



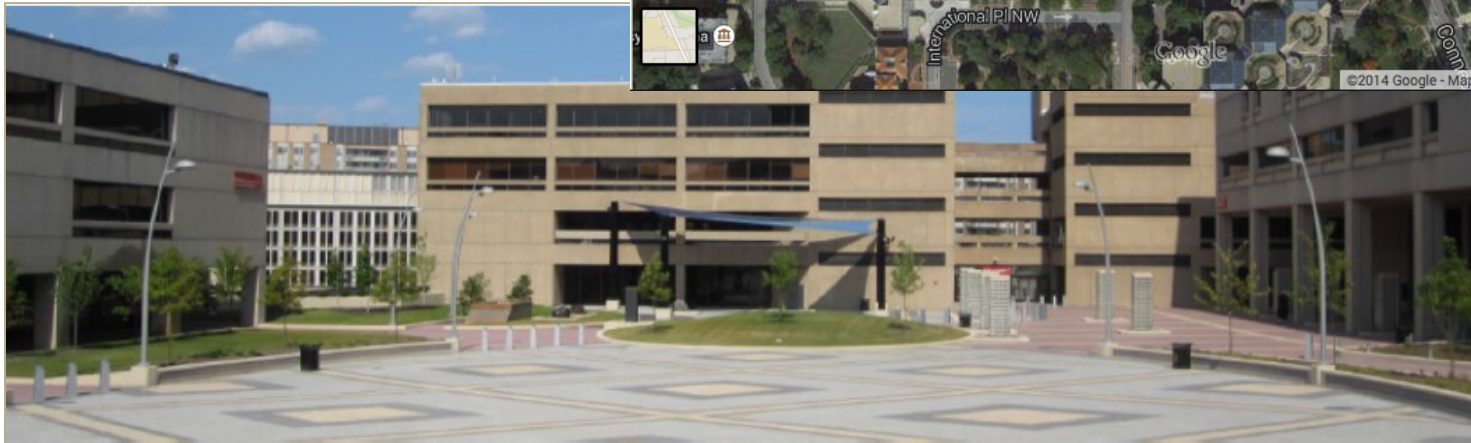
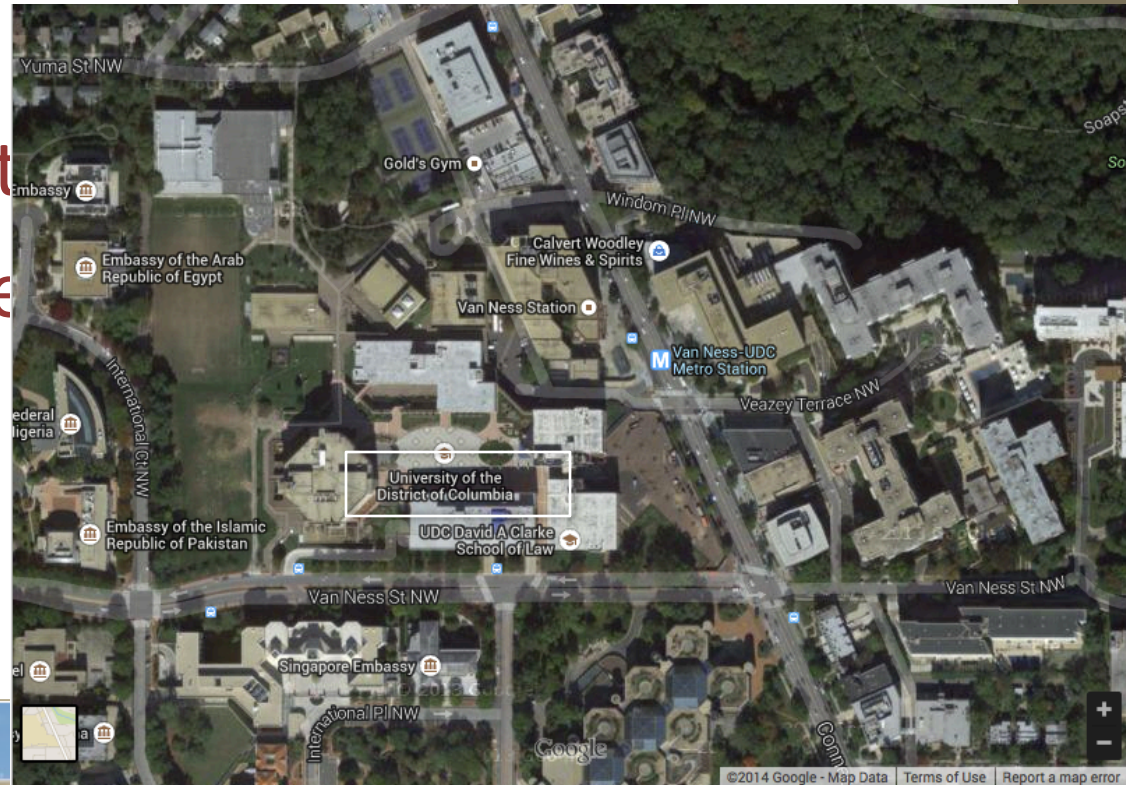
Dwane Jones, UDC Director of the Center for Sustainable Development

Twitter: @sustainUDC

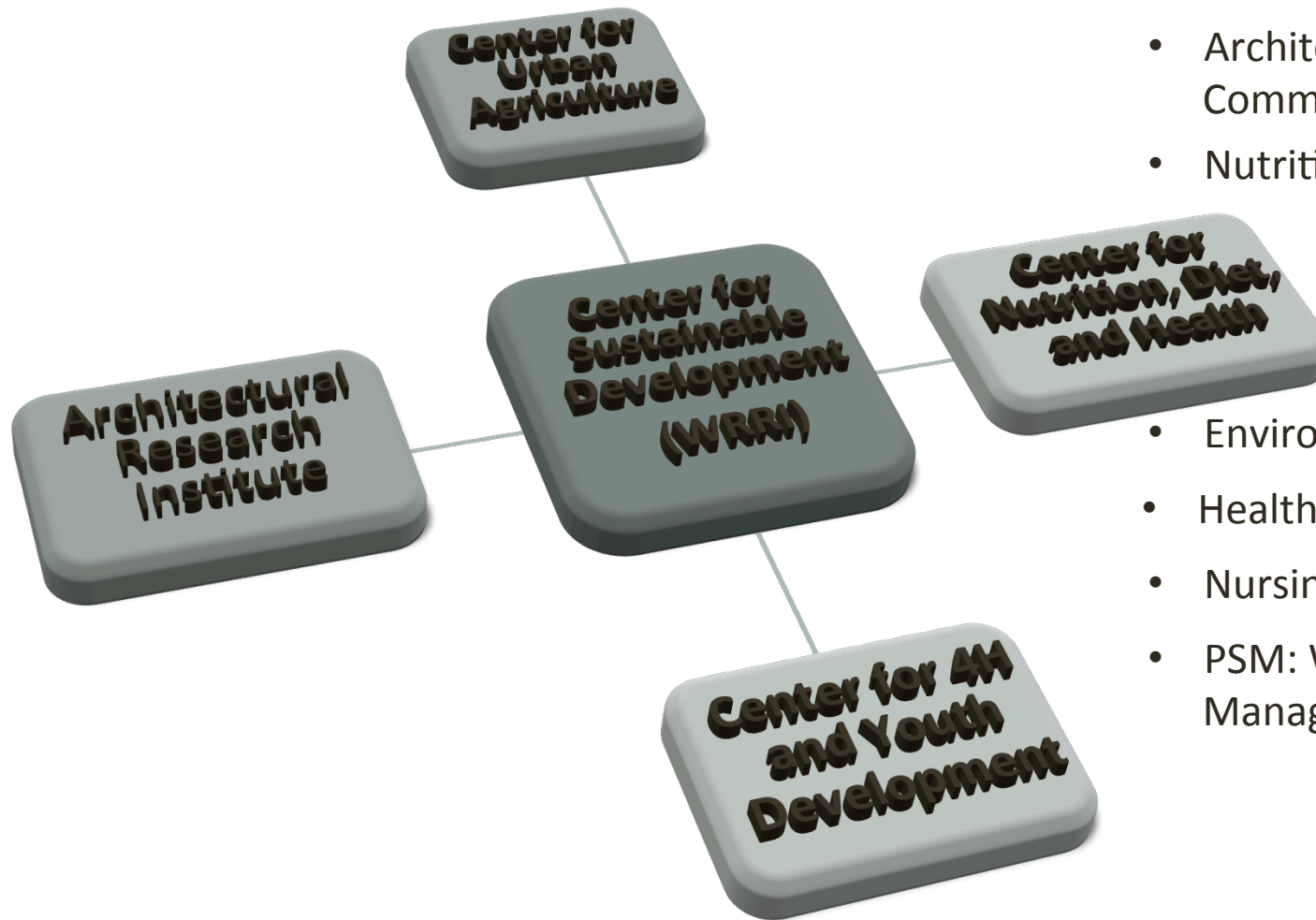
UDC's Center for Sustainable Development provides relevant and innovative applied research and education to students, District residents, and the world in the areas of sustainable infrastructure, sustainable spaces, urban economics and entrepreneurship, and behavioral and social change.

University of the District of Columbia

- Urban, land-grant
- 50 undergraduate degree programs
- UDC-CC
- 5,400 students



The Center for Sustainable Development Land-Grant Centers & Academic Programs in CAUSES

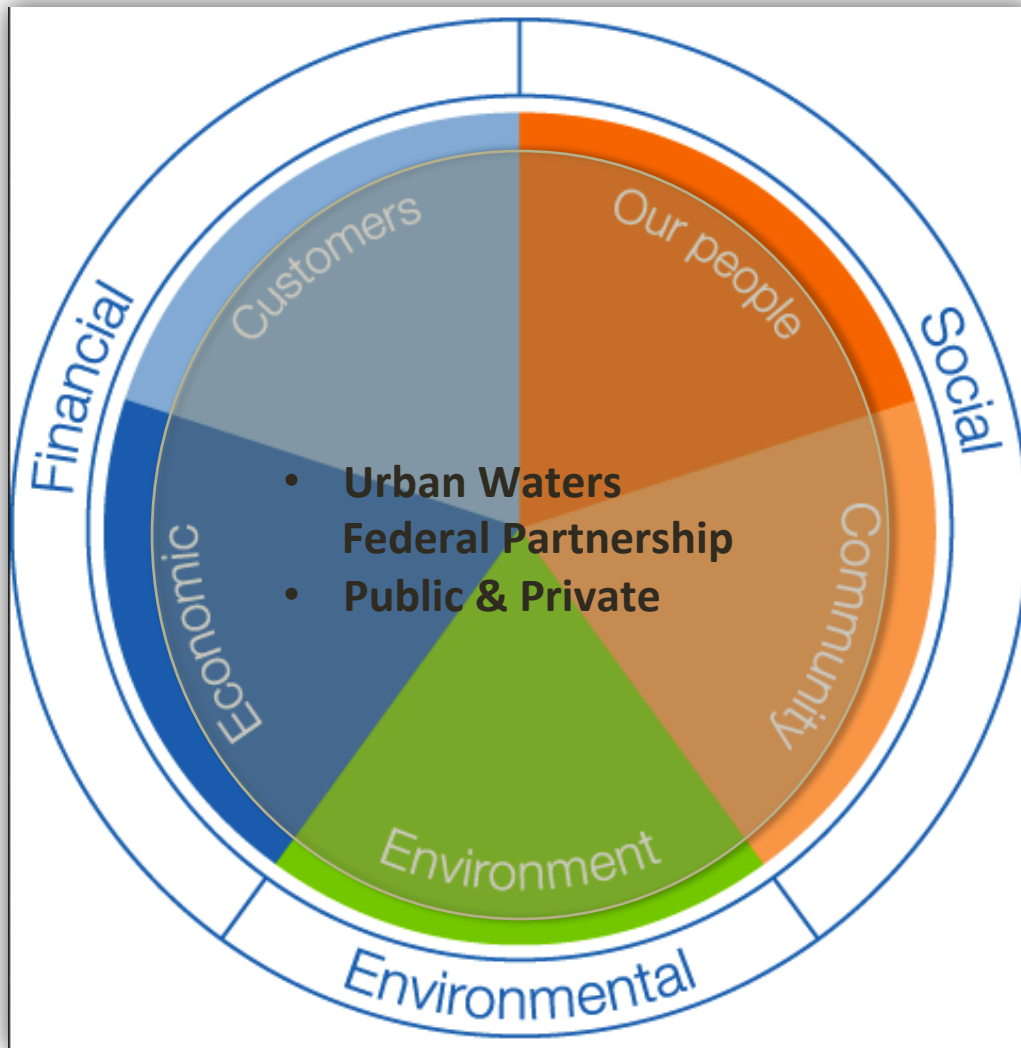


Academic Programs

- Architecture & Community Planning
- Nutrition & Dietetics
- Environmental Studies
- Health Education
- Nursing
- PSM: Water Resources Management

UDC CAUSES:

Center for Sustainable Development



- Research
- Academics
- Extension
- Engagement

Graphic: SP AusNet

Urban Agriculture

“The future needs an agricultural system that produces about 50 percent more food to feed the world's 9 billion people by 2050; that provides adequate nutrition; that substantially raises the levels and resilience of incomes and employment for most of the world's poor...that provides environmental services such as absorbing carbon, managing watersheds, and preserving biodiversity; and that uses finite land and water resources more efficiently.”

Source: World Bank, 2013

Green Infrastructure

Green infrastructure uses vegetation, soils, and natural processes to manage stormwater and create healthier urban environments.

At the city scale, green infrastructure refers to the patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water.

At neighborhood scale, green infrastructure refers to stormwater management systems that mimic nature by soaking up and storing water.

Source: EPA, 2015

Urban Areas

- Today's urban population of about 3.5 billion people is projected to reach 5 billion by 2030, with two-thirds of the global population living in cities.
- More than 80 percent of global GDP is generated in cities. If managed well, urbanization can promote sustainable growth by increasing productivity, allowing innovation and new ideas to emerge, saving energy, land and natural resources.

Source: World Bank

U.S. Farms and Farmers

- The number of farms in the U.S. continues to decline (2.1 million farms in 2012- down 4.3% from the last agricultural census in 2007).
- Between 2007-2012, the amount of land in farms declined from 922 million acres to 915 million acres. This was the smallest decline since 1950.
- The average farm size declined from 434 acres to 418.

Source: USDA



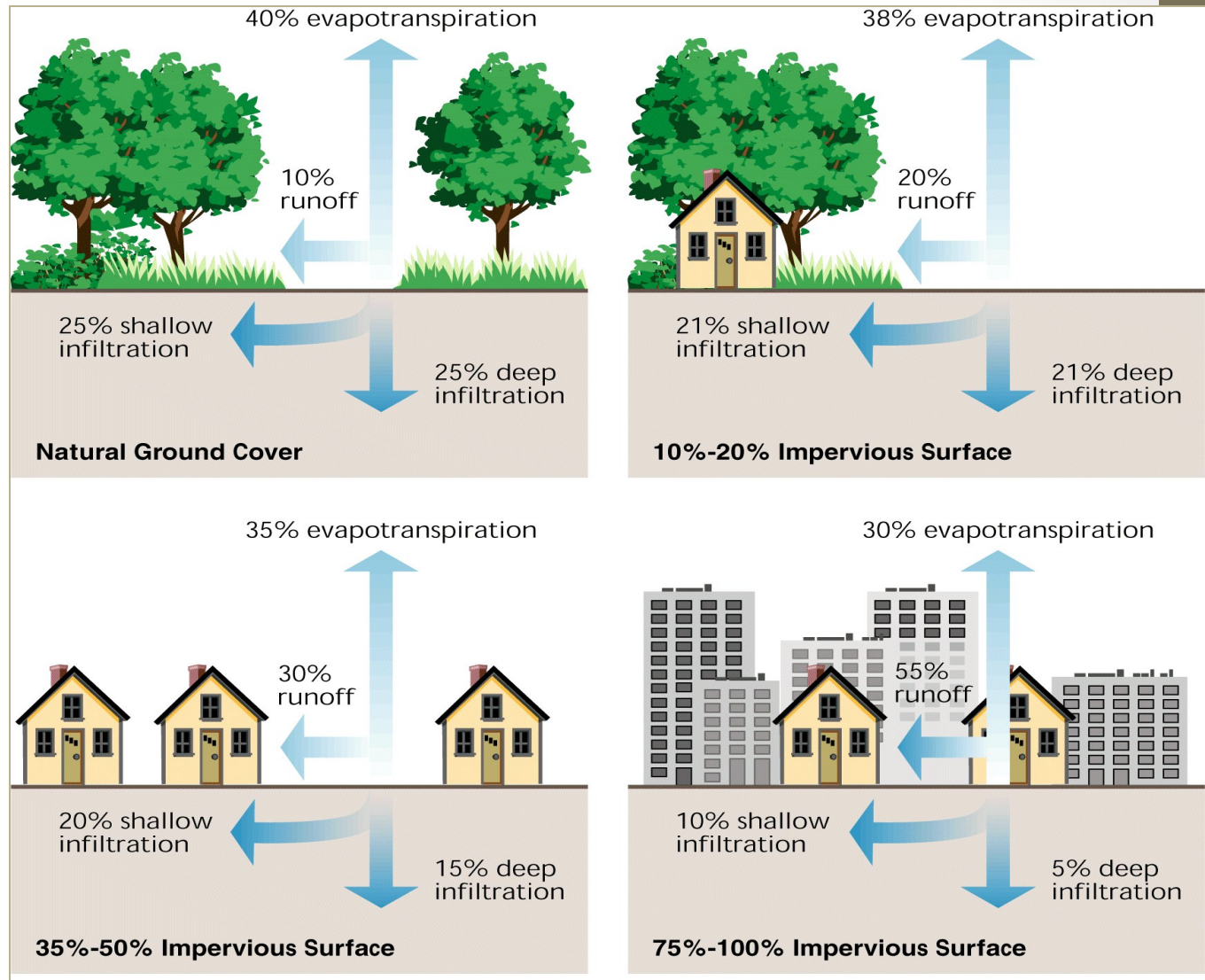
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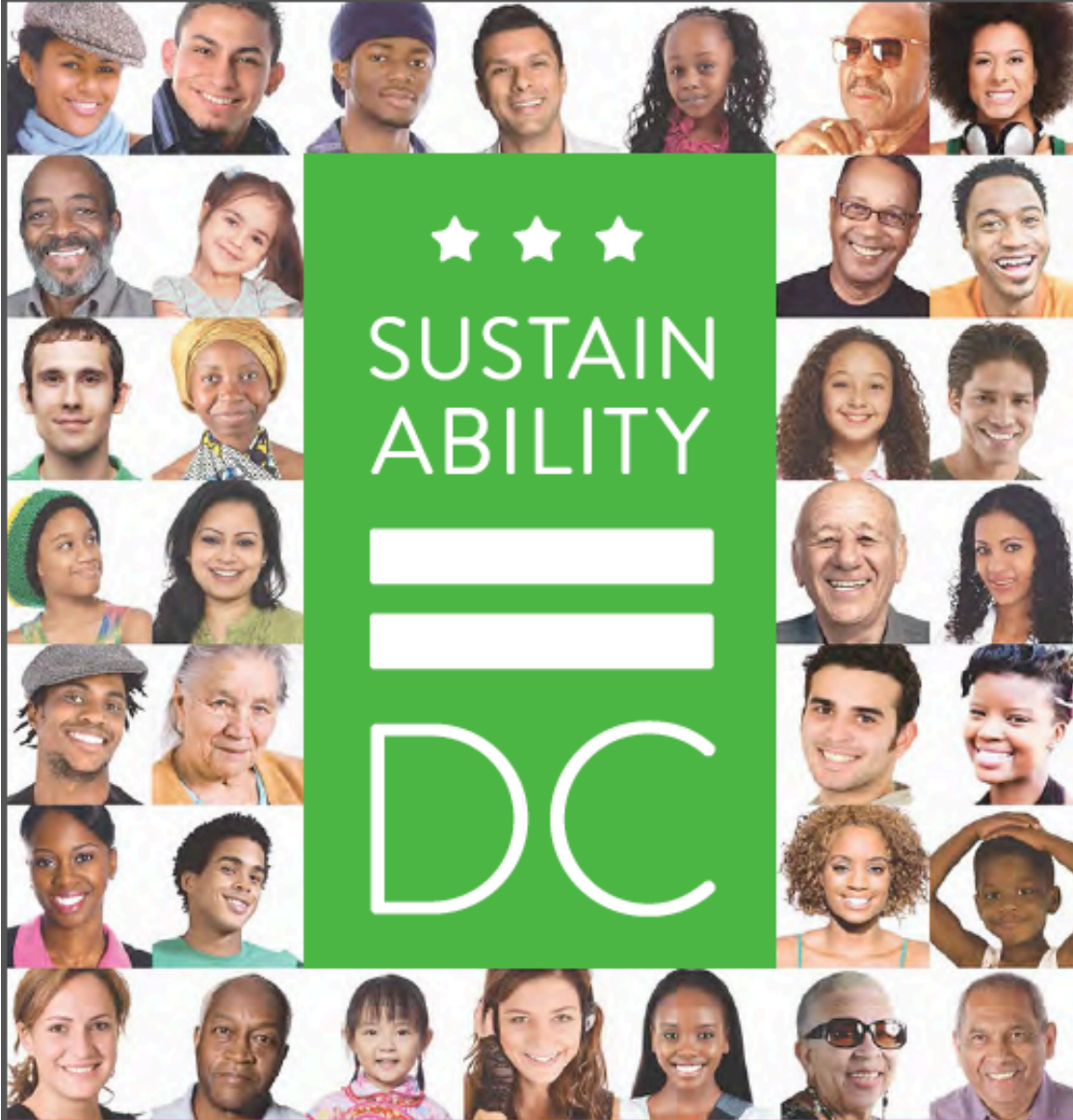
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- As rural farm population declines, we are attempting to increase the number of small-scale urban farms and producers in the District.
- We are also integrating urban stormwater initiatives.

Impacts of Urbanization

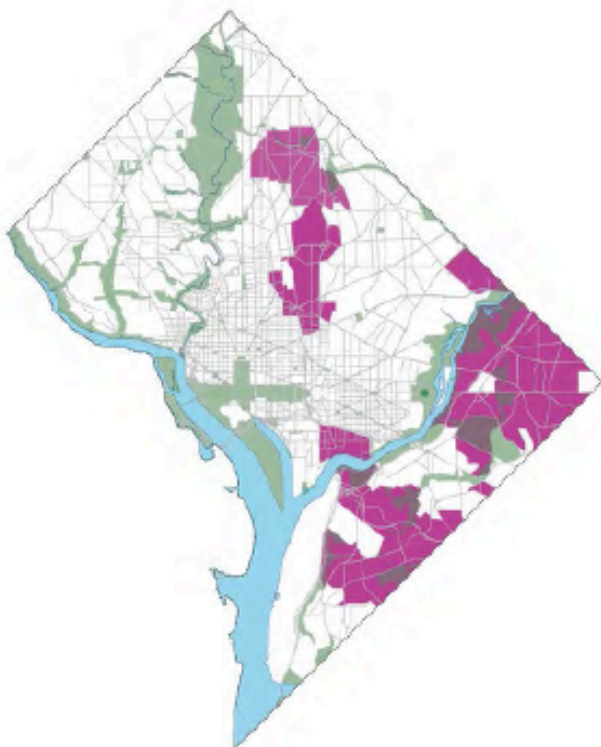
Stream Corridor
Restoration: Principles,
Processes, and
Practices, 10/98, by the
Federal Interagency
Stream Restoration
Working Group
(FISRWG)





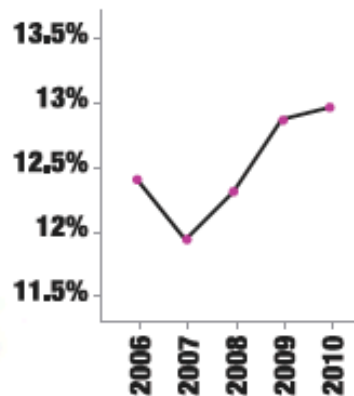
SUSTAINABLE DC PLAN

AREAS OF DC WITH LIMITED SUPERMARKET ACCESS (2011)*



 LIMITED SUPERMARKET ACCESS
 NOT LIMITED SUPERMARKET ACCESS

% OF DC HOUSEHOLDS THAT ARE FOOD INSECURE*




26.5 ACRES
OF COMMUNITY GARDENS ARE GROWING FOOD, WHICH IS LESS THAN 1% OF THE CITY'S TOTAL AREA*



DC RESIDENTS SPEND **\$920 MILLION** ON GROCERIES EVERY YEAR. **\$112 MILLION** OF THAT IS LOST TO NEIGHBORING JURISDICTIONS*

★★★
SUSTAINABILITY



DC

Considerations for Urban Environments

- Soils have not been farmed for X number of years.
- Water quality & quantity considerations.
- Urban populations are not typically trained in agricultural best management practices.
- Maintenance.
- Space constraints.
- Other?

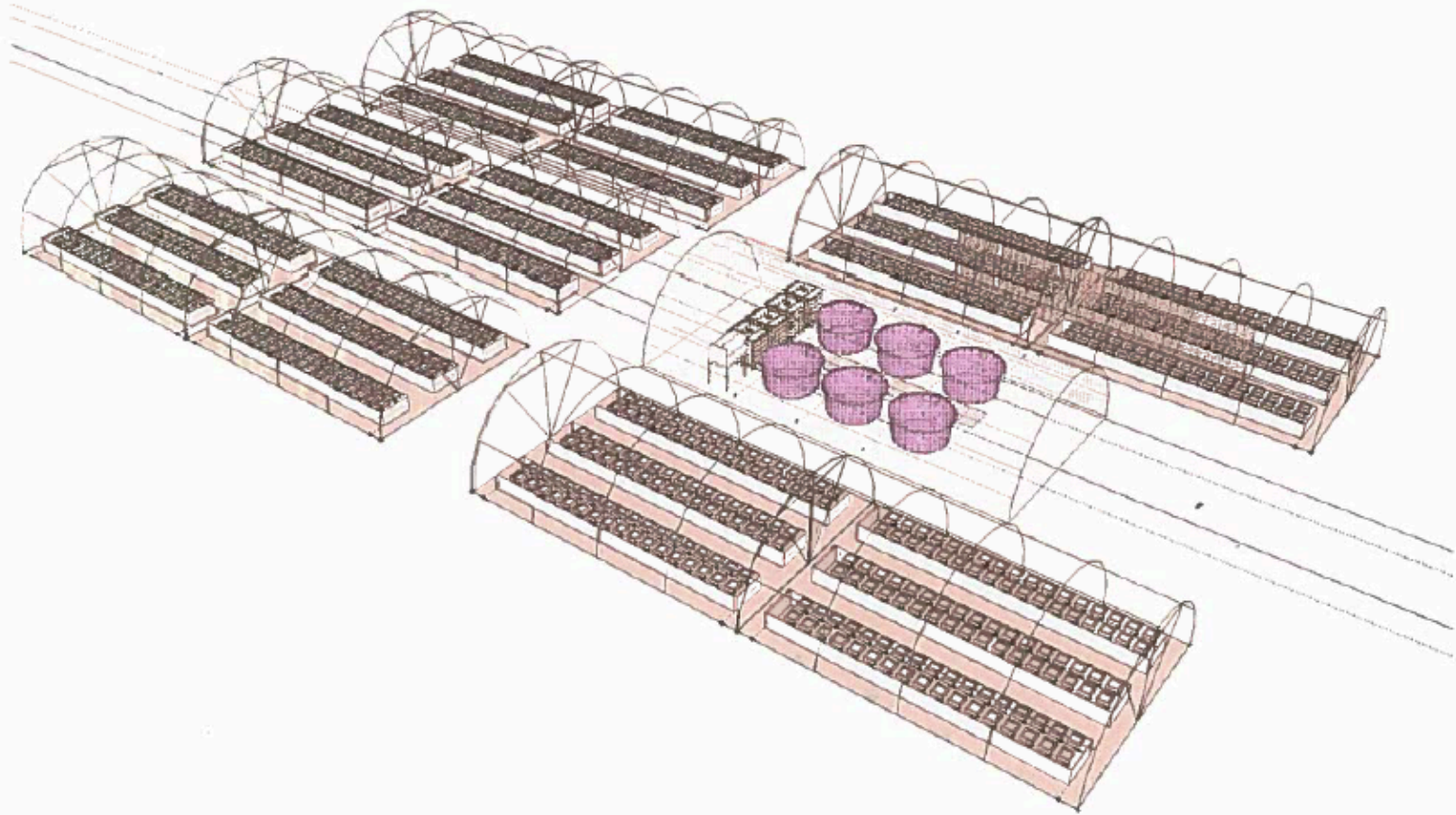
Aquaponics



Aquaponics



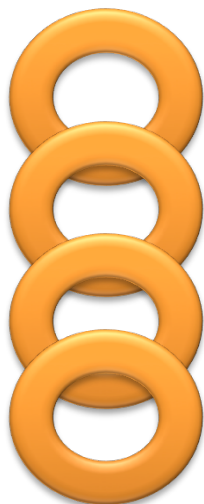
UDC's Aquaponics System-Schematic



Ethnic Crops



CAUSES Urban Food Systems Model



Replicate

Source

**Aquaponics:
fish and
produce**

**Muirkirk
Farm**

**Community
Partners**

Vendors

Prepare

**Business
Kitchen
Incubation
Space**

Food Truck

Distribute

Food Truck

**Farmers
Markets**

Retail

Recycle

**Compost
Facility at
Muirkirk**

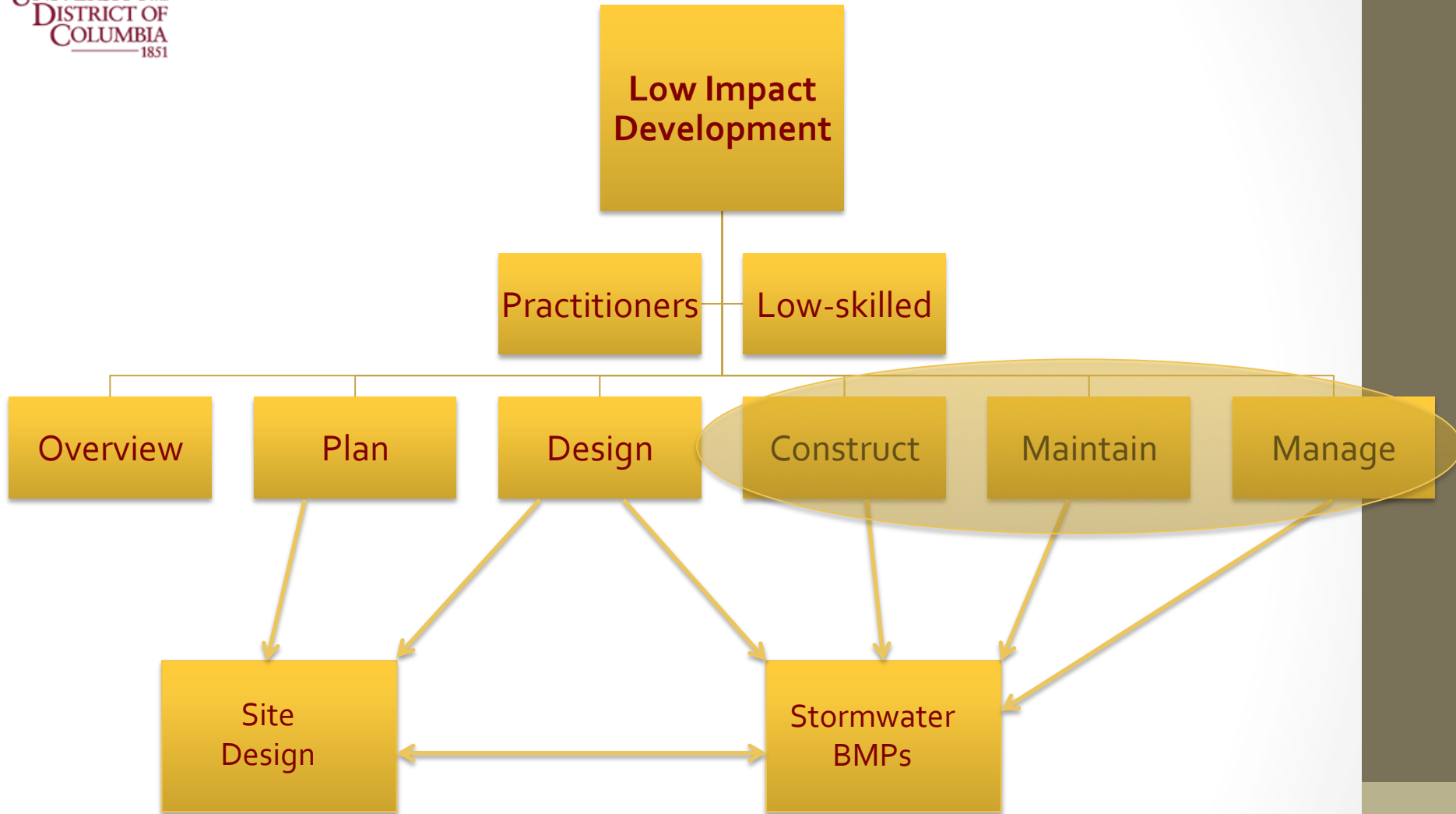
**Anaerobic
Digestors**

- Entrepreneurship
- Communications/Marketing
- Business Planning and Management
- Food Preparation
- Policies and Legal Processes

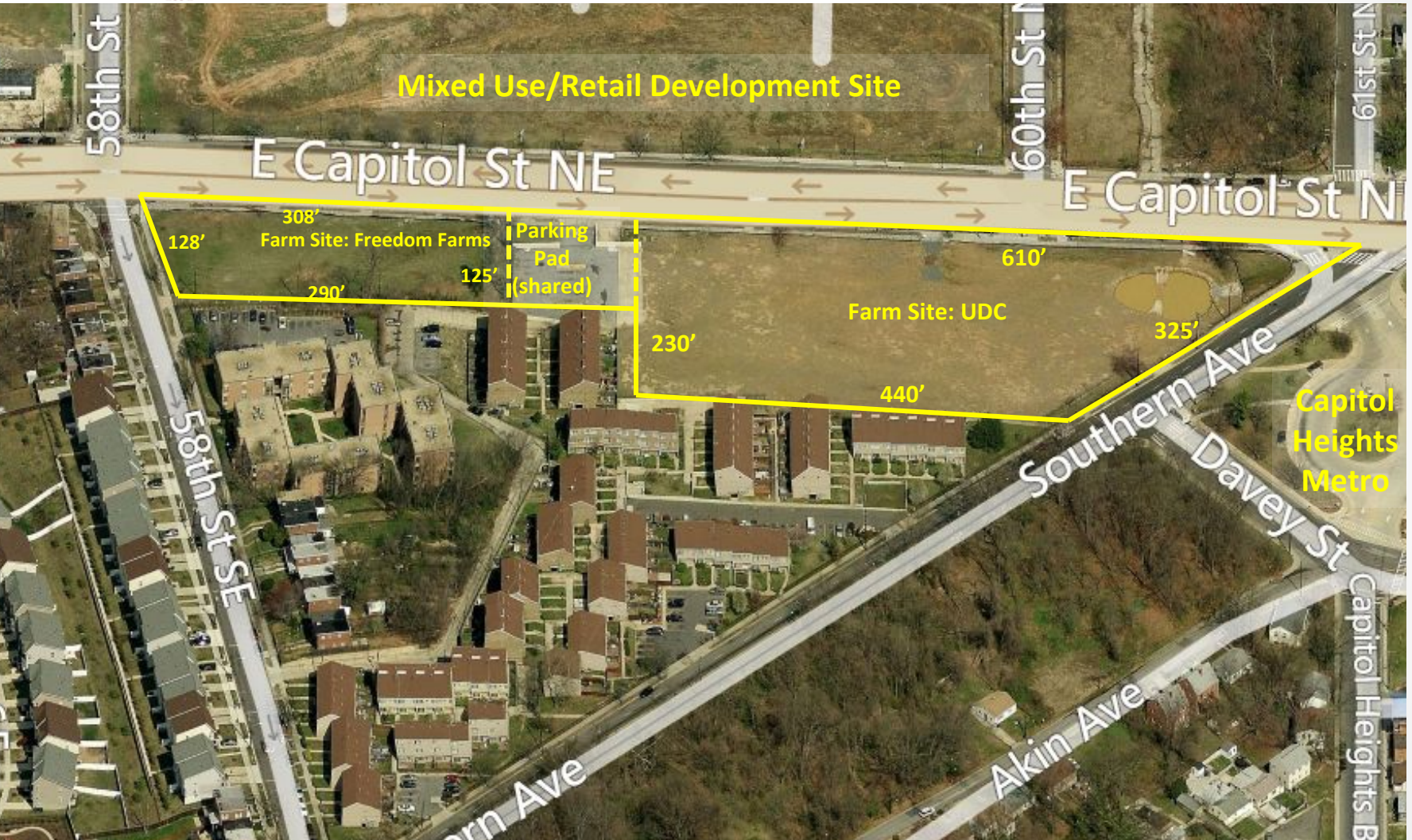
- Economic Analyses
- Environmental Impacts
- Maintenance and Management
- Technical Assistance
- Healthy Foods/minimize fishing from Anacostia

Jones & O'Hara© 2013

CAUSES Urban Stormwater Management Model



Urban Agriculture/DCHA



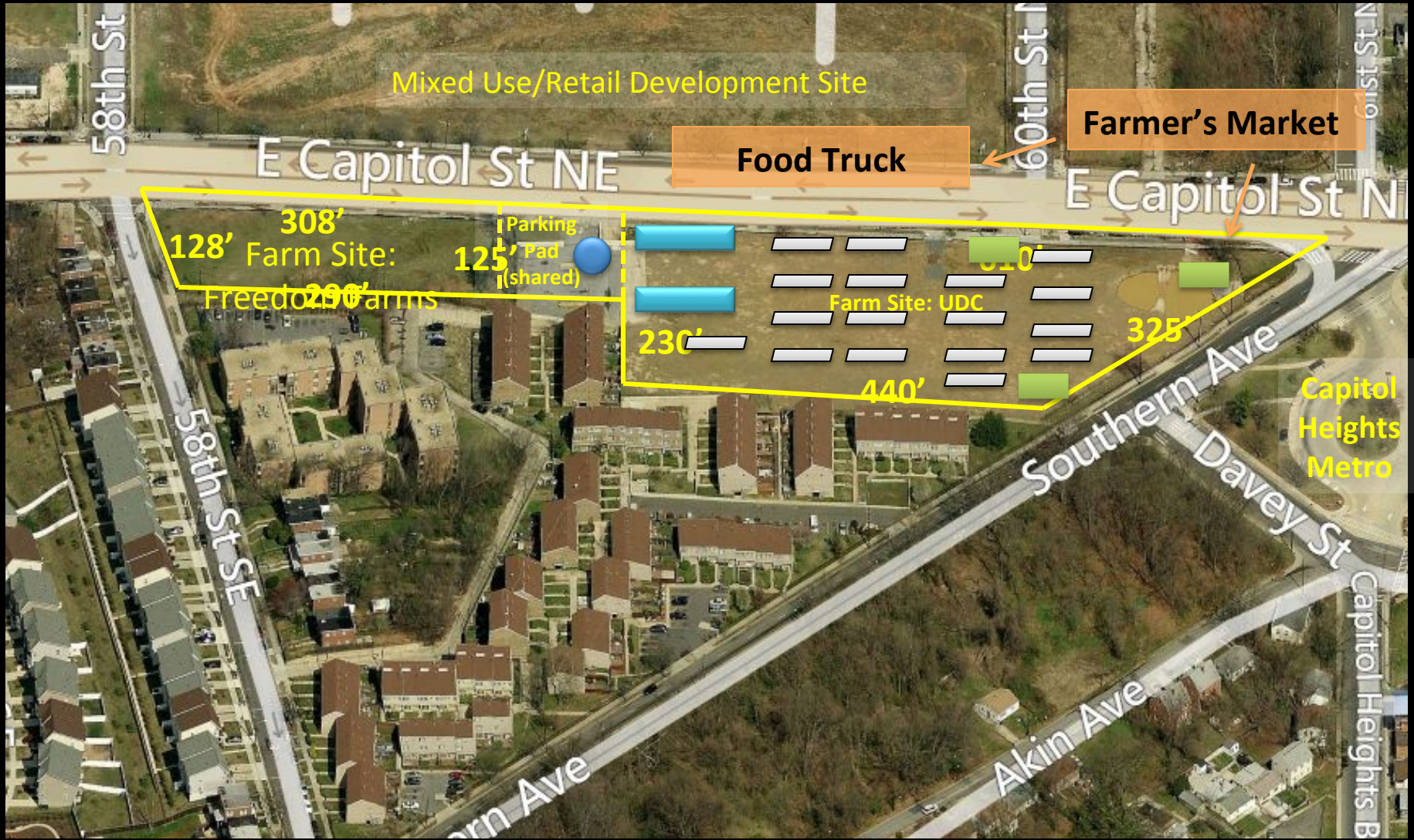
Objectives

- Promote local, urban agriculture
- Promote urban stormwater management
- Create demonstration site
- Enhance job skills
- Create jobs
- Improve public health
- Support community partners and promote similar initiatives

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Farming Site @ 5900 East Capitol Blvd., NE



*Illustration Purposes Only

- = aquaponics
- = green infrastructure
- ▭ = hoop house
- ▭ = raised beds

Aerial Photo:
Courtesy of DCHA

an Stormwater



Graphics: April Phillips, 2013

water pumped from reservoir to fields via pipes

r



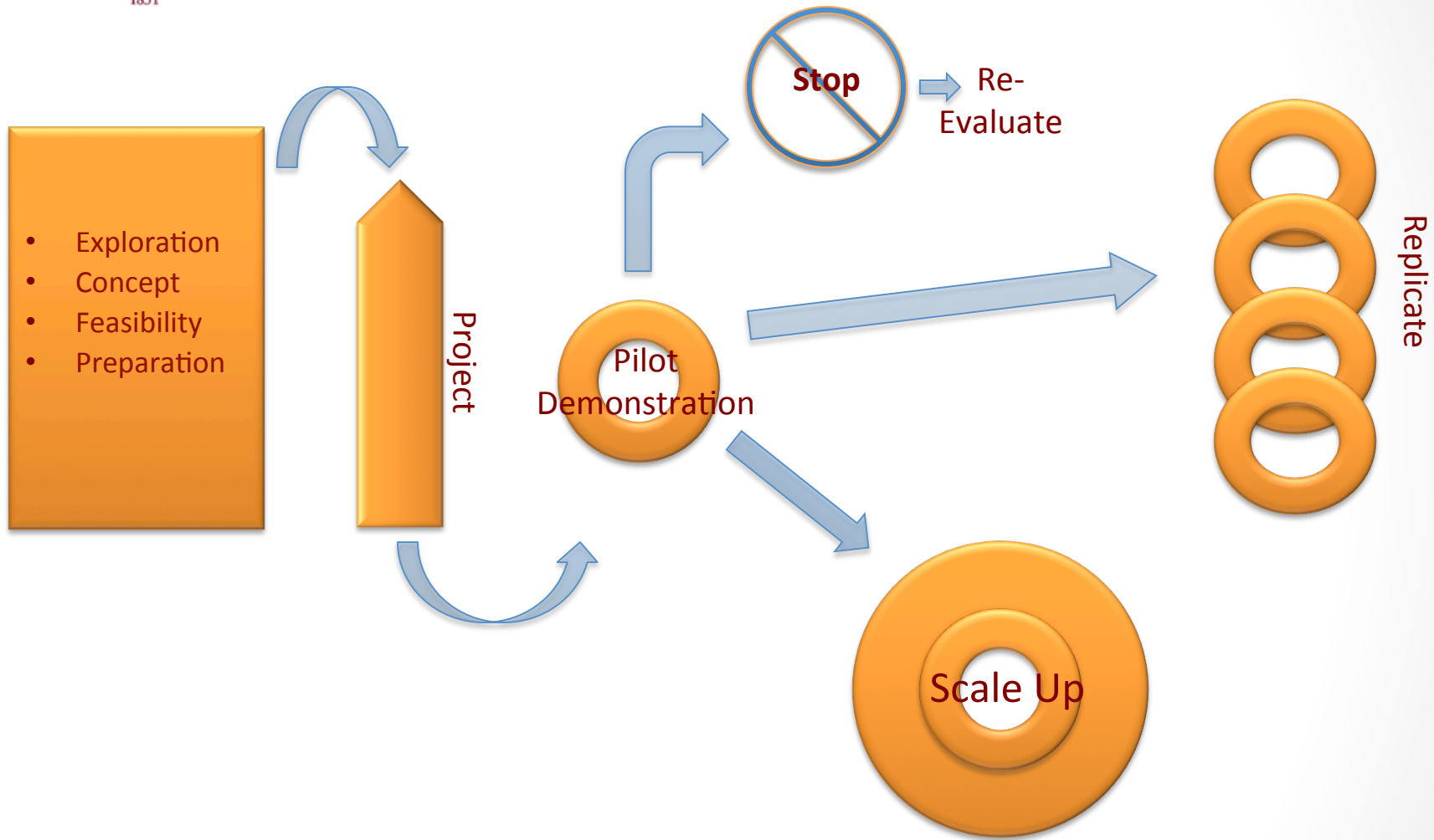
typ. water level

flood overflow

Client: Mary Queen of Vietnam
Community Development
Corporation
Landscape Architect: Spackman Mossop Michaels
Collaborators: Louisiana State University
Urban Landscape Lab
Tulane City Center
University of Montana

Graphics: April Phillips, 2013

CAUSES Demonstration Project Model



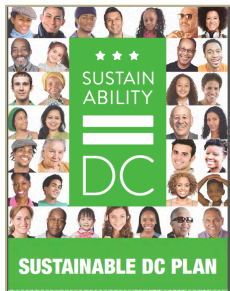
Adapted from CCIA

Partners (short list)

Federal Partners



District Partners



Partners (short list)

Non-Profit Sector



University Partners



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Graphic: Jeffrey Catts

Summary/Next Steps

- Comprehensive strategy for urban food production, processing, distribution, consumption, and recycling.
- Architecture, Nursing, Nutrition, Environment, Health, Economics.
- Food Hubs Concept.
- Model for Temporary Urban Farm Sites.
- Model for demonstration and education.
- Develop a sustainable O & M program.



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Questions?

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