



LEXARTS

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LFUCG Service Contract

Date: April 17, 2015

Project Title: FY16 LiveStream Installation

Job Description:

- Coordination of Engineering, Construction, Electrical and IT
- Communication and Contract with artist
- Parks and Rec meetings and permits
- Urban County Arts Review Board Approval
- Artist payments
- Scheduling of installation
- Documentation
- Press and Coordination of the Dedication Ceremony

Payment for Service: \$5,000

LexArts Contact for this Job: Nathan Zamarron

LexArts will complete the tasks outlined above to the best of our ability in exchange for the service fee associated. LFUCG Department of Environmental Quality agrees to contribute an additional \$36,000 needed to realize the installation which will be matched by a grant LexArts received from the National Endowment for the Arts. Total budget for the Project is \$100,000 and will be realized in time for Water Week October 19, 2015.

Sincerely,

Nathan Zamarron

Community Arts Manager

Ellen A. Plummer

President and CEO

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major project activities

Nearly 2,000,000 people throughout Kentucky rely on groundwater everyday. Families, farms, entire ecologies depend on it. Groundwater is a source of life. Yet, little is known about the water that runs beneath the Bluegrass: How much groundwater do we have? Is it enough? What aquifers are most sensitive to contamination and degradation? Why? And how are we responsible?

Livestream harnesses the power of art, science, and technology to raise environmental awareness, literacy, and accountability from the ground up! To this end, Public Works Collaborative—including Kiersten Nash, Ben Sollee, Sean Montgomery, Bland Hoke, Zachary Kaiser, and Dan Marwit—in partnership with the Kentucky Geological Survey (KGS) and with the support of LexArts and the Department of Environmental Quality (DEQ), are developing a network of systems to collect, monitor, and translate groundwater data from throughout Kentucky into an interactive soundscape that will manifest as a(n):

Public Art Installation (PHASE 1: 014–2015) During Phase One, KGS will install live monitoring stations in 4 springs throughout Kentucky—including Carter Cave State Resort Park; McConnell Springs Park; Mammoth Cave National Park; and Clarks River National Wildlife Refuge. Each station will collect and transmit data to the KGS Groundwater Data Repository that measures pH, conductivity, temperature, turbidity, and depth—5 parameters that are indicative of groundwater quality. Using sonification software, *Livestream* will translate this data into a musical score composed by local artists, beginning with Ben Sollee. The resulting sound tracks will be uploaded to a public art installation situated in Lexington's Jacobson Park.(fig.A,B) This interactive sound sculpture will be fabricated out of 20 pipes divided into 4 clusters that correlate to the 4 springs where groundwater is being collected.(fig.D) Within each cluster, each pipe represents 1 of the 5 groundwater parameters being measured.(fig.E) Sound is activated when motion is detected. As individuals move through this soundscape, they effectively play the ground! (fig.C) Volume is contingent upon human engagement or, more specifically, it directly corresponds to proximity—the closer an individual is to a pipe, the louder it plays; the further away, the softer the sound, until eventually, the pipe is silent.

As environmental activist and poet, Wendell Berry, suggests, "For humans to have a responsible relationship to the world, they must imagine their places in it." By actively engaging individuals in the cultivation of one of Kentucky's most valuable resources—imagination, *Livestream* reframes how individuals perceive their environment and, consequently, themselves.

Online Archive (PHASE 2: 2014–2016) Beyond serving as a provocative framework for increasing environmental awareness, *Livestream* aims to expand environmental literacy by serving as an analytic tool for the exploration of groundwater data. How? Experimentation. Groundwater data gleaned from 4 springs across Kentucky (including Carter Cave State Resort Park; McConnell Springs Park; Mammoth Cave National Park; and Clarks River National Wildlife Refuge) will be uploaded to the *Livestream* website (hosted by KGS) in addition to the audio libraries composed by local artists. In this phase of the project, we will transform the on-line archive into an interactive platform for studying groundwater quality by mixing sounds. Visitors to the site will be able to: (a) listen to the archived data/sounds; (b) create unique studies/mixes of groundwater by mashing-up a variety of data (c) upload, download, and share their individual studies/mixes; and (d) discuss their findings, i.e. comment on one another's compositions. The resulting rhythms, harmonies, and/or dissonance has the potential to provoke novel insights, interpretations, and, ultimately, innovations toward the sustainment of Kentucky's groundwater!

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www.livestreamky.com*

* indicates hyperlink

Educational Outreach Program (PHASE 3: 2015–2017) A mobile application combines digital and analogue technology into an interactive toolkit to effectively transform citizens into geologists equipped to: (1) measure water quality using a wearable technology and (2) contribute data to the Livestream website. This participatory action research platform will be supplemented by a STEAM-based educational outreach program dedicated to expanding geologic literacy and advancing a collective conversation regarding the ecological implications of groundwater quality amongst individuals, organizations, and institutions throughout the Bluegrass and beyond.

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impact and evaluation

By harnessing the power of art, science, and technology as a means to catalyze curiosity, *Livestream* invites a diversity of individuals, organizations, and institutions throughout Kentucky to tune into the Bluegrass so that, together, we can imagine more sustainable futures...for our Commonwealth. The effectiveness of *Livestream* to serve as a participatory, pedagogical, and phenomenological framework will be measured and evaluated according to qualitative and quantitative indicators that assess the ability of the project to increase groundwater awareness, literacy, and accountability throughout Kentucky.

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schedule

Phase 1: Public Art Installation	2014_2015
Design Development	01.2015_03.2015
Construction Drawings	04.2015_05.2015
Installation	04.2015_05.2015
Monitoring Stations Carter Cave State Resort Park; McConnell Springs Park; Mammoth Cave Nat'l Park; Clarks River Nat'l Wildlife Refuge	04.2015_06.2015
Public Art Installation Jacobson Park	04.2015_10.2015
Opening & Dedication Ceremony University of Kentucky Water Week	10.2015
Phase 2: Online Archive	2015_2016
Phase 3: Educational Outreach Program	2015_2017

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key individuals, organizations, and works of art

Livestream: Tuning In To The Bluegrass is being developed by Public Works Collaborative—including Kiersten Nash, Ben Sollee, Sean Montgomery, Bland Hoke, Zachary Kaiser, and Dan Marwit—in conjunction with the Kentucky Geological Survey and with the support of LexArts and the Department of Environmental Quality.

LexArts*

Ellen A. (Non) Palmer, President and CEO and Nathan Zamarron, Community Arts Manager

Lexington-Fayette Urban County Government (LFUCG)*

Louise Caldwell-Edmonds, Department of Environmental Quality and Public Works (DEQ)

Public Works Collaborative*

Kiersten Nash, founder and designer; Ben Sollee, musician; Sean Montgomery, engineer; Bland Hoke, public artist; Zachary Kaiser, d.j.; and Dan Marwit, educator

The Kentucky Geological Survey*

Charles J. (Chuck) Taylor, Head of Water Resources and Bart Davidson, Water Resources

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plans for promoting, publicizing, and/or disseminating

LexArts will host prominent individuals from Kentucky and throughout the U.S. that represent a diversity of communities—municipal, scientific, artistic—for the public unveiling of *Livestream*. The unveiling will serve as a foundation for the development of workshops and panel discussions during the University of Kentucky's 2015 Water Week. Additionally, as an innovative framework for environmental activism, *Livestream* will ignite conversations regarding sustainability, civic engagement, cultural analytics, transdisciplinary design, and experimental pedagogies that contribute to a diversity of disciplines (from urban planning to computer science, geology, and art) via workshops (UK's Water Week, Kentucky 2015; World Science Festival 2015, New York), conferences (Learning x Design 2015, Chicago) and publications (Inhabitat.com, FastCompany.com, etc).

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plans for making the project accessible

Situated in Jacobson Park—Lexington's most highly trafficked park—between 2 parking lots and adjacent to a playground, *Livestream* will actively engage individuals from a diversity demographics, with various mobilities. The project will also incorporate educational wayfinding with braille.

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fig.A

Livestream Phase 1: A Public Art Installation
Jacobson Park Lexington, Kentucky



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fig.B

Livestream Phase 1: Site Plan
Jacobson Park Lexington, Kentucky



Note Configuration subject to change based
on forthcoming topographic survey

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fig.C

Livestream Phase 1: An Interactive Soundscape



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fig.D

Livestream Phase 1: A Representational Map of KY
Plan View, Not to scale

installation

240' 0" x 148' 0"

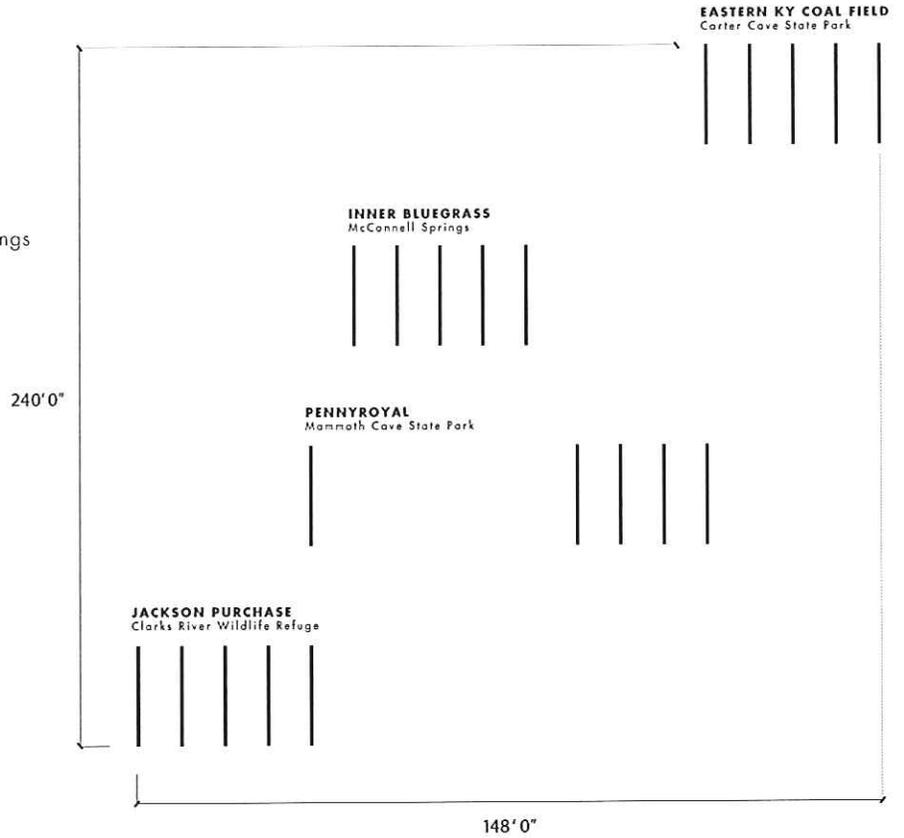
20 Pipes / 4 Clusters / 4 Physiographic Regions & Springs

01 Eastern KY Coal Field: Carter Cave State Resort Park

01 Inner Bluegrass : McConnell Springs Park

01 Pennyroyal : Mammoth Cave National Park

01 Jackson Purchase : Clarks River National Wildlife Refuge



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fig.E

Livestream Phase 1: Components
Plan View, Not to scale

cluster of pipes

20' 0" x 35' 4"

1 Cluster / 1 Physiographic Region & Spring / 5 Pipes

(01 Pipe / Parameter)

01 pH

01 Conductivity

01 Temperature

01 Turbidity

01 Depth

