, townhouses, and garden apartments to comfortable, secure high-rise apartment buildings.

We envision community centers where people congregate and create.

We envision neighborhoods and communities evolving and retaining unique identities with lively, safe streets and sidewalks, accessible from within and without.

We envision clean, efficient transportation choices including light-rail and streetcars and well planned and maintained freeways, arterials, and streets to accommodate bus and auto traffic while providing interconnecting sidewalks and paths for pedestrians, skaters and bicycles.

We envision lots of parks and open spaces shared by all; retaining the outdoors and nature as an integral part of our daily life.

PEOPLE

We envision for all people love and proper care, safe and stable home environments, safe and nutritious food, basic health care, songs and storytelling, and play apart from scheduled activities.

We envision convenient access to schools, community centers, libraries and museums, and information. We expect the region to foster a lifelong learning environment for all its citizens and visitors.

We envision dignified, accessible employment and volunteer opportunities at all skill levels.

1000 FRIENDS OF OREGON

RECEIVED

January 20, 1994

Metro Council
600 NE Grand Avenue
Portland, OR 97232

Re: "Slow/No Growth" and Citizen Involvement

Dear Metro Council Members:

I write because after attending Metro's panel discussion on "No/Slow Growth," I am profoundly concerned about the way in which Metro is (1) treating citizen input on this issue, and (2) framing the discussion. I write as one who individually, as well as my organization, supports Metro's role in land use planning and believes that generally, the Region 2040 program is progressing well. It is because I support Metro and 2040 that I express my concern that what I saw at the conference will undermine public trust in Metro's 2040 effort.

The "Slow/No Growth" conference was prompted by citizens throughout the region asking whether we have to grow at all, or at the projected rate. They want information about the growth options available to the region, and the positive and negative consequences of those options. If the conference and resulting report are the extent of Metro's response to these concerns, then you are simply burying the issue for explosion later.

First, the conference was held on a workday, from 7:30 - 9:30 am, a time which is inconvenient for the average citizen to attend. Consequently, the attendees were the usual suspects. I understand that Metro did not even announce the conference to the press, and that the only reason the press knew about it was because other invitees informed them. There was certainly food for thought presented and I'm sure we all benefitted, but the conference was by no means a <u>public</u> response to the <u>public</u> question of whether we have to grow.

Second, the moderator's description of the views of those who want slow and no growth options considered was condescending, and his treatment of some citizens who asked questions was, to me, extremely inappropriate.

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Third, the selection of the panelists was very unsatisfying. I, like many others, am still struggling with the question of whether we should try to slow growth. I, like many others, am searching for concrete information about the positive and negative effects of various methods to slow growth, and about the positive and negative effects if we don't slow growth, but rather try to plan for it.

However, rather than presenting a diversity of perspectives on whether and how to accommodate growth, at least two of the speakers - Edwin Mills and Ed Whitelaw - presented the standard economist's view that slow or no growth are counter-productive, without any real examination of that conclusion. Doug Porter began to suggest methods that other jurisdictions had used to try to slow growth, and I would have liked to hear more from him about the negative and positive consequences of those. Thus, most of the speakers simply dismissed the question the public is asking - should we stop or slow growth? Mr. Mills seemed particularly uninformed about Oregon.

Only Larry Orman seemed to have an open mind on the issue and appreciated its importance to the public. And he said something very significant, which Metro should seriously take to heart: that we have to find a common language to discuss these issues, so we do not become polarized.

I think that Metro's attitude as evidenced in the conference was a step towards polarization. Metro has lumped slow and no growth together, which I think are very different, and positioned them as the opposite of accommodating growth. This is as simplistic as the other notion Metro keeps saying, that we have to "grow up" or "grow out." None of these is very informative, and in fact I think they misinform the public as to what 2040 is all about.

Rather, growth should be looked at as a continuum, with a variety of tools available to both slow and accommodate growth. We should be looking at each of these tools, and evaluating their impacts, both negative and positive. Some were hinted at at the conference: internalizing the external costs of different forms of development; limiting or directing the location of new industrial enterprises; requiring new residential development at the fringe to pay a fair share of the costs of servicing it; not building new infrastructure if we do not want development in certain locations; greenbelting the metropolitan area; congestion pricing; and more. I would like to have heard from speakers who are advocating "sustainable development" and "sustainable economies."

Metro does not seem to appreciate that the only "information" the general public has now are the ill effects of our recent rapid growth which they experience every day: traffic congestion; increasing housing costs from out-of-state "equity refugees"; sprawling suburbs consuming farmland; a distancing from their local governments and neighbors. It is understandable, therefore, that many citizens would question whether we should continue to grow, and would mistrust government's ability to accommodate any and all future growth well.

These perspectives need to be treated with respect and aired fully. I want the 2040 process to work, and for there to be regional acceptance of the final product. However, Metro is not going to get that if what happened at the conference continues.

We ask that the Metro Council adopt a resolution directing Metro staff to, as part of the 2040 project, examine and compare specific mechanisms to slow growth, including an evaluation of their social and economic consequences, and to involve the public in a meaningful way in this discussion. These should be considered with the tools we are already looking at to accommodate all growth.

Thank you for consideration of our perspective.

Sincerely,

Mary Kyle McCurdy

Mary Kyle McCurdy
Staff Attorney

c: Future Vision Commission
Andy Cotugno
John Fregonese

Ed Mills:

No Growth is counterproductive. In Oregon it is seen as anti-business/leads to higher prices, unemployment.

Mills argues for policies that improve life.

Ed Whitelaw:

Businesses that would bypass Portland will not go to Eastern Oregon but to Seattle and Vancouver, B.C.

Stop growth and you stop getting the best people and firms

Limit growth, decrease income

Improve life and you get growth/policies that limit growth make life worse.

Douglas Porter:

Portland is unique, there are no other models -- no other metro area in US has the power of Metro to influence growth.

When cities restrict growth, people move further away, thus adding to the commute problems.

Larry Orman:

Nation is watching Portland. We are ahead of the curve.

No growth is not a real issue. People are concerned about rapid change, and that the area is getting too big. What we should concern ourselves with is Wise Qualitative Development.

Future Vision is the vehicle for the discussion of wise qualitative development.

Make the UGB permanent -- focuses the discussion

"Common Language" is key to the discussions -- State ideas clearly and simply that describe real issues

Carrying capacity is a function of *technology/*consumption/*people
--there are no answers, but it stimulates discussion

Major policy should be investment in education (the "knowledge society")

Virtual reality emerges to help civic planning

By NEAL R. PEIRCE

Must we always let "them" — architects, shopping-center moguls, parking-lot operators, local politicos, city planners — decide what the world around us will look like?

Or could all of us, as ordinary citizens, be given a voice in the design of the streets and freeways, the buildings, neighborhood centers and parks and commercial centers that make up our daily environment?

PEIRCE

An emerging form of technology says the days of "them" calling the shots could be numbered.

The technology, a few years old and gaining fast in sophistication and accessibility, is called "computer visual simulation" or "image processing."

There's a new film about it called, "Looking at Change Before It Occurs," written and produced by Meg Maguire, underwritten by the Design Arts Program of the National Endowment for the Arts and available through Design Access in Washington.

No one suggests that ordinary people watching a set of computer-driven simulations showing alternative futures for their neighborhoods or towns, could put expert architects, engineers and town planners out of business. But simulations could be one of the most democratizing tools of our time by letting all the players — from experts to ordinary people — see the changes new building or development forms could bring, and then influence the process based on their own values, beliefs and hopes for their communities.

The simplest form of simulation is a basic, two-dimensional form of graphics in which one simply "paints," or superimposes, possible new structures or design changes on a photo image of a streetscape. The "Main Street" program in Texas, for example, uses a computer-driven process to show the historic forms of existing buildings, or to illustrate how they'd look with different kinds of design or color treatments.

Actual physical-simulation models of cities showing the impact of potential changes date to experiments that started in the '60s at the Berkeley campus of the University of California. Today's variant on faceless blocks representing buildings is to create a Lilliputian version of a streetscape by taking photos of the facades and then scaling them to correct for perspective distortion. The photos are pasted on the building models and the scene made more real by adding trees, cars and human figures.

Then when one lowers a gantry-mounted miniature camera into the model, a sense of walking or driving through the scene — just like Hollywood special effects — can be created.

Syndicated columnist Neal R. Peirce is on the staff of the National Journal.

Now the technology is moving on to three-dimensional computer-driven simulations that show all the physical forms of a city, almost precisely true to real-world measurements. These geographic information system models permit one to swoop down electronically into almost any street environment, see what it's like today and then check out how all manner of new roadways, buildings, demolitions or open spaces would affect the scene.

The Environmental Simulation Center at the New School for Social Research in New York is building just such a system, already incorporating large portions of Manhattan and getting ready for expansion to the other boroughs.

The model is so mathematically precise, notes Director Michael Kwartler, that it can be used for zoning, permits and other public decision-making. Proposed zoning changes, alterations to historic districts, the impact of new buildings on the sunlight that falls on parks or streets — all can be measured.

In a city notorious for its loud, contentious debate about new building, the New School simulation lab findings are made available to any and all comers. Not only is the information democratized, says Kwartler, he's also finding that contentious factions are far more likely to reach compromise solutions when the computerized simulation shows them what proposed building would really be like.

In a simulation for a town center at Princeton Junction, N.J., Kwartler and his colleagues found that the town leaders and residents rather quickly agreed, once they'd seen an array of computer-generated alternatives, that they wanted a much more dense, three-story main street than the low-slung one they'd imagined beforehand.

But simulation doesn't produce automatic answers. "It's a kind of Talmudic game," says Kwartler. "It only works if you ask it questions."

And the buyer has to beware, notes film producer Maguire. The information in a simulation can be misrepresented, so it's important that viewers pose tough questions and keep boring in until they feel they can trust the technicians who create the simulations.

Still, the potential to demystify planning and development is enormous. Keeping his finger on the most imaginative experiments nationwide, Peter Hawley of the National Endowment of the Arts cites examples ranging from simulated layouts for small towns in the Sierra Nevada mountains (prepared by the University of California/Davis) to a program to record historic-building and neighborhood forms — and thus facilitate future reconstruction — prepared at Louisiana State University for hurricane-prone Gulf Coast areas.

When a truly useful technology is born, the critical question is how fast it will be adapted. For the sake of America's townscapes and cityscapes, one can only hope our public universities — the most logical sponsors — will quickly jump on the simulation bandwagon.