

## Artist eyes unused TV channels for New Orleans project

JADE BOYD – JUNE 24, 2013

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### 'Prospect.3 New Orleans' project would use Rice U. 'Super WiFi'

Conceptual artist Mary Ellen Carroll's latest vision, PUBLIC UTILITY 2.0, would combine unused TV channels, emblematic cultural symbols and cutting-edge wireless technology from Rice University for connectivity in underresourced communities across greater New Orleans. Carroll plans to build PUBLIC UTILITY 2.0 for the upcoming Prospect.3 New Orleans, the third edition of the acclaimed international contemporary art biennial launched in the wake of Hurricane Katrina in 2008.

"PUBLIC UTILITY 2.0 will become part of the permanent infrastructure, and the fabric of New Orleans," Carroll said. "This is something that's substantive but also emblematic of what's possible in the United States. This is about universal access — for knowledge, society, community and connection."

In PUBLIC UTILITY 2.0, Carroll proposes erecting two broadcast towers that would provide access to broadband Internet service in portions of the city. The towers will then link to hubs. Crowd sourcing will be utilized as a method for distributing the hubs throughout greater New Orleans.

"This breaks with conventional urban planning, which is rooted in the street plan," Carroll said. "We're taking advantage of the elevation plan and broadcast spectrum and using it as a material that permeates and connects underresourced communities in the city."

The enabling technology for Carroll's project is being developed by Rice's Wireless Network Group, which is directed by Edward Knightly, professor of electrical and computer engineering. In early 2011, the group deployed the first residential broadband Internet service via "TV white space," or TVWS, a telecom industry moniker for unused channels in UHF broadcast TV bands. Examples include TV channels that are unused in a particular market. TVWS wireless technology has sometimes been termed 'Super WiFi' because TVWS towers act like WiFi hotspots that cover several square miles.



"Unlike traditional WiFi, lower-frequency TV signals penetrate walls and propagate over distances," said Knightly, whose team is demonstrating its second-generation TVWS technology in New Orleans today for a group of community leaders and wireless technology researchers. He said Rice's latest TVWS technology will use a technique called "channel bonding" to provide broadband Internet service to large numbers of users. Knightly said the team forecasts each tower will be able to serve a range of 1-2 kilometers with speeds that are comparable to or better than today's typical DSL or cable modems.

"We're already testing in the lab and are on pace to have the technology needed for Prospect.3 New Orleans," Knightly said. "And as we look beyond New Orleans, our technology will have distinct advantages in other parts of

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the world where larger bands of TV spectrum are available and there are fewer regulatory hurdles.”

Carroll, a New York-based designer and conceptual artist, met Knightly more than five years ago while teaching a graduate architecture studio with architect Charles Renfro at Rice’s School of Architecture. Knightly worked with Carroll on [‘prototype 180’](#) in Houston, and her vision for PUBLIC UTILITY 2.0 stemmed partly from her conversations with Knightly about TVWS technology.

“Broadcast towers can be potent cultural emblems,” Carroll said. “The [RKO transmitter](#), the [Shukhov Tower](#) in Moscow or even the [Watts Towers](#) in Los Angeles are all examples. The towers would be the visible presence in the city, and the connections they provide would create a cultural, economic and social platform for greater New Orleans.”

Carroll said she has been in ongoing discussions with a number of strong local and national partners who are interested in coming to the table.

She said one of her motivations with the New Orleans project is to influence the ongoing national policy debate about the future of the high-quality TV spectrum that is expected to be made available via next year’s [highly anticipated auction](#) by the Federal Communications Commission.

“If the government was to auction off beachfront property along a national seashore, that would evoke a common image,” Carroll said. “For most people, words like ‘600 megahertz unused television spectrum’ are incomprehensible, but the national spectrum is analogous to a national seashore. To put it simply, connectivity is invaluable to the growth and development of society. It’s a cultural necessity.”



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**About Jade Boyd**

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