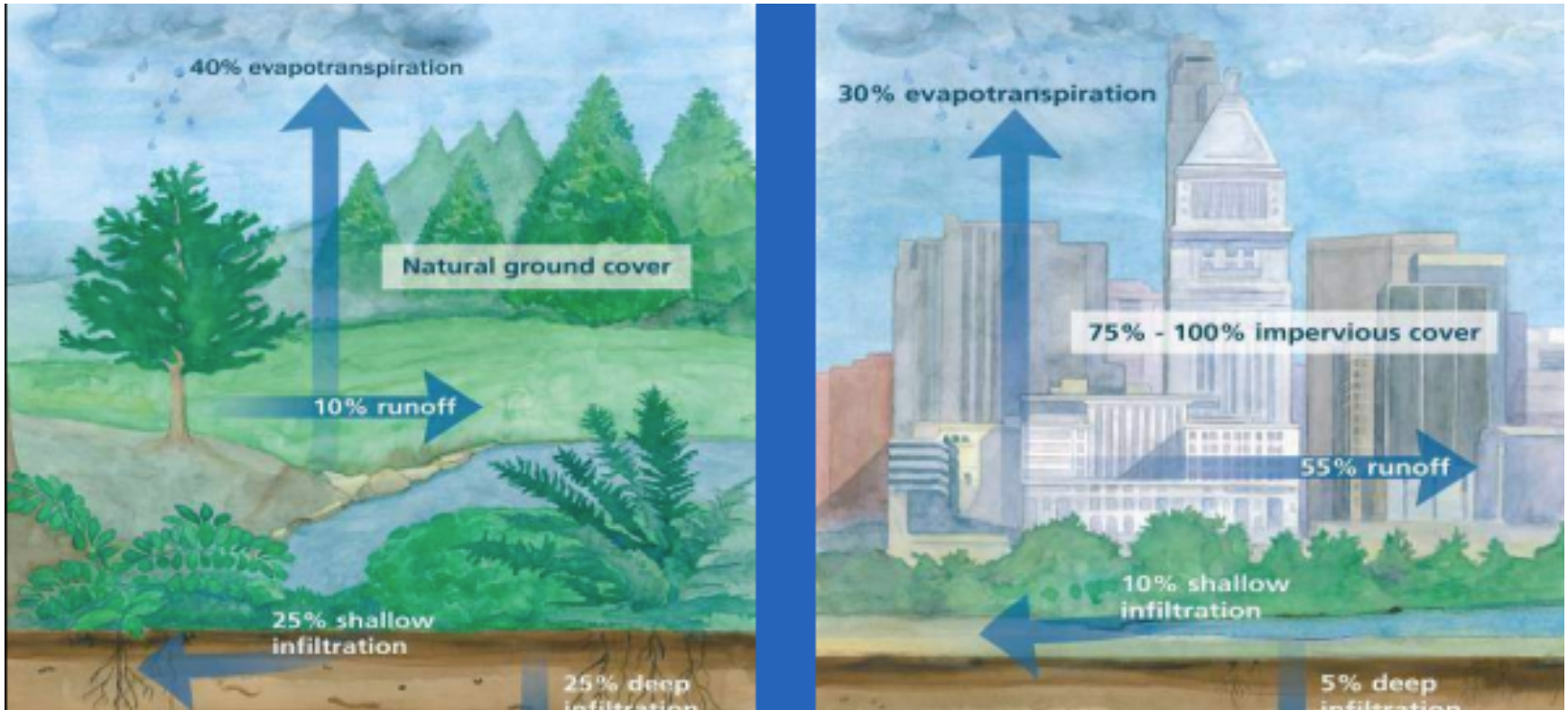


Prototypes and Images

Navy Point Rain Gardens and
Community Greens

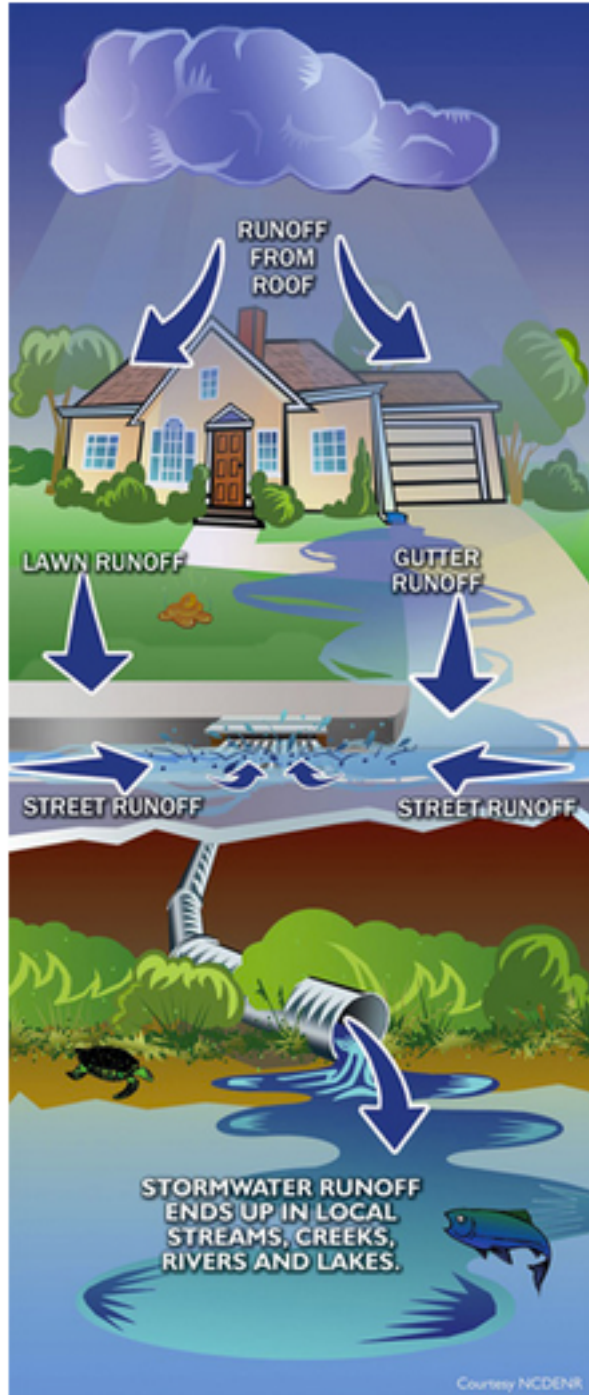
Impervious Cover and Run-Off



SOURCE: Biddle, Jenny (US EPA), Pamela Rowe (Montgomery County DEP), and Lynn Hinkle (ASTRA Co). "Using Rain Gardens to Reduce Runoff -- Slow it down, spread it out, soak it in!" EPA Webcast, December 3, 2008.

http://water.epa.gov/learn/training/wacademy/upload/raingardens_dec10_2slides-2.pdf

Suburban Stormwater Sheet Run-off

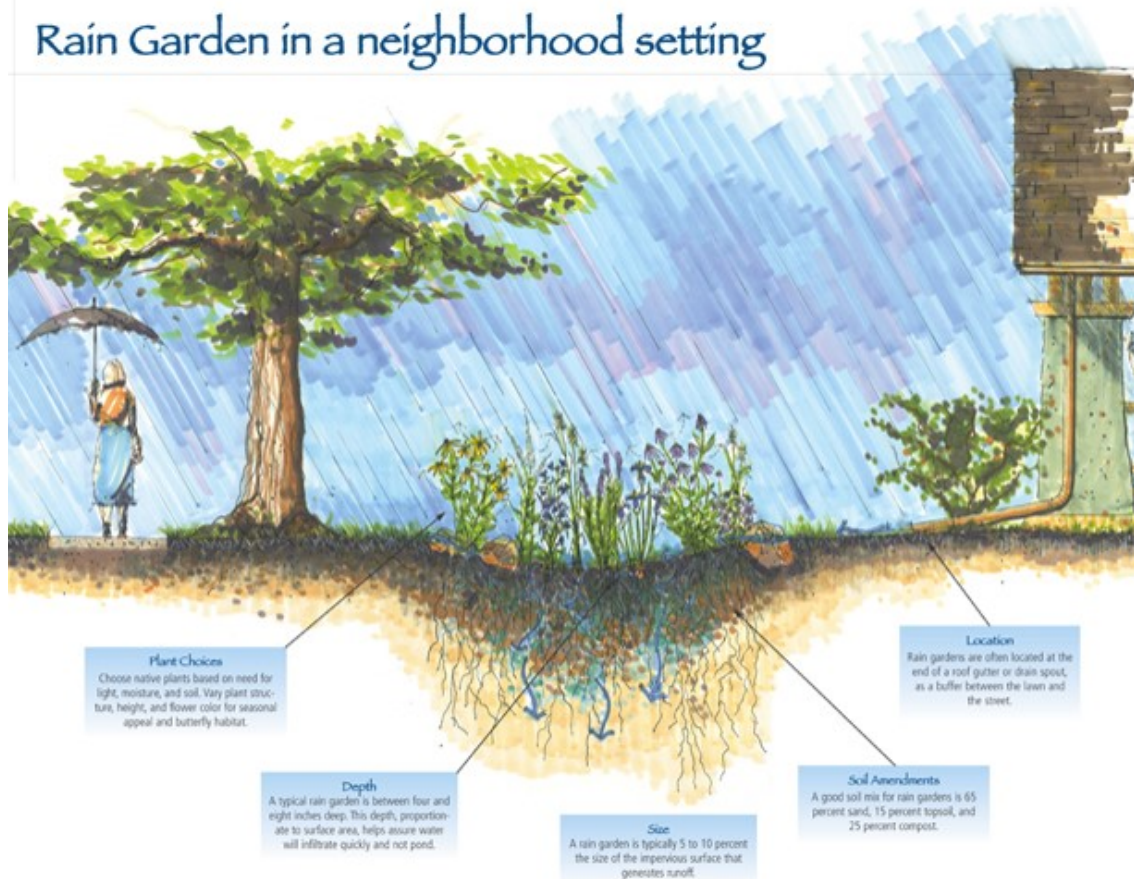


SOURCE: Chrystal Bartlett, Stormwater Awareness and Outreach Coordinator. "An Ounce of Prevention..." North Carolina Department of Environment and Natural Resources.

<http://web.archive.org/web/20100820220621/>

<http://www.enr.state.nc.us/upclose/pages/ounceofPrevention.html>

Rain Garden Features

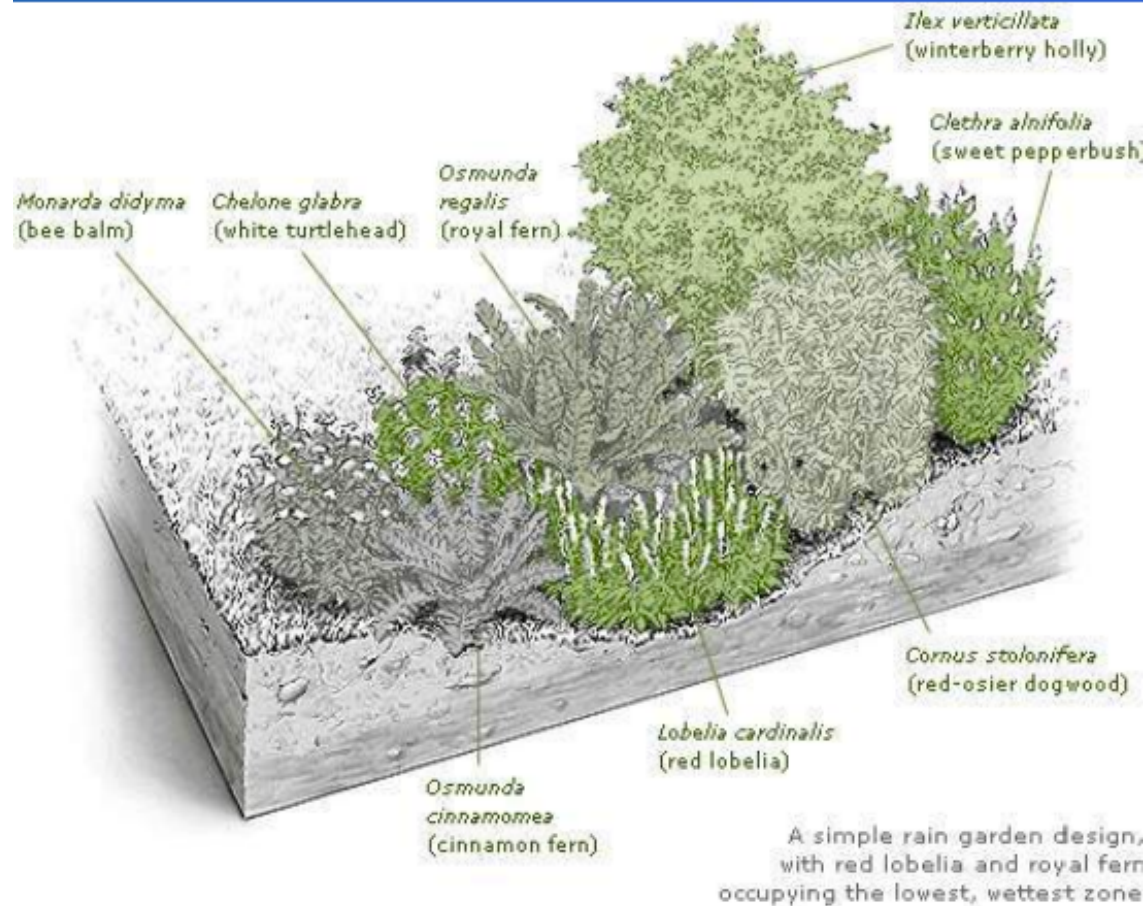


Depth: A typical rain garden is between four and eight inches deep to assure water will infiltrate quickly and not pond.

Soil: A good soil mix is 65% sand, 15% topsoil, 25% compost

SOURCE: <http://nwdistrict.ifas.ufl.edu/hort/files/2014/05/nrcs-rain-garden.jpg>

Sample Rain Garden Design



SOURCE: http://www.bbg.org/gardeningtopics/design/2004sp_raingardens1.html

Sample Florida Panhandle Rain Gardens, 1



SOURCE: Carrie Stevenson (ctsteven@ufl.edu) Coastal Sustainability Agent, Escambia County Extension. "Rain Gardens Offer Option for Problem Areas of Yard Gardening In The Panhandle" U Florida IFAS Extension. May 27, 2014.

<http://gadsden.ifas.ufl.edu/newsletters/2014/05/27/rain-gardens-offer-option-for-problem-areas-of-yard/>

Sample Florida Panhandle Rain Gardens, 2



SOURCE: "City of Tallahassee builds rain garden for Earth Day"

http://www.wtxl.com/news/city-of-tallahassee-builds-rain-garden-for-earth-day/article_b09df284-ca67-11e3-bd6b-0017a43b2370.html?mode=image

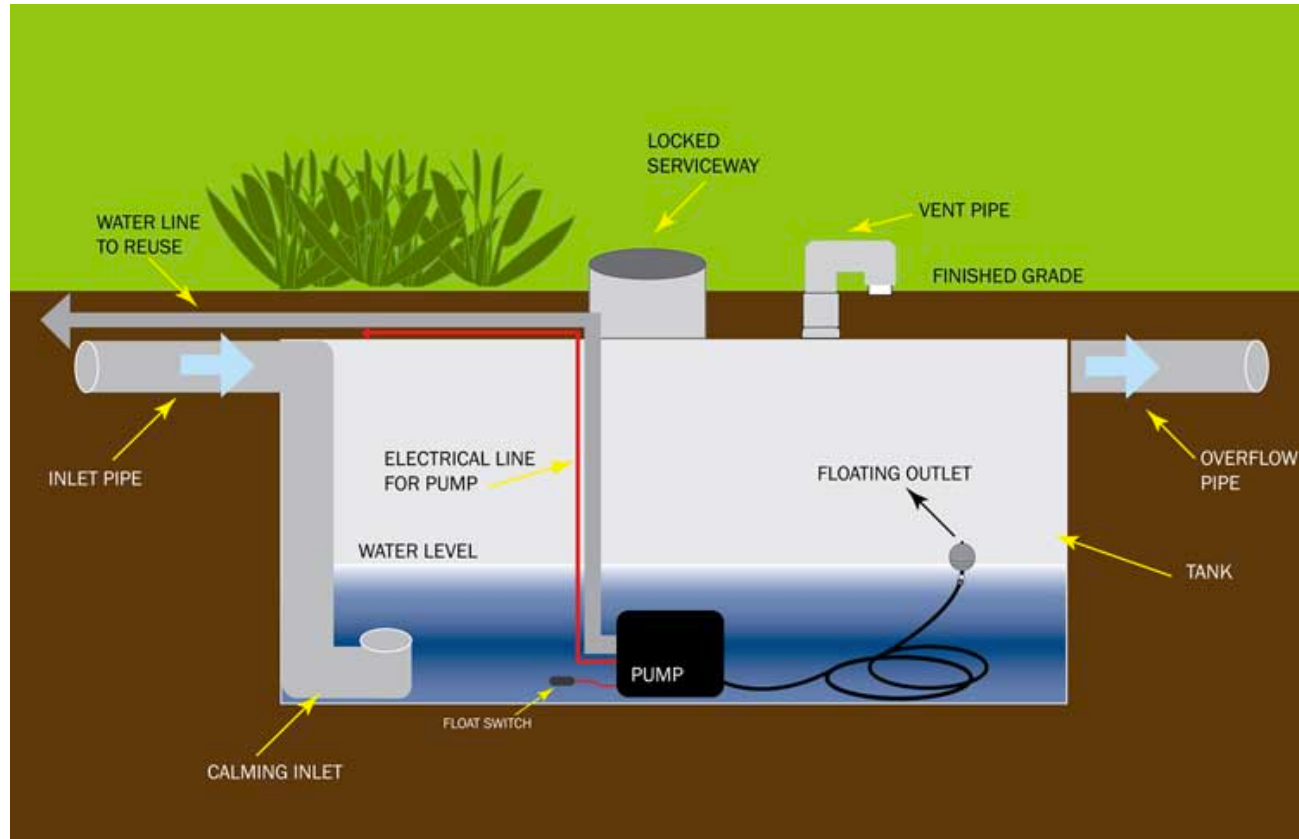
Sample Rain Gardens, 3



SOURCE: All Things Local Radio WGSO 990AM New Orleans. "Don't Fight Nature: Storm Water Management."

[http://allthingslocalnola.info/prior show topics/
dont fight nature storm water management](http://allthingslocalnola.info/prior_show_topics/dont_fight_nature_storm_water_management)

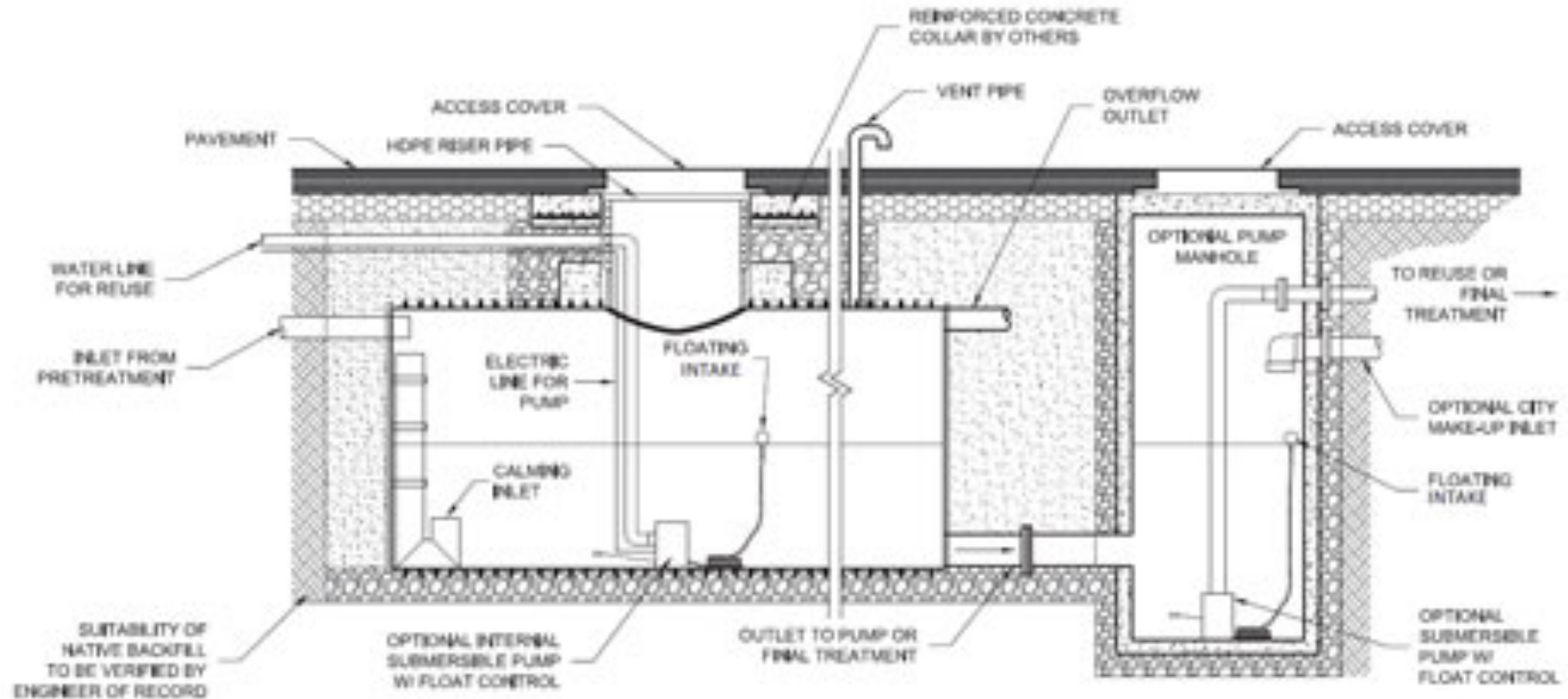
Sample Underground Cistern Design, 1



SOURCE: Greg Kowalsky and Kathryn Thomason, P.E. "Cistern Design Considerations for Large Rainwater Harvesting Systems"

<http://www.conteches.com/Knowledge-Center/PDH-Article-Series/Cistern-Designs-Large-Rainwater-Harvesting-Systems>

Sample Underground Cistern Design, 2



Typical underground cistern components

Source:

<https://sites.google.com/site/hmcbuildingsites/water-efficiency/additional-design-element>

Restoring bayou ecosystem - green approach to storm-water management connected to community and rain garden					Total	780,980.00
PHASE 1: Surveying and Assessment	Surveying, Permits, and Assessment	Project manager time to oversee efforts and permit acquisition for contracted experts to produce appropriate surveys, hydrology tests, geotech, soil texture and sampling as required in bioretention efforts	Qty	Unit	Cost	Amount
			1	ea	37500	37,500.00
PHASE 2: Planning and Design	Design Consultation	Project manager time to consult with local Florida Native Plant Society on indigenous wildflowers for the rain gardens	1	ea	500	500.00
	Design Requirements and Review	Project manager time to assemble requirements for RFP of local Green Infrastructure company and present document to appropriate county departments and the Navy Point neighborhood group	1	ea	7500	7,500.00
	RFP and Vendor Selection	Project manager time to circulate RFP (selection of local Green Infrastructure company), capture and review bids, and score them according to the parameters established by the county and neighborhood group	1	ea	5000	5,000.00

	Contract Finalization	Project manager time to consult with selected Florida-based green construction firm, reviewing and modifying AutoCAD designs and construction plan in coordination with appropriate departments and functions of Escambia county for signoff as fixed bid contract with appropriate payment stages.	1	ea	5000	5,000.00
	Land acquisition	Purchase of 315 SE Kalash Rd, 316 SE Kalash Rd, 405 SE Baublits Rd (prices averaged)	3	ea	135000	405,000.00
	Digital presence	Creation of website, using low-cost cloud provider and simplified CSS with appropriate 508 ADA measures (in which run-rate costs are defrayed in part through plot costs). Project manager reviews and brings in appropriate county experts to sign-off.	1	ea	1425	1,425.00

PHASE 3: Construction	Sheet run-off and underground bioretention	Selected Green construction firm installs infiltration trench, silt fence, clearing and grubbing, topsoil salvage, excavation/grading, vault structure, media, geotextile, inlet structure, overflow structure, observation well, and gutter redirection. Project manager reviews and brings in appropriate county experts to sign-off.	3	ea	36410	109,230.00
	Above-ground bioretention efforts	Selected Green construction firm installs rain garden stormwater planters to serve as riparian buffer (approx 1600 sq ft per property) to ring Kalash and Baublits, complete with soil amendment and native wildflowers and plants. Project manager reviews and brings in appropriate county experts to sign-off.	3	ea	21250	63,750.00

	Storage and water re-purpose	Selected Green construction firm installs 2500 gallon underground cistern and pump, with solar panel and battery unit to create and store sufficient power to run pumps. . Project manager reviews and brings in appropriate county experts to sign-off.	3	ea	8450	25,350.00
	Signage	Installation of community signboard for indication of rules, recommendations, and upcoming events as well as signage on rain garden wildflowers. Project manager reviews and brings in appropriate county experts to sign-off.	1	ea	1475	1,475.00
	Community garden	Selected Green construction firm provisions for community garden: raised soil beds with embedded soaker hoses connected to cistern and pump arranged in 100, 200, and 300 sq ft beds, sufficient for more than 40 plots, complete with fencing. Project manager reviews and brings in appropriate county experts to sign-off.	3	ea	11250	33,750.00

	Compost	Selected Green construction firm builds and establishes vermicompost trench and compost bin. Project manager reviews and brings in appropriate county experts to sign-off.	3	ea	6250	18,750.00
	Maintenance shed	Selected Green construction firm installs fixed, lockable shed for maintenance and upkeep of facilities (to be managed by community garden association with run-rate costs defrayed by annual garden fees). Project manager reviews and brings in appropriate county experts to sign-off.	1	ea	15000	15,000.00
PHASE 4: Monitoring	Monitoring	Weekly water testing for 3 years at Bayou Grande drainage site to assess immediate local impact on coliform bacteria compared against county sample taken at Navy Point bridge. Regular review of environmental impact of reduced stormwater runoff into bayou on soil/shore erosion, water quality, and sustainability of aquatic life harvesting using appropriate measures as declared by Escambia county departments.	3	annual, recurring	17,250	51,750.00