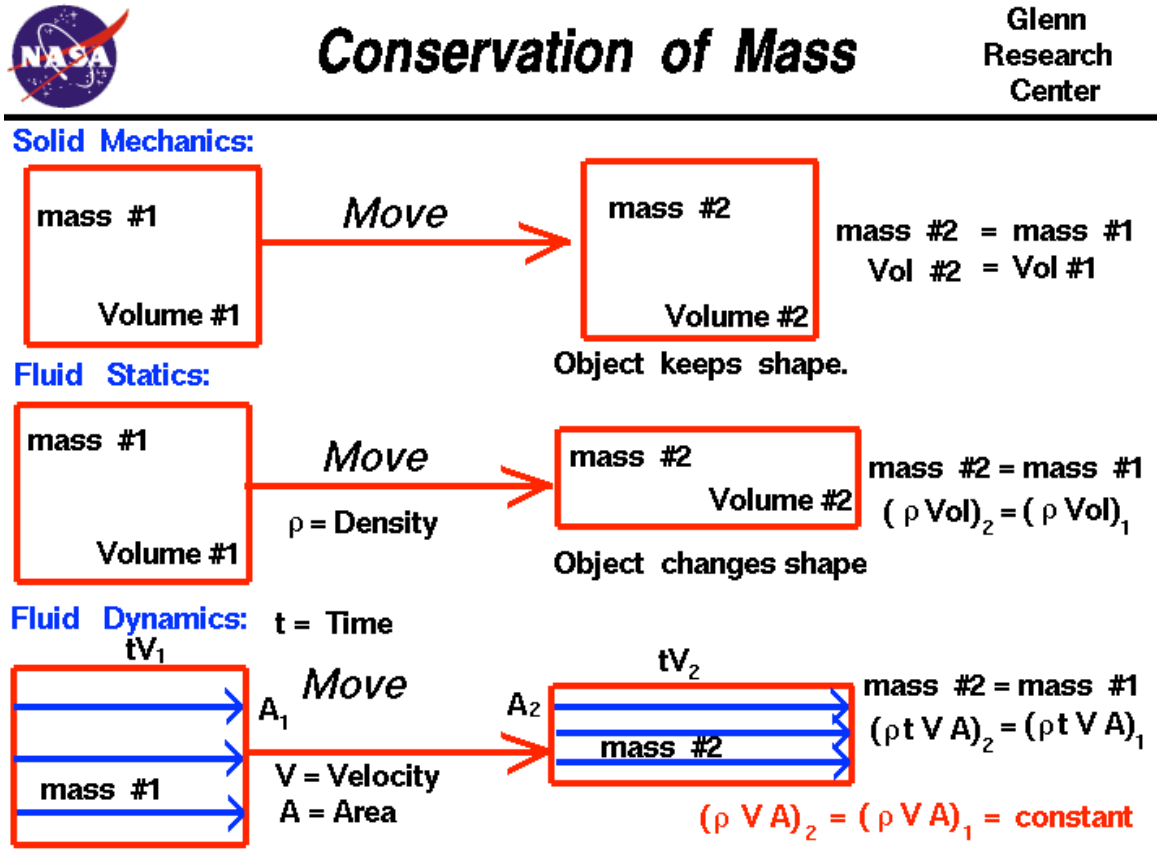
Think Like an EcoSystem: Cognition + Affect = Effect

Marda Kirn
EcoArts Connections

BECC Conference
November 19, 2013



Slide source: Tim Butler, Director of the Center for Urban Ecology
Butler University, Indianapolis

Levitated Mass by artist Michael Heizer

Slide source: Tim Carter, Butler University

EcoArts2006

July 6–16

KRONOS QUARTET

PERFORMANCES EXHIBITS TALKS TOURS





Program Highlights: PERFORMANCES: Colorado Shakespeare Festival "The Tempest" July 6, 13, 14 • Colorado Music Festival: The Kronos Quartet July 11, Symphonic Music July 13–14 • Eiko & Koma in Denver July 8, in Boulder July 14–15 EXHIBITS: Museum of Contemporary Art/Denver Creative Acts That Matter: The Environment; North, South, East, West: 360° of Climate Change • National Center for Atmospheric Research: Climate Discovery TALKS: SOLAR 2006 Conference July 8–13 • Boulder Museum of Contemporary Art: Hollywood & Climate Change July 7, Climate Change in Boulder County July 8 • NCAR: Creeping Environmental Problems: What Can We Do? July 12 TOURS: Eco-Cycle Recycling Center July 7 • ReSource Building Materials Sales Yard July 7 & 15 Thorne Ecological Institute: Sombrero Marsh July 7 • Valmont Station Coal-Fired Plant July 7 & 15 AND MUCH MUCH MORE

www.ecoartsonline.org for a full schedule of events **303.325.5637**

The Compton Foundation
Our Anonymous Angel

NATIONAL ENDOWMENT FOR THE ARTS · WESTAF · SCFD · Roché Colorado · D·A·I·R·Y CENTER FOR THE ARTS · KGNU · DAILY CAMERA

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Boulder County's True Independent Voice <FREE> <www.boulderweekly.com> September 6-12, 2007

BOULDER WEEKLY

climate challenge

EcoArts gathers artists and scientists to spark dialogue on global warming

by Grace Hood

ecoarts

SEPT 14 – OCT 6
2007





OVER 25 MAJOR SCIENCE, ENVIRONMENTAL, ARTS, INDIGENOUS, AND OTHER ORGANIZATIONS PRESENTING EXHIBITS, PERFORMANCES, TALKS, TOURS, FEASTS, FAIRS, FILMS AND MORE!



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The Compton Foundation
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The Big Question

Why is it that so many people know
about climate change
and sustainable solutions

but so few people
are doing anything about them?

RESEARCH

- Carleton College. Student motivations and attitudes: The role of the affective domain in geoscience learning. 2010 http://serc.carleton.edu/NAGTWorkshops/affective/index.html.

- Center for Research on Environmental Decisions. 2009. *The psychology of climate change communication: A guide for scientists, journalists, educators, political aids, and the interested public*, ed. A. Cimino. New York: Columbia University.

- Kahan, D. 2010. Fixing the communications failure. *NATURE* 463, 296-297.

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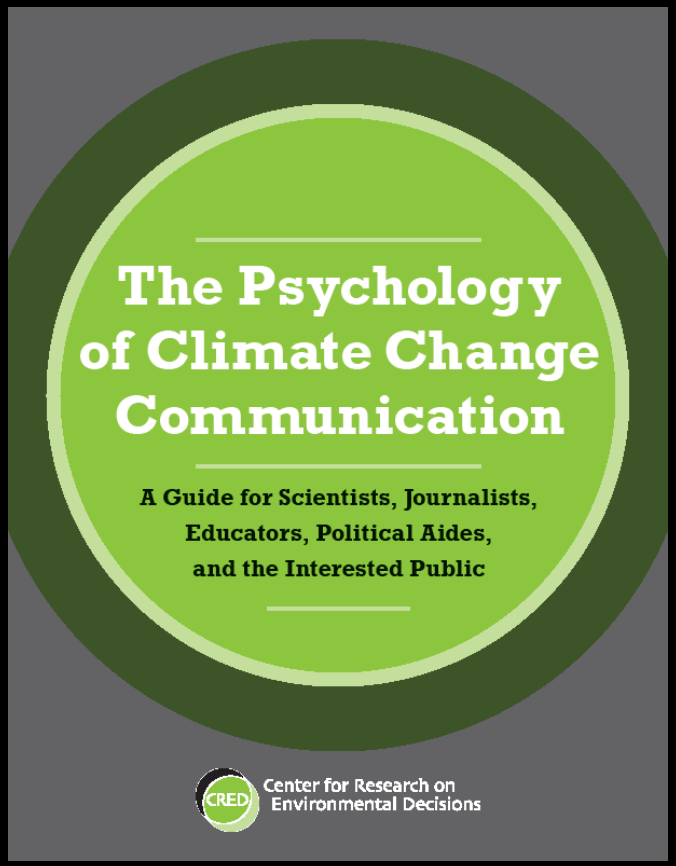

The Psychology of Climate Change Communication
A Guide for Scientists, Journalists, Educators, Political Aides, and the Interested Public
CRED
Center for Research on Environmental Decisions

Cognition + Affect = Effect

Cognition + Affect = Effect

Mind	Heart
Intellect	Emotions
Facts	Feelings
Reasoning	Attitudes
Analysis	Beliefs

History of Art & History of Science

The Arts & Religion

The Arts & Advertising

The Arts
& Education Entertainment

The Arts
Inspiring Political Change

THE JUNGLE

UPTON SINCLAIR

The Brain: Two Information Processing Systems*

Analytic

- Logical
- Deliberative
- Perceives reality in abstract symbols, words, numbers
- Rules and algorithms need to be learned – does not happen automatically

Examples

- Numerical statistics in tables, figures, graphs, charts

Experiential

- Holistic
- Intuitive
- Emotion-driven (fear, dread, anxiety)
- Perceives reality in concrete images and narratives, linked in associations
- Operates automatically and without any training

Examples

- Images or stories
- Emotionally charged and vivid

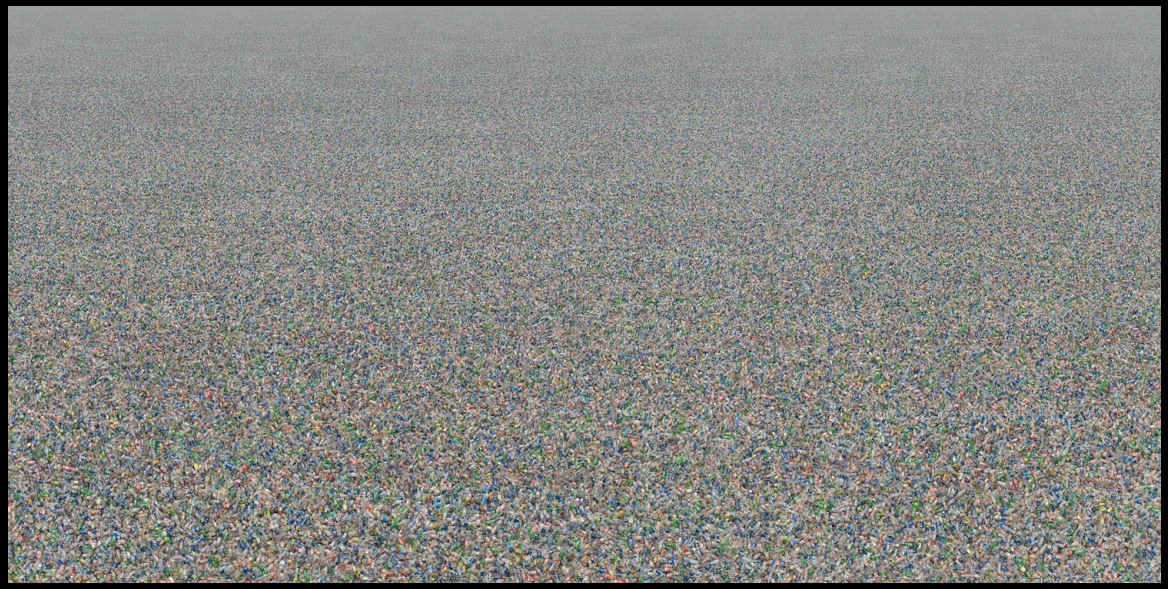
*** "The Psychology of Climate Change Communication," Center for Research on Environmental Decisions, Earth Institute, Columbia University**

*Fixing the Communications Failure**

- Community
- Equality
- Egalitarian and communitarian values
- Suspicious of commerce and industry
- Believe environmental risks should be restricted
- Trust brown-haired bearded male in a denim shirt

- Individualism
- Authority
- Hierarchical values
- Prize personal initiative
- Admire commerce and industry
- Dismiss evidence of environmental risks
- Trust grey-haired male in a suit

*Dan Kahan, *Nature*, Vol 463, 21 January, 2010



Source: Chris Jordan www.chrisjordan.com

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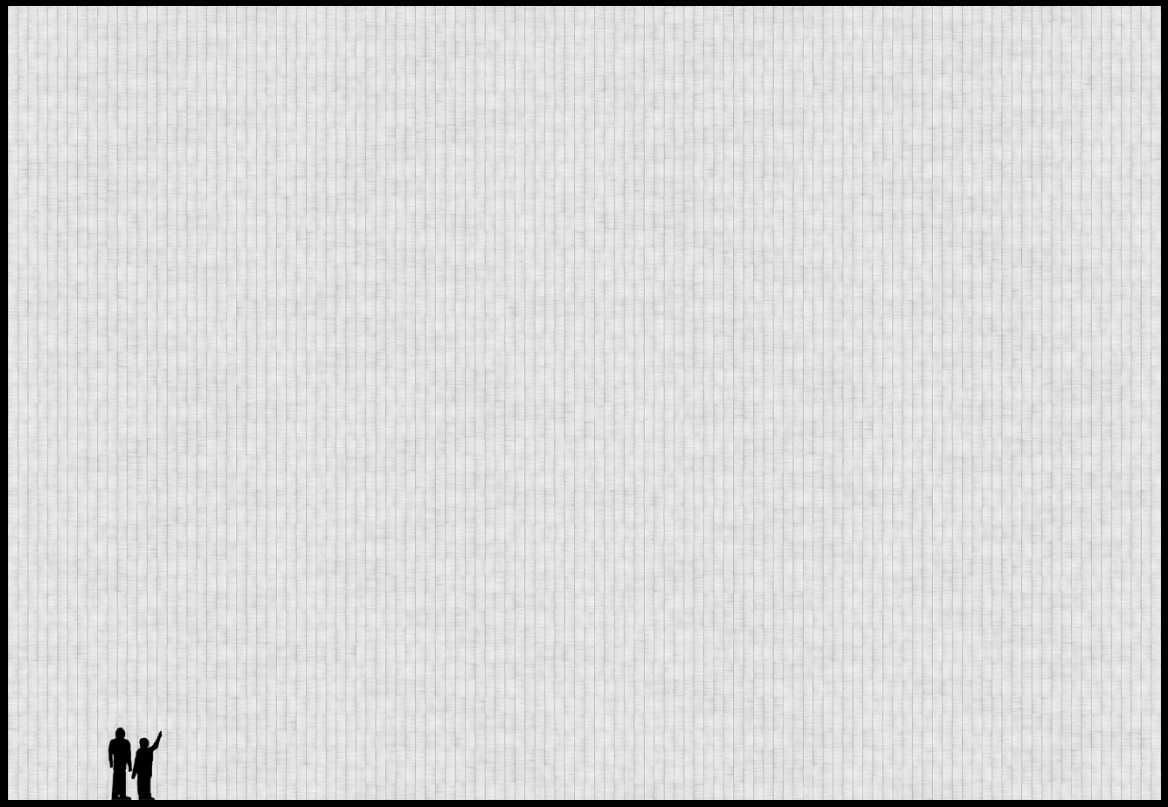


Source: Chris Jordan www.chrisjordan.com

Source: Kim Abeles www.kimabeles.com

Presidential Commemoration
Smog Plate Series

Source: Kim Abeles www.greenmuseum.org, www.kimabeles.com

Detail of *Smog Collector Sculpture (Sixty Days of Smog)* gathering smog at California State University, Fullerton.

Smog Collectors Sculpture (Sixty Days of Smog), 1991-92. Welded vehicle exhaust systems, bilingual text, images made of particulate matter (smog) on plexiglass gathered at California State University, Fullerton. Funded by the California Bureau of Automotive Repair, Department of Consumer Affairs.

Informative "table" accompanying each *Smog Collector Sculpture (Sixty Days of Smog)* while it was on-site gathering smog, and during the extensive tour of the completed works to businesses and organizations throughout southern California.

On-site Smog Collector Sculpture Project. In 1991, the California Bureau of Automotive Repair, Department of Consumer Affairs sponsored on-site *Smog Collector Sculptures* by Abeles as a unique campaign to inform citizens about the Smog Check Program and facts about smog. Midway through the project, February 1992, the media's support for the campaign was said to be unprecedented, reaching 30 million people and a total dollar equivalent media value of close to $3 million. The completed sculptures toured to forty corporations and agencies during 1992, primarily to encourage participation in rideshare programs and use of mass transit. In 1992, Abeles received a Clean Air Award from the South Coast Air Quality Management District (AQMD) for this project.

The *Smog Collector Sculptures* were created from recycled automobile mufflers and catalytic converters, each holding a cut stencil image on plexiglass. Placed in the environment, visitors to the sites saw the accumulation of particulate matter deposited by the polluted air onto the stencils. For each sculpture, Abeles created an accompanying informative "table" using visuals and text in English and Spanish to describe solutions for cleaner air. The table displays were an effort to empower the audience with facts and phone numbers for further information. After eight weeks, the stencils were removed from each sculpture, revealing the images made of smog: lungs, heart, cityscape, artery system, tree, automobile engine, and a wheel of walking legs.

The Storm

Source: John Flax, Theater Grottesco www.theatergrottesco.org

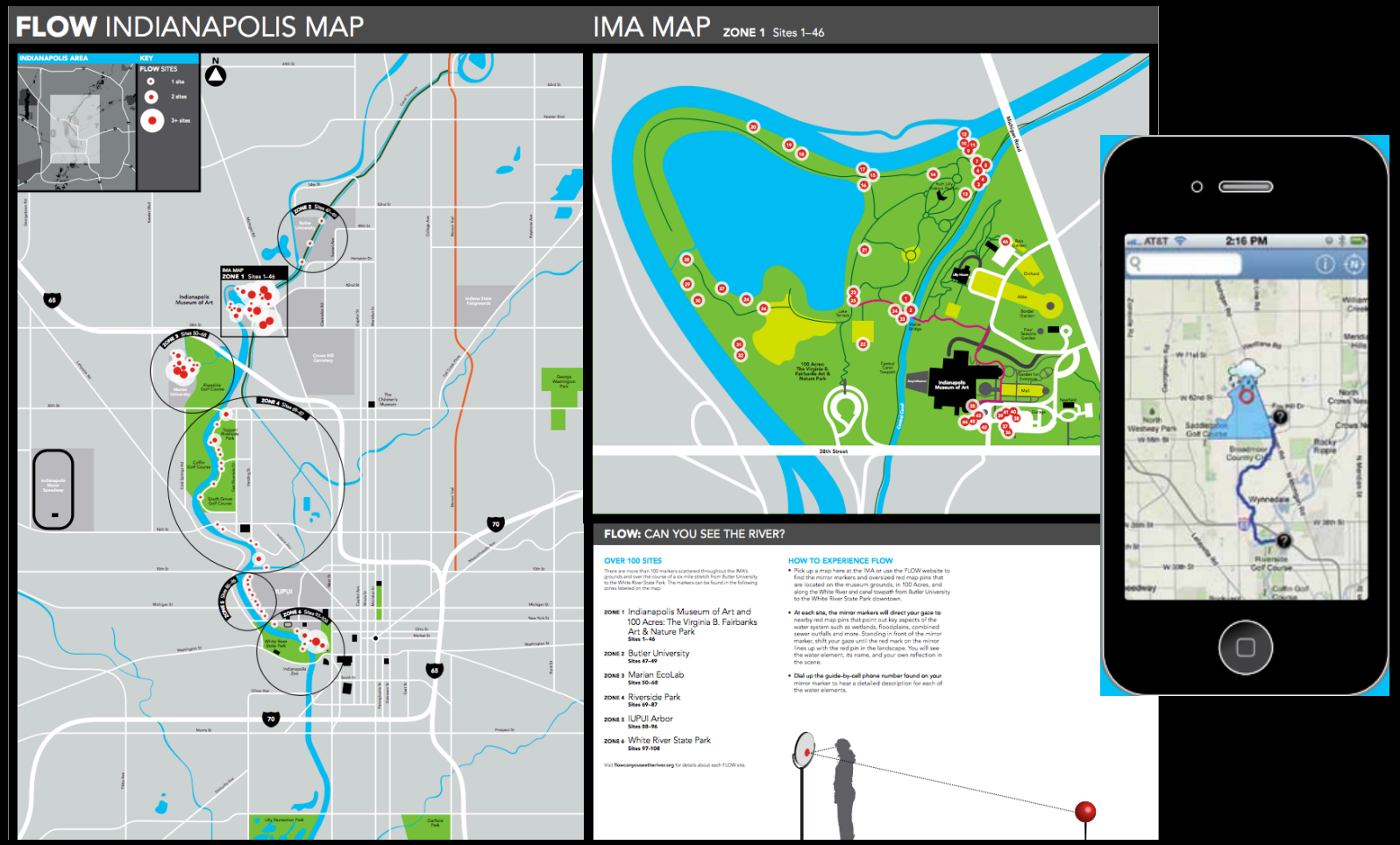
Framework for a 21st Century City

Sustainability Made Tangible Through The Arts

CITY AS LIVING LABORATORY

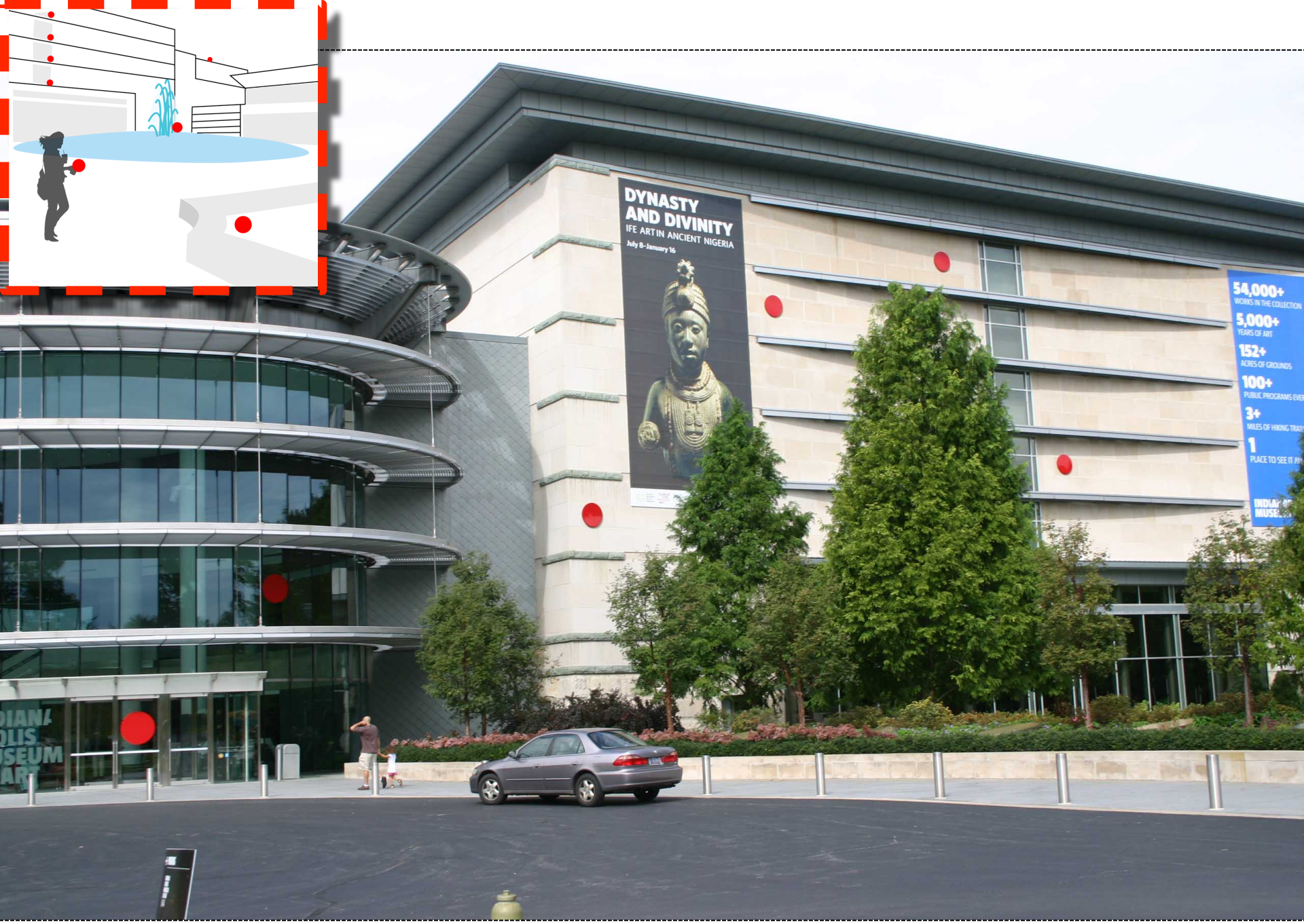
FLOW: CAN YOU SEE THE RIVER?

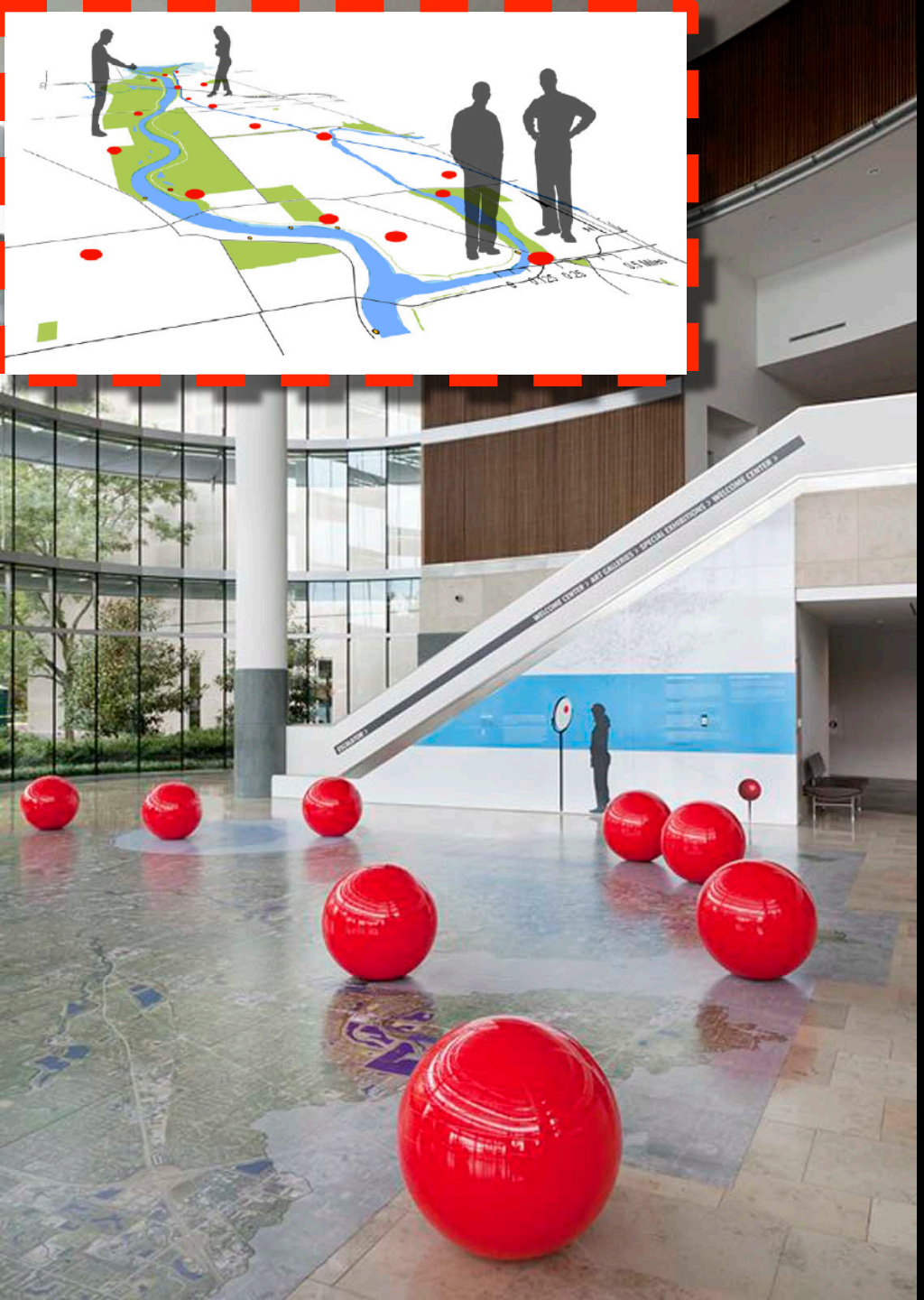
“FLOW” and the“Raindrop” App

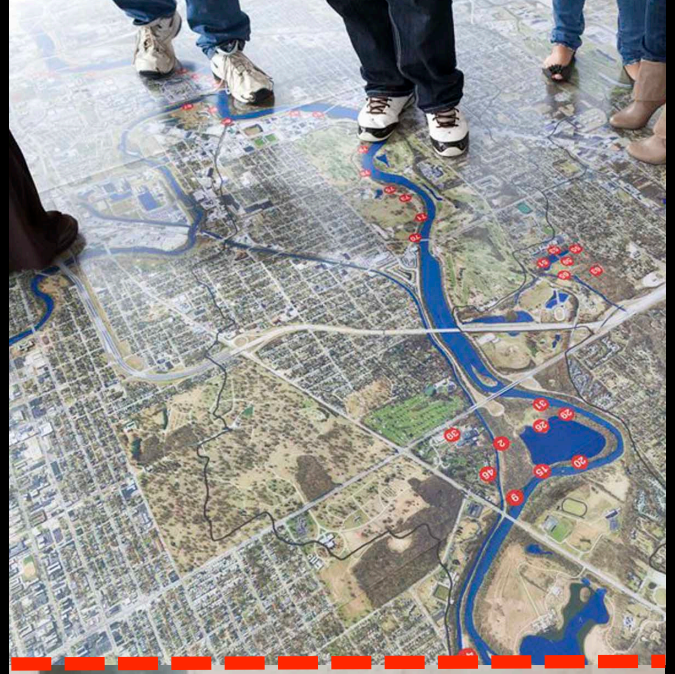


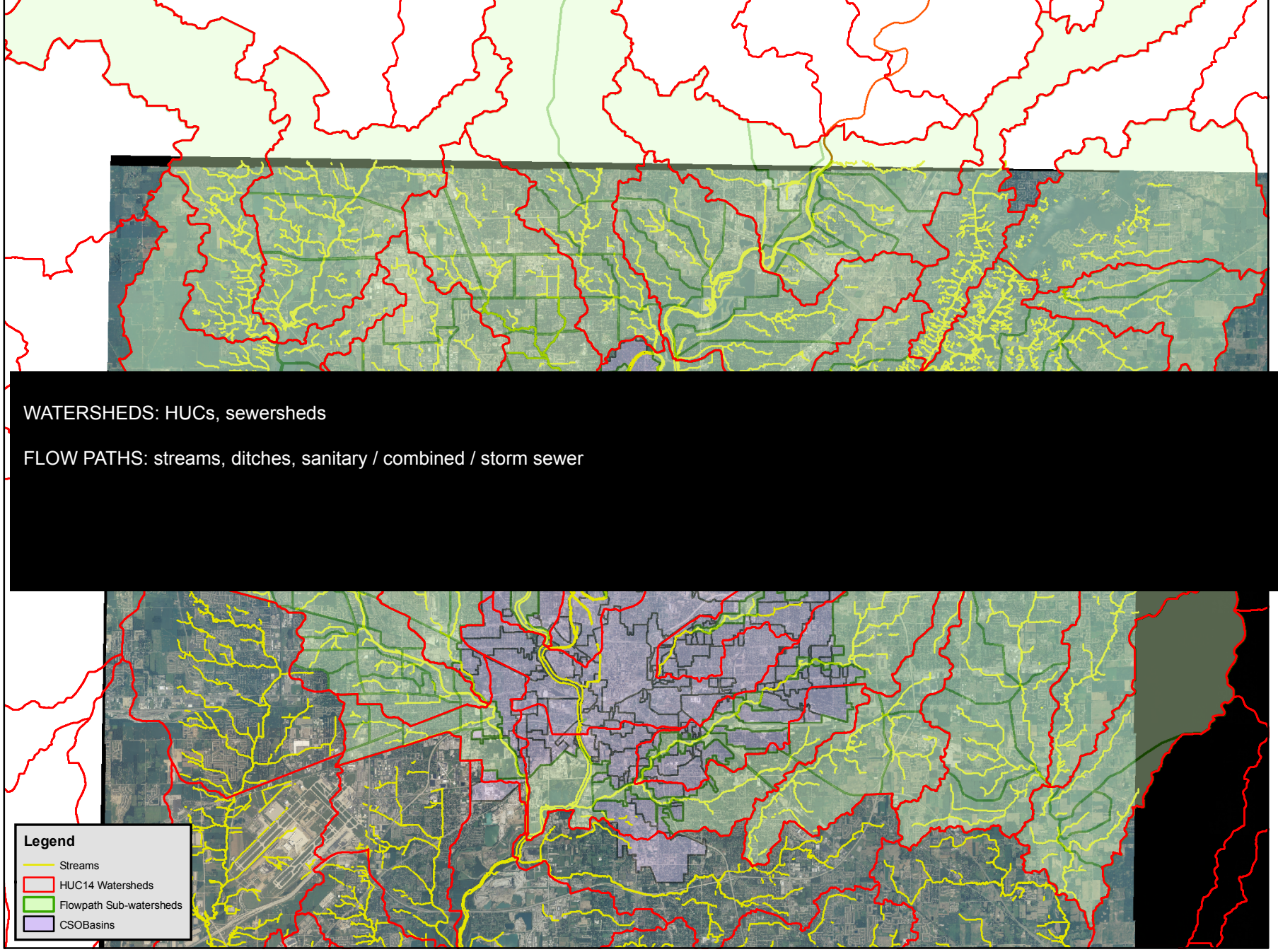
16th STREET DAM


WWW.TRACKARAINDROP.ORG
65
70
70


DYNASTY
AND DIVINITY
IFE ART IN ANCIENT NIGERIA
July 8–January 16
54,000+
WORKS IN THE COLLECTION
5,000+
YEARS OF ART
152+
ACRES OF GROUNDS
100+
3+
1

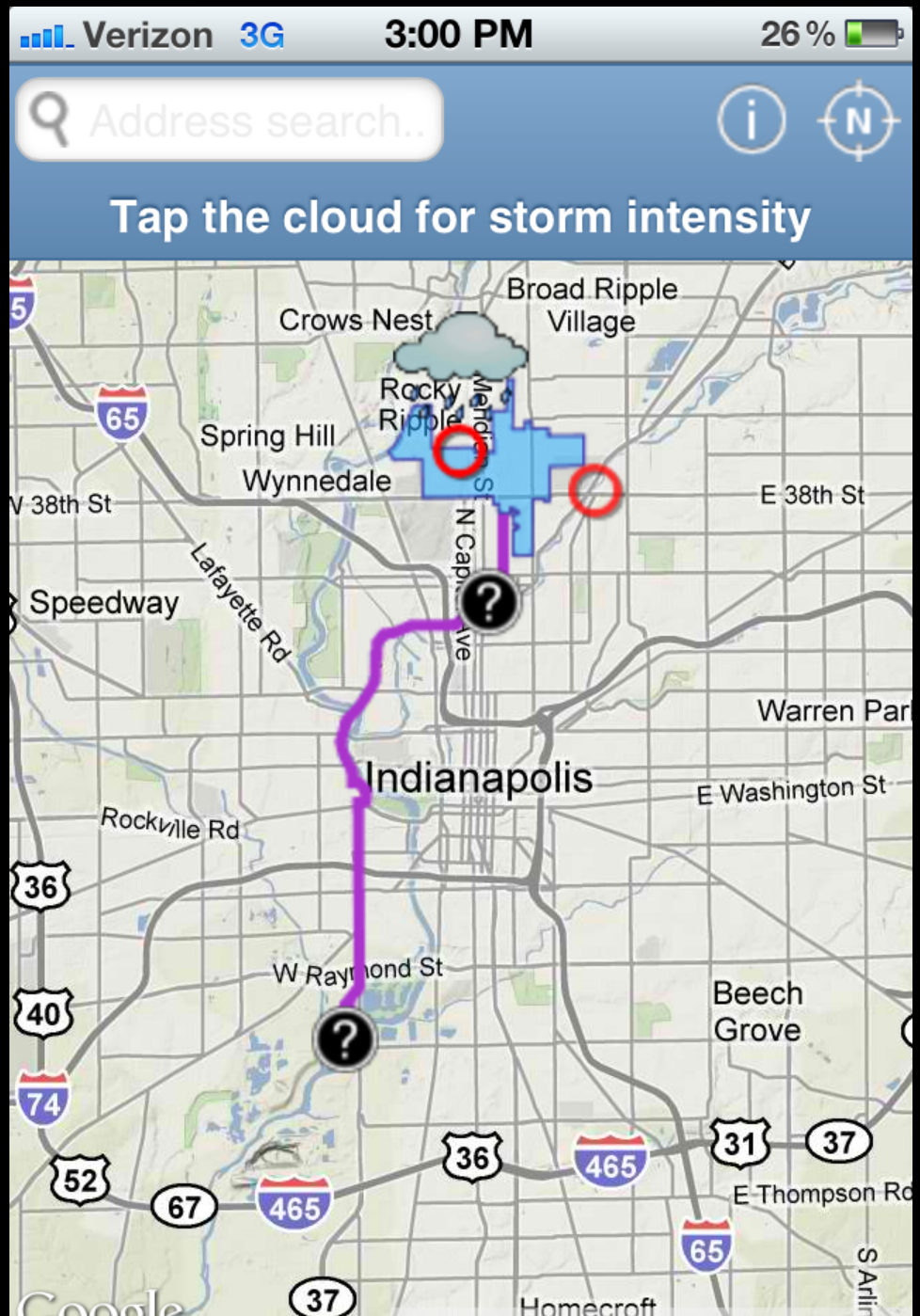






WATERSHEDS: HUCs, sewersheds

FLOW PATHS: streams, ditches, sanitary / combined / storm sewer


Verizon 3G
3:00 PM
26 %
Address search..
Tap the cloud for storm intensity
Broad Ripple Village
Crows Nest
Rocky Ripple
Spring Hill
Wynnedale
E 38th St
Speedway
Lafayette Rd
Warren Park
Indianapolis
E Washington St
Rockville Rd
W Raymond St
Beech Grove
E Thompson Rd
Homecroft
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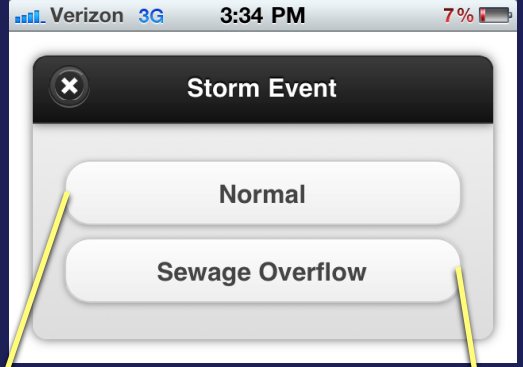
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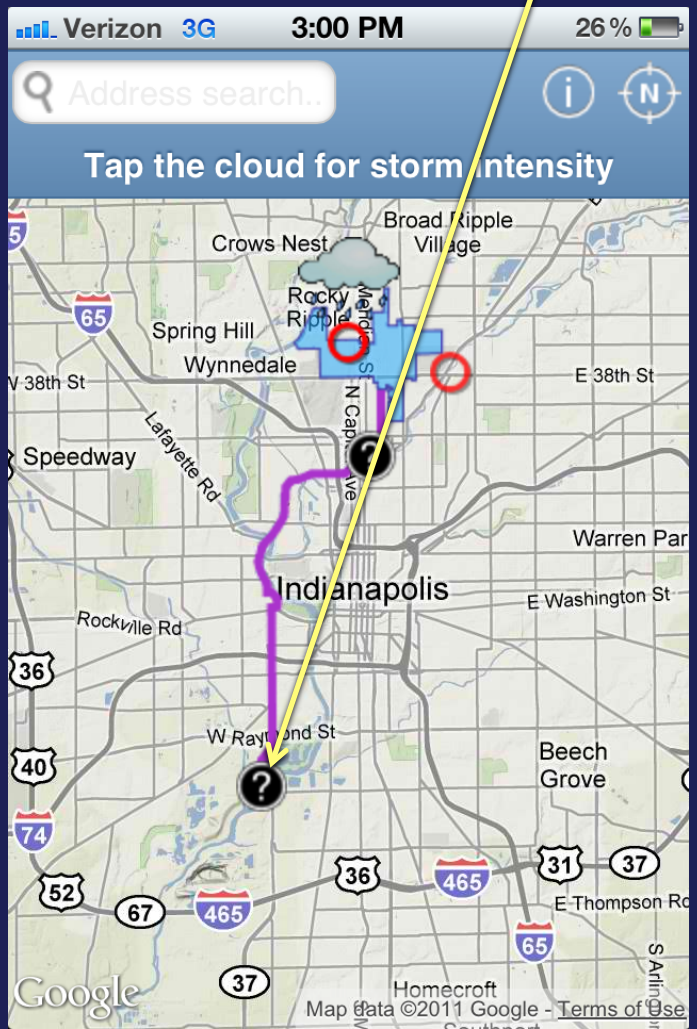
Storm Event
Normal
Sewage Overflow


Verizon 3G 3:00 PM 26%
Address search..
Tap the cloud for storm intensity
Crows Nest
Broad Ripple Village
Rocky Ripple
Spring Hill
Wynnedale
E 38th St
Speedway
Lafayette Rd
Indianapolis
Warren Park
E Washington St
Rockville Rd
W Raymond St
Beech Grove
E Thompson Rd
Homecroft
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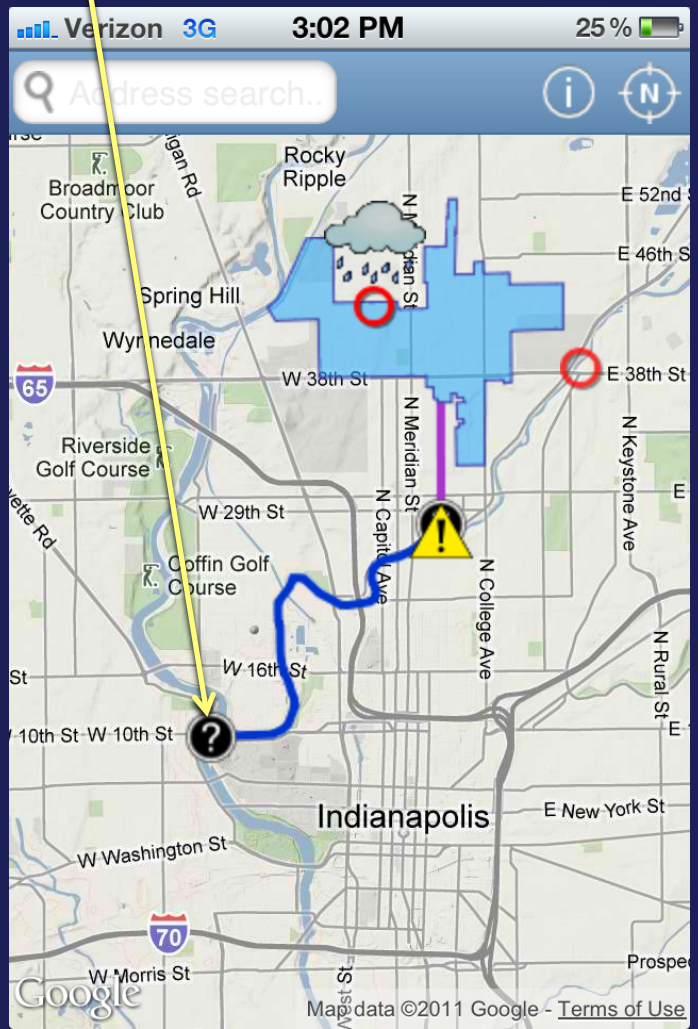
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Address search..
Broadmoor Country Club
Rocky Ripple
Spring Hill
Wynnedale
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Riverside Golf Course
W 29th St
N Meridian St
N College Ave
N Keystone Ave
Coffin Golf Course
W 16th St
W 10th St
Indianapolis
E New York St
W Washington St
W Morris St
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www.trackaraindrop.org

www.flowcanyouseetheriver.org

www.ourwaterways.org

www.butler.edu/urban-ecology
Timothy Carter, Ph.D.
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Mary Miss Studio
EcoArts Connections
Indiana State Climate Office

CENTER FOR URBAN ECOLOGY
BUTLER UNIVERSITY

This presentation was prepared by Butler University under award NA10SEC0080027 from the National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce. The statements, findings, conclusions, and recommendations are those of the author(s) and do not necessarily reflect the views of the National Oceanic and Atmospheric Administration (NOAA) or the U.S. Department of Commerce

The Arts & Health

xCLINIC – Environmental Health Clinic & Lab

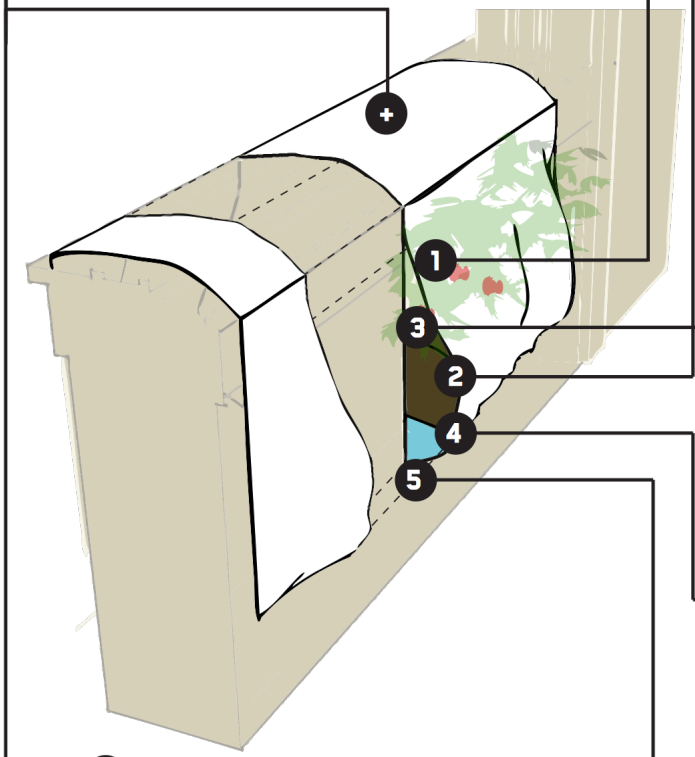
Source: Natalie Jeremijenko www.environmentalhealthclinic.net

AGBAG FEATURES

HOW IT WORKS TO PROVIDE AN INTENSIFIED AND BIODIVERSIFIED GROWING ENVIRONMENT

SYSTEM CHARACTERISTICS:

+ System minimized rootspace and maximizes leaf area index via
+ Root to shoot ratio characterization of plants (e.g. vines)
+ Perrenial (storing nutrients over winter) --→ imp to building interacting pollinators/birds and biodiversification
+ Scaled to be manageable by one or two people; strategy of scaling thru aggregation of small action vs scaling thru tractor/heavy equipment scaling; because urban systems have large number of i-people, whereas rural context defined by low human to plant ratio
+ Scaled to work within safety margins of legacy buildings and building codes
+ Modular / inexpensive / aggregatable / networked agriculture system
+ Using urban structures to access solar resources; (that would not be accessible in 2-d agriculture / community garden); exploits 3-d space filling algorithms; and existing structural investment; coupling
+ Changes the scale (by approx 3 orders of magnitude) of what is possible in urban agricultural context



GENERAL SYSTEM NOTES

+ Tyvek / air pemeable water proof and high tensile
+ Puncture resistant
+ Upcycled material (theoretically)
+ Single HDPE materiel, no leaching, no binders
+ Using counter balancing for safe non destructive fastening that can be added to any railing, double hung window, parapet or existing structure
+ Load bearing on railings (mass is less than a person)
+ White titatium dioxide acts photocatalyzes the breakdown of common urban air pollutants NOx SOx

1 FOILAGE EXPOSED TO REFLECTED AND DIRECT SOLAR

+Tyvek reflects valuable blue spectrum to plants

+Tyvek provides printable surface for in situ notes and observation capture

+Brinno camera based data collection on growth responses; high fidelity data from participatory research context

2 AIR SOIL LAYER

The tyvek material provides moisture barrier for loss of water thru air soil layer ... retains moisture and simulates and supports green mulching, provides habitat for snails and other leaflitter inhabiters

+ Tuxury snail housing for snails: soil indicators; vertical grazing

+ Easy access for incorporating food scraps and cellulosic waste

+ Can also support modest vermiculture

3 RHIZOMIC SPHERE/ROOT LAYER

+ Because of breathable fabric oxegenated soil is spread around the bag surface rather than just on top in traditional planter agbag has more root space for close companionship

+ show air permeability oxegenated depth from the surface of the bag; ~ 1-2"

+ variable soil conditions

4 MEMBRANE BT WATER RESEVOIR AND SOIL

+ To control soil moisture and wetting rate
+ 2 x parameters of control
+ Attentuates wicking connection to soil thru surface area
+ Controlling polymer moisture release rate to soil
+ Can design different soil conditions [wetland/marsh agriculture to highly drained ...

5 SUB IRRIGATION SYSTEM

+(Ssimulates moisture seepage from large soil banks; damps wet/dry cycle and associated plant stress)

+ Soft and expandable water reservoir
+ Maximizes space use
+ Releases dissolved nutriets to plants; 777 NPK (current) i.e. plants are not nutrient limited despite constrained rootspace

Case Study:
NOAA Science On a Sphere® (SOS)

THE ANNOTATED

UNCLE TOM'S CABIN

HARRIET BEECHER STOWE

EDITED WITH AN INTRODUCTION AND NOTES BY

HENRY LOUIS GATES JR.

AND HOLLIS ROBBINS

Thank You!

Artists

Kim Abeles

John Flax, Theater Grottesco

Natalie Jeremijenko, xCLINIC

Chris Jordan

Mary Miss

People/Entities

Tim Carter, Center for Urban Ecology, Butler University

Shilpi Gupta, NOAA