Green Infrastructure

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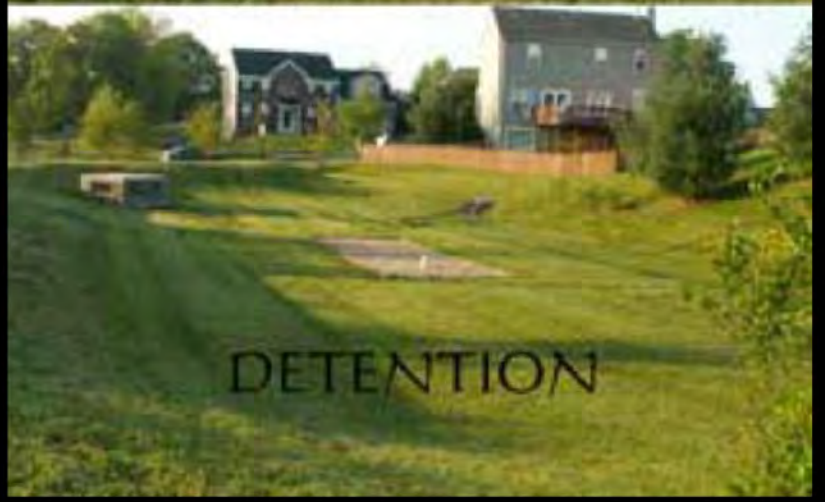
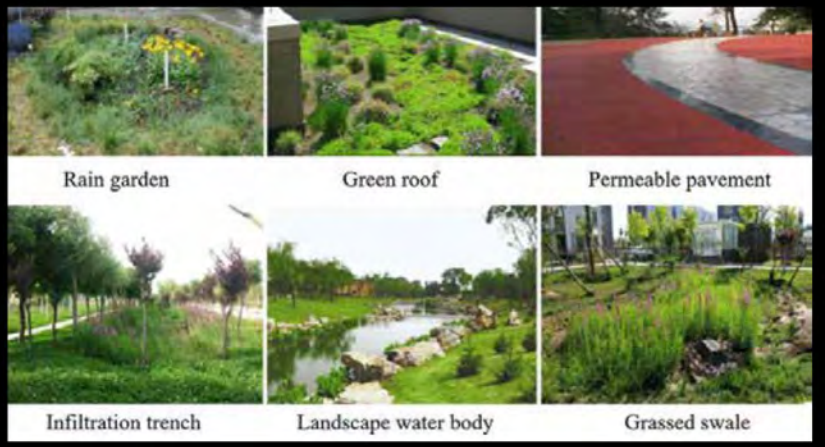
Cromona Buyout Properties: Demonstration Project for Best Management Practices (BMPs) & Low Impact Development (LID)

- Illustrate BMPs and LID to serve as example for current and future buyout properties
- BMPs encompass range of strategies and techniques designed to mitigate adverse effects of flood and stormwater management on the environment and surrounding communities, emphasizing sustainable approaches that minimize pollution, prsernve natural resources, and enhance overall ecosystem resilience; in context of flood and stormwater management, BMPs aim to reduce volume and velocity of runoff, prevent erosion and improve water quality
- One key aspect of BMPs is incorporating LID principles: LID focuses on mimicking natural hydrological processes to manage stormwater at its source, rather than relying solely on conventional 'hard' engineering solutions such as concrete channels and underground pipes
- LID techniques include green roofs, permeable pavements, rain gardens, bioswales and conservation landscapes, all of which can help infiltrate, filter and store stormwater on-site, reducing the volume of runoff entering local waterways and alleviating pressure on traditional drainage systems, thus helping communities address flooding and water quality issues while also promoting environmental sustainability. For example:
    - Green roofs absorb rainfall and reduce the amount of water that flows into storm drains
    - Permeable pavements allow water to percolate into th eground, replenishing groundwater supplies and reducing the risk of flooding
- BMPs and LID offer additional benefits beyond flood and stormwater management. They enhance biodiversity, provide habitat for wildlife, and contribute to the aesthetic value of communities. By preserving natural landscapes and promoting green infrastructure, BMPs and LID foster a more sustainable approach to urban development that prioritizes environmental stewardship and long-term resilience
- BMPs and LID play crucial roles in flood and stormwater management by offering sustainable solutions that reduce the environmental impact of urbanization while safeguarding communities against the adverse effects of flooding and water pollution. By integrating these practices into planning and development processes, cities and municipalities can create more resilient, livable environments for current and future generations.

https://www.retrofittingresilience.com/






Kentucky


Fleming-Neon
Cromona
Tolliver Town

internet storm-drains

sewage

health-care garbage electricity

drinking-water

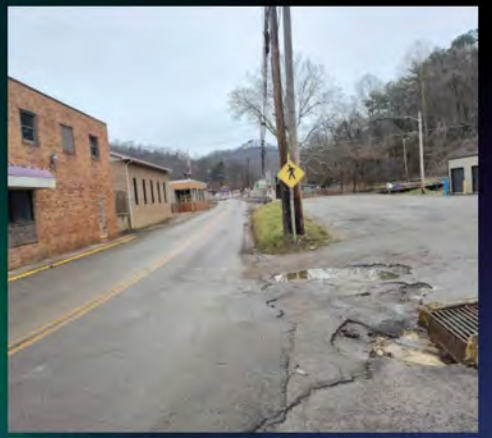
roadways

food-security

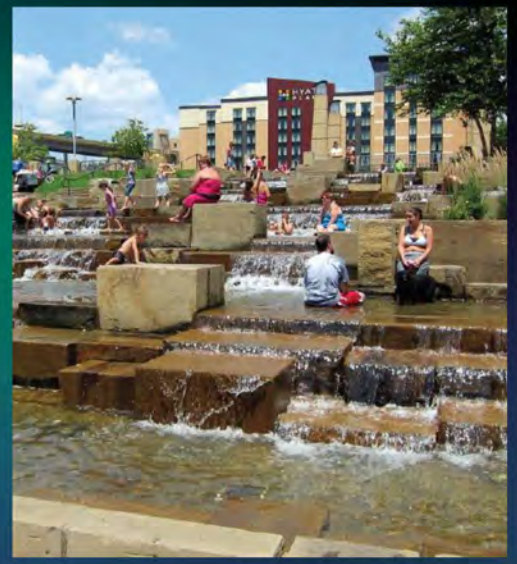

ELLIOT

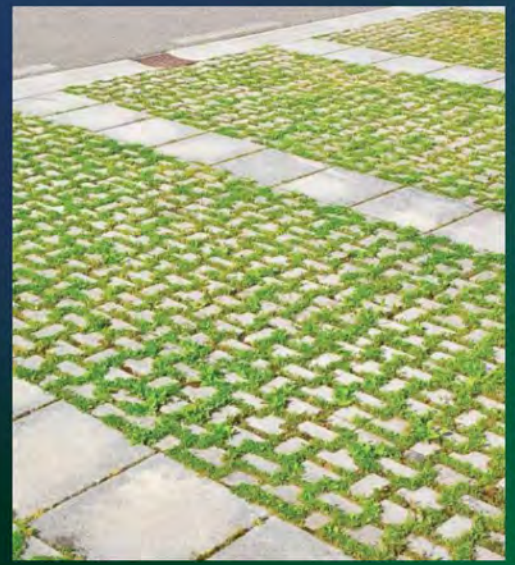
NEON CITY PARK

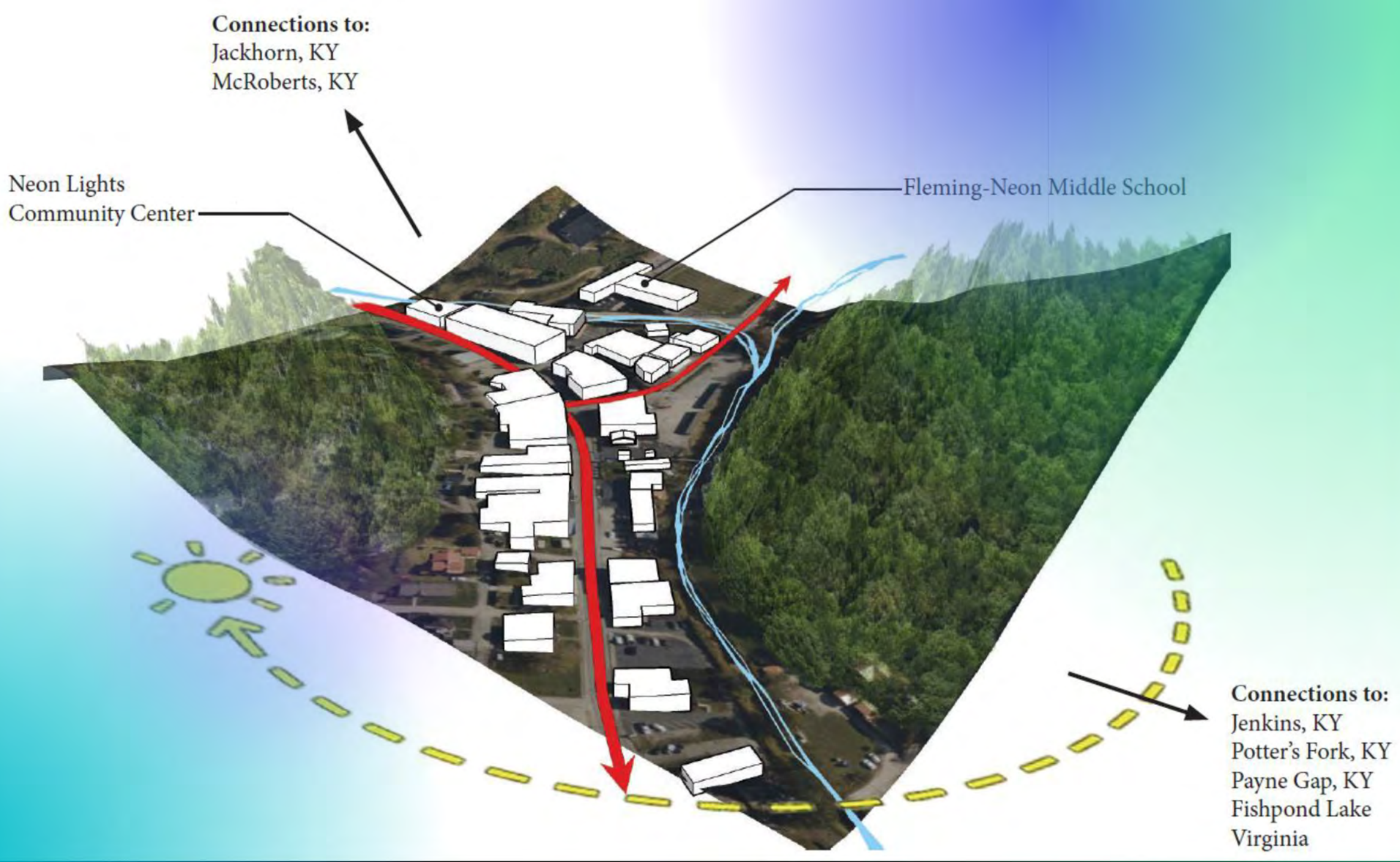
AT WRIGHTS FORK CREEK

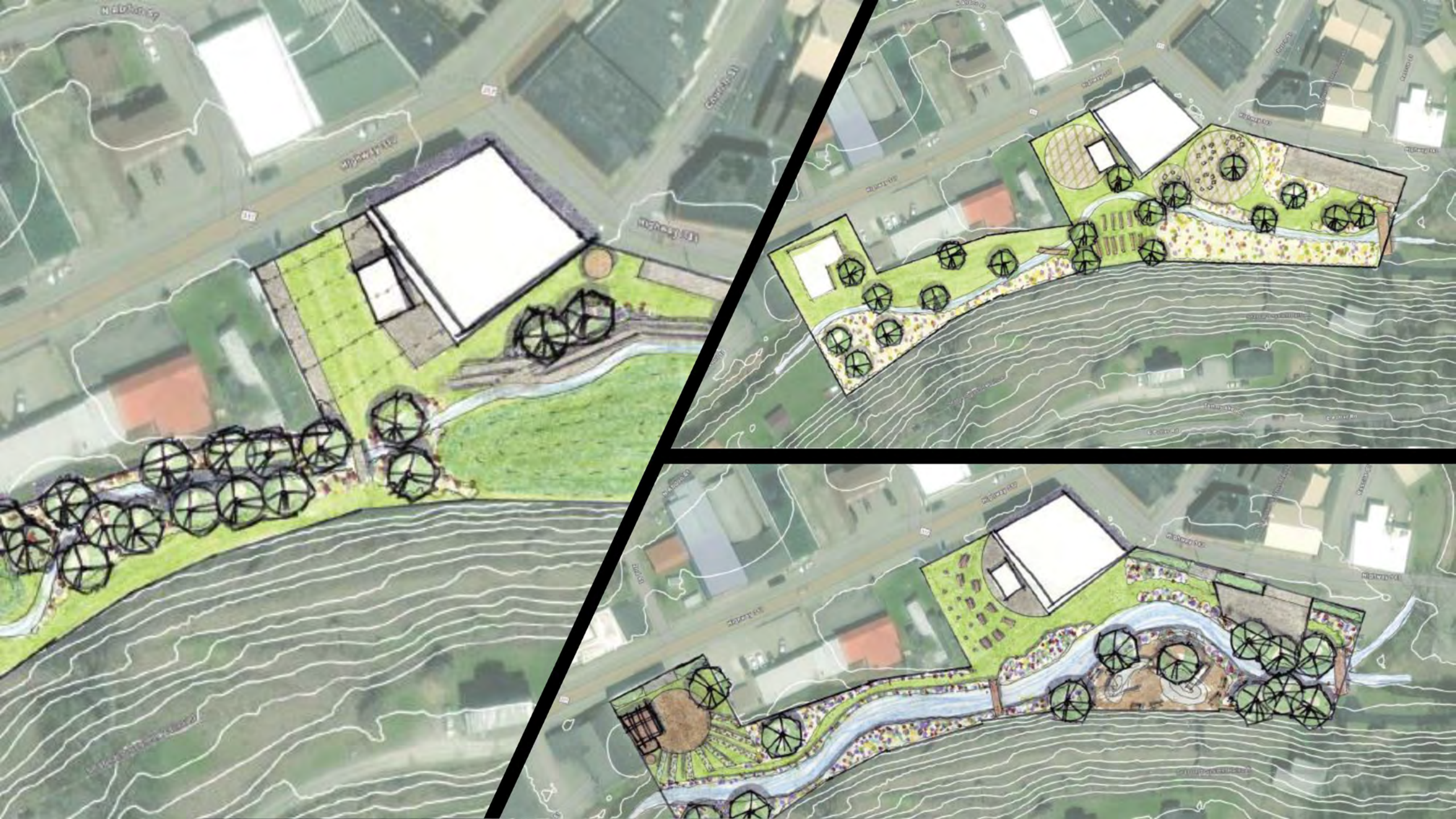



BEFORE
AFTER






Connections to:
Jackhorn, KY
McRoberts, KY
Neon Lights
Community Center
Fleming-Neon Middle School
Connections to:
Jenkins, KY
Potter's Fork, KY
Payne Gap, KY
Fishpond Lake
Virginia



Q = (0.90) * (1/12 feet/hour) * (67,802 square feet)
Q = 5,066 cfs

On the existing site, the peak stormwater runoff rate for this location, based on the Rational Method, is approximately 5,066 cubic feet per second.

Q=(0.90)×(1/12 feet/hour)×(3,500 square feet)
Q=262.5 cfs

With the new design for neon City Park, the peak stormwater runoff rate for this location, with an impervious paving area of 3,500 square feet, is approximately 262.5 cubic feet per second.

Image 20: Section through plan option 1

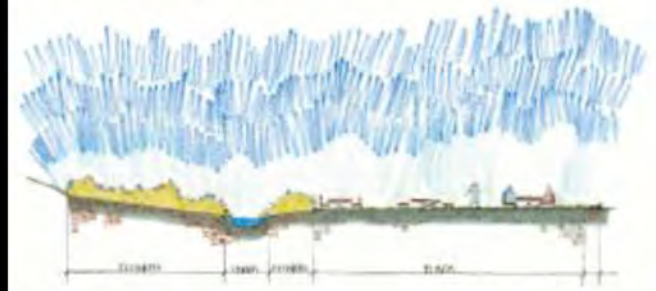
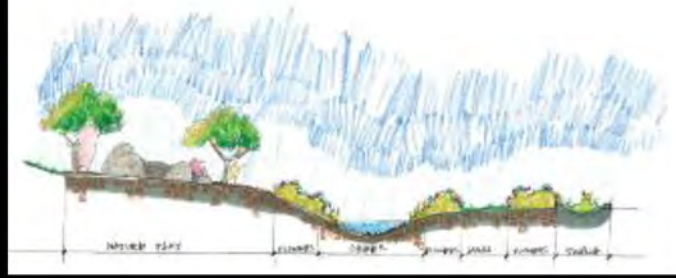


Image 21: Section through plan option 2




mion


lumion

Neon Exchange

Kendall Shockley

Green Infrastructure

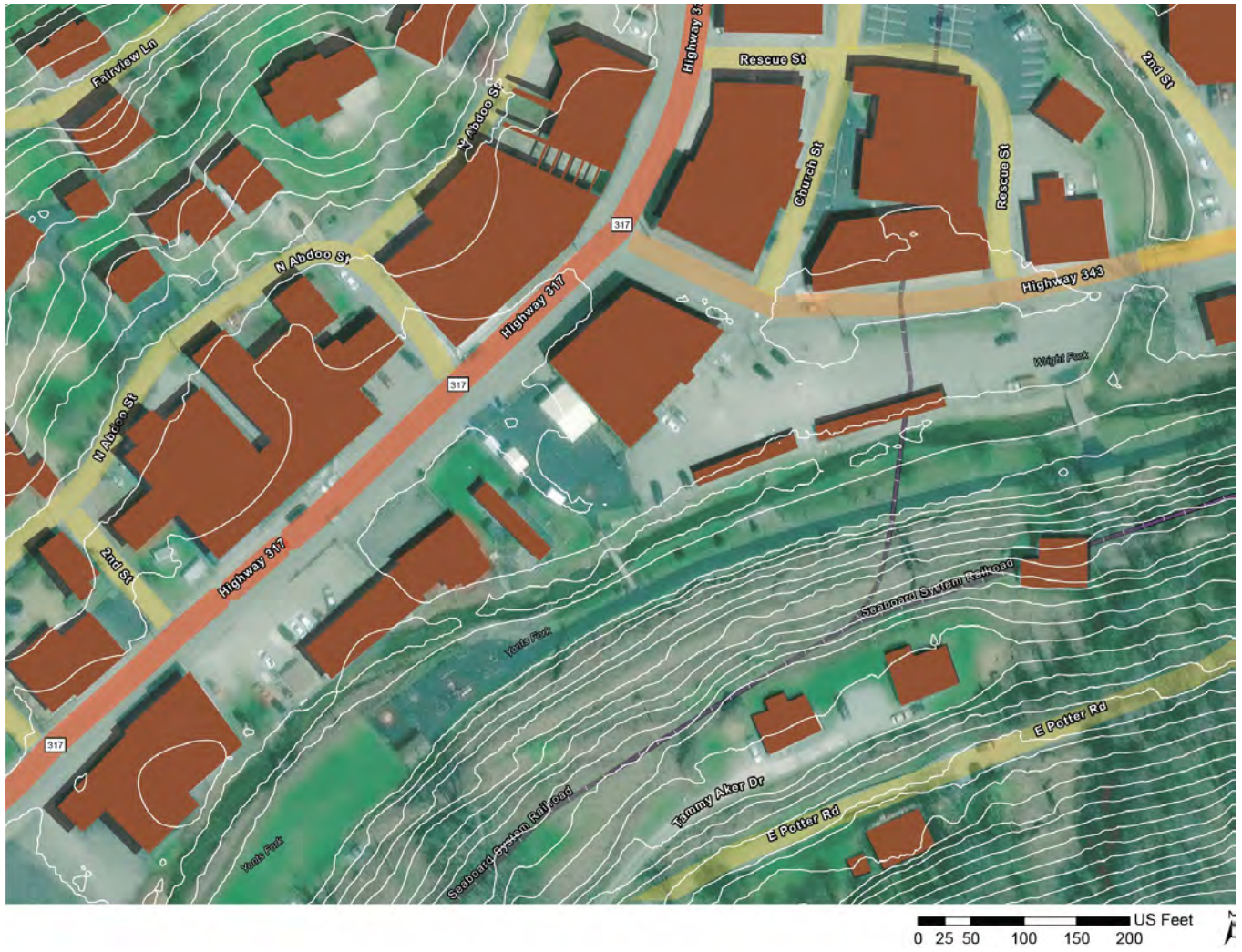
- Bioretention ponds
- Bioswales
- Permeable pavers
- Rain gardens
- Green roofs
- Rain barrels

Precedents

- Education opportunities
- Community events
- Fresh food supply
- Sustainable planting palette

Inventory/Analysis

- Runs along Wright Fork
- Non-permeable surfaces
- Located close to the stage
- Heart of downtown
- Adjacent to main intersection



Concept 1: Social Stairs

Concept 2: Themed Gardens and Nature Play

Concept 3: Farmers Market

Site Plan

- Combination of all three
- Elements:
  - Community Garden
  - Memorial Garden
  - Nature Trail
  - Nature Play
  - Social Stairs
  - Central Plaza
  - Bioretention Pond/Bioswales
  - Parallel Parking

Final Schematic


US Feet
0 25 50 100 150 200
N


US Feet
0 25 50 100 150 200
N


US Feet
0 25 50 100 150 200
N

Phasing

Bioretention Pond Perspective

Memorial Garden Perspective

Section

- Community Garden on the FEMA buyout property

Section

- From the Central Plaza to Wright Fork