

## Green Infrastructure Connectivity for Public Health in Florida Christopher Coutts

### Background

As Michael McCally notes in *Life Support: The Environment and Human Health*, “it is at least since the time of Hippocrates’s essay *Air, Water, and Places* that humans have been aware of the many connections between health and the environment.” Despite this awareness, seldom do we create an environment optimal for achieving health and well-being. A vital part of an environment which is supportive of public health is land conservation that contributes to green infrastructure. Green infrastructure is the interconnected system of natural areas and open spaces that are not only important for sustaining wildlife but also people. From an ecological perspective, connecting landscape components creates contiguous habitat. On the other hand, this structure also affects human and environmental functions that influence health outcomes. A system of local parks connected by greenways which are in turn connected to a regional system of conserved lands supports not only the delivery of environmental goods important for health but also the opportunity to perform healthful behaviors.

As Donna Erickson notes in *Metro Green: Connecting Open Space in North American Cities*, considering the pattern of conserved lands as infrastructure “...has profound implications for how the landscape is studied, planned, and developed.”

The study outlined in this brief addresses the question: Is the Florida Communities Trust land acquisition program supporting public health by creating a more connected landscape structure? I do not account for the myriad confounding variables necessary to infer a causal relationship between the environment and health outcomes. Rather, I examine this program to determine if it is contributing to the green infrastructure which an increasing amount of evidence has shown is necessary to support health and health behaviors.

### Florida Forever

The Florida Forever program is the most recent and ambitious version in a series of land acquisition programs that started with Florida’s 1985 Growth Management Act. This act, like most planning statutes across the country, requires that each city and county in the state create a local comprehensive plan that must aim to “preserve, promote, protect, and improve public health,

safety, comfort, and good order.” This act also requires that local plans contain both a recreation/open space element and a conservation element.

With \$3 billion dollars devoted to Florida Forever over 10 years (2000-2010), the state of Florida now outpaces the federal government in its financial resources devoted to land acquisition. The combination of the Florida Forever and Preservation 2000 (the predecessor program to Florida Forever) programs results in one of the most aggressive conservation and recreation land acquisition efforts in the United States and the world. Since the passage of the 1985 Growth Management Act, Florida has invested approximately \$6.8 billion to conserve approximately 3.7 million acres of land for environmental, recreational and preservation purposes.

The structure and delivery of Florida Forever are such that the vast majority of funds (70%) are devoted to managing lands (Department of Environmental Protection, State Lands) and protecting watersheds (State Water Management Districts). An additional 22% or \$66 million each annual funding cycle is allocated to the Department of Community Affairs, Division of Housing and Community Development, which administers the Florida Communities Trust program.

### The Florida Communities Trust

The FCT

...is a state land acquisition grant program that provides funding to local governments and eligible non-profit environmental organizations for acquisition of community-based parks, open space and greenways that further outdoor recreation and natural resource protection needs identified in local government comprehensive plans.

Since local governments often avoid creating public open space that may cut into the tax base and developers have little incentive to create these spaces, programs such as the Florida Communities Trust (FCT) are often essential to conserve land for recreational uses. As of 2008, over one billion dollars have come through the Florida Communities Trust program to protect more than 80,000 acres of open space. The significant resources devoted to the FCT gives it great potential to impact many Floridians. One of the impacts not yet to be explic-

itly considered is the social benefit of protecting public health.

### **Green Infrastructure and Public Health**

There are a growing number of reports and literature reviews that compile the evidence on how land conservation and green infrastructure supports human health. The most obvious way is in the satisfaction of the human needs for air, water, and food. Beyond these goods that not only support health but also our mortal existence, there are also a number of physical and mental health benefits that arise from exposure to or accessing conserved public lands with natural qualities. These include the health benefits associated with psychological restoration, stress reduction, the performance of physical activity, and social interaction.

### **Data and Methods**

Data from six annual funding cycles (2001-2006) of the FCT were collected from the Department of Community Affairs. The FCT applications submitted by Florida communities during this period (n=617) were first reviewed to determine which questions on the FCT application were important for connectivity. Then, the proportion of positive responses to these “connectivity” questions were analyzed to determine the difference between funded and unfunded applicant communities.

### **Findings**

The FCT application considered connectivity through three questions that determine if the applicant community is proposing trail systems, contributing to a statewide network of greenways, and/or furthering trail or greenway system plans.

Most of the communities whose applications for land acquisition were funded by the FCT have provided provisions for land connectivity. Between 2001-2006 approximately 60% of communities funded (n=298) and no more than 31% of the unfunded communities (n=319) provided positive responses to the connectivity questions. The difference between funded and unfunded applications on the proportion of positive responses to all three questions was significant at the  $p < .001$  level. This

result does not imply that providing a positive response to the “connectivity” questions was causing an applicant community to be funded or not. Rather, communities typically sized to more accurately reflect the projected growth of a community. This mismatch between the land use element and the transportation element presents difficulties for planners and other local officials as they undertake the capital budgeting process and review development proposals for their transportation impacts. Because of this situation, transportation investments often get spread across a wider landscape, driving up the size, extent, and costs of these systems, which represents an inefficient and ineffective use of limited public infrastructure funds.

### **Conclusion**

The original objective of the state’s transportation concurrency mandate was to create a situation where traffic congestion would not result from new development. However, the evidence indicates that achievement of this objective is possible only by allowing low density development in the midst of large arterial roadways and substantial freeway networks. In addition, this policy framework yields development outcomes that run against other public policy objectives, such as promoting more compact development and the development of a range of viable transportation options.

In our work we have documented the fundamental flaws in the state’s transportation concurrency mandate, flaws that rest in both the design and implementation of the mandate. Taken as a whole, the land use and transportation literatures, our experiences in working with local governments, and the on-the-ground evidence all indicate that the Florida’s transportation concurrency mandate is in dire need of reconsideration by the government. Instead of continued and largely ineffective minor changes to the state’s transportation concurrency policy, we instead recommend that the state, through the Department of Community Affairs, strongly reconsider the utility and viability of transportation concurrency as a means for managing growth in the state. If the state remains interested in experiencing continued, but sustainable economic growth, then the evidence indicates that transportation concurrency is an unworkable and untenable means to this end.

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