

The 2006-2008 Progress Report
of the
The National Center for Smart Growth
Research and Education
at the
University of Maryland

in cooperation with
The School of Architecture, Planning and Preservation *
* The College of Agriculture and Natural Resources *
* The School of Engineering * The School of Public Policy
University of Maryland

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Message from the Executive Director

Welcome to the National Center for Smart Growth Research and Education. This is now our eighth year of operation and the sixth since I joined the Center. Our record of getting progress reports out on a regular schedule has been, well, irregular; but I like to think our productivity more than compensates.

As always, publication in scholarly publications remains among the Center's strengths since our last progress report in 2005-2006. Since then, Center faculty and affiliates have published more than 71 articles in refereed journals, 14 chapters in books, 13 books or edited volumes, and countless reports, scholarly presentations, and public presentations. And, as before, Center staff continues to make contributions on a wide ranging number of topics that confront policy makers at the international, national, state, and local levels.

In addition, since the last progress report, the Center has added two sub-centers: the Environmental Finance Center and the Transportation Policy Research Group. The addition of these centers greatly expands the capacity of the Center to conduct research and provide technical assistance on environmental and transportation issues — two areas of critical importance, both now and in coming decades.

The highlights over the past two years are numerous, varied, and diverse. Chengri Ding remained active in China conducting research, speaking at major events, and hosting training sessions both in China and College Park. Reid Ewing followed his pioneering research on sprawl and obesity with even more path breaking and widely noticed research on sprawl and climate change, and has become an associate editor of the *Journal of the American Planning Association*.

John Frece and his colleagues with the Governor's Institute on Community Design have consulted with the governors of eight states (Rhode Island, Virginia, Arizona, Delaware, Maryland, Wyoming, New Mexico, and Iowa), with

measurable impacts on state policy making. Kelly Clifton's pedestrian audit instrument has become widely adopted across the country and she was promoted to associate professor based her strong record of scholarly contributions on the relationship between physical activity and urban form. I, meanwhile, continue to work closely with state agencies on topics that range from creating Maryland's first State Development Plan, creating Maryland's first statewide transportation model, and assisting with an assessment of Maryland's green infrastructure.

Along with growth at the Center, of course, has come change. Public Policy Professor Antonio Bento has moved on to Cornell University; Arnab Chakraborty received his Ph.D. and has gone on to a faculty position at the University of Illinois; and Engineering Professor Glenn Moglen has moved on to Virginia Tech. We lament the loss of these key Center contributors, but hope to maintain a productive, though now distant, relationship. In the meantime, with the adoption of the Environmental Finance Center we have gained the expertise of Joanne Throwe and her able staff and with the creation of the Transportation Policy Research Group we have added the modeling expertise of Nikhil Kaza and Xin Ye.

With all this considerable talent, the Center is poised to address some of the most interesting and pressing issues facing followers of smart growth. These include helping state agencies with the State Development Plan; building an infrastructure for analyzing economic, land use, and transportation issues; financing the clean-up of the Chesapeake Bay; and addressing the problems associated with greenhouse gases and climate change. I hope you will check in with us again in a few years or months to see how we've progressed.

-- Gerrit-Jan Knaap
August 2008

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I. HISTORY

The National Center for Smart Growth Research and Education (hereafter, the Center) was established in 2000 as a direct result of the rapidly expanding national and international interest in improving land use management through efforts collectively known by the term “Smart Growth.” The Center is a cooperative venture of four schools on the University of Maryland’s College Park campus: Agriculture and Natural Resources; Architecture, Planning and Preservation; Engineering; and Public Policy. The Center was created in no small part due to the national reputation of the State of Maryland’s 1997 Smart Growth and Neighborhood Conservation program and a desire by the University to build on the national and even international visibility of that effort.

The concept of a Center for Smart Growth originated with university faculty, who saw both a need and an opportunity to develop an objective, interdisciplinary approach to better understand the complex Smart Growth strategies sweeping the nation at the advent of the 21st century. From the outset, the center was envisioned as an institution that would assess, and assist where possible, the implementation of the Maryland Smart Growth initiative, but which would also become a national resource for research and education on Smart Growth or related land use strategies.

Dr. Gerrit-Jan Knaap, a 25-year student of land use policy and author of more than 40 articles and five books on state and local land use planning, was recruited in 2002 from the University of Illinois at Champaign-Urbana to be the Center’s Executive Director. After seven years working on smart growth issues for the governor of Maryland, John W. Frece joined the Center staff in 2003 and became Associate Director in 2004. Knaap and Frece have led the Center’s involvement in a series of growth visioning exercises in Maryland known as Reality Check *Plus*, and Frece has represented the Center on a separate project around the nation known as the Governors’ Institute on Community Design. Among their publications, Knaap has written a book analyzing the state of Oregon’s planning

program, entitled, *The Regulated Landscape*, and Frece has written a political history of Maryland's incentive-based land use program, entitled, *Sprawl and Politics: The Inside Story of Smart Growth in Maryland*.

Faculty researchers include Dr. Chengri Ding; who heads the Center's China Land Use Program, which was established through support from the Lincoln Institute of Land Policy; Dr. Reid Ewing, a nationally recognized expert on land use and transportation planning and on the link between public health and the built environment; Dr. Kelly J. Clifton, who researches issues linking the built environment and travel choices and who has taken on a key leadership role in the Center's expanding transportation research work. Knaap, Ding, Ewing and Clifton are all affiliated with the Urban Studies and Planning Program within the School of Architecture, Planning and Preservation.

During the years covered by this report, the Center faculty also included Dr. Antonio Bento, whose research topics included the impacts of urban growth boundaries on housing prices and the housing deflection effect of adequate public facilities ordinances in Maryland; and Dr. Glenn Moglen, whose research focused on the relationship between the built environment and watersheds and water quality. Bento, who was affiliated with the School of Public Policy, has relocated at Cornell University; and Moglen, who was with the Department of Civil and Environmental Engineering, has moved to the Northern Virginia faculty of Virginia Tech.

Two other important structural changes broadened the Center's regional community outreach and internal research capabilities. In February 2007, the Environmental Finance Committee (EFC) merged with the Center. Headed by Associate Director Joanne Throwe, the EFC is affiliated with the U.S. Environmental Protection Agency and is one of nine University-based centers across the country providing communities with the tools and information necessary to manage change for a healthy environment and an enhanced quality

of life. Her staff of eight includes program managers Jennifer Cotting, Lisa Grayson Zygmunt and Megan Hughes.

In 2008, the Center and the Maryland Department of Transportation jointly agreed to create the Transportation Policy Research Group. In a separate agreement with the Maryland State Highway Administration, the Center is creating Maryland's first statewide transportation model. As a result of these two related actions, the Center has added several new staff, including Faculty Research Associates Nikhil Kaza and Xin Ye and Research and Assistant Professors Charles Towe and Cinzia Cirillo. Melissa Keeley is a Faculty Research Associate.

The Center's goals are two-fold:

- 1- To fill critical gaps in the research and available data on the underlying assumptions and effects of "Smart Growth," including the effectiveness of state and local growth management initiatives; and,
- 2- To fill an equally critical gap in available education and training for decision makers who need new ideas and tools for adopting cross-disciplinary and integrated approaches to managing growth, planning their land use, problem solving and implementation.

II. MISSION

The mission of the Center is to help the University of Maryland become nationally and internationally recognized as a leader in Smart Growth research and education.

The Center does this by bringing the diverse resources of the University of Maryland, and a network of national experts, to bear on issues of land development, resource preservation and urban growth through interdisciplinary research, outreach and education. This approach recognizes that work on these interwoven issues directly affects the nature of communities, the landscape and environment and, ultimately, quality of life.

III. PROJECT HIGHLIGHTS – 2006-2008

Over the past two years, the National Center for Smart Growth Research and Education continued its work on land use issues at the national and international scale, yet largely refocused much of its attention on the workings of Maryland's decade-old Smart Growth initiative.

A. Maryland Initiatives

Smart Growth @ 10

In fall 2007, the Center hosted "Smart Growth @ 10," a three-day seminar commemorating the 10th anniversary of the program's passage. In addition to an opening address by former Governor Parris N. Glendening and closing remarks by Maryland Department of Planning Secretary Richard E. Hall, the conference took a critical look at what has and has not worked in Maryland's incentive-based approach to managing growth in the nation's fifth most densely populated state. The event, co-sponsored by the non-profit environmental research organization, Resources for the Future, featured 25 papers from planning researchers and practitioners on topics related to the Maryland program. These papers included a survey of state efforts to manage growth, revitalization case studies, the impact of suburban infill development, forest and farmland conservation, the unintended effects of adequate public facilities ordinances, and the impact of state incentives for growth, including spending on transportation and sewer infrastructure. One paper from the conference that received front-page coverage in the Baltimore Sun was a study by Center Executive Director Gerrit-Jan Knaap and Rebecca Lewis, a graduate student in the School of Public Policy and research assistant at the Center, that showed that state agencies have been lax in tracking Smart Growth spending as required by the 10-year-old law.

Governors' Institute on Community Design

On a parallel track, the Center has worked closely with officials from a variety of state government agencies as well as the office of Maryland Governor Martin O'Malley to analyze Maryland's land use programs. In August 2007, the Governors' Institute on Community Design, a project co-led by the National Center for Smart Growth and Smart Growth America, held a day-and-a-half workshop for Governor O'Malley and his staff and cabinet. The Governors' Institute brought in several national experts to discuss with governor, cabinet and staff ways to jump-start the state's stalled Smart Growth program.

In addition to the workshop in Maryland, the Governors' Institute has also hosted similar workshops for the Governors of Rhode Island, Virginia, Arizona, Delaware, Wyoming, New Mexico and Iowa over the past three years.

Reality Check *Plus*

"Reality Check *Plus*" was the name given to a series of growth visioning exercises that were held in four different regions in Maryland in late spring 2006. The events were co-sponsored by the Center, 1000 Friends of Maryland, and the Baltimore District Council of the Urban Land Institute. They were designed to help elected officials, government leaders, business executives, civic organizations, environmentalists and everyday Marylanders become more aware of the level and pace of growth that is projected to come to Maryland by 2030 – and to ask them think about the potential challenges and consequences Marylanders will face as a result of such dramatic change. It also was designed to encourage citizens and elected officials to think about ways to address growth issues on a regional or even statewide basis.

Maryland Scenario Project

Using the results of the Reality Check *Plus* exercises as a springboard, the Center is in the process of creating a series of potential development scenarios for the state. Researchers at the center are now in the process of comparing the effects of the different scenarios on the environment, infrastructure, transportation and

other resources. This work will include assessments of the effects different development patterns are likely to have on watersheds, farmland, energy consumption, vehicle miles traveled, and other related issues. The Center expects the results from this Scenario comparison project to help inform the work of various state agencies that are grappling with how to respond to growth pressures in Maryland.

Partnership for Land Use Success

The Center has broadened its original Reality Check *Plus* coalition to create a new organization called PLUS (the Partnership for Land Use Success) that includes the Center, 1000 Friends of Maryland, the Home Builders Association of Maryland, the Citizens Planning and Housing Association, the Maryland Municipal League and the Greater Baltimore Urban League. The ambitious goal of PLUS is to find ways the disparate member organizations of the coalition can reach consensus on land use issues that have typically been contentious.

In summer 2008, the five of the six PLUS members reached agreement on a series of recommendations to the O'Malley administration on ways to improve the state's Smart Growth program (The Maryland Municipal League, which participated in discussions that led to the series of recommendations, was unable to endorse them.) These recommendations were circulated widely among state agencies and a statewide Smart Growth task force created by the General Assembly.

Maryland's State Development Plan

Throughout the period, the Center faculty and staff have worked closely with the Maryland Departments of Planning, Housing and Community Development, Transportation, Environment, and Natural Resources as those agencies began work on creating Maryland's first statewide framework for development.

Working with individual state agencies, the Center hosted three focused workshops on state development plans generally, housing plans and

transportation plans. A fourth workshop focused on natural resources, environmental protection and agriculture, was being planned.

Smart Growth Indicators

In 2008, the Center has also moved closer to unveiling a *beta* version of a Maryland Smart Growth Indicators website, a long-term project that will permit citizens and decision-makers alike to analyze and compare data related to the progress of Maryland's program. Funded primarily by the Abell Foundation, graduate students working under the direction of Center Director Gerrit Knaap and Center consultant Jason Sartori have collected and posted extensive data on eight issue areas: Population and Demographics; Land Utilization; Housing; Transportation; Land Preservation; Economic Development; Environment; and, Infrastructure.

The interactive website (www.indicatorproject.com) will permit users to see the data visually displayed in different formats by county, by transit station, over multiple years and in multiple ways, such as graphics and maps. In time, users will be able to aggregate data by self-selected regional groupings for comparison with other regions.

Transportation Modeling and Research

The Center's activities related to transportation research are rapidly expanding. A critical element of this work is a new long-term contract between the Center and the Maryland State Highway Administration to develop Maryland's first statewide transportation model. Working in cooperation with several other state agencies, this model will serve as the foundation for a suite of economic, environmental, and land use models used to explore the merits of alternative development patterns. This work is expected to assist in the comparison of various Maryland development scenarios mentioned above.

In addition, the Center reached agreement with the Maryland Department of Transportation and hired two new researchers as part of an effort to establish a jointly-staffed Transportation Policy Research Group at the University of Maryland Center. The mission of the Transportation Policy Research Group is to explore new approaches to transportation policy that provides citizens with transportation choices that:

- increase mobility and accessibility;
- are economically and environmentally sustainable; and,
- promote sound urban development.

To further this mission the research group will conduct advanced policy research on topics of interest to the Maryland Department of Transportation. Issues to be studied include, but are not limited to:

- the identification of new markets for transit service;
- the implementation of transit-oriented development;
- the efficacy of congestion pricing and other demand management tools;
- the potential of Intelligent Transportation Systems;
- the effects of transportation investments on urban growth, land use, and environmental quality; and,
- transportation economics and finance.

Study of Impact of DHCD's Community Legacy Program

In early 2008, the Center, working with the Division of Neighborhood Revitalization at the Department of Housing and Community Development (DHCD), conducted an analysis of randomly selected Community Legacy investments from the period 2002 to 2005. The analysis was designed to assess the impact and effectiveness of the Community Legacy and Neighborhood BusinessWorks programs and the value of awards to communities undergoing revitalization. DHCD randomly selected two Community Legacy areas from each of six regions of the state for review, representing 14% of the 89 Community Legacy areas designated across the state in 2007.

Based on the NCSG team's observations, the programs were seen as having visible, lasting and catalytic effects in the communities where Community Legacy and Neighborhood BusinessWorks investments are being made. Many of these communities have begun to implement "Smart Growth" development patterns that feature mixes of uses and more vibrant, attractive, walkable downtowns. At a time when Maryland faces unprecedented levels of growth and rising concerns about the fiscal, environmental and social costs of sprawling development, the Community Legacy and Neighborhood BusinessWorks programs were seen as making Maryland's older towns and cities attractive alternatives to the suburban and rural development that has characterized Maryland's landscape for the past half century.

Papers and Books on the Maryland Smart Growth Program

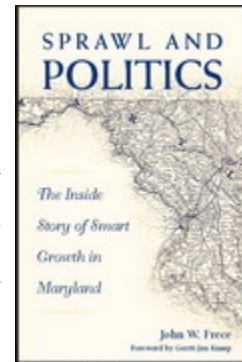
In addition to the more than two dozen papers about the Maryland Smart Growth program produced by Maryland and out-of-state researchers and practitioners for the Smart Growth @ 10 conference, faculty, staff and graduate assistants at the Center have produced a number of other research papers about the program as well as a new book that details the politics and back-room maneuvering that led to the creation in of the program in 1997 o and its implementation in succeeding years.

- Gerrit Knaap and graduate assistant Rebecca Lewis researched and wrote a paper that demonstrated that state agencies had failed to comply with reporting requirements for whether state funding for projects was within or outside the Priority Funding Areas established under the Smart Growth law. The new study, which was publicized on the front page of the *Baltimore Sun*, showed that only about 5 percent of the overall state budget each year is targeted for spending on projects inside PFAs and most of that money consists of spending on transportation projects. The relatively small proportion of the state budget that is restricted to projects within Priority Funding Areas may be one reason the PFAs do not seem to

be concentrating growth and curbing sprawl development as envisioned when they were created, the NCSG researchers concluded.

- Knaap and Associate Director John W. Frece co-wrote an article for the 2007 Idaho Law Review that identifies a series of areas in which Maryland's Smart Growth program could be improved. They included recommendations to emphasize urban development on a par with land preservation; revise or reform the Priority Funding Areas; invest more in infrastructure to support higher density growth; require conservation zoning to support state land preservation investments; require housing and economic development elements to be included in local comprehensive plans; and integrate Smart Growth legislation with existing state planning legislation.
- Planning Professor James R. Cohen, a Center affiliate, and former Public Policy faculty member Antonio Bento researched and co-wrote a paper that identified problems with the implementation of Adequate Public Facilities Ordinances in Maryland, including the unintended deflection of growth to outlying areas.
- In 2008, Frece wrote a paper about "Big Forces and Big Challenges for Smart Growth" that appeared in the *Real Estate Review*, a journal published by the new Real Estate Development Program in the School of Architecture, Planning and Preservation.

- In July 2008, the State University of New York Press published a book by Frece called, *Sprawl & Politics: The Inside Story of Smart Growth in Maryland*. The book details the politics and back-room maneuvering that led to the creation in 1997 of Maryland's well known Smart Growth and Neighborhood Conservation initiative and its implementation in succeeding years. It contains a foreword by Knaap.



Center Affiliates Join O'Malley Cabinet

Another connection between the Center and the new O'Malley administration occurred when two of the Center's longtime friends and affiliate faculty members were appointed to the governor's Cabinet.

Richard E. Hall was appointed Secretary of Planning. Hall also serves on the Governor's Executive Council, the Governor's Council on the Chesapeake Bay, and the Smart Growth Subcabinet. He is also the past President of the Maryland Chapter of the American Planning Association.

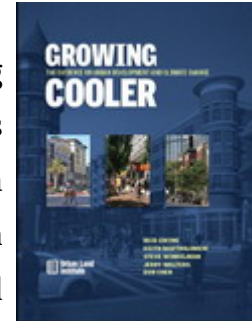
John D. Porcari was appointed as Secretary of Transportation. Porcari is also a member of the Governor's Executive Council, the Governor's Subcabinet on International Affairs, and the Smart Growth Subcabinet. He previously served as Secretary of Transportation under Governor Parris Glendening from 1999-2003 and as the Vice President for Administrative Affairs at the University of Maryland in College Park from 2003-2007.

Both Hall and Porcari have worked with the Center on a variety of projects, including the Reality Check *Plus* growth visioning exercises.

B. National Initiatives:

“Growing Cooler” Links Urban Development and Climate Change

A new book by Center faculty researcher Dr. Reid Ewing documented how key changes in land development patterns could help reduce vehicle greenhouse gas emissions. Based on a comprehensive review of dozens of studies by leading urban planning researchers, the book, published by the Urban Land Institute, concluded that urban development is both a key contributor to climate change and an essential factor in combating it. The authors make the case that one of the best ways to reduce vehicle travel is compact development: building places in which people can get from one place to another without driving. This includes developments with a mix of uses and pedestrian-friendly settings. The book received considerable press attention throughout the United States and was the subject of a symposium on the University of Maryland campus hosted by the Center’s Environmental Finance Center.



Obstacles to Skinny Streets - New Article in *Urban Land*

Ewing also co-authored with Ted Stevens, and Steven J. Brown an article that appeared in *Urban Land* that examined obstacles to creating more "skinny" streets. After years of discussion, the field of traffic engineering is slowly embracing narrow streets in practice. Narrow streets have numerous advantages, including comfortable human scale for pedestrians, lower cost of development and minimized negative impact on environment. However, there is another unexpected barrier to implementation: the local fire chief. In this article, the authors presented case studies around the country where local fire codes prohibit building narrower street in the interests of "safety first."

Study Shows Effect Inclusionary Zoning Policies Have on Production, Cost and Size of Housing

Another Center for Smart Growth study shows that policies aimed at increasing the stock of affordable housing can stimulate construction of multi-family housing, but may also push up the price and reduce the size of single family houses that are built within the cities that adopted the policy. The study, by Gerrit Knaap, Antonio Bento and Scott Lowe and funded by the National Home Builders Association, examined so-called "inclusionary zoning" policies implemented in California from 1998 to 2005.

Impact of Urban Form on Residential Energy Use

Another study by Professor Reid Ewing and Fang Rong of the Milken Institute examined the impact of urban form on residential energy use in the United States. The article, which appeared in *Housing and Policy Debate*, focused on three causal pathways: electric transmission and distribution losses, energy requirements of different housing stocks, and space heating and cooling requirements associated with urban heat islands. Statistically controlling for other influences, different effects on sprawling and compact counties were examined.

Zoning as a Barrier to Affordable Housing

Zoning, the principal regulatory mechanism used by local governments to manage land use, can be a barrier to the development of higher-density, multi-family housing, according to a study by a team of land-use researchers that included Center Executive Director Gerrit-Jan Knaap. Multi-family housing – apartments, townhouses or condominiums -- is considered central to “smart growth” efforts to encourage higher-density development as a means of discouraging more low-density sprawl development in suburban or rural areas.

The study, published by the American Planning Association, was researched and written by Knaap; Stuart Meck of the Bloustein School of Planning and Public Policy at Rutgers, the State University of New Jersey; Terry Moore, vice president

and planner at the Oregon-based consulting firm, ECONorthwest, and Robert Parker of ECONorthwest and the Community Service Center at the University of Oregon. The study, funded by the U.S. Department of Housing and Urban Development, the Lincoln Institute of Land Policy, and the Fannie Mae Foundation, focused on the relationship between zoning and the production of multi-family housing in six metropolitan areas of the country: Boston; Miami; Minneapolis-St. Paul; Portland (Ore.); Sacramento; and Washington, D.C.

Study Helps Predict Flooding In Urban Watersheds

A U.S. Geological Survey study co-authored by Associate Professor Glenn E. Moglen provides researchers with new ways of predicting flooding in urban watersheds. The study developed methods of applying existing Geological Survey flood estimates, which generally apply to rural areas, to more urbanized areas by taking into consideration either the amount of impervious surfaces or existing population density within the watershed.

Dr. Moglen, an associate research scientist at the National Center for Smart Growth Research and Education and an associate professor in the Department of Civil and Environmental Engineering, co-authored the study with Dorianne E. Shivers while on a sabbatical at the U.S. Geological Survey. The full study is entitled "Methods for Adjusting U.S. Geological Survey Rural Regression Peak Discharges in an Urban Setting."

Prince George's County Shortchanged on Federal Office Leases

A National Center for Smart Growth study of federal office leasing activities in the Washington metropolitan area concluded that Prince George's County, a major suburb of the District of Columbia, has not received leases on a par with other jurisdictions in the region. The study, conducted in conjunction with the university's Real Estate Development Program, concluded that the imbalance in leasing is occurring despite the fact that Prince George's County has more land and generally offers lower rents than its neighboring jurisdictions.

Comparing Sustainability Indicators from Different Development Scenarios

The Center is in the midst of work on a grant from the U.S. Environmental Protection Agency that is focused on calculating comparable “sustainability” indicators from different development scenarios. In an era of fast rising energy costs, this EPA Star Grant project is looking at the energy implications of various planning scenarios. Moreover, at a time when development is having increasingly adverse effects on water quality, this project is also analyzing the effects different planning scenarios would have on sediment and pollution levels in Maryland watersheds.

Scenario planning is common in transportation policy making. More than 153 scenario planning exercises have been conducted across the country in recent years, often funded by state departments of transportation. The most common indicators address transportation (vehicle miles traveled, mode choice, congestion, etc.), land use (acres of urban land, farmland, open space, etc.), sewer capacity, water consumption, and fiscal impacts. But only 18 of 80 such exercises addressed energy consumption and none addressed water quality, a key to sustainability from both the environmental and health perspective. The Center-led team will compute many of the indicators used in these other exercises. But by adding indicators of water quality and energy consumption, the work will offer much more regarding environmental sustainability.

C. International Initiatives

New Book edited by Yan Song and Chengri Ding Examines China's Massive Migration to Cities

While China's overall population growth rate is projected to be a seemingly modest 0.6%, its urban segment will be growing faster than twice this rate for the next 10 years. To increase American and international awareness of China's challenges in its "transition to a socialist market economy" and the wider repercussions, two researchers associated with the Center examined the most pressing challenges facing planners and policymakers in China today in the new book, titled "Urbanization in China: Critical Issues in an Era of Rapid Growth."



The book, published by the Lincoln Institute of Land Policy, focuses on four key areas: urban planning, land policy, rural-to-urban migration, and financing China's urbanization. The book reflects the proceedings of the Institute's May 2006 Conference on "Urban Strategies and Instruments" to promote "economically sound, environmentally desirable, politically feasible, and socially acceptable" growth in China.

Transatlantic Activities

The Center also continues to increase its ties to Europe. Building on the momentum from the Transatlantic conference in Annapolis in fall 2004, the Center continued its cooperation with Habiforum, a land use research foundation in the Netherlands. Jointly, Habiforum and the Center sponsored a research conference in Sabionetta, Italy, designed to produce research proposals to the European Union. Several proposals were submitted, none were successful.

Collaboration with European scholars continued, however, as Knaap and Arnab Chakraborty offered seminars on smart growth at the Institute for Housing

Studies at Erasmus University in the Netherlands, and as John Frece and Gerrit Knaap attended charrettes organized by the MILUnet program funded by the EU in Munich and Lisbon, respectively.

IV. Environmental Finance Center

In an effort to expand the capabilities of the National Center for Smart Growth Research and Education beyond land use research and education and to provide more technical and outreach assistance to individual communities, the Center merged with the Environmental Finance Center (EFC) in February 2007.

Created with support from the U.S. Environmental Protection Agency, the Environmental Finance Center was developed to assist communities in identifying innovative and sustainable ways of paying for environmental protection efforts. To this end, the EFC offers technical assistance as well as training and outreach activities in the form of workshops, charrettes and conferences, designed to promote the effective management of the costs associated with resource protection activities. Headed by Associate Director Joanne Throwe, the EFC has a staff of eight that includes: Jennifer Cotting, Lizbeth Fried, Megan Hughes, Lisa Grayson Zygmunt, students Kristin Mui, Elizabeth Skane and Nora Somoygi, and Joe Dillon, who is on loan to the EFC from the U.S. Environmental Protection Agency.

Over the course of the past two years, the EFC has assisted local governments in identifying financially efficient solutions to natural resource issues such as land use management in Virginia's Shenandoah Valley; waste management in Prince George's County, Maryland; septic system upgrades in Delaware's Coastal Bays; and stormwater management in the Wissahickon and Upper Darby watersheds in Pennsylvania.

The EFC also assisted a variety of organizations including the Cacapon and Lost Rivers Land Trust, the Partnership for the Delaware Estuary, the Schuylkill Action Network, and the Chesapeake Bay Trust improve their internal capacity and in turn expand their ability to effect change in their communities. In addition, the EFC has updated its web-based offerings to include the Greenways Financing Toolbox and a series of Bay-related funding matrices both of which are

designed to assist communities in developing their own resource protection implementation and financing strategies.

EFC Launches AgTrader and FoodTrader Websites

In 2008, the Environmental Finance Center launched two new agriculture-oriented websites that became immediately popular with Maryland farmers and consumers of farm products.

The first of the two sites, the Maryland Agricultural Exchange (<http://www.agtrader.org/>) allows Maryland farmers to take advantage of a free online marketplace that can help them buy, sell, give away or trade their agricultural products. Farmers are already using the website to exchange products such as manure, compost, hay, fodder crops, fruits and vegetables, organics, equipment, livestock, and much more.

The second, similar site allows consumers to buy the freshest food Maryland farms have to offer. *Foodtrader.org* is a free, virtual farmer's market that lets small independent Maryland farms create an instantaneous listing that describes the fresh foods they have to sell, the price and the location. The popular site (www.foodtrader.org) gives consumers, restaurants, institutions such as hospitals or schools, and others to have quick access to specialty cuts of meat, fruits and vegetables of all types, flowers, honey, dairy products, and even soap made from goat's milk.

EFC Offers Courses in Environmental Finance

The University of Maryland's School of Public Policy, in collaboration with the U.S. Environmental Finance Program, has proposed a 12-credit graduate Certificate Program in Environmental Finance. While the Certificate Program is pending approval, anticipated for Spring 2009, the School of Public Policy and the Environmental Finance Center offered two courses in Fall 2008 to current

University of Maryland graduate students, as well as to non-degree-seeking students. These courses were to be held in downtown Washington, D.C., to make them accessible to professionals practicing in the field.

V. Papers and Publications

A. Full Books (Published, edited, authored, or co-authored)

Ewing, R., K. Bartholomew, S. Winkelman, J. Walters and D. Chen. *Growing Cooler: The Evidence on Urban Development and Climate Change*. Urban Land Institute, 2008.

Ewing, R. and S. Brown. (forthcoming) *U.S. Traffic Calming Manual*. American Planning Association.

Frece, John W., *Sprawl & Politics: The Inside Story of Smart Growth in Maryland*, State University of New York Press, 2008.

Knaap, G.J., H. Haccoû, J.W. Frece and K.J. Clifton. eds. *Incentives, Regulations and Plans: The Role of States and Nation States in Land Use Planning*, Edward Elgar Publishers: London, 2007.

Song, Y. and C. Ding. *Important Issues in the Era of Rapid Urbanization in China*, Lincoln Institute of Land Policy, Cambridge, USA, edited, 2007.

Song, Y. and C. Ding. *Urbanization in China: Critical Issues in an Era of Rapid Growth*. Lincoln Institute of Land Policy: Cambridge, edited, 2007.

Song, Y. and C. Ding. (forthcoming) *Smart Growth in China*. Lincoln Institute of Land Policy: Cambridge.

B. Chapters in books (Published, edited, authored, or co-authored).

Clifton, K. J. and C. Burnier. Chapter 6: "From The Ground Up: Local Land Use Policies, Transportation Choices, and the Potential For Improved Air Quality," in *Regional Development, Infrastructure, and Adaptation to Climate Variability and Change*. 2006.

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VI. CONFERENCES AND SYMPOSIA

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- Ewing, R. *Relationship between Urban Sprawl and Weight of U.S. Youth.* World Planning Schools Congress, Mexico City. Jul. 15, 2006.
- Ewing, R. *Effectiveness of Regional Growth Management and Local Urbanist Planning.* International Union for Health Promotion and Education/Centers for Disease Control and Prevention, Atlanta, Ga., Aug. 16, 2006.
- Ewing, R. *Smart Growth Index.* Institute of Transportation Engineers, Border Section, San Diego, Ca., Sept. 7, 2006.
- Ewing, R. *Creating Walkable Places: From Statewide Smart Growth to Context-Sensitive Street Design.* Minnesota State Planning Conference, Rochester, Mn., Sept. 27, 2006.
- Ewing, R., *Community Approaches to Prevention.* Newsweek-Harvard Conference on Heart Health, Boston, Ma., Oct. 23, 2006.
- Ewing, R., *Transport Greenhouse Gas Emissions Dialogue,* World Resources Institute, Washington, D.C. Oct. 30, 2006.
- Ewing, R., *The Impact of Urban Sprawl on U.S. Residential Energy Use and Relationship between Urban Sprawl and Weight of U.S. Youth.* Annual

Conference, Association of Collegiate Schools of Planning, Fort Worth, Tx., Nov. 9-11, 2006

Ewing, R., *Injury and Violence and the Built Environment*. National Environmental Public Health Conference, Centers for Disease Control, Atlanta, Ga., Dec. 4, 2006.

Ewing, R., *Smart Growth: Best-in-Class Examples*. December 10: AltCar Expo 2006, Los Angeles, Ca., Dec. 10, 2006

Ewing, R. *Policy & Planning Retreat*, Urban Land Institute, Washington, D.C. Jan. 18, 2007.

Ewing, R. *Influences on My Work*. Livable Streets Forum, UC Berkeley College of Environmental Design, Berkeley, Ca., Feb. 6, 2007.

Ewing, R. *(three presentations) Technical Assistance: How to Help Communities and States Get to Smart Growth. It's Easy Being Green...and Healthier Too. Changing Climate Through Smart Growth*. Annual Conference, New Partners for Smart Growth, Los Angeles, Ca., Feb. 8-10, 2007.

Ewing, R. *Urban Development, Travel, Emissions, and Smart Growth Policies*. Global Warming, Land Use, and Infrastructure Investment, Hewlett and Packard Foundations, Half Moon Bay, Ca., Mar. 8, 2007.

Ewing, R. *Traffic Calming and Roundabout Myths*. Public Work Officers Institute, League of California Cities, Monterey, Ca., Mar. 14, 2007.

Ewing, R. *Child-Accessible Cities*. MSPZI Conference on Child-Friendly Cities, University of Memphis, Memphis, Tenn., Mar. 30, 2007.

Ewing, R., *Built Environment*. Summit on Childhood and Adolescent Obesity, College of Health and Human Performance, University of Maryland, MD, College Park, Md., Apr. 7, 2007.

Ewing, R. *(two presentations) Planning that Reshaped America. Shared Streets and Spaces*. National Planning Conference, American Planning Association, Philadelphia, Pa., Apr. 16-17, 2007.

Ewing, R. *Land Use, Transportation and Sustainable Communities of the Future*. Developing Green: Integrating Sustainability with Success, Urban Land Institute, Pittsburgh, Pa., Apr. 24, 2007.

Ewing, R. *Health and the Built Environment*. Blueprints for a Healthy Community, Mecklenberg County Health Department, Charlotte, N.C. May 4, 2007.

- Ewing, R. *Transit-Oriented Development: How Do We Get There from Here? Designing a 21st Century City*, Raleigh Department of City Planning, Raleigh, N.C. May 10, 2007.
- Ewing, R. *Laytonville Design Studio*, California Local Government Commission, Laytonville, Ca., May 17, 2007.
- Ewing, R. Course, *Traffic Calming: Strategies that Work*. University of California Berkeley Institute of Transportation Studies, Pasadena, Ca., May 22-23, 2007.
- Ewing, R. *Coordination of Transportation and Land Use*. Napa County Speakers Program, Napa County Transportation and Planning Agency, Napa, Ca., May 30, 2007.
- Ewing, R. *Land Use, Energy and Climate Change Workshop*, California Energy Commission, Sacramento, Ca., Jun. 26, 2007.
- Ewing, R. *Costs of Sprawl and Auto Dependence*. Transit Education and Awareness Speaker Series, Indianapolis Metropolitan Planning Organization, Indianapolis, In., Jun. 28, 2007.
- Ewing, R. *Building Healthier Communities*. Society of Environmental Journalists, Palo Alto, Ca., Sept. 7, 2007.
- Ewing, R. *Design for Health*, University of Minnesota, Minneapolis, Mn., Sep. 14, 2007.
- Ewing, R. *Reducing Global Warming*. GrowSmart Maine Summit, Augusta, Maine Sep. 19, 2007.
- Ewing, R. *Big City Planning Directors' Institute*, Harvard University/Lincoln Institute, Cambridge, Ma., Oct 23, 2007.
- Ewing, R. *Climate Panel*. ULI Fall Meeting, Las Vegas, Nev. Oct. 25, 2007.
- Ewing, R. *The Heat is On: Why Hybrid Vehicles Won't Save the Planet* Roundtable Luncheon, Metropolitan Planning Commission, Chicago, Ill., Dec. 6, 2007.
- Ewing, R. *Growing Cooler: The Evidence on Urban Development and Climate Change*. Sustainable Solutions to Climate Change in Delaware, AIA Delaware, Lewes, Del. Dec. 11, 2007.

John W. Frece

Frece, J.W., presentation on communications issues to agency staff, State of Arizona, Governors Institute on Community Design, Phoenix, Arizona, June 2007.

Frece, J.W., smart growth presentation to the Upper Shore Regional Council, Queen Anne's County, Md., July 2007.

Frece, J.W., presentation on communications issues to Governor Ruth Ann Minner, Governors Institute on Community Design, Dover, Delaware, July 2007.

Frece, J.W., smart growth presentation to the National Oceanic and Atmospheric Administration, Washington, D.C., July 2007.

Frece, J.W., smart growth presentation to Trans-Atlantic Planners group, Washington, D.C., September 2007.

Frece, J.W., smart growth presentation to the Maryland-Pennsylvania Realtors Association, Hagerstown, Maryland, September 2007.

Frece, J.W., *Twenty Lessons from Smart Growth*, presentation to Chesapeake Bay class, School of Public Policy, University of Maryland, October 2007.

Frece, J.W., smart growth presentation to the Legacy Leadership Institute, Riverdale, Maryland, November 2007.

Frece, J.W., presentation on state planning offices to Task Force Studying State Planning Office, Baton Rouge, Louisiana, December 2007.

Frece, J.W., *Smart Growth 101* presentation, New Partners for Smart Growth conference, Washington, D.C., February 2008.

Frece, J.W., testimony to Maryland House Environmental Matters Committee on transit oriented development, Annapolis, Maryland, February 2008

Frece, J.W., smart growth presentation to the Northeast State Planning Leadership Retreat, Baltimore, Maryland, February 2008.

Frece, J.W., *Designing the New West: Architecture and Landscape in the Mountain West*, presentation to the New West Conference, Bozeman, Montana, April 2008.

Frece, J.W., smart growth presentation to Real Estate Program class, University of Maryland, May 2008.

Frece, J.W., Governors' Institute on Community Design presentation to staff council of the Western Governors' Association, Jackson Hole, Wyoming, June 2008.

Nikil Kaza

Kaza, N., D. Finn and L. D. Hopkins. (forthcoming). *Updating Plans: Historiography of Decisions over Time*. COST 21 Conference, Turin, Italy.
Kaza, N., Plans in Decision Support Systems and Decisions in Planning Support Systems, 48th ACSP Conference, Milwaukee, WI.

Gerrit-Jan Knaap

Knaap, G.J. *Reality Check, Final Results*, Cambridge, Baltimore, St. Mary's, Hagerstown, Md. 2006.

Knaap, G.J., *Reality Check, Final Results*, Fredericksburg Chamber of Commerce, Fredericksburg, Va. 2006.

Knaap, G.J., *Smart Growth in Maryland*, Resources for the Future, Washington, D.C. 2006.

Knaap, G.J. *Smart Growth in Maryland: Towards a New Reality*. Lincoln Institute of Land Policy, Cambridge, Ma. 2006.

Knaap, G.J. *Zoning as a Barrier to Affordable Housing*. US Dept of Housing and Urban Development, Washington, D.C. 2006.

Knaap, G.J., *Economic Development*, Prince George County Economic Development Summit, College Park, Md. 2006.

Knaap, G.J., *Adequate Public Facilities Ordinances*, Maryland Homebuilders Association, Baltimore, Md. 2006.

Knaap, G.J., *Regional Planning in Maryland*, Northeastern Illinois Planning Commission, Chicago, Ill., 2006.

Knaap, G.J., *Reality Check Plus*, American Planning Association, San Antonio, Tx. 2006.

Knaap, G.J., *Zoning as a Barrier to Multifamily Housing, and Does Regionally Integrated Development Scenario Provide Aggregate Net Benefits*, with Jung Ho Shin and Arnab Chakraborty, Association of Collegiate Schools of Planning, Dallas, Tx. 2006.

Knaap, G.J., *Smart Growth*, Workshop Chair, National Academy of Science, Washington D.C. 2006.

Knaap, G.J., *Protecting Water Quality with Smart Growth*, International Joint Commission, Chicago, Ill. 2006.

Knaap, G.J., *Reality Check Plus in Maryland*, Envisioning the Region, Trenton, N.J. 2006.

Knaap, G.J. and Rebecca Lewis, *State Agency Spending Under Maryland's Smart Growth Areas Act: Who's Tracking, Who's Spending, How Much, and Where?* Smart Growth @ 10 Conference, University of Maryland, 2007.

Sohn, Jungyul, G.J. Knaap and Rebecca Lewis, "Managing Growth with Priority Funding Areas: Promise, Politics and Performance," Smart Growth @ 10 Conference, University of Maryland, 2007.

Glenn E. Moglen

Moglen, G.E., *The ASCE/EWRI Impervious Surface Task Committee*, Presented at the American Society of Civil Engineers World Water Congress, Tampa, Florida, May 15, 2007.

Moglen, G.E., *Limiting Imperviousness to Maintain Ecological Quality: Are Threshold-Based Policies a Good Idea?* Presented at the American Planning Association 2006 National Planning Conference, San Antonio, Texas, April 23, 2006.

Moglen, G.E. *Impervious Area Limits Are Trickier Than You'd Think*. Presented at the American Water Resources Association National Conference on Geographic Information Systems, Houston, Texas, May 8, 2006.

Environmental Finance Center Conferences and Symposia

Small Town Symposium – In November, 2006, the EFC presented at the Maryland Rural Development Corporation's Small Town Symposium in Cambridge Maryland. The session was based on *25 Questions to Evaluate Your Water System's Financial Health*, an interactive, self-assessment tool designed to evaluate a system's financial capacity created by the EFC at the University of Maine.

Financing for Maryland's Counties – The EFC presented a session on county-level financial management at the annual meeting of the Maryland Association of Counties (MACo) in August of 2006 in Ocean City, Maryland.

Implications of Biofuel Production – In August, 2007, the EFC conducted a seminar on "The Economic and Environmental Impacts of the Increased Biofuels Production." The presentation was based on a four month assessment by EFC staff on the unintended consequences of ethanol production on rural communities across the United States. This seminar was held at the U.S. EPA and was attended by staff from a number of offices involved in biofuels activities.

Green Infrastructure Financing – The EFC offered sessions on developing a green infrastructure financing strategy, with a focus on cost-reducing methods and revenue stream generation, as a part of the Conservation Fund's leadership training program offerings in July and October of 2007, as well as April of 2008. An additional session was held in November specifically for stakeholders seeking to implement regional scale in Virginia's New River Valley.

The EFC was also a featured presenter on a green infrastructure financing webcast hosted by the National Association of Local Government Environmental Professionals in February 2008.

VII. EDUCATION AND TRAINING

Since 1998, the University of Maryland has periodically offered "smart growth" leadership training for student audiences that have included representatives of federal, state and local governments, non-profit organizations, public school teachers, and private businesses. These training sessions have addressed issues related to land-use, housing, transportation and other smart growth issues and have provided participants with the knowledge and skills needed to lead their agencies, companies or jurisdictions in implementing smart growth.

Based on this experience, the Center now works with governments and/or other organizations and businesses to develop a leadership training curriculum that is tailored to fit the timetable, budget and substantive needs of the student audience. The Center brings to this task expertise grounded in research, teaching and practice and a set of educational processes that are engaging and transformative.

A. Governors' Institute on Community Design

Since 2005, the National Center for Smart Growth Research and Education has been partners with the Smart Growth Leadership Institute in Washington, D.C., to develop and put on workshops for governors who are interested in issues of growth, development and community design.

The project, called the Governors' Institute on Community Design, is modeled after the successful Mayor's Institute on City Design. It is funded by the National Endowment for the Arts and the U.S. Environmental Protection Agency.

To date, Governors' Institute workshops have been held in eight states: Rhode Island, Virginia, Arizona, Maryland, Delaware, Wyoming, New Mexico and Iowa. In most cases, the Governors' Institute staff works with the governors' staff to identify an issue related to growth and development that the governor wishes to address, then the GICD staff identifies and recruits national experts to work

directly with the governor, his or her cabinet and staff to devise solutions. In one instance, the governor of Wyoming opted to use the Governors' Institute to help stage a public forum on growth and development issues rather than a private workshop with his staff.

The goal of the Governors' Institute on Community Design is to provide direct technical assistance to governors around the nation interested in improving performance in the area of land use and community design.

B. New Jersey Smart Choices Leadership Institute

In March 2007, the Center held a four-day educational course on smart growth issues for municipal officials from a number of New Jersey cities and towns. Held at the Robert Wood Foundation headquarters near Princeton, the course was customized to meet the needs of the municipal audience. The work was done in cooperation with the Municipal Land Use Center at the College of New Jersey.

Topics for the course included: place making; redevelopment pressures; moving from vision to plans; eminent domain; financing projects; effective negotiation strategies; and, communications and messaging.

C. Smart Growth Instructional Presentations for the National Association of Realtors®

At the request of the National Association of Realtors®, the Center agreed in 2006 to prepare a series of PowerPoint presentations and supplemental educational materials that could be used for training sessions for realtors. The Power Point presentations, largely put together by Urban Studies and Planning Professor James R. Cohen, a Center affiliate, focused on smart growth related issues and the relevance of smart growth to real estate professionals. One set of presentations was for use in a full-day course; the other for a half-day course.

VIII. FACULTY AND STAFF BIOGRAPHIES

GERRIT-JAN KNAAP, executive director of the National Center for Smart Growth Research and Education, is an economist and professor of Urban Studies and Planning in the University of Maryland's School of Architecture, Planning and Preservation. He also is director of the Environmental Finance Center and the Transportation Policy Research Group. He is an *ex officio* member of the Governor's Smart Growth Sub-Cabinet.

Dr. Knaap is the author of more than 75 articles and seven books on state and local land use planning and economics. His research interests include the economics and politics of land use planning, the efficacy of economic development instruments, and impacts of environmental policy.

He is co-author, editor, or co-editor of seven books: *Land Market Monitoring for Smart Urban Growth*; *Environmental Program Evaluation*; *Spatial Development in Indonesia*; *The Regulated Landscape: Lessons on State Land Use Planning from Oregon*; *Partnerships for Smart Growth: University-Community Collaboration for Better Public Places*; *Incentives, Regulations, and Plans: The Role of States and Nation-States in Smart Growth Planning*; and, *Planning in the Face of Markets: A Guide to Land Use Planning in a Market Economy*.

He received the "2006 Outstanding Planner Award" from the Maryland chapter of the American Planning Association. He earned a B.S. from Willamette University, his M.S. and Ph.D. from the University of Oregon, and received post-doctoral training at the University of Wisconsin-Madison, all in economics.

JOHN W. FRECE is the Center's Associate Director and an adjunct professor in Urban Studies and Planning. His responsibilities include public outreach and response to media inquiries related to Center research projects, smart growth generally and Maryland's Smart Growth initiative specifically. He coordinates

publications, web page content, writes and edits articles and reports, assists and teaches in the Center's Smart Growth Leadership Program, and serves as a deputy to the Executive Director. Frece leads the Center's efforts as a partner in the Governors' Institute on Community Design, a project that provides workshops on land use issues for governors around the nation. At the University of Maryland, he has taught a graduate course in "The Politics of Smart Growth," has served as a coordinator of the Center's Reality Check *Plus* growth visioning exercises, and helped plan the Center's Smart Growth @ 10 conference.

Frece previously worked for seven years on the staff of former Maryland Governor Parris N. Glendening, where he was a coordinator, adviser and chief spokesman for Maryland's Smart Growth initiative. For more than two decades prior to that, Frece was a longtime newspaper reporter covering politics and government for the *Baltimore Sun*, *United Press International* and the *Reston (Va.) Times*. He is co-author of *My Unexpected Journey: The Autobiography of Governor Harry Roe Hughes* (The History Press, 2006), co-editor of *Incentives, Regulations and Plans: The Role of States and Nation-states in Smart Growth Planning* (Edward Elgar, 2007), and author of *Sprawl & Politics: The Inside Story of Smart Growth in Maryland* (SUNY Press, 2008). He holds a B.A. in philosophy from the College of William and Mary in Virginia.

JOANNE THROWE is the Associate Director of the Environmental Finance Center (EFC) and is formerly the Agriculture Program Leader for the EFC. She recently completed an 18-month assignment working with USDA/CSREES as shared faculty to assist in the coordination of special agriculture projects.

Ms. Throwe works with communities in the Mid-Atlantic region implementing innovative financing solutions for environmental protection. Her work experience includes extensive knowledge about agriculture, green infrastructure, biofuels, ecosystem services and solid waste management. She assisted with developing a "Women in Agriculture" Symposium for the University of Maryland, a national conference for USDA on "Water Reuse Applications in Agriculture"

and a Sustainable Infrastructure for Water and Wastewater conference for EPA Region 3 and Region 4.

Ms. Throwe currently participates in several committees, including Mid-Atlantic Water Quality Advisory Committee for Region 3; USDA Ecosystem Services Group; and the Shenandoah Valley Waste Solutions Forum. Prior to joining the EFC, Ms. Throwe spent several years as a Development Resource Specialist at USDA's Foreign Agriculture Service and two years as an Agriculture Extension Agent for Peace Corps in the South Pacific. She holds a M.A. in Public Policy and Private Enterprise from the University of Maryland. She also received intensive agriculture training from the Hawaii Loa College and the East West Center in Hawaii.

RACHELLE BEASLEY joined the Center as Coordinator in August 2005. She has been with the University of Maryland College Park for 13 years, working with departments such as Engineering, Health & Human Performance and the Graduate School. She is a current member of the National Council of University Research Administrators. She completed her Bachelors Degree in Business Management in June 2008 with University of Maryland – University College and moved to another position at the University of Maryland in August 2008.

ANTONIO BENTO was an assistant research professor at the Center and held an assistant professorship in the School of Public Policy. His fields of interest include environmental economics and policy, urban economics and public economics. After joining the Center in 2004, Bento had three papers accepted for publication in prestigious journals, including, "The Efficiency and Distributional Impacts of Anti-Sprawl Policies" (with Sofia Franco), forthcoming in the *Journal of Urban Economics*. He also conducted research on the impacts of urban growth boundaries on housing prices in California and the impacts of urban sprawl on community participation and civic engagement. Bento is an environmental economist who earned his Ph.D. at the University of Maryland in Agricultural and Resource Economics. He also holds a degree of Licenciatura in Economics

from the Universidade Nova de Lisboa in Portugal. In 2007, Bento took a new position on the faculty of Cornell University.

CINZIA CIRILLO is an assistant professor in the Department of Civil and Environmental Engineering. She became a member of the Center's research faculty in 2008. She holds an M.S. degree in engineering from the University of Naples (Italy), and a Ph.D. from the University of Torino (Italy). Her research interests include: Discrete choice analysis; advanced demand modeling; activity based models; revealed and stated preference surveys; large scale model systems; and value of time studies.

KELLY J. CLIFTON is a research faculty with the Center and is associate professor in the Urban Studies and Planning Program. She is also affiliated with the Civil and Environmental Engineering Department and the Master Program in Engineering and Public Policy. Her research and teaching activities focus on the influence of the built environment on transportation choices.

Recently, Dr. Clifton was involved with a number of projects that focus on non-motorized transportation. She is currently researching the connections between the built environment, walking and health as part of two multi-year studies funded by the Active Living Research Program of the Robert Wood Johnson Foundation. She is funded by the Maryland State Highway Administration to develop and test a model of pedestrian demand. Dr. Clifton has also completed several studies of pedestrian safety, which examines the physical environment at crash locations. She holds a B.S. degree in mechanical engineering from West Virginia University, a M.S. degree in planning from the University of Arizona, and a Ph.D. in community and regional planning from the University of Texas at Austin.

JENNIFER COTTING joined the Environmental Finance Center in 2004 to manage an EPA funded program designed to help communities and organizations in Region 3 overcome barriers to implementing and financing their

watershed protection efforts. She now coordinates a number of the EFC's core programs, with a particular focus on community-based urban greening, tree canopy, and green infrastructure issues. Prior to joining the EFC, Ms. Cotting worked as an independent consultant developing and implementing environmentally based education and outreach programs for nonprofit organizations and government agencies. She received her M.S. in Sustainable Development and Conservation Biology from the University of Maryland and her B.A. in Communications from Marymount University. Ms. Cotting is also co-editor of *Urban Wildlife News*, the biannual newsletter of the Urban Wildlife Working Group of The Wildlife Society.

CHENGRI DING is associate professor of Urban Studies and Planning and director of the Chinese Land Policy Program, co-sponsored by the University of Maryland and the Lincoln Institute of Land Policy. His research interests include urban economics, growth management, housing and land studies, and the application of quantitative methods and GIS to issues in planning and public policy. He holds a B.S. degree from Beijing Normal University, an M.S. degree from the Chinese Academy of Sciences, and a Ph.D. from the University of Illinois at Urbana-Champaign in regional planning.

REID EWING is a Research Professor at the National Center for Smart Growth, associate editor of the *Journal of the American Planning Association*, columnist for *Planning* magazine, and Fellow of the Urban Land Institute. Formerly, he was Director of the Voorhees Transportation Center at Rutgers University, and earlier in his career, he served two terms in the Arizona legislature and worked on urban policy issues at the Congressional Budget Office. He holds master degrees in Engineering and City Planning from Harvard University and a Ph.D. in Transportation Systems and Urban Planning from the Massachusetts Institute of Technology.

He has authored books for the major planning and development organizations: *Developing Successful New Communities* for the Urban Land Institute; *Best*

Development Practices and Transportation and Land Use Innovations for the American Planning Association; and *Traffic Calming State-of-the-Practice* for the Institute of Transportation Engineers. The two books for the American Planning Association made him APA's top selling author for many years. His study of sprawl and obesity received more national media coverage than any planning study before or since, and at one time, was the most widely cited academic paper in the Social Sciences, according to *Essential Science Indicators*. His most recent book, written for EPA and published by the Urban Land Institute, is *Growing Cooler: The Evidence on Urban Development and Climate Change*. Also due out this year, and published by the American Planning Association, is *National Traffic Calming Manual*. His prior work on smart growth development includes the U.S. Green Building Council's LEED-Neighborhood Development guidelines, the Institute of Transportation Engineers' *Recommended Practice for Context-Sensitive Thoroughfares*, the National Wildlife Federation's *Endangered by Sprawl*, and dozens of consulting projects around the United States.

MEGAN HUGHES comes to the EFC most recently from Bowling Green State University in Bowling Green, Ohio where she served for four years as an Instructor and Internship Coordinator for the Center for Environmental Programs. In this capacity, Ms. Hughes taught undergraduates on a variety of environmental topics including human population growth, biodiversity, land use, water, and climate disruption and focused on research, writing, and critical-thinking strategies.

Prior to accepting this instructorship, Ms. Hughes worked for two years with the Chapel Hill, NC, firm Environmental Consultants and Research (EC/R, Inc.) as a contractor to the Environmental Protection Agency Office of Air Quality Planning and Standards (OAQPS). She received her Master of Environmental Management degree from Duke University's Nicholas School of the Environment and Earth Sciences and a Bachelor of Arts Degree in Environmental Studies from the University of North Carolina at Wilmington. Her Master's Project, entitled

“Creating the Urban Toolshed: A case study of Durham children’s perceptions of nature and neighborhood,” was authored during her time as an environmental education consultant for Durham Parks and Recreation in Durham, NC. During graduate studies, Ms. Hughes also held a series of positions in the Triangle region of NC with the North Carolina Solar Center (as K-12 program manager), the Center for Environmental Education (as education intern), and Triangle J Council of Governments (as solid waste intern).

NIKHIL KAZA is a post doctoral fellow at the National Center for Smart Growth Education and Education. His graduate degrees are from the University of Illinois. He holds a Ph.D. in regional planning and is also trained as a mathematician and as an architect. Dr. Kaza works on vexing questions of what plans ought to be and how they should be formulated and how such formulations affect the urban processes. These have led him simultaneously on intersecting and fruitful paths of inquiry into complex systems, optimization, qualitative analysis, analytical reasoning, decision making under uncertainty and institutional structure. At the Center, he is working on the connections between land use and transportation in Maryland and is a member of the newly formed Transportation Policy Research Group.

MELISSA KEELEY’S research focuses on urban water resource management and lies at the intersection between urban ecology, engineering, and environmental policy and planning. Her interests include watershed management, land use planning, and the environmental services provided by urban vegetation, and her work contributes a comparative, transatlantic dimension to these topics.

She previously worked as a stream restoration ecologist in Philadelphia, and then at the Berlin Environmental Ministry and the Ecologic Institute of International and EU Environmental Policy. A fellow of Columbia University's Earth Institute, she now also regularly consults governmental agencies such as the EPA and

HUD, and advises decision-makers in cities including Miami, Chicago, Philadelphia, Washington, D.C., and Seattle.

She has received numerous awards, including the National Science Foundation Graduate Research Fellowship, Robert Bosch Foundation Fellowship, and Fulbright Fellowship (declined). Keeley's studies have taken her to the universities of Hamburg (in Germany) and Washington (in Seattle), Ohio State and Harvard; she received her doctorate in Environmental Engineering from the Technical University of Berlin.

GLENN MOGLEN was an associate research scientist at the Center and an associate professor in the Department of Civil and Environmental Engineering. His research focuses on issues of urbanization and the impacts of land use change on the hydrologic environment. His work frequently employs the use of Geographic Information Systems (GIS) and its use in modeling applications. Recent efforts of Moglen have sought to apply quantitative measures to land development decisions in efforts to minimize impacts to the hydrologic and ecological environments.

Dr. Moglen's work has been published in many journals including *Water Resources Research*, the *Journal of Hydrologic Engineering* (ASCE), the *Journal of Hydrology*, the *Journal of the American Water Resources Association*, *Journal of the American Planning Association*, *Geomorphology*, and *Ecosystems*. He is also an author in the recently published Encyclopedia of Hydrology on the topic of digital elevation model analysis in GIS.

Dr. Moglen recently completed a sabbatical at the U.S. Geological Survey, Office of Surface Water, where he focused on developing new methods for estimating flood frequency in urbanizing landscapes. He holds a B.S. from the University of Maryland, an M.S. from Colorado State University, and a Ph.D. from the Massachusetts Institute of Technology. In 2008, Dr. Moglen left the University of Maryland for a position on the Northern Virginia faculty of Virginia Tech.

ANN PETRONE has been with the University of Maryland for 24 years. For the last 17, she has been an assistant to the dean of the School of Architecture, Planning and Preservation. She joined the National Center for Smart Growth in August 2008. Prior to her employment at the University of Maryland, Ms. Petrone was in private business, owning her own seafood business and restaurant. She is a graduate of the University of Maryland, as are her three children. She resides in Columbia, Maryland.

GRETCHEN SWEENEY joined the Environmental Finance Center as Coordinator in 2007 following three years in the Capital Markets department at Friedman, Billings, Ramsey & Co, Inc. She managed all office activities at EFC. Ms. Sweeney also developed an Action Plan for the City of Staunton, Va., to help the city implement and fund a greenway and trail network. In addition, she created an online resource guide for greenway funding for the Shenandoah Valley, Virginia. She provided assistance on stormwater management and Low Impact Development (LID) programs at the EFC. Ms. Sweeney received a Bachelor's degree in Classics and Politics from Mount Holyoke College in South Hadley, Mass. She left the EFC in 2008 to resume her education.

CHARLES TOWE is an assistant research professor at the Center and also holds an assistant professorship in the Department of Agricultural and Resource Economics. His fields of interest include behavioral economics, environmental economics and policy, and the economics of land use and land conversion decisions. He has a publication history in top academic journals and field journals including *Econometrica* and the *American Journal of Agricultural Economics*. Charles is an environmental economist who earned his Ph.D. at the University of Maryland in Agricultural and Resource Economics. He also holds a degree in Economics from Tufts University and the University of North Carolina at Asheville.

XIN YE is a faculty research associate at the Center. He received his bachelor degree (2000) in Civil Engineering from Tongji University, Shanghai, China. He received his M.S. (2004) and Ph.D. (2006) degrees in Transportation Engineering from the University of South Florida and received postdoctoral training (2007-2008) at Arizona State University.

Xin Ye's previous research was mainly focused on econometric modeling methodology for analyzing activity, travel and time use behavior. He also has experience in modeling analysis of traffic crash frequency and severity. More recently, he entered the area of population synthesis and investigated new algorithms for generating synthetic populations in a more sophisticated and efficient way. Currently, his major research effort at the Center is to aid in developing and implementing a statewide travel demand model for Maryland.

LISA GRAYSON ZYGMUNT joined the Environmental Finance Center in 2005 to manage the EFC's Stormwater Financing Initiative which was designed to provide communities with the tools and resources they need to effectively finance and implement their stormwater management programs. She has more than 17 years of experience in managing and coordinating national and regional environmental and natural resource conservation projects, meetings, workshops, and conferences. Her three core areas of focus are in: watershed related efforts, green building, and corporate environmental health and safety management. She has worked with numerous organizations and agencies including the U.S. Environmental Protection Agency, USDA, U.S. Green Building Council, Sierra Club, Global Environmental Management Initiative, Performance Track Participants Association, National Association of Environmental Managers, Multi-State Working Group, and the Pennsylvania Environmental Council.

Ms. Grayson Zygmunt serves on the board of the Delaware Valley Green Building Council and is a member of the Lower Makefield Environmental Advisory Council. She is a graduate of Sarah Lawrence College in Bronxville, NY.

IX. AFFILIATE FACULTY

More than two dozen University of Maryland faculty and faculty from other academic institutions are affiliates of the Center. Home departments include public policy, agricultural economics, American studies, geography, landscape architecture, the academy of leadership, historic preservation, engineering, architecture and urban studies. These affiliate faculty often work with faculty and staff at the Center or are engaged in research consistent with the mission of the Center.

Anna Alberini, *Associate Professor*, Agricultural and Resource Economics

Uri Avin, *FAICP, Practice Leader*, PB PlaceMaking, Parsons Brinckerhoff, Baltimore

Howell S. Baum, *Professor*, Urban Studies and Planning Program

Matthew J. Bell, *Associate Professor*, School of Architecture, Planning and Preservation

Ralph Bennett, *Professor*, School of Architecture, Planning and Preservation

Sidney N. Brower, *Professor*, Urban Studies and Planning

Program

Judy Brown, Graduate School of Public Policy

Marita B. Brown, *Senior Resident Scholar*, School of Public Policy

John Carruthers, *Economist*, US Department of Housing and Urban Development, Office of Policy Development and Research

Arnab Chakraborty, *Assistant Professor*, Department of Urban & Regional Planning, University of Illinois at Urbana-Champaign

Shenglin Chang, *Assistant Professor*, Natural Resource Science and Landscape Architecture

James R. Cohen, *Lecturer and Director of Graduate Studies*, Urban Studies and Planning Program

Charles G. Field, *Senior Research Fellow*, School of Public Policy

Christopher H. Foreman, *Professor and Director of Social Policy Program*, School of Public Policy

Steven A. Gabriel, *Assistant Professor*, Civil and Environmental Engineering

Huibert Haccou, *Director*, Habiforum Foundation, Gouda, The Netherlands

Richard E. Hall, *Secretary*, Maryland Department of Planning

William Hanna, *Professor*, Urban Studies and Planning Program

Marie Howland, *Director and Professor*, Urban Studies and Planning Program

Steven Hurtt, School of Architecture, Planning and

Preservation

Seema Desai Iyer, *Chief of Research & Strategic Planning*, Baltimore City Department of Planning

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