

# SLOW DOWN THAT STORM WATER!

## LOW-IMPACT DEVELOPMENT TECHNIQUES IN VERMONT

### BEST MANAGEMENT PRACTICES

- ✓ PROTECT RIPARIAN CORRIDORS
- ✓ REDUCE IMPERVIOUS SURFACES
- ✓ MINIMIZE SOIL DISTURBANCE
- ✓ PROTECT NATURAL FLOW PATHWAYS
- ✓ MAXIMIZE SHEET FLOW AND INFILTRATION
- ✓ PREVENT DELIVERY OF POLLUTANTS
- ✓ PROTECT SENSITIVE NATURAL AREAS

### STRUCTURED SYSTEMS

#### BIOSWALE

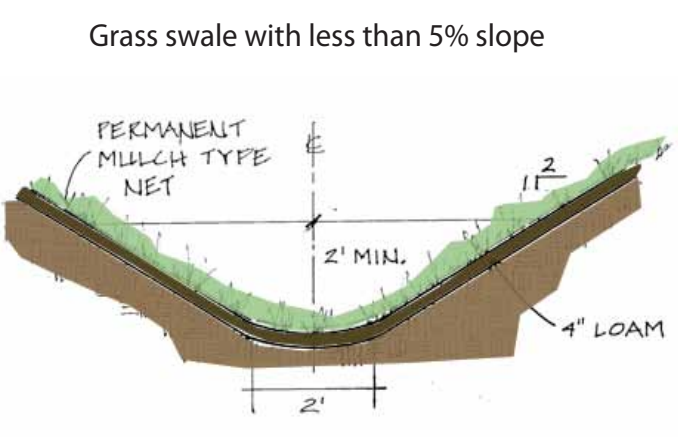
convey and filter



WWW.MASS.GOV

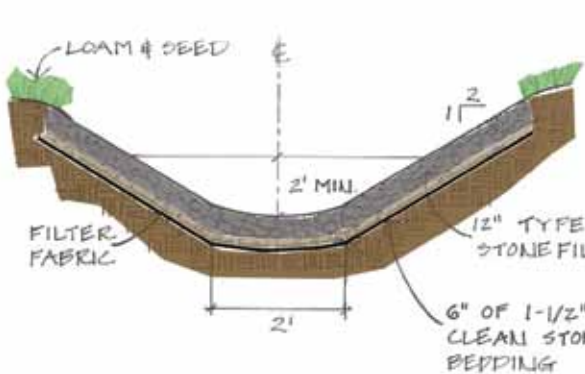


VERMONT BETTER BACK ROADS PROGRAM



Grass swale with less than 5% slope

Drain rock swale for slopes 5%-10% slope



#### RAIN GARDEN

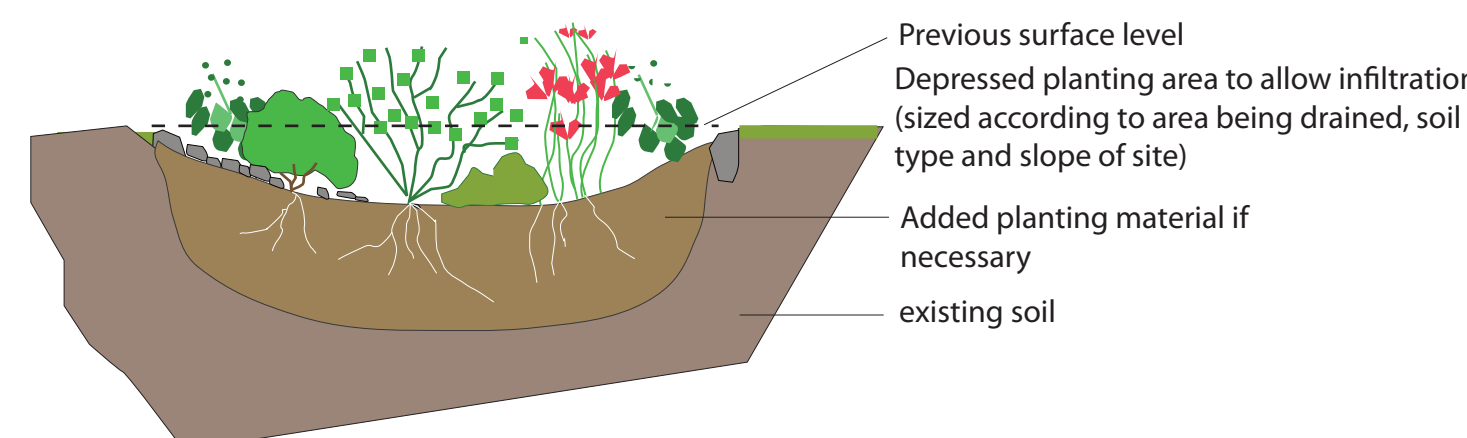
filter and infiltrate



VERMONT ACHIEVEMENT CENTER, RUTLAND, VERMONT  
RUTLAND NATURAL RESOURCE CONSERVATION DISTRICT



RUTLAND, VERMONT  
RUTLAND NATURAL RESOURCE CONSERVATION DISTRICT

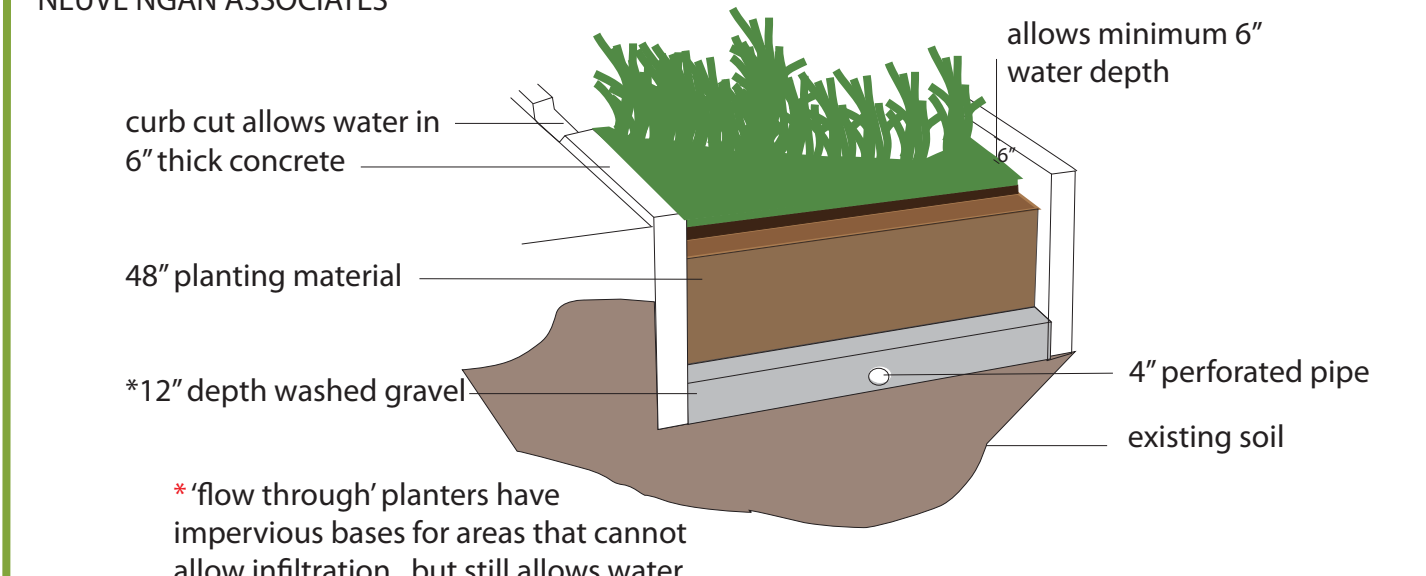


#### STORMWATER PLANTER

filter and \*infiltrate



CAPITOL PARKING LOT, MONTEPELIER, VERMONT  
NEUVE NGAN ASSOCIATES

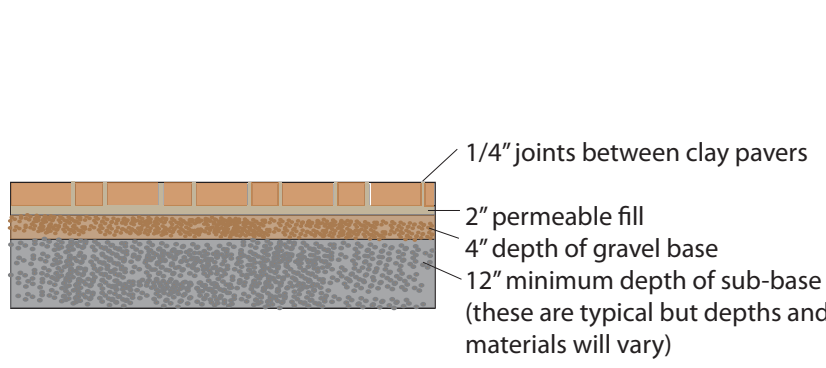


#### PERVIOUS PAVEMENT

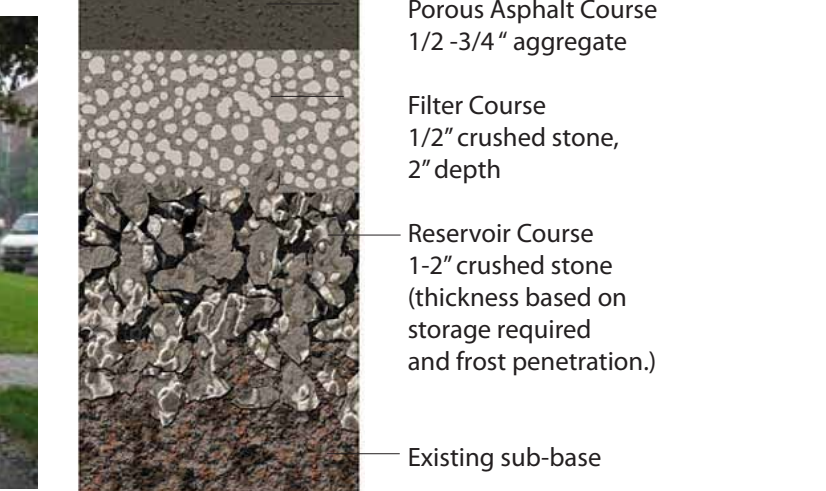
infiltrate and filter



PERMEABLE CLAY PAVERS, WATERBURY VERMONT  
STATE OF VERMONT, WATER QUALITY DIVISION



POROUS ASPHALT SIDEWALK  
CITY OF ST. ALBANS, VERMONT



#### GREEN ROOF

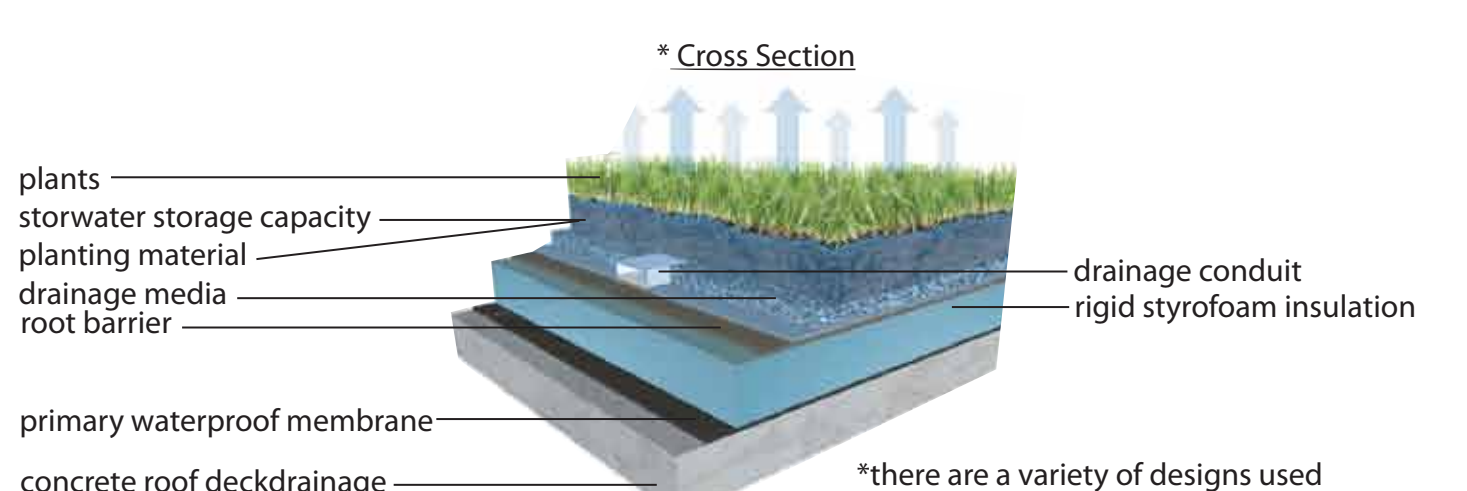
catch, disperse, filter and cool



FLETCHER ALLEN HOSPITAL, BURLINGTON, VERMONT  
H.KEITH WAGNER I PARTNERSHIP



WARREN, VERMONT  
CYNTHIA KNAUF LANDSCAPE DESIGN INC



#### CONSTRUCTED WETLANDS

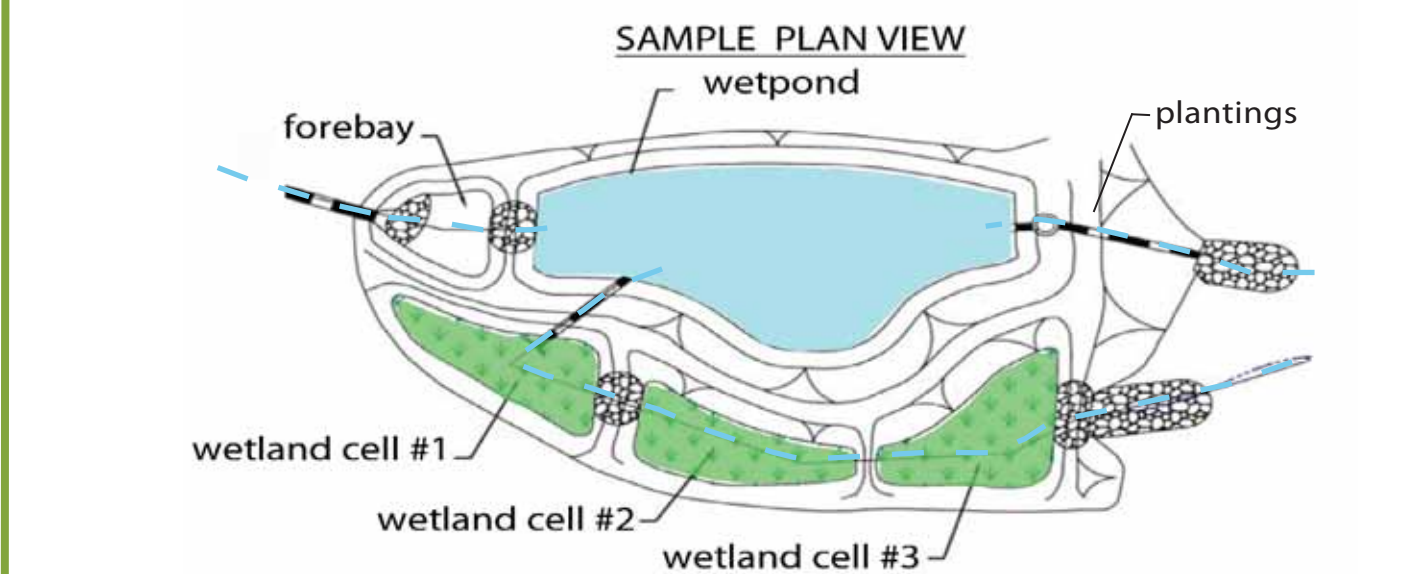
filter, infiltrate, habitat



JAMAICA, VERMONT  
TERRAGENEUS LANDSCAPE ARCHITECTS



CHAMPLAIN COLLEGE, BURLINGTON, VERMONT  
ORW LANDSCAPE ARCHITECTS AND PLANNERS



#### CISTERNS

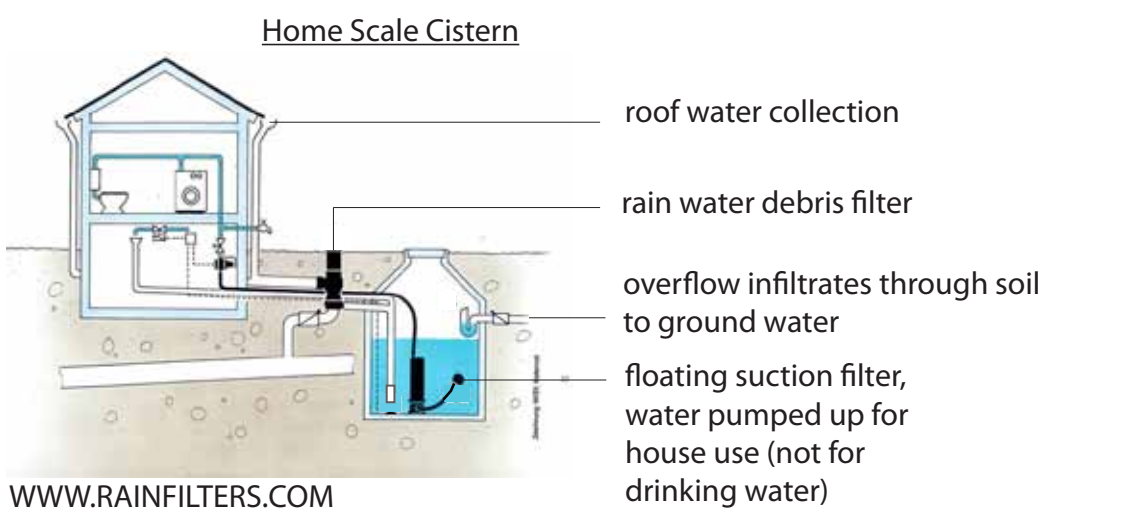
collect, store and reuse



HERITAGE AVIATION ROOF WATER STORAGE  
H.KEITH WAGNER I PARTNERSHIP



TOWN OF MIDDLEBURY, STORMWATER COLLECTION  
VHB INC.



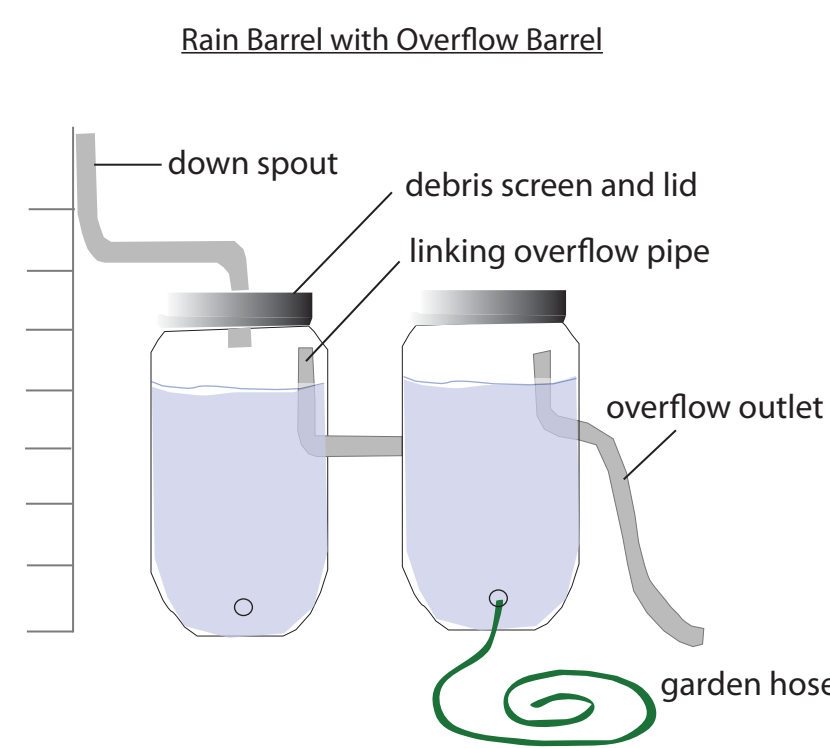
WWW.RAINFILTERS.COM

#### RAIN BARRELS

collect, store and reuse

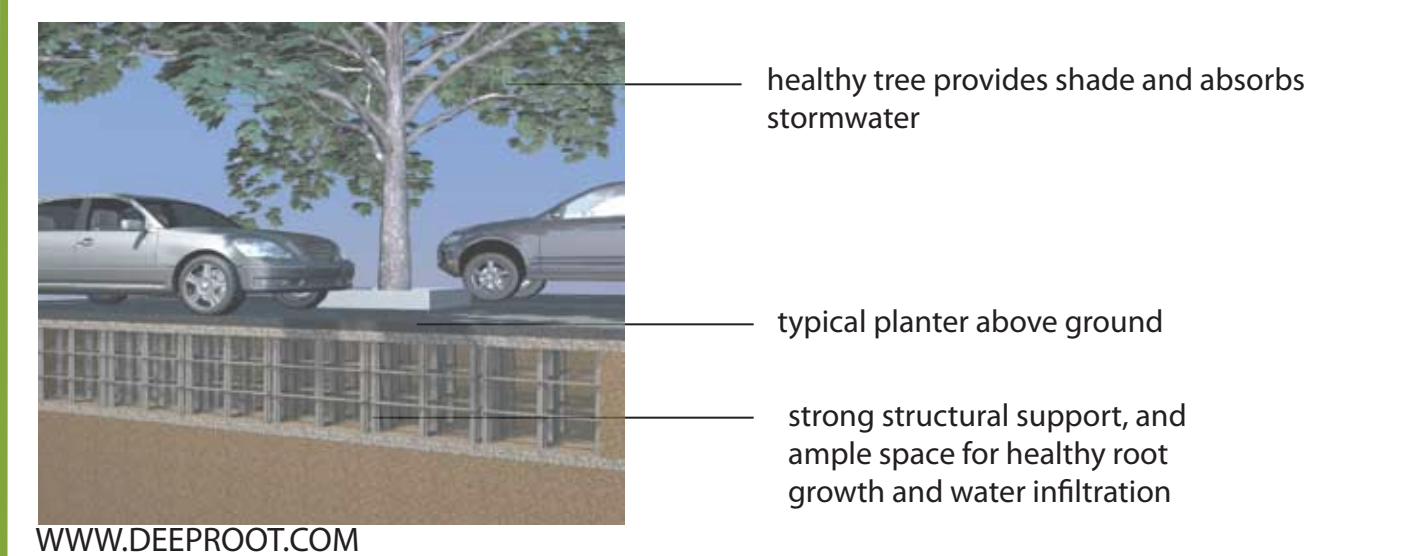


WINOOSKI NATURAL RESOURCE CONSERVATION DISTRICT



#### SILVA CELLS

support tree growth, infiltrate



WWW.DEEPROOT.COM

### SUPPORTING TOWN PLAN AND ZONING POLICY FOR LOW IMPACT DEVELOPMENT

#### NATURAL RESOURCES

- Create inventory, analysis and protection tools for the following:
  - Surface water
  - Ground water
  - Wetlands
  - Forests and village trees
- Enforce riparian buffer regulations
- Adopt fluvial erosion hazard zones

#### ROADS

- Follow VTRANS water quality best management practices
- Identify impaired ditches and culverts
- Follow 'Vermont Better Back Roads' manual
- Incorporate LID stormwater techniques into street networks
- Protect and plan for healthy trees in village centers

#### BUILT ENVIRONMENTS

- Limit run-off from developed areas and construction sites
- Minimize new impervious surfaces
- Require construction practices to conserve water and collect stormwater on-site
- Impose limitations on where development can be sited
- Access existing stormwater infrastructure and ways to improve it with LID techniques
- Prohibit development in flood plains

#### MUNICIPAL WATER SYSTEMS

- Create inventory and analysis of sewage and septic systems in area
- Identify development limitations for sensitive sites
- Identify drinking water supply, quality and protection tools

### RESOURCES

- ▶ Water Quality Division, Vermont Department of Environmental Conservation, [www.vtwaterquality.org](http://www.vtwaterquality.org) (802)241.3777
- ▶ Vermont LID Atlas and Map, Winooski Natural Resource Conservation District, [www.vacd.org/~winooski/](http://www.vacd.org/~winooski/) (802)865-7895
- ▶ Model Low Impact Development Bylaw, Vermont League of Cities and Towns Resource Center, [www.resources.vlct.org/](http://www.resources.vlct.org/) (802)229.9111
- ▶ Vermont Better Back Roads Pocket Guide and Manual, Natural Resource Conservation Service, [www.vt.nrcs.usda.gov](http://www.vt.nrcs.usda.gov) (802) 388-6748
- ▶ Stormwater Center, University of New Hampshire, [www.unh.edu/unhsc/](http://www.unh.edu/unhsc/) (603)767.7091
- ▶ Center for Low Impact Development, [www.lowimpactdevelopment.org/](http://www.lowimpactdevelopment.org/) (301)982-5559



Addison County  
Regional Planning Commission