

GREEN INFRASTRUCTURE LAFAYETTE 2014

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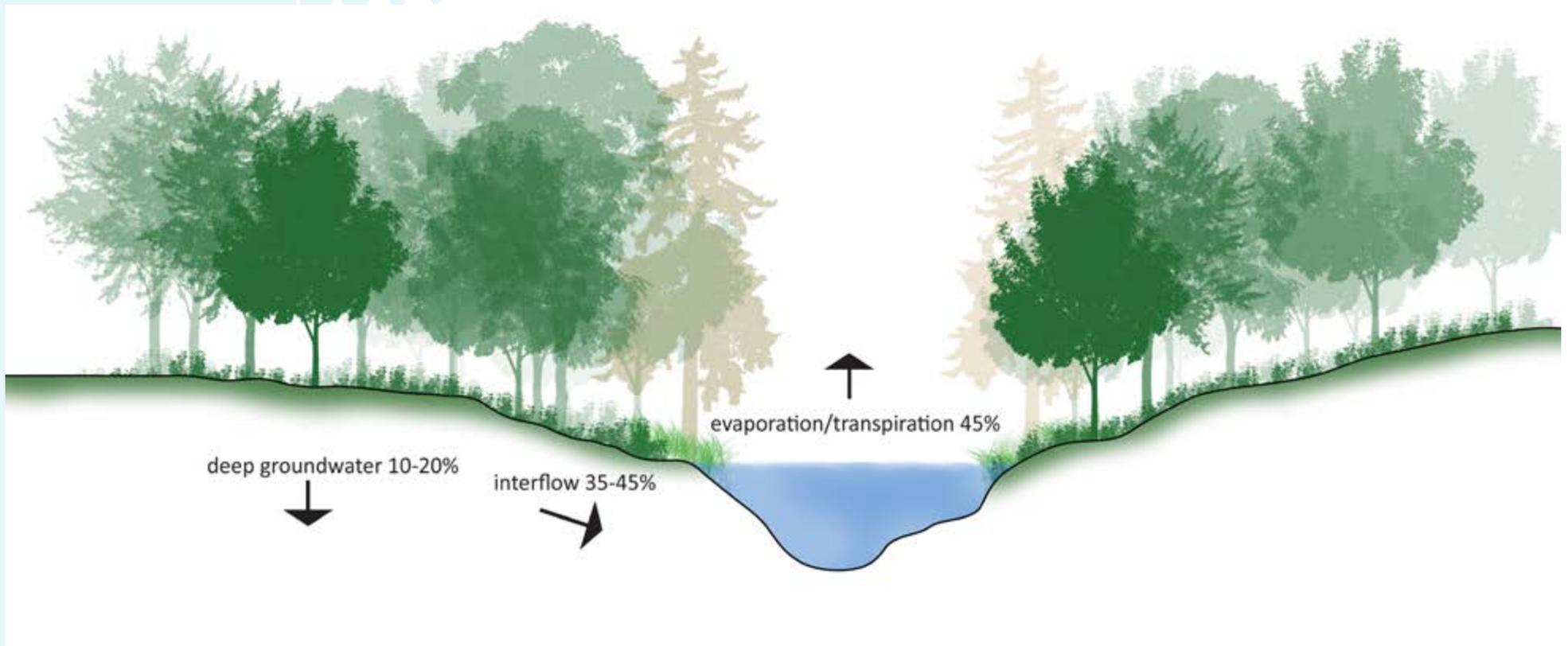
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AGENDA

- **NATURAL HYDROLOGY VS TRADITIONAL DRAINAGE**
- **STORMWATER MANAGEMENT APPROACH**
- **GREEN INFRASTRUCTURE STRATEGIES**
- **BENEFITS**

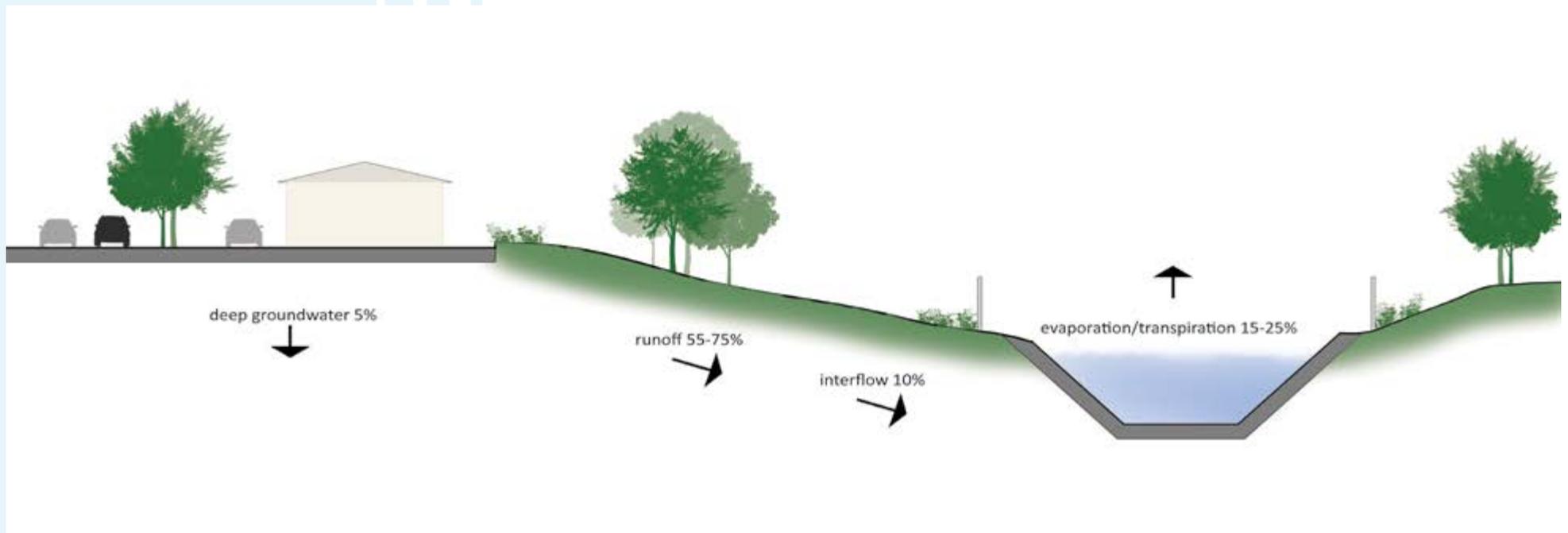
NATURAL HYDROLOGY

- RAINFALL PRIMARILY PERCOLATES INTO THE GROUND AND FLOWS AS GROUNDWATER
- HELD AND ABSORBED BY TREES AND OTHER VEGETATION
- EVAPORATED INTO THE ATMOSPHERE



TRADITIONAL DRAINAGE

- CLEARS THE LAND OF ALMOST ALL EXISTING VEGETATION
- MUCH OF THE GROUND IS PAVED
- DRAINAGE CHANNELS ARE MOSTLY CONCRETE LINED AND SURROUNDED BY CHAIN-LINK FENCING
- MUCH OF THE SW DOESN'T PERCOLATE INTO THE GROUND AND BECOMES RUNOFF



TRADITIONAL DRAINAGE

MOVE WATER AS QUICKLY AS POSSIBLE AWAY FROM WHERE RAIN FALLS

- COLLECT STORMWATER
- CONVEY STORMWATER
- DISPOSE OF STORMWATER



TRADITIONAL DEVELOPMENT

CLEARY AVENUE, NEW ORLEANS



TRADITIONAL DEVELOPMENT



SUBURBAN SINGLE FAMILY:

47% PERVIOUS
53% IMPERVIOUS
12% TREE CANOPY

URBAN RESIDENTIAL:

28% PERVIOUS
72% IMPERVIOUS
14% TREE CANOPY

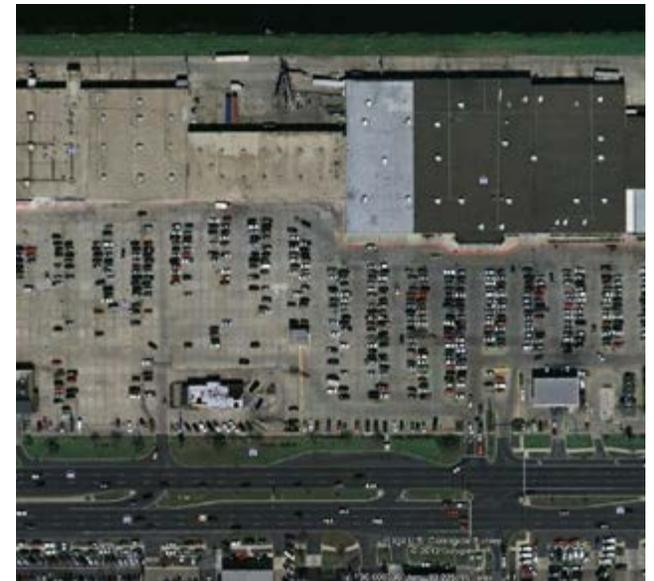


URBAN DENSE:

28% PERVIOUS
72% IMPERVIOUS
14% TREE CANOPY

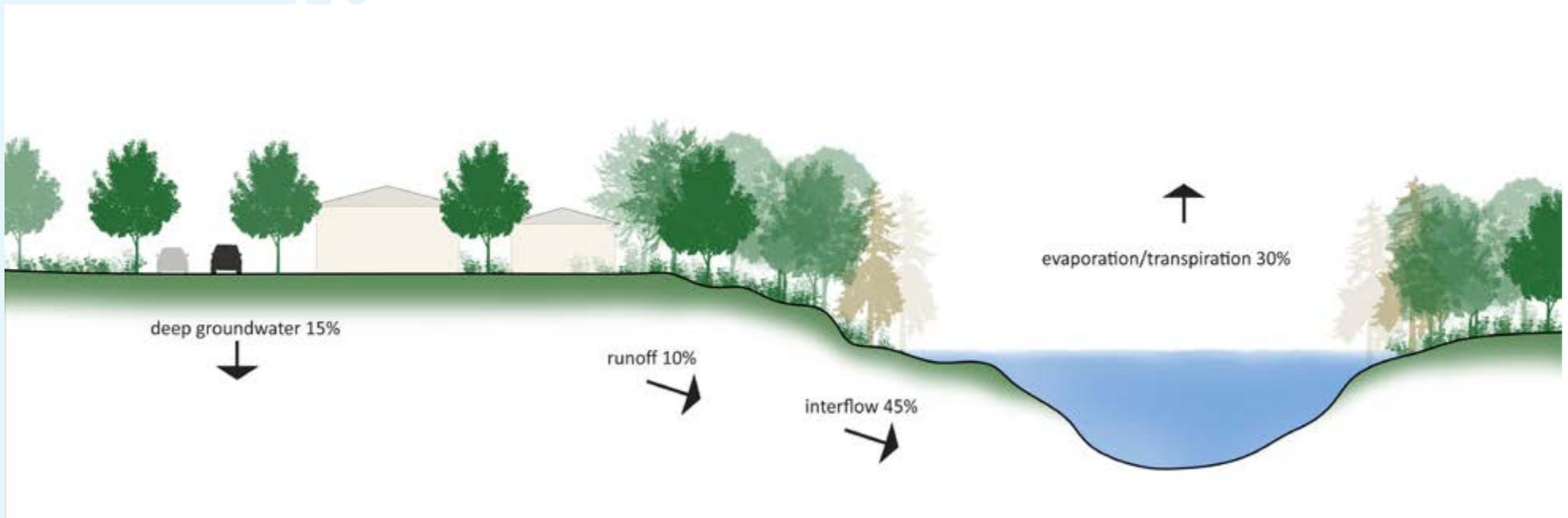
COMMERCIAL, LIGHT INDUSTRIAL:

12% PERVIOUS
88% IMPERVIOUS
4% TREE CANOPY



GREEN INFRASTRUCTURE STRATEGIES

- USES EXISTING NATURAL SYSTEMS AS MUCH AS POSSIBLE IN NEW DEVELOPMENT
- EXISTING TREES ARE RETAINED
- IMPERVIOUS SURFACES ARE MINIMIZED
- BANKS OF DRAINAGE CHANNELS ARE MAINTAINED IN THEIR NATURAL STATE
- ENVIRONMENTALLY SENSITIVE + LOWER OVERALL DEVELOPMENT COSTS



GREEN INFRASTRUCTURE STRATEGIES

GREEN INFRASTRUCTURE

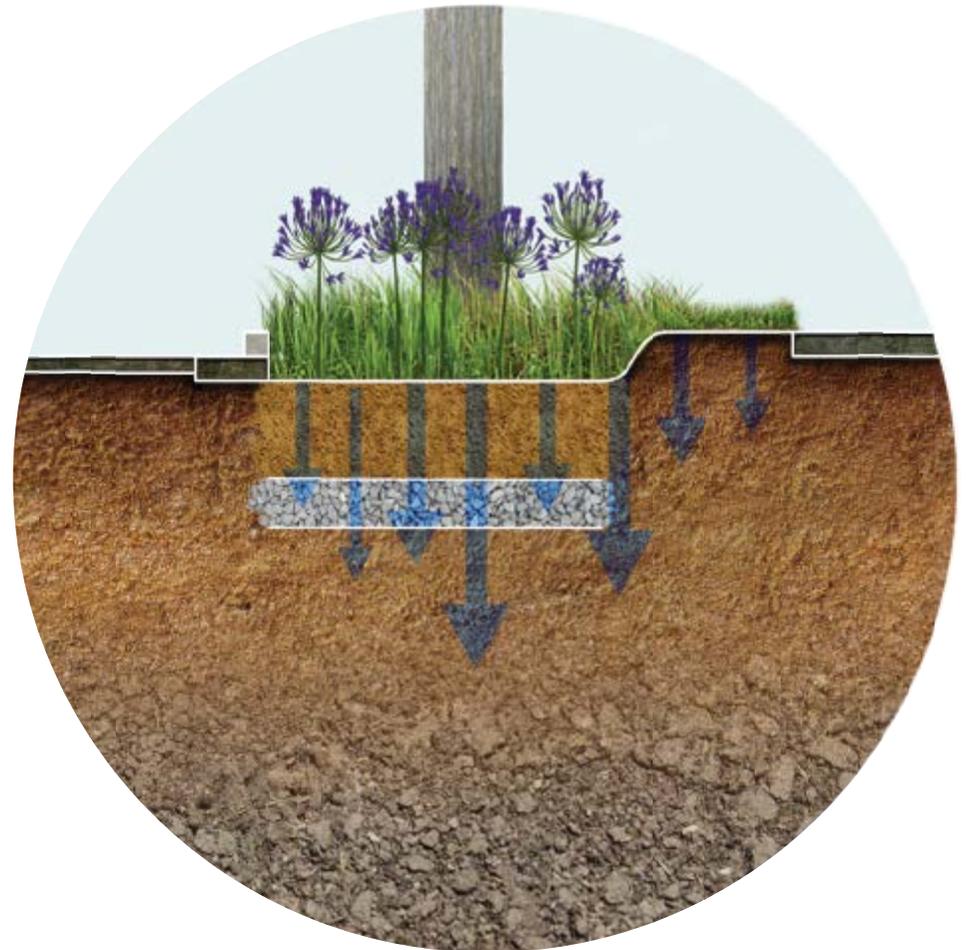
DETAILS WATER



FILTERS POLLUTANTS

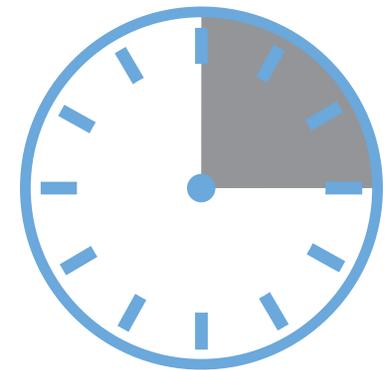
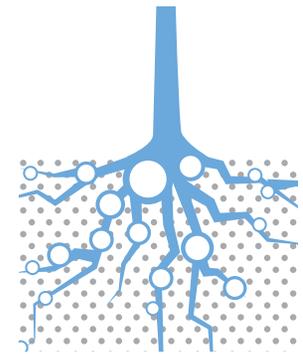
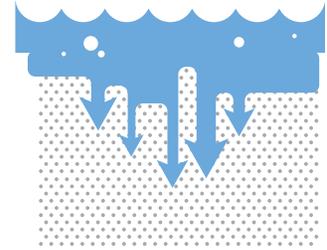


RECHARGES GROUNDWATER

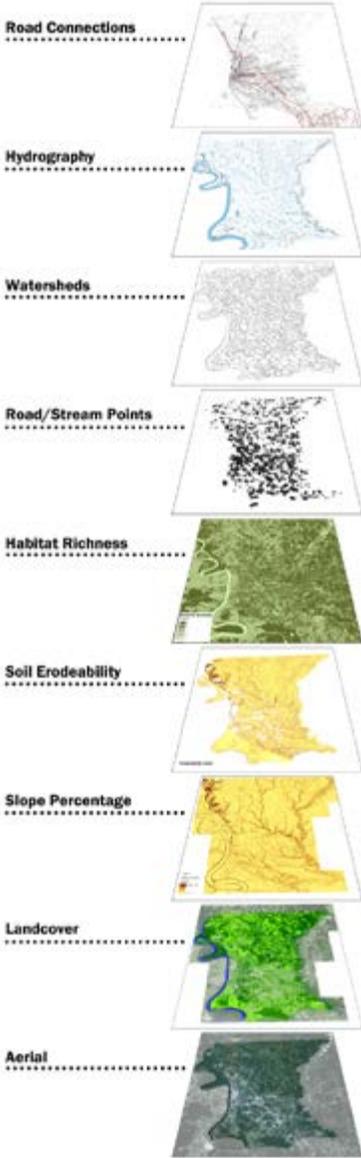


GREEN INFRASTRUCTURE STRATEGIES

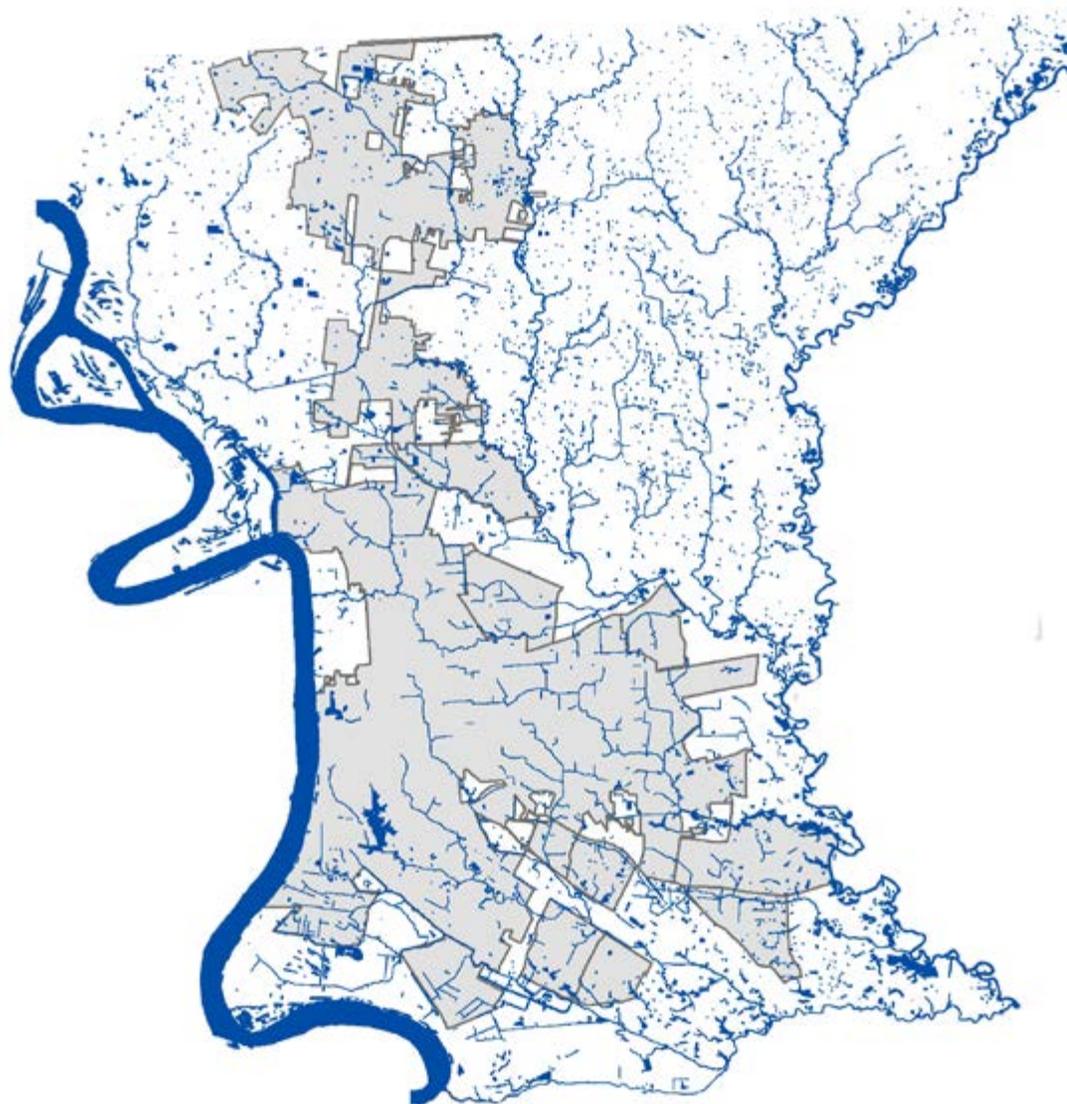
- INFILTRATION
 - FILTRATION
 - RETENTION/DETENTION
-
- ALL INVOLVE EXTENDING THE TIME OF CONCENTRATION
 - ALL INVOLVE INCREASING RESIDENCE TIME IN GREEN INFRASTRUCTURE



BATON ROUGE // GIS LAYERING



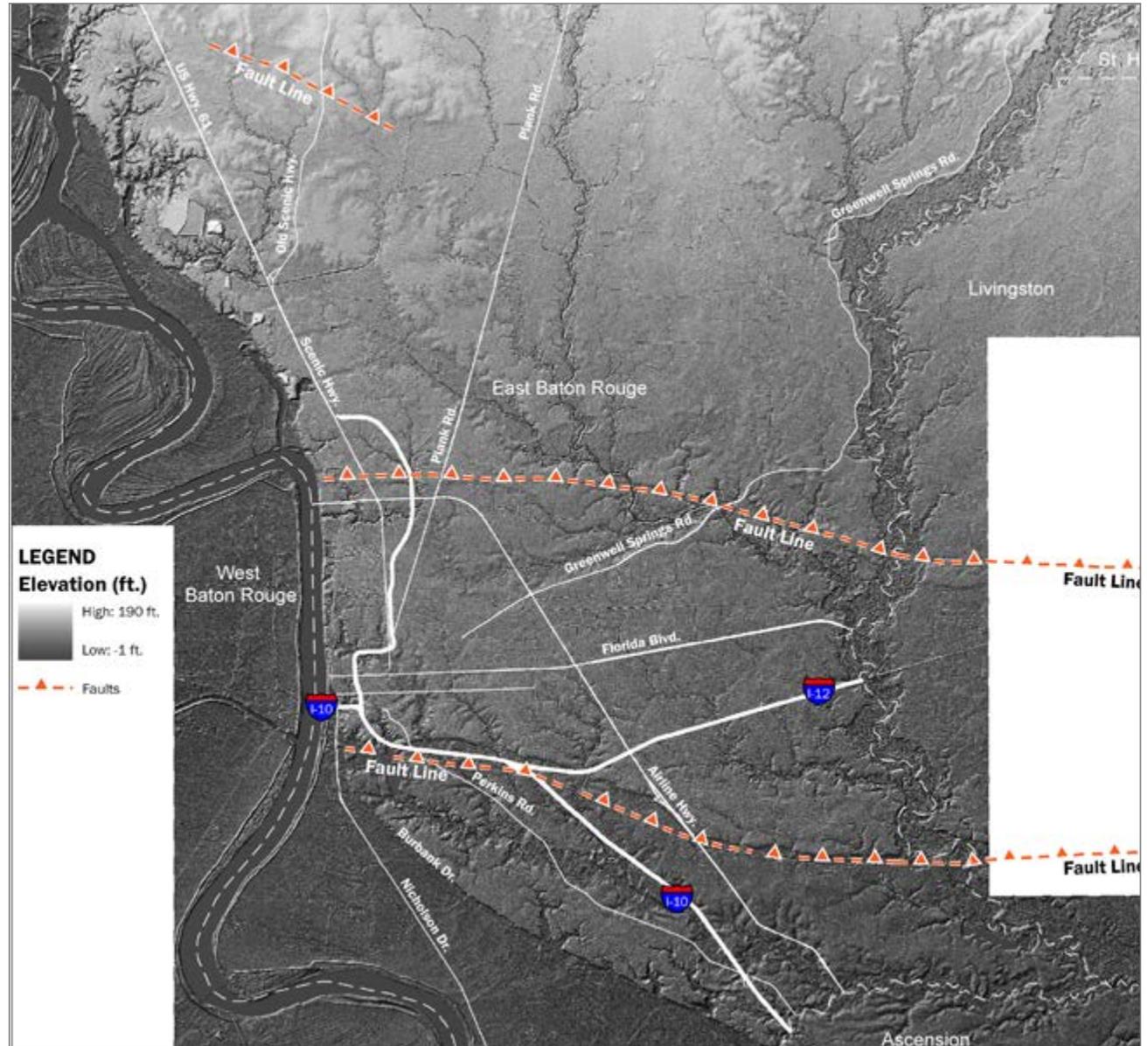
BATON ROUGE // WATER BODIES



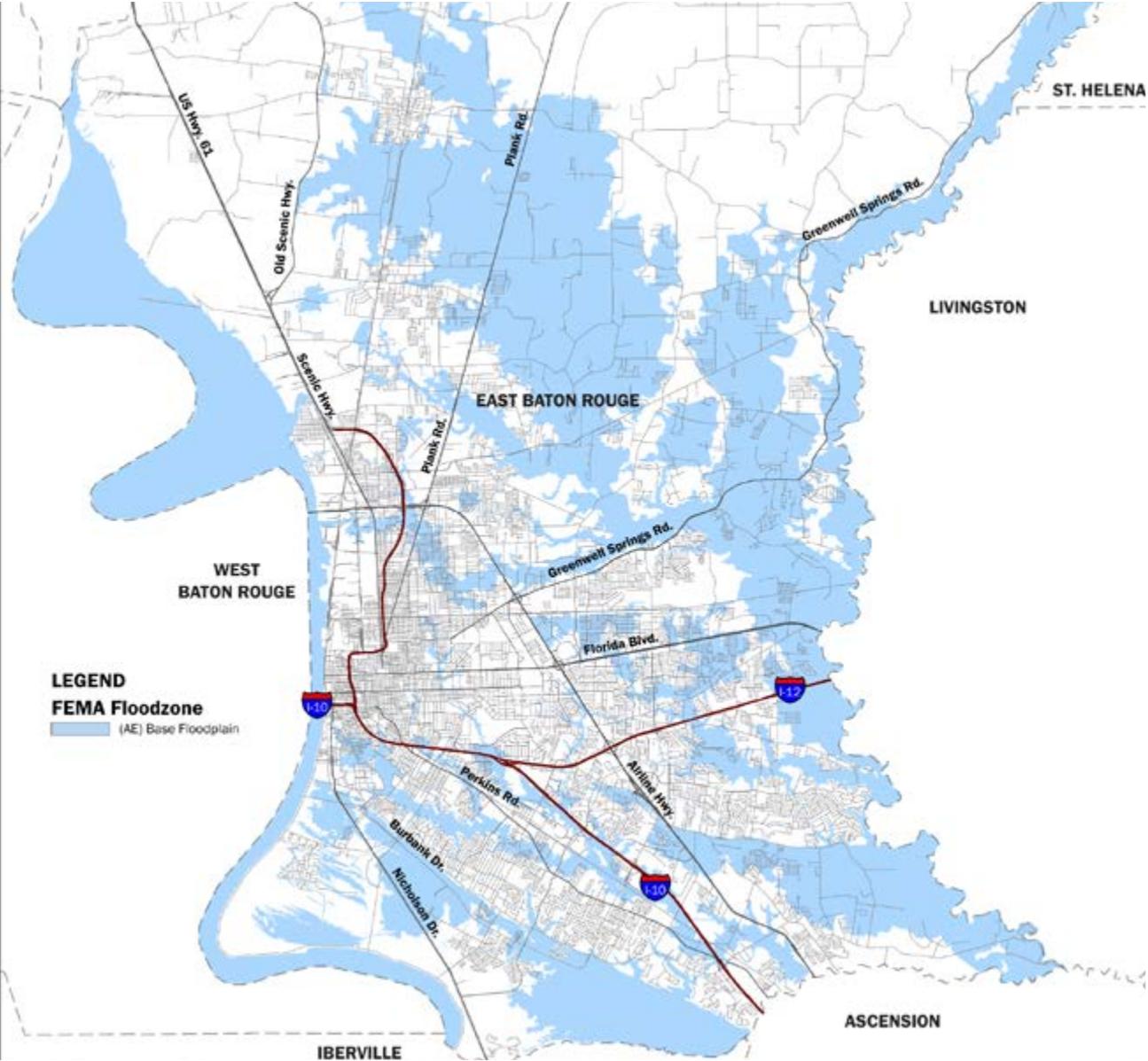
CANAL STREET CANAL



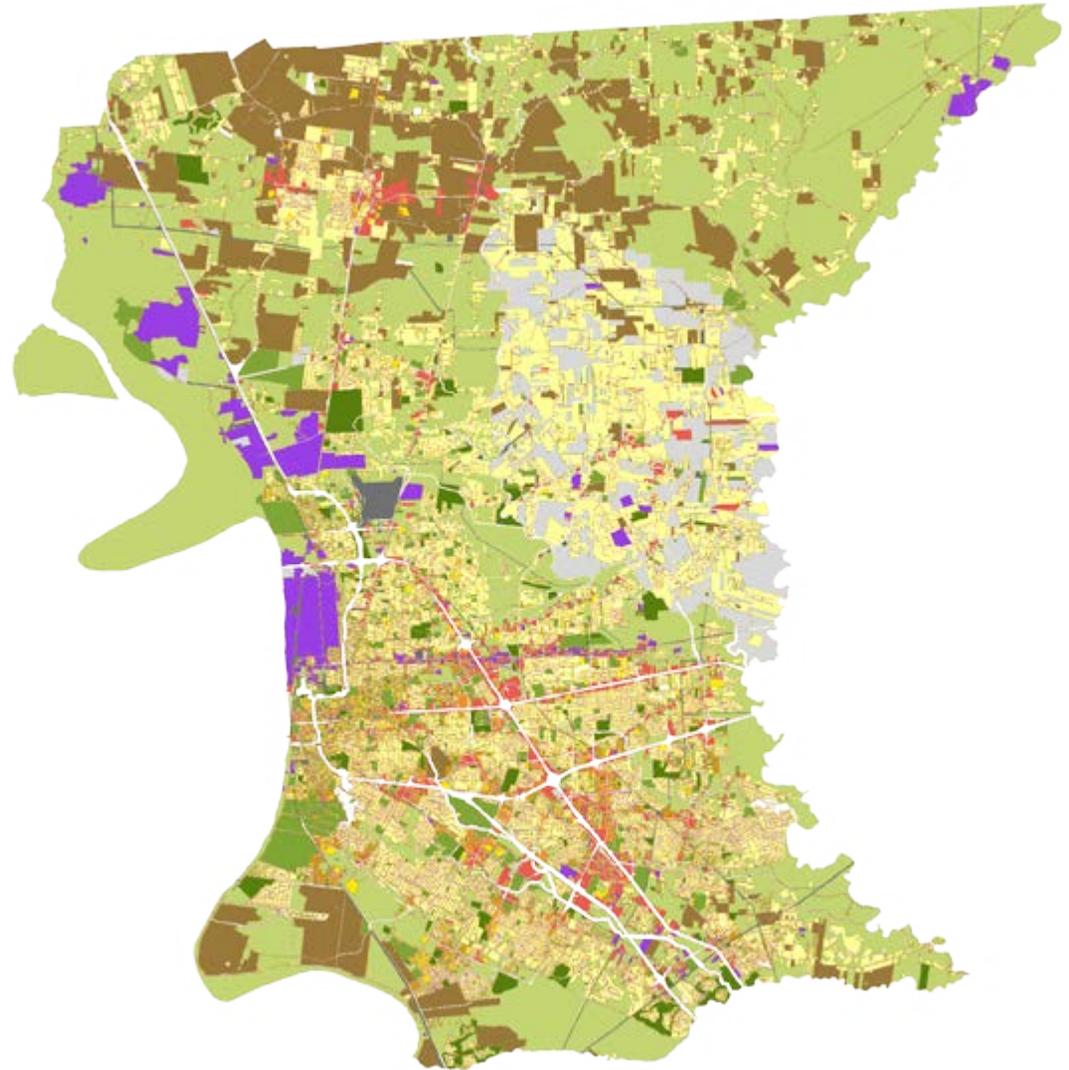
BATON ROUGE // ELEVATION



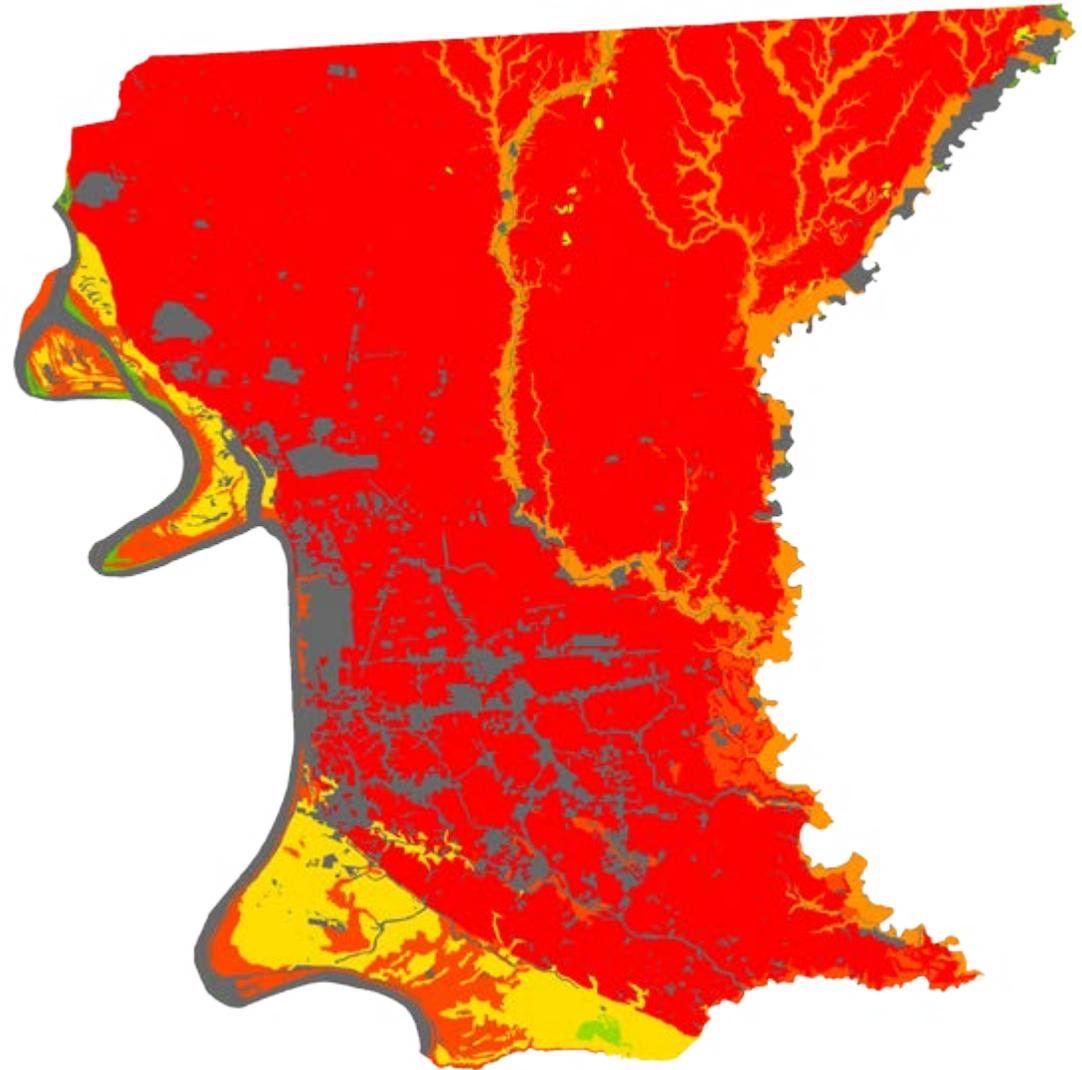
BATON ROUGE // FLOODZONES



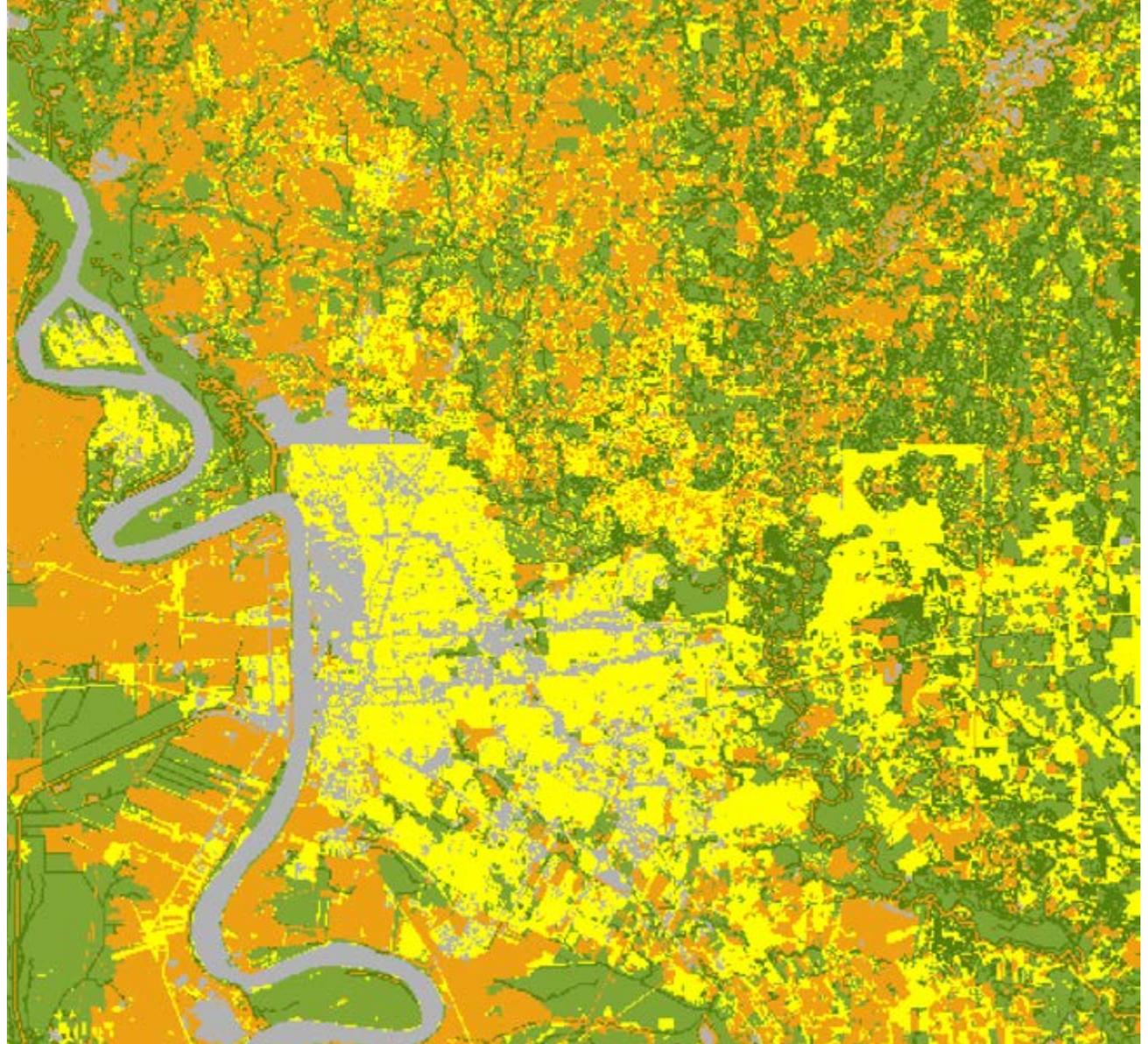
BATON ROUGE // LAND USE MAP



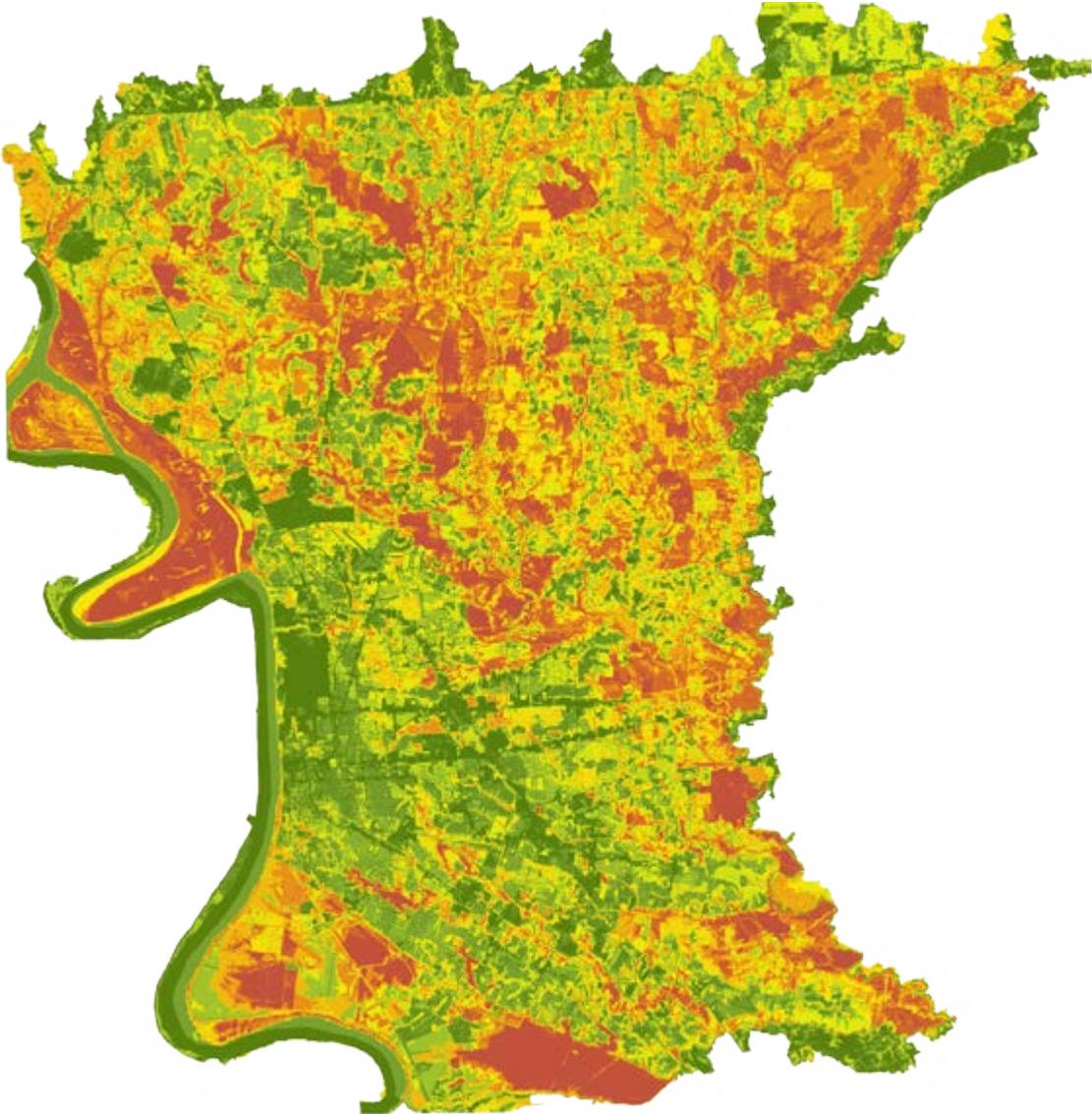
BATON ROUGE // SOIL FACTORS



BATON ROUGE // HABITAT RICHNESS



BATON ROUGE // SENSITIVE LANDS



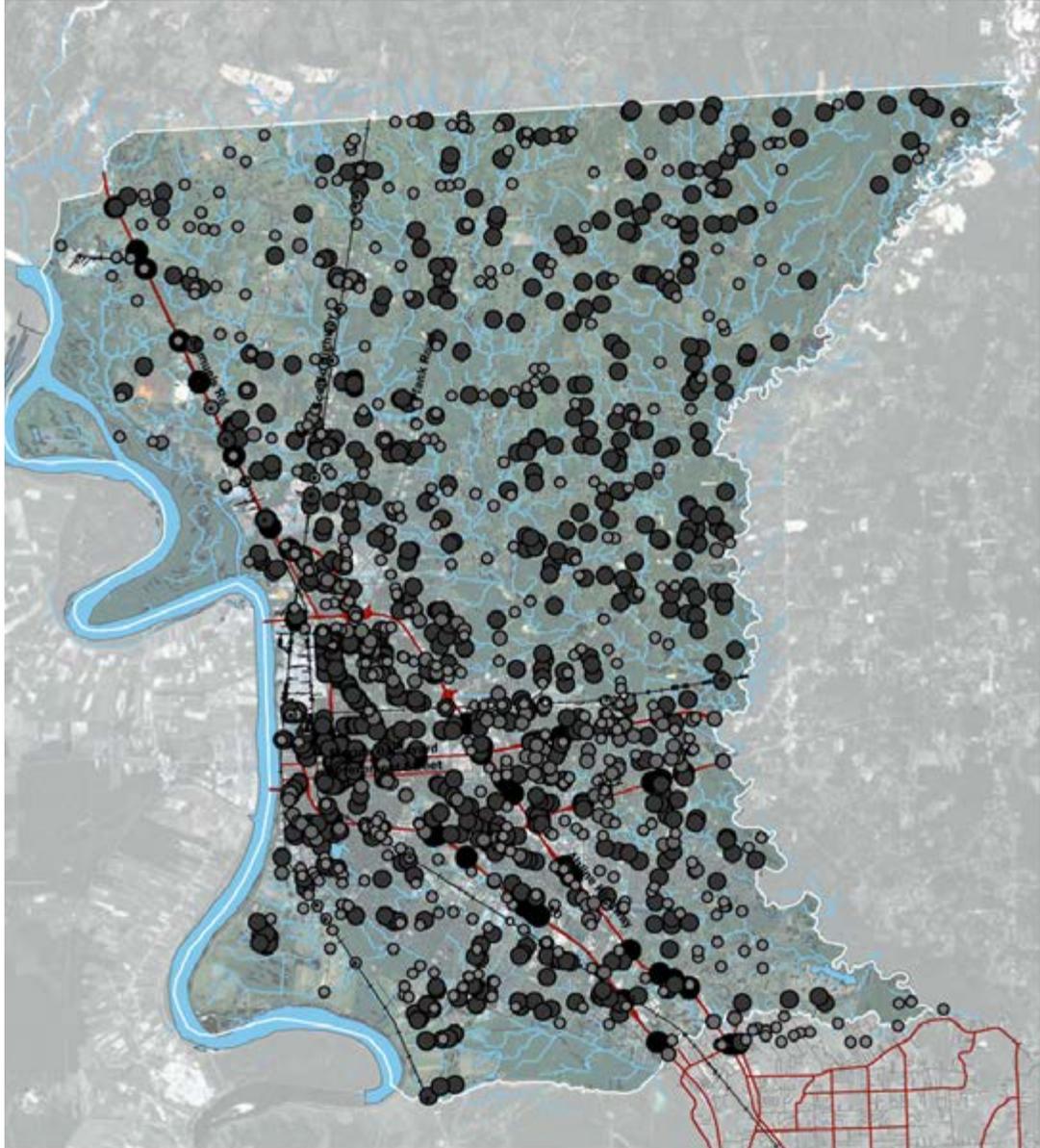
BATON ROUGE // ROAD STREAM INTERSECTIONS

Roads 2009

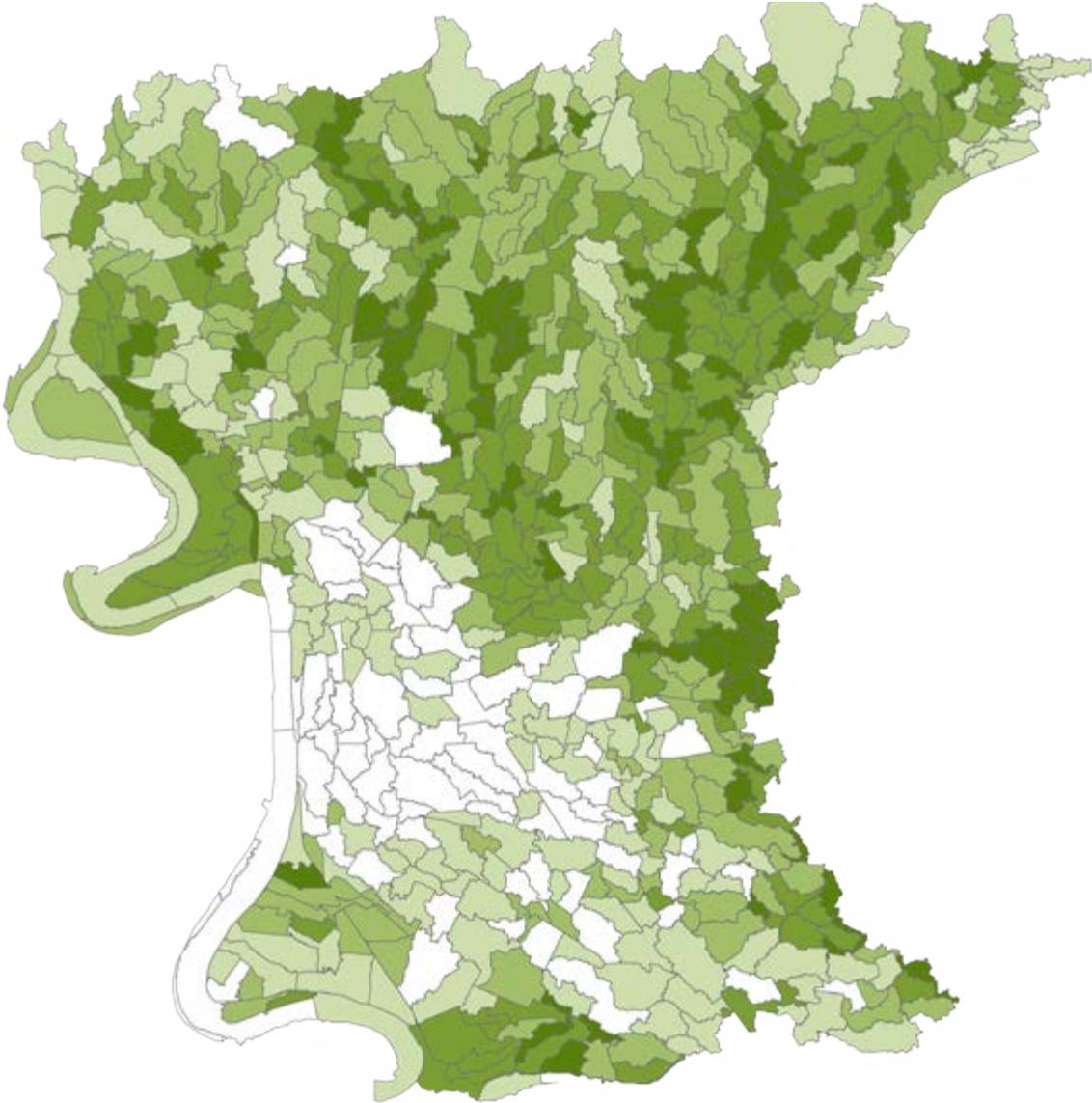
- ACTIVE RAILROAD
- AIRPORT
- PRIMARY ROAD
- SECONDARY ROAD
- CPPC Streams
- Hydrography
- Micro Watersheds

Rd/Stream Intersection Impact

- 1
- 2
- 3
- 4



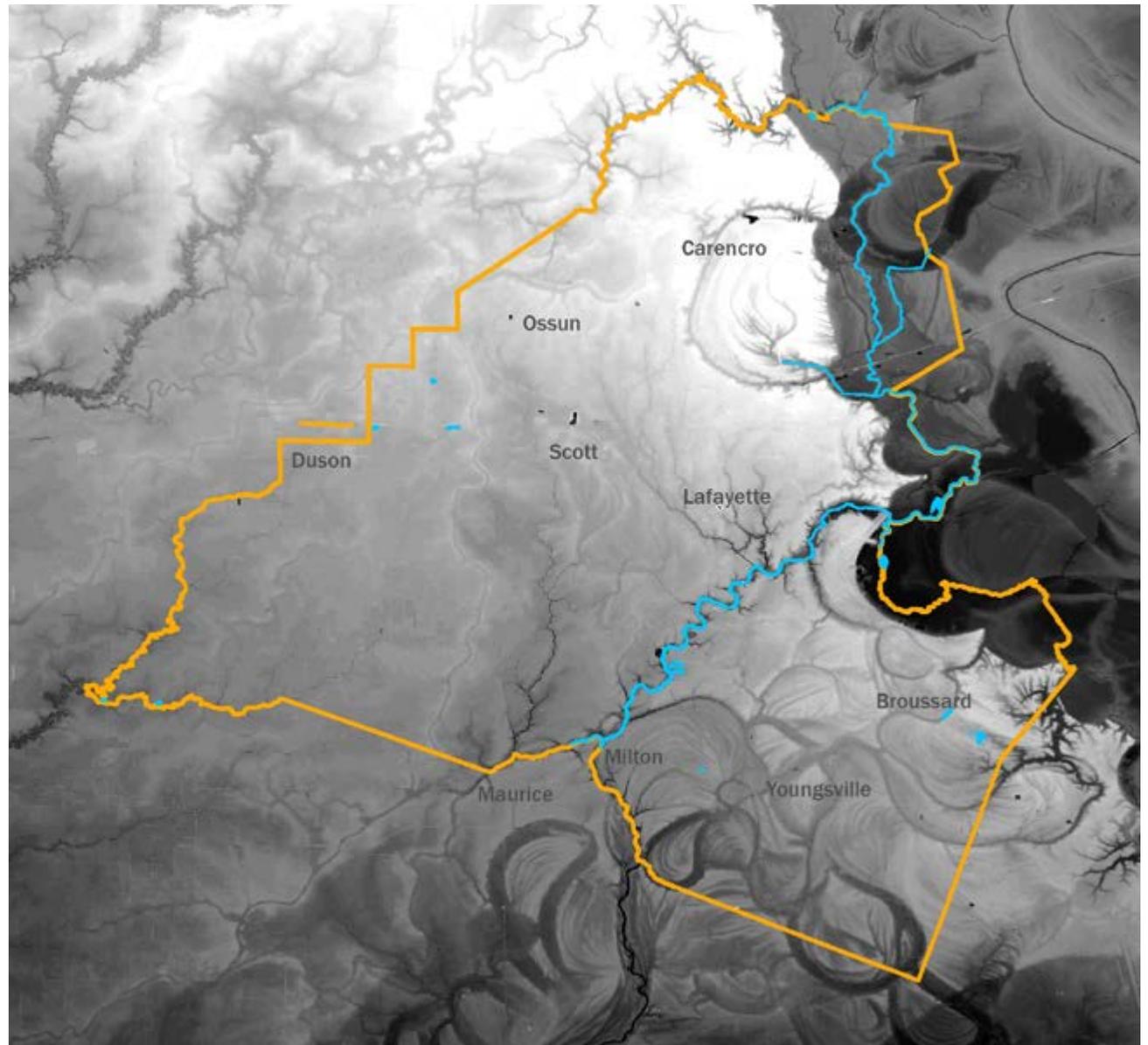
BATON ROUGE // SENSITIVE WATERSHEDS



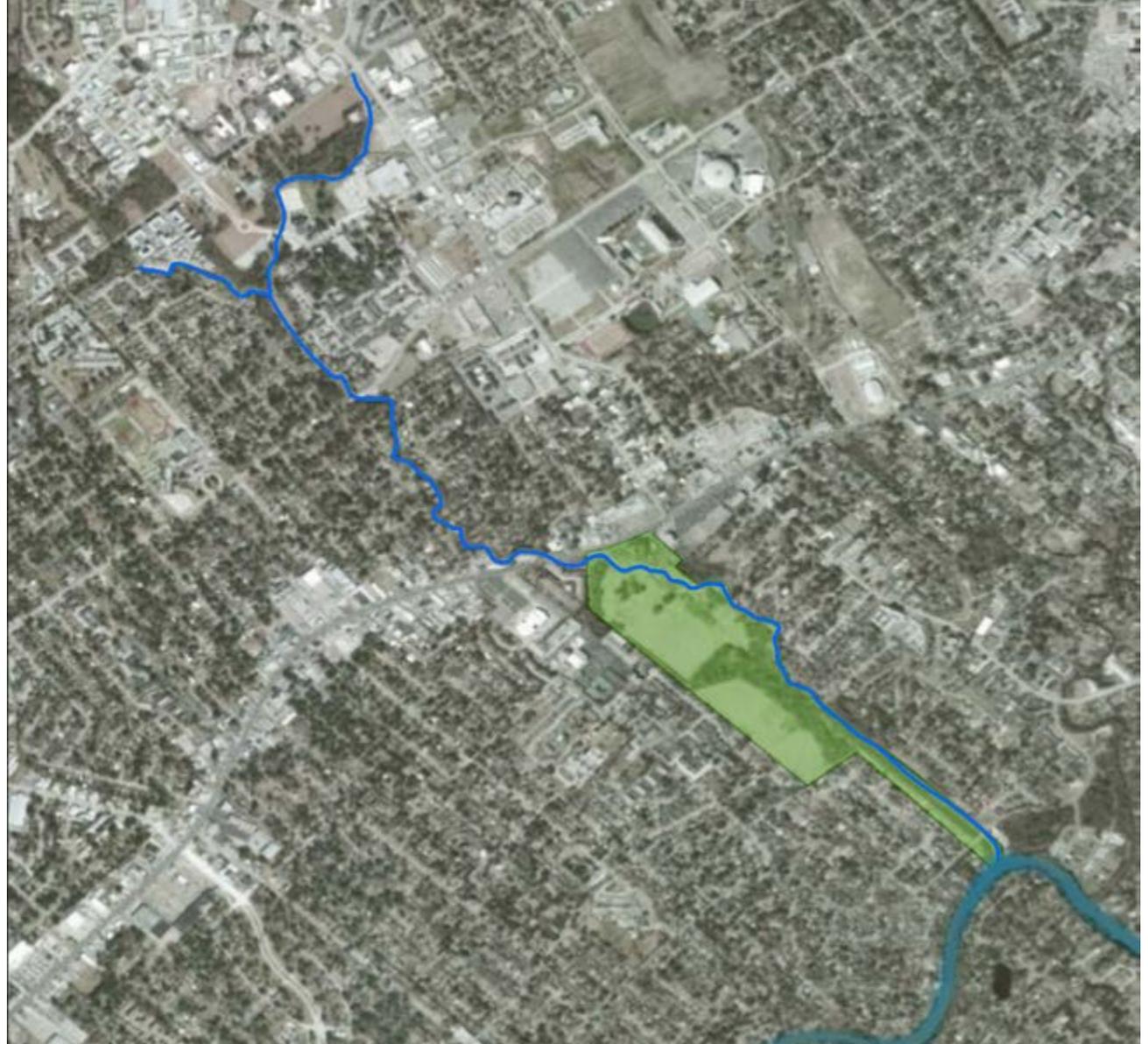
LAFAYETTE // URBANIZED AREAS



LAFAYETTE // TOPOGRAPHY



LAFAYETTE // COULEE MINE & THE HORSE FARM



GREEN DESIGNS // BATON ROUGE AIRPORT



GREEN INFRASTRUCTURE



GREEN INFRASTRUCTURE



WATER BALANCE

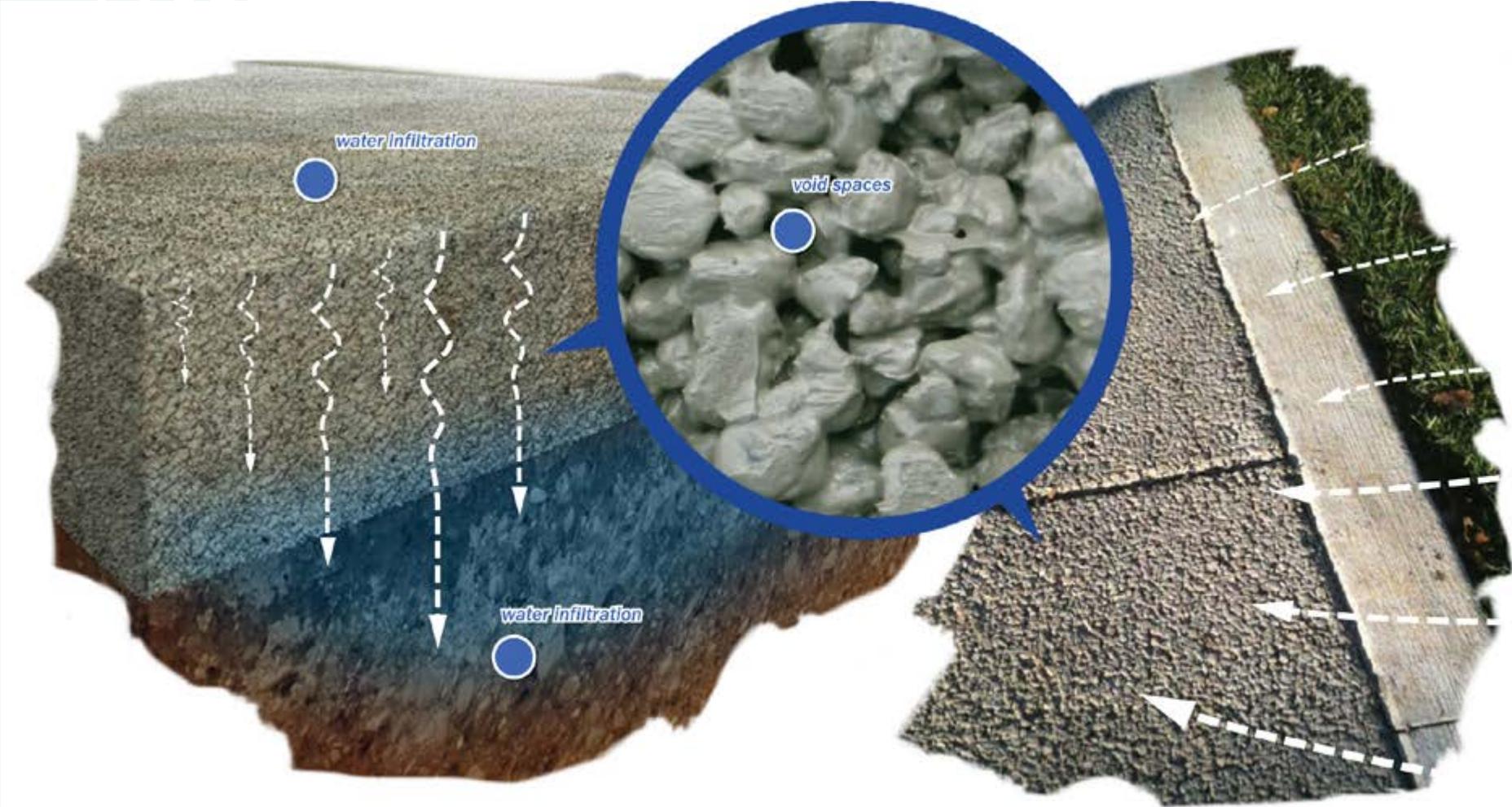
- INCREASE IN IMPERVIOUS SURFACES = INCREASE IN RUNOFF
- INCREASE IN RUNOFF = INCREASED FLOODING, SUBSIDENCE, IMPAIRED WATER BODIES
- NEED PLACES FOR WATER TO EXIST
- LIVING WITH WATER

GREEN INFRASTRUCTURE



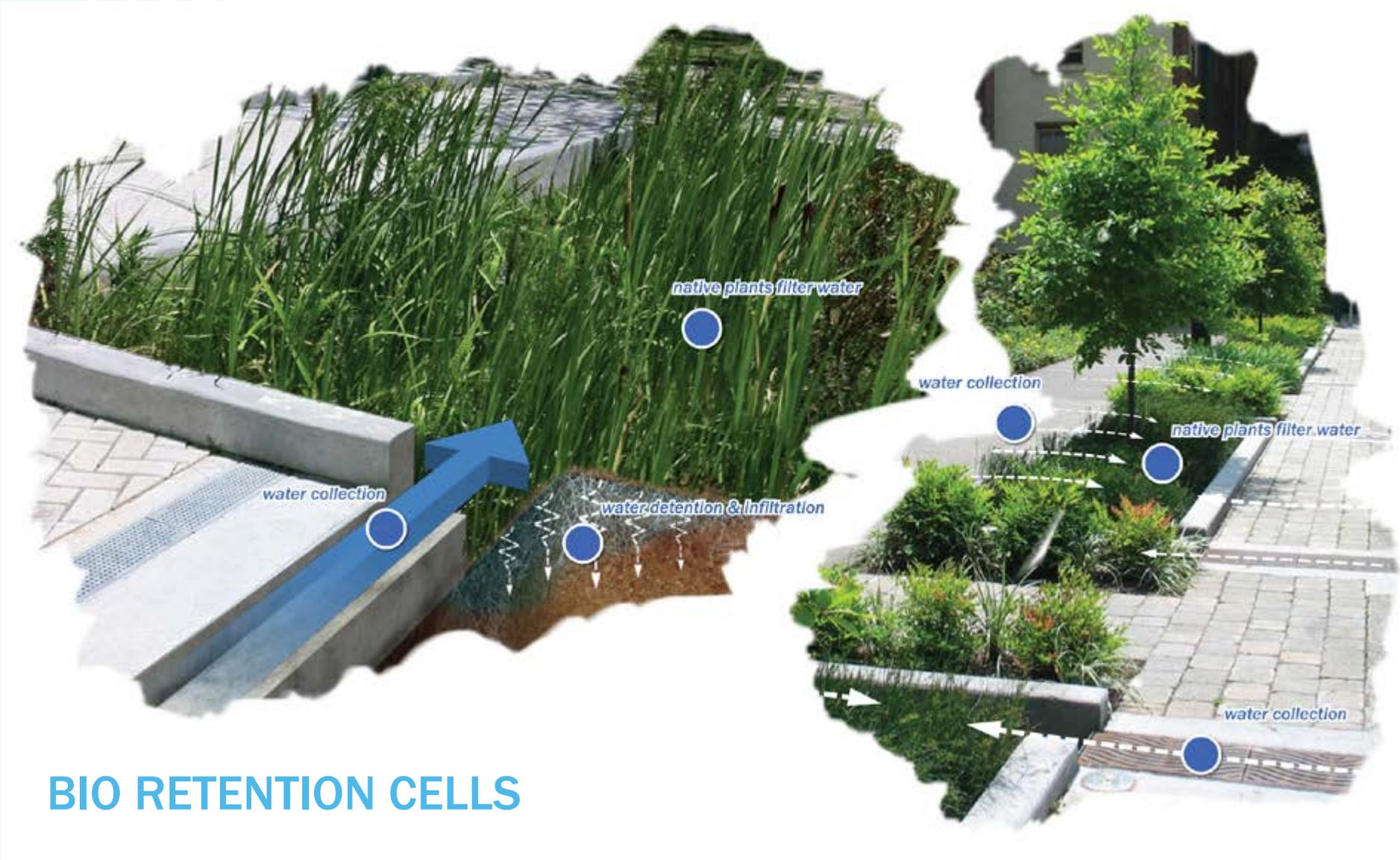
BIOSWALE

GREEN INFRASTRUCTURE

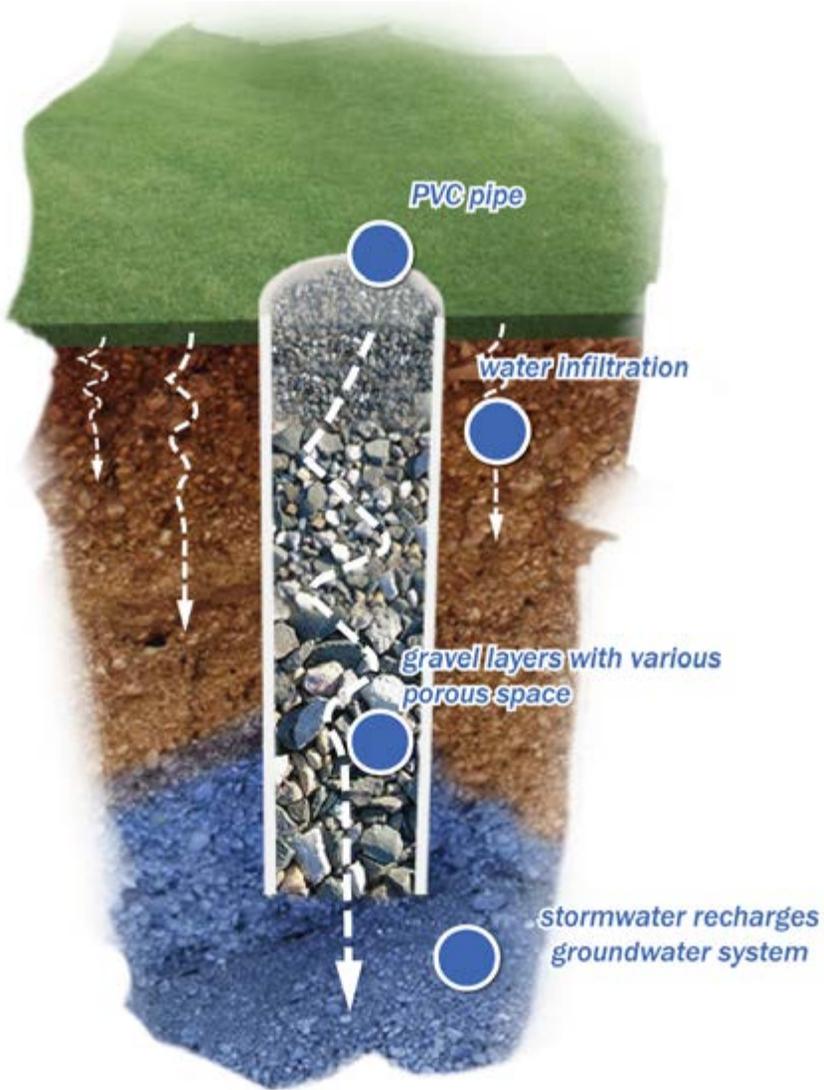


PERVIOUS PAVEMENT

GREEN INFRASTRUCTURE

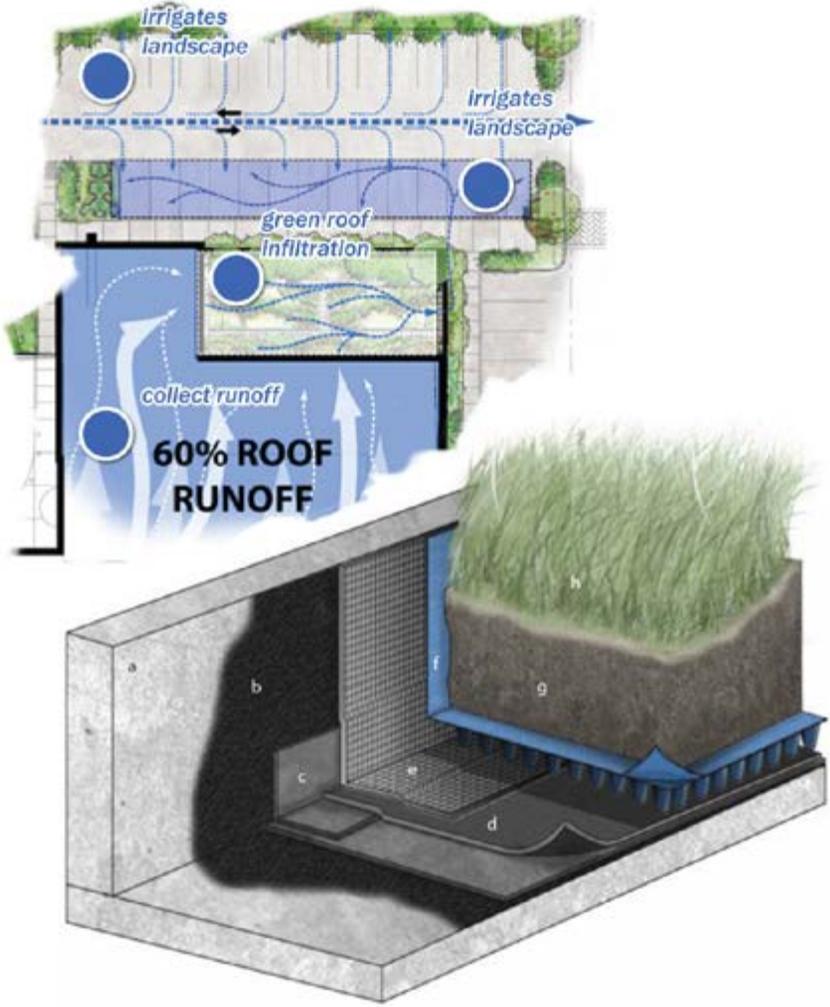


BIO RETENTION CELLS



INFILTRATION COLUMN

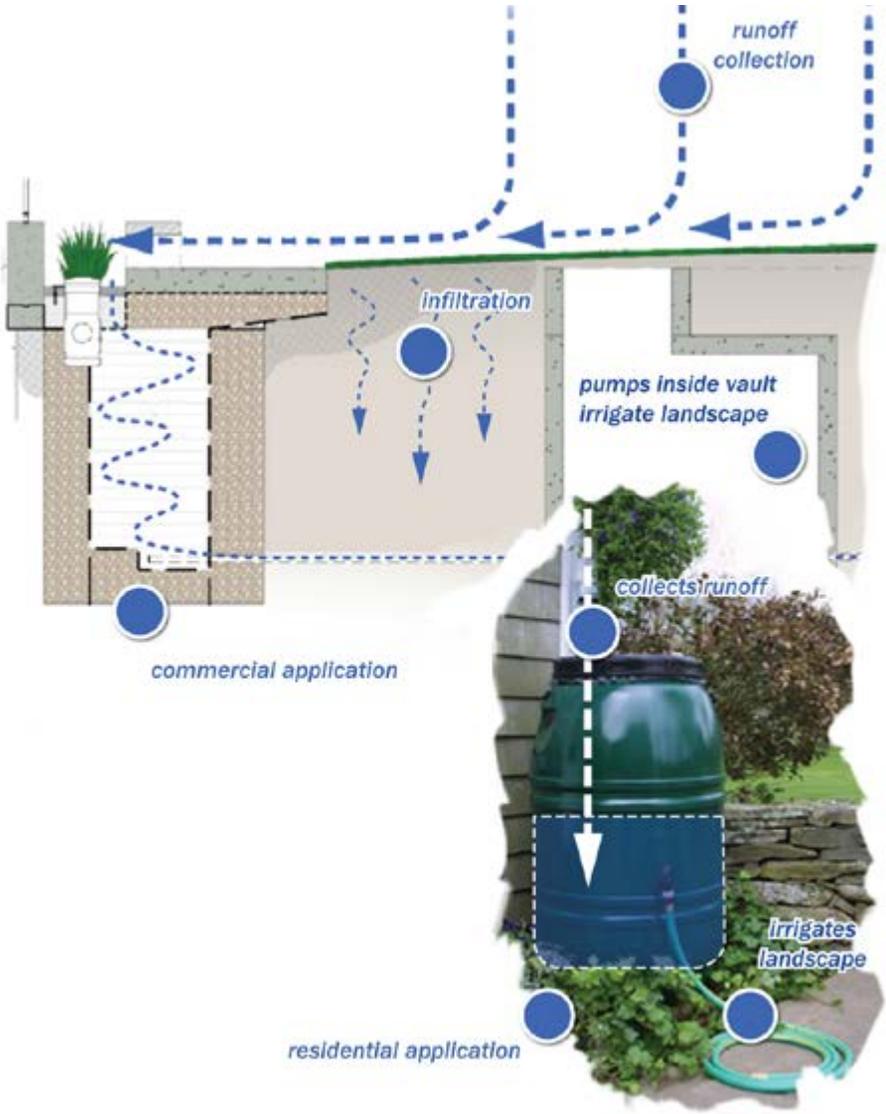
GREEN INFRASTRUCTURE



a concrete roof b primed substrate c water proof membrane d root protection barrier
e protection board f filter fabric g growth media h vegetation

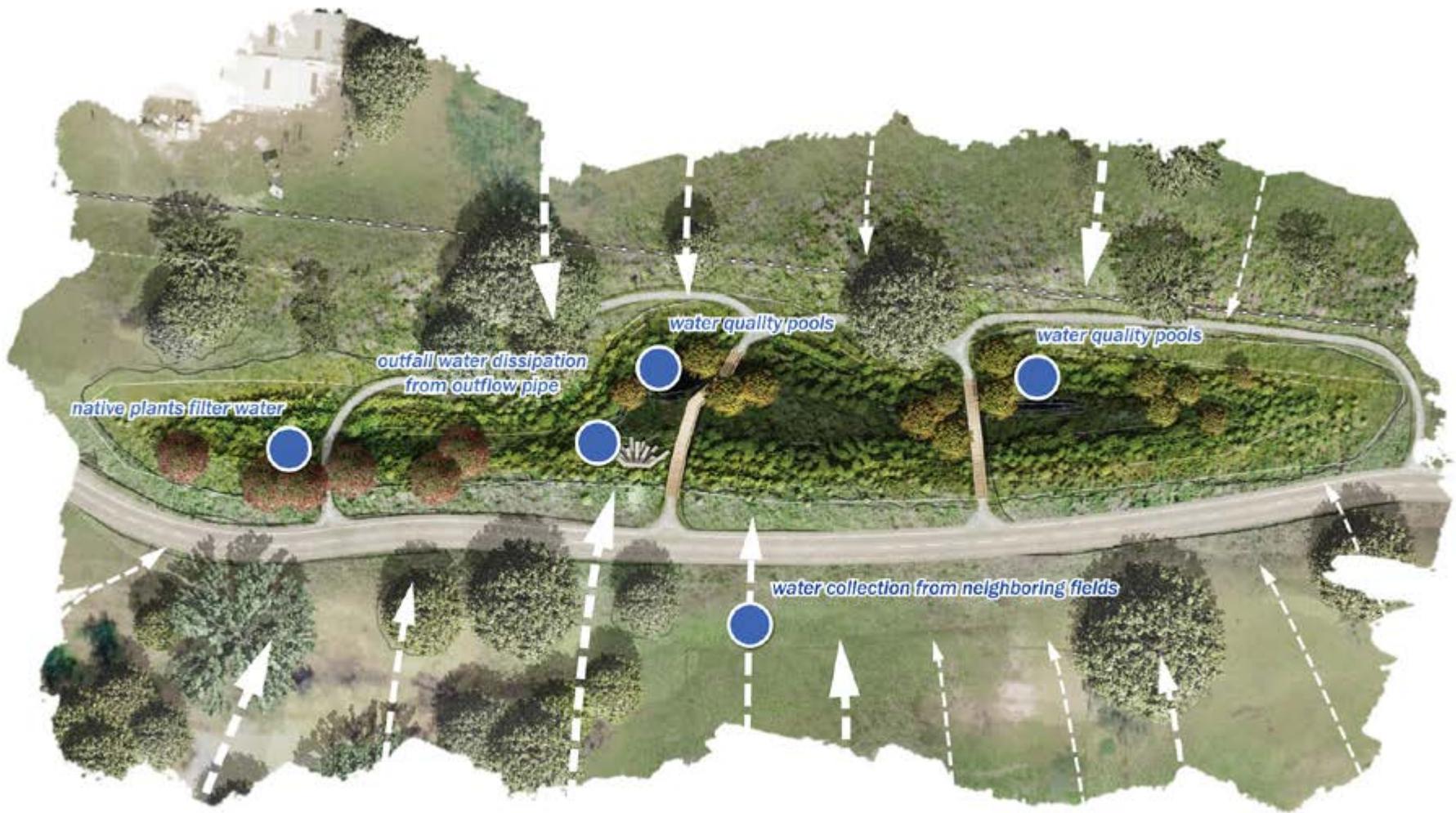
GREEN ROOF

GREEN INFRASTRUCTURE



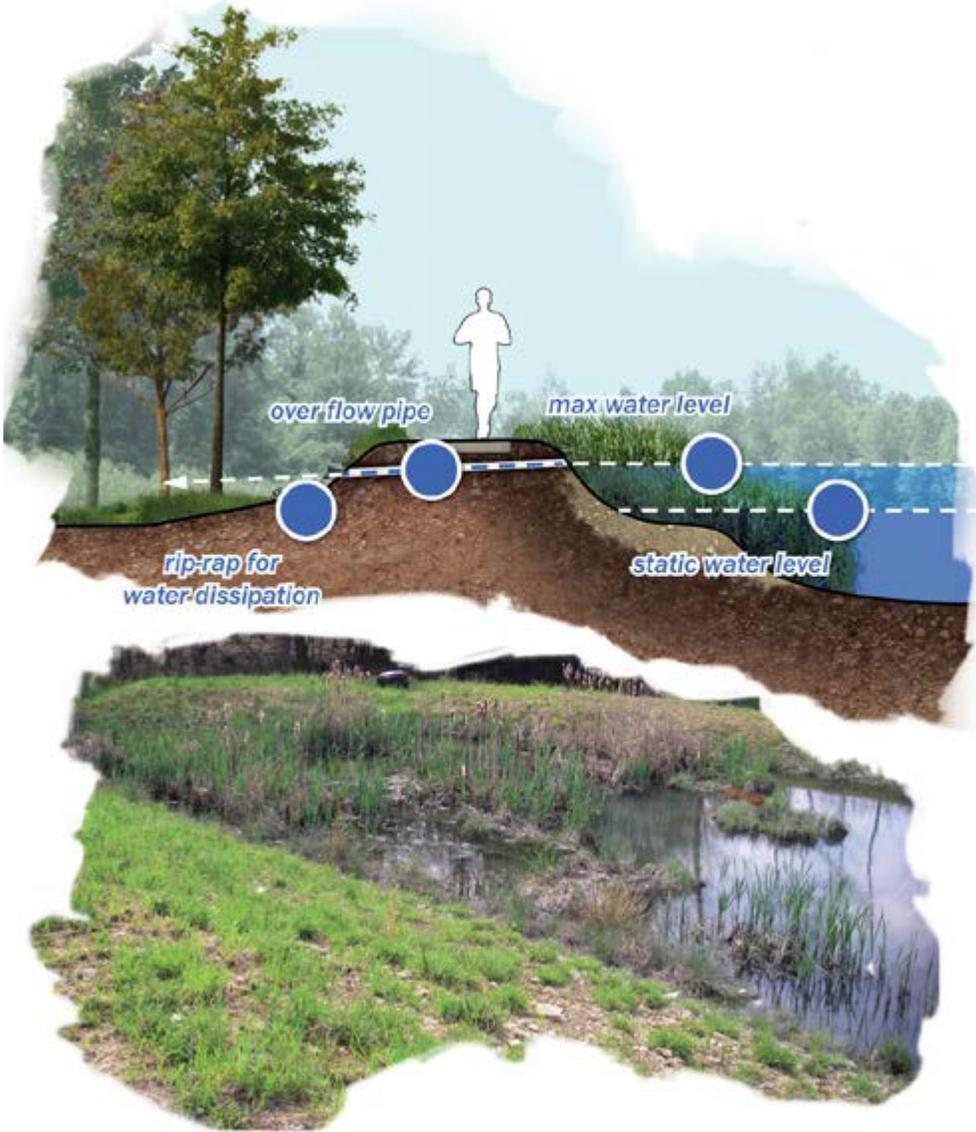
RAINWATER HARVESTING

GREEN INFRASTRUCTURE



STORMWATER WETLANDS

GREEN INFRASTRUCTURE



DETENTION POND

THANK YOU!

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