

# DIY Rainwater Projects for The Home: Creating Habitat and Treating Runoff

Love landscaping? Learn what projects you can do in your yard to improve habitat, treat rainwater runoff, and increase the value of your home.



**Melissa Sikes**, Fairbanks Soil and  
Water Conservation District

**Laura Minski**, Tanana Valley  
Watershed Association



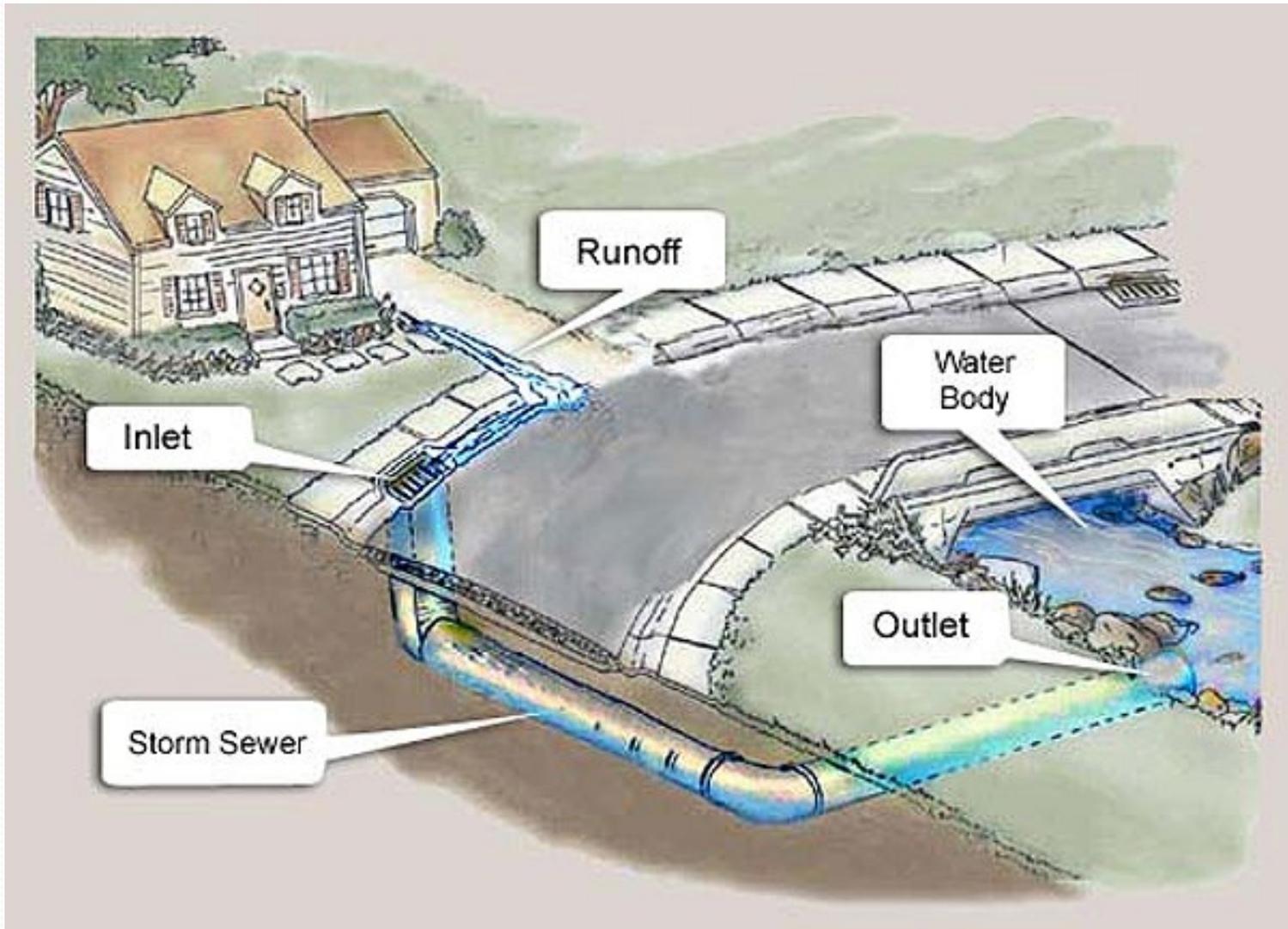
# Stormwater Runoff:

water from a rain storm that runs off the surface of a site





Flood Runoff



# Typical Fairbanks Area Homes



# Why does Stormwater Runoff matter to homeowners?

- It can erode and degrade your property
- It can cause flooding when storm drains or septic backs up
- Keeping it on your site helps water your plants
- Keeping it on your site helps recharge groundwater
- It can degrade water quality, and fish habitat of our nearby waterways, like the Chena and Salcha Rivers. Even if it is far from your house.

What can be done for YOUR home  
to manage stormwater?

**Green Infrastructure!**



# What is Green Infrastructure?

- Green Infrastructure projects can be used to manage stormwater runoff through infiltration, capture, and reuse of water.
- It is cost effective, sustainable, and environmentally friendly.
- Many green infrastructure applications create important habitat for our wildlife AND can increase the value of your home.

# How does it add to the Value of your property ?

- Helps alleviate erosion or flooding problems on your property.
- Can prevent water damage to your house itself.
- Can add to the beauty of your landscape.
- Keeping it on your site makes for healthy and happy plants and trees.

**FREE 2014-2015  
FAIRBANKS  
YELLOW MAP**  
**'Green' Edition**  
**Tanana Valley  
Watershed Association**  
**For Residents and Visitors**



**Tanana Valley  
Watershed Association**

Tanana Valley Watershed Association promotes and improves the health of the Tanana Valley through education, restoration, collaborative research, and diverse community involvement.

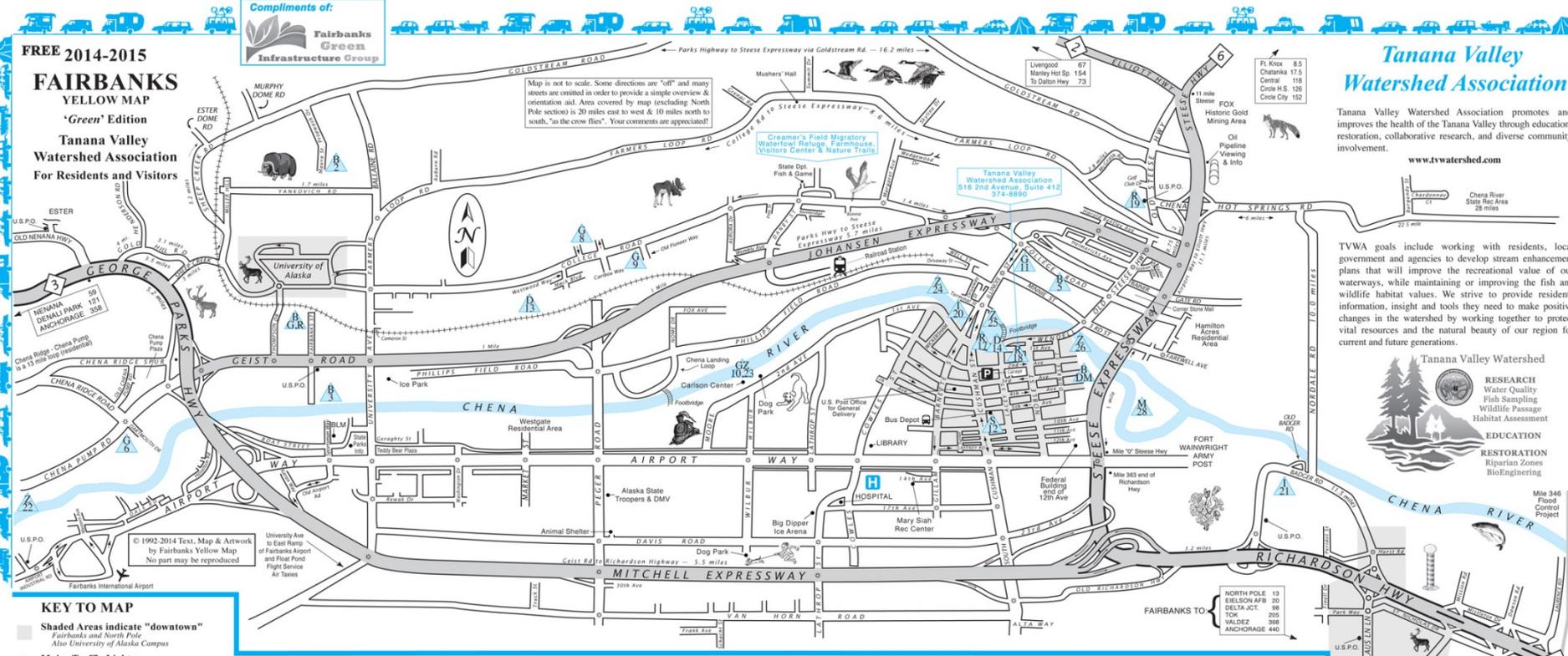
[www.tvwatershed.com](http://www.tvwatershed.com)

TVWA goals include working with residents, local government and agencies to develop stream enhancement plans that will improve the recreational value of our waterways, while maintaining or improving the fish and wildlife habitat values. We strive to provide residents information, insight and tools they need to make positive changes in the watershed by working together to protect vital resources and the natural beauty of our region for current and future generations.



- Tanana Valley Watershed**
- RESEARCH
    - Water Quality
    - Fish Sampling
    - Wildlife Passage
    - Habitat Assessment
  - EDUCATION
  - RESTORATION
    - Riparian Zones
    - Bio-Engineering

Mile 346 Flood Control Project



Map is not to scale. Some directions are "off" and many streets are omitted in order to provide a simple overview & orientation and. Area covered by map (excluding North Pole section) is 20 miles east to west & 10 miles north to south, "as the crow flies". Your comments are appreciated!

- KEY TO MAP**
- Shaded Areas indicate "downtown" Fairbanks and North Pole. Also University of Alaska Campus
  - Major Traffic Lights
  - Key to Green Infrastructure Projects
    - B - Rain Barrel
    - G - Rain Garden
    - S - Stormwater Design
    - D - Dry Well
    - R - Green Roof
    - I - Infiltration/Flow-Through Planter
    - Z - Riparian Zone Revegetation
    - M - Grass Mesh and Xeriscaping

- Green Infrastructure Projects in Fairbanks by Category**
- B Rain Barrels**
- Cold Climate Housing Research Center, 1000 Fairbanks St.
  - Private Residence, 105 Mauna St.
  - Private Residence, 3980 Danlay Ave.
  - Private Residence, 302 Charles St.
  - Private Residence, 147 3<sup>rd</sup> Ave.

- G Rain Garden**
- Woodruff Elementary School, 5000 Palo Verde Ave.
  - Cold Climate Housing Research Center, 1000 Fairbanks St.
  - Tanana Valley Farmer's Market, 2600 College Road
  - thread, 1908 Old Pioneer Way
  - Carlson Center, 2010 2<sup>nd</sup> Ave.
  - Catholic Schools of Fairbanks, 516 Monroe St.
- S Stormwater Design**
- Fairbanks Fire Department, 1101 Cushman St.

- D Dry Well**
- Private Residence, 2775 Hanson Rd.
  - Festival Fairbanks, Plaza on 1<sup>st</sup> Ave.
  - Private Residence, 147 3<sup>rd</sup> Ave.
- R Green Roof**
- Cold Climate Housing Research Center, 1000 Fairbanks St.
  - Yukon Quest building, 550 1<sup>st</sup> Ave.
  - Green Infrastructure Group, 516 2<sup>nd</sup> Ave.
  - Old Steese Post Office Cabins, 221 Swan Ln.

- I Infiltration/Flow-Through Planters**
- The Big I, 122 North Turner St.
  - Private Residence, 1245 Rangeview Rd.
- Z Riparian Zone - Revegetation**
- Riverboat Discovery Chena Indian Village, 2688 Tall Spruce Rd.
  - Carlson Center, 2010 2<sup>nd</sup> Ave.
  - Fairbanks North Star Borough Building, 809 Pioneer Rd.
  - Gordon Weir Memorial Park, Shoreway Dr.
  - Tanana Chief's Conference, 122 1<sup>st</sup> Ave.

- M Grass Mesh and Xeriscaping**
- Private Residence, 147 3<sup>rd</sup> Ave.
  - Private Residence, 207 Slater Dr.

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# Resources to help you plan improvement projects using Green Infrastructure.

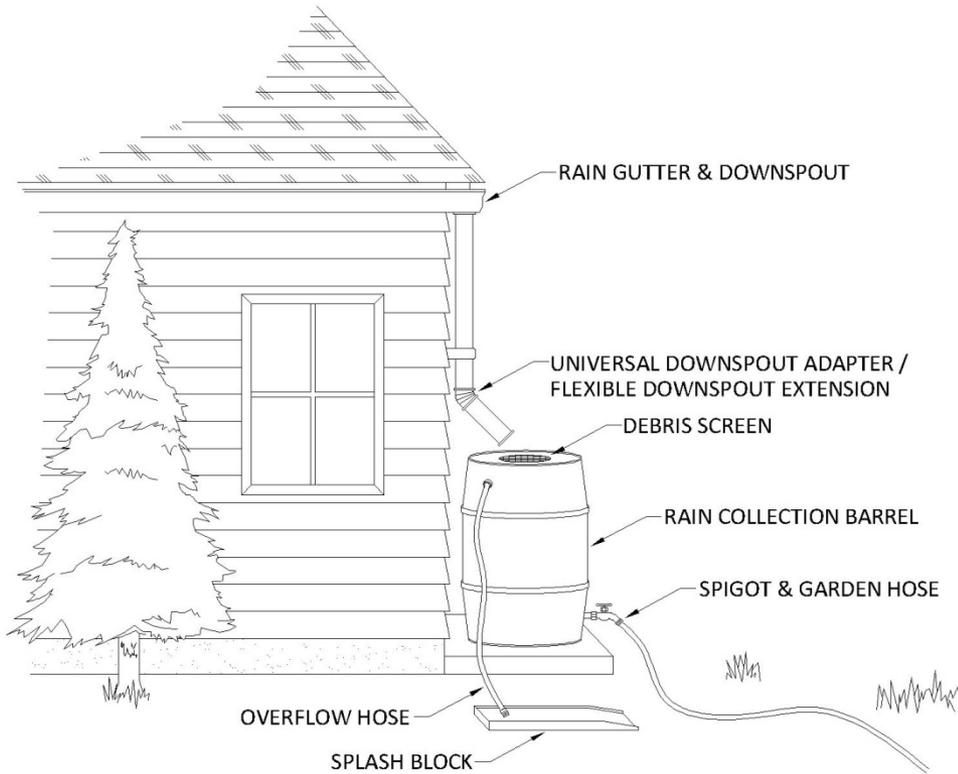
## Green Infrastructure Project Guide for Fairbanks, Alaska



Tarana Valley Farmer's Market Rain Garden

# Green Infrastructure Projects

## Rain Barrels



# What is a Rain Barrel?

Rain barrels are a low-cost, effective tool to manage rooftop runoff.

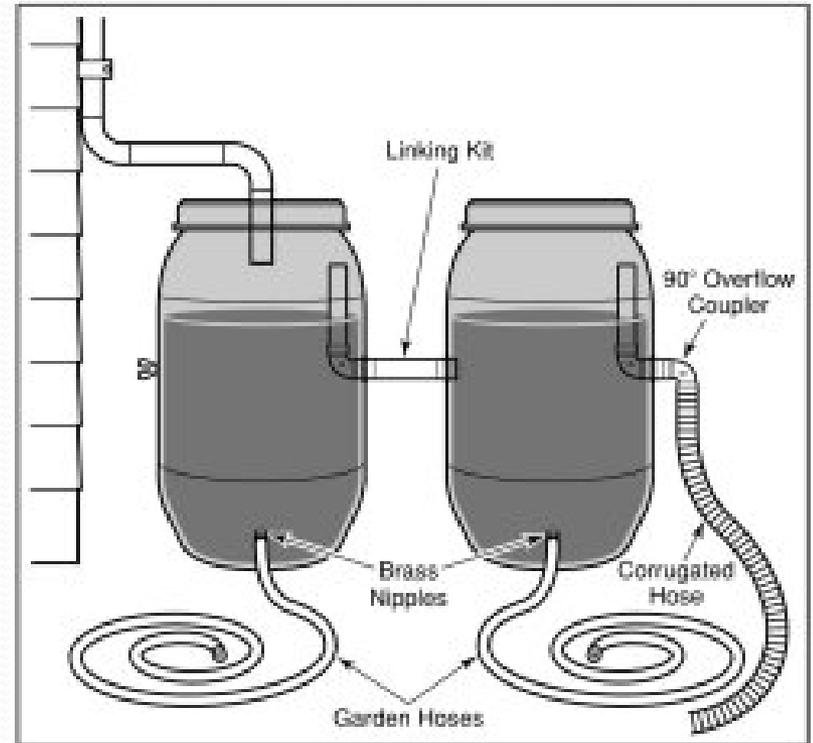


# Benefits of a Rain Barrel

- By storing and diverting runoff from roofs, they reduce the undesirable impacts of runoff that would otherwise flow swiftly into receiving waters and contribute to flooding and erosion problems and habitat degradation for fish and wildlife.
- Rain barrels can provide a source of free water for flower and vegetable gardens and landscapes, free of most sediment and dissolved salts.

# Connecting Rain Barrels

Rain barrels can be connected to provide larger volumes of storage.



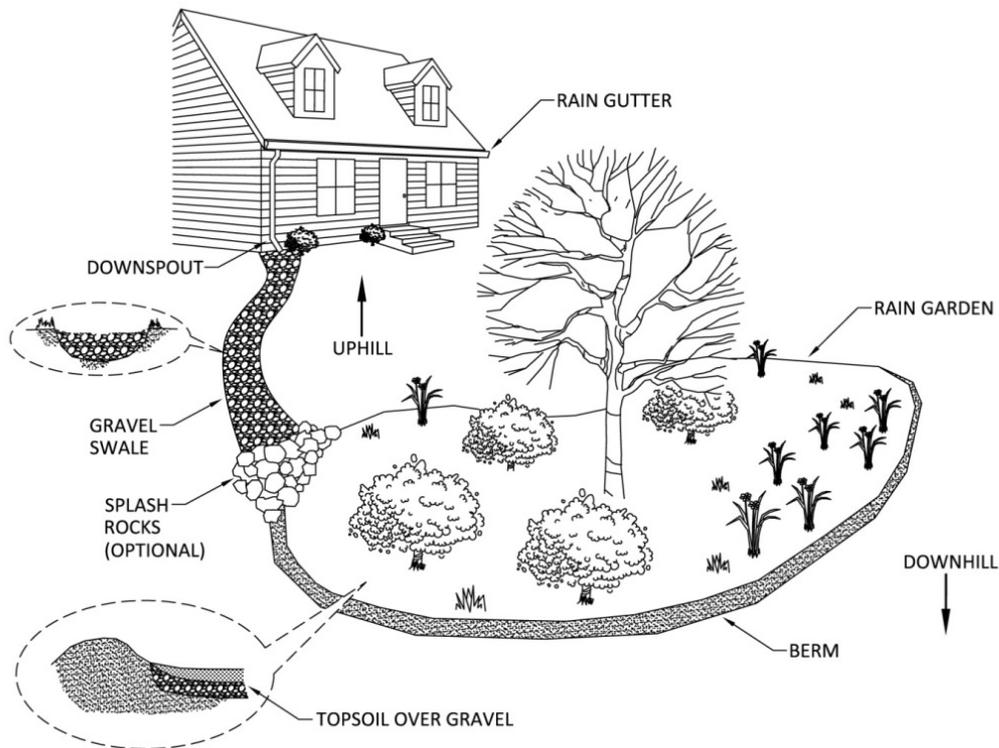
# Rain Barrel Art



# Container Options



# Rain Gardens



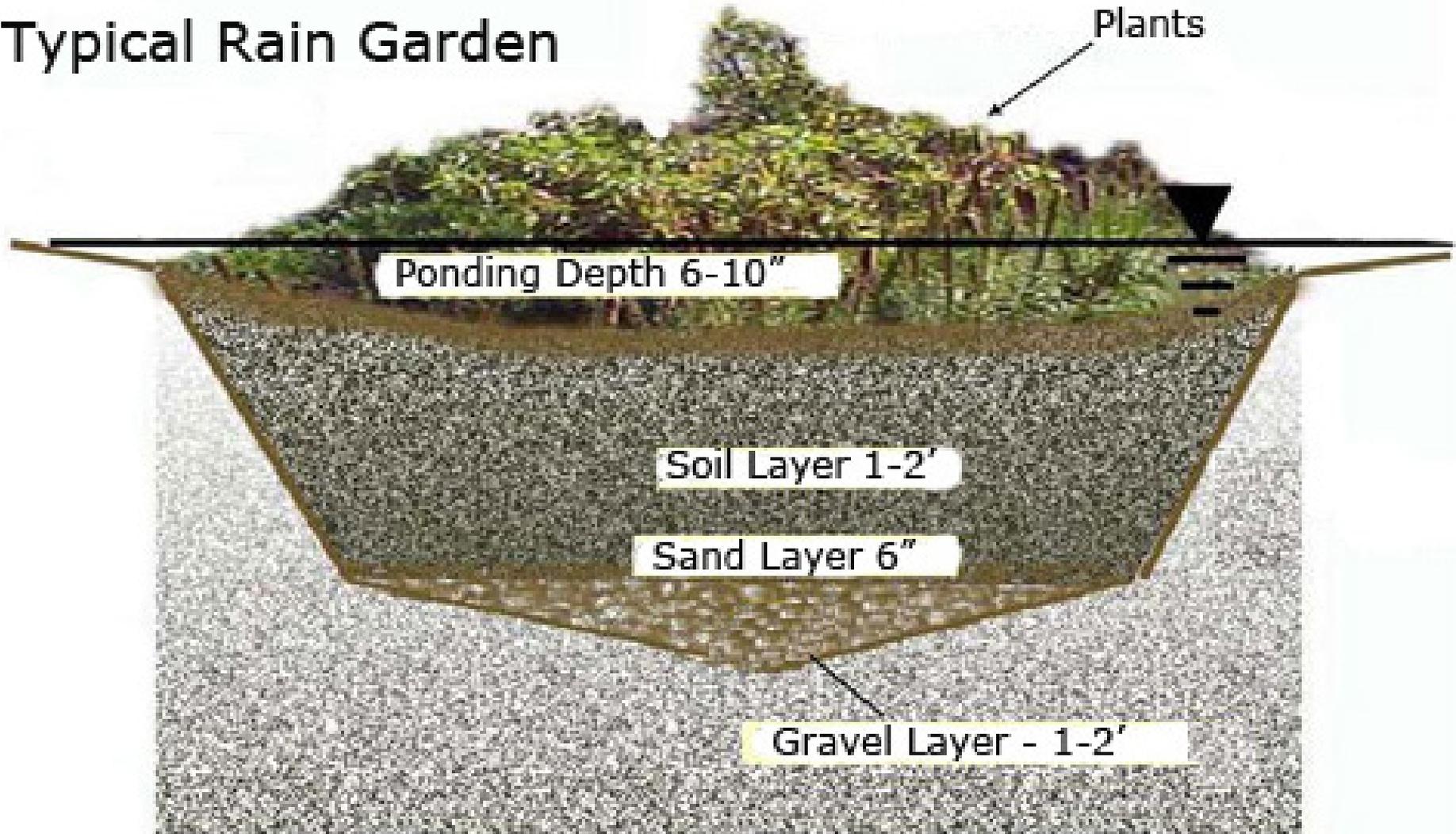
# What is a Rain Garden?

Rain gardens are landscaped areas planted with native vegetation that help filter rainwater that runs off a roof, driveways, sidewalks and lawns.

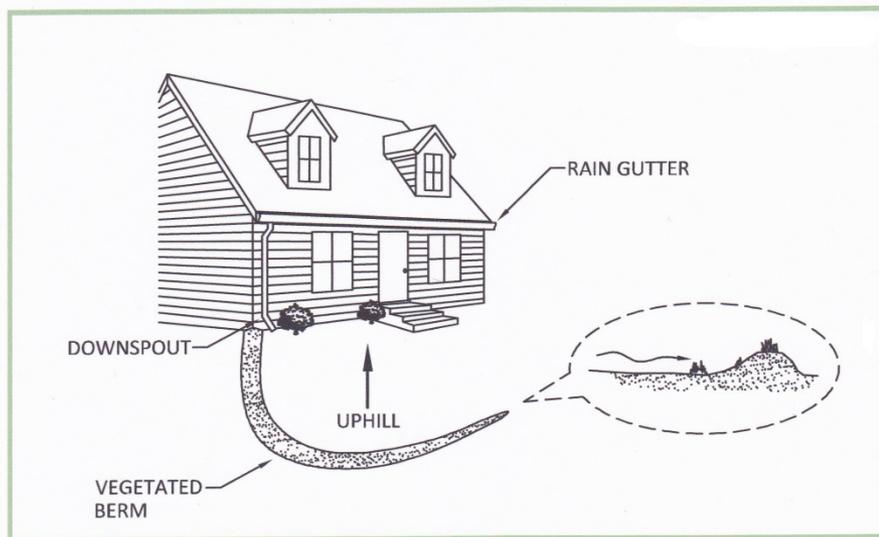
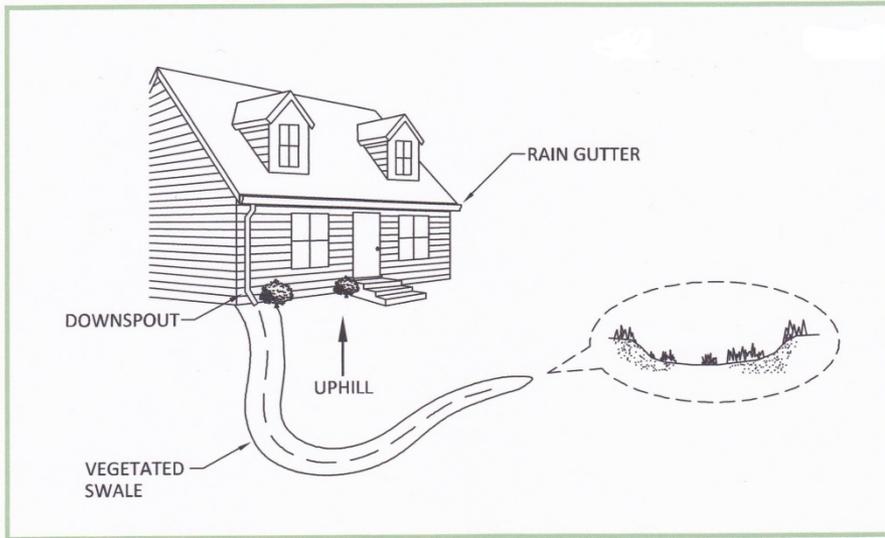




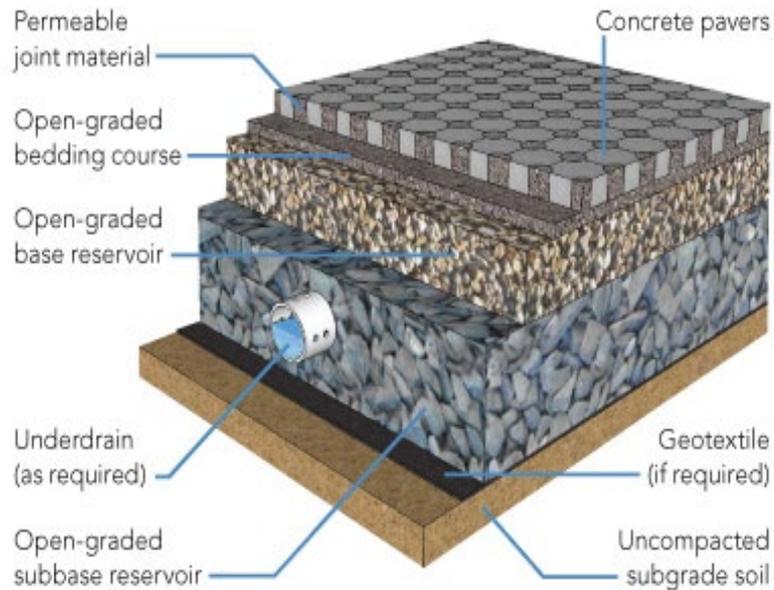
# Typical Rain Garden



# Swales and Berms



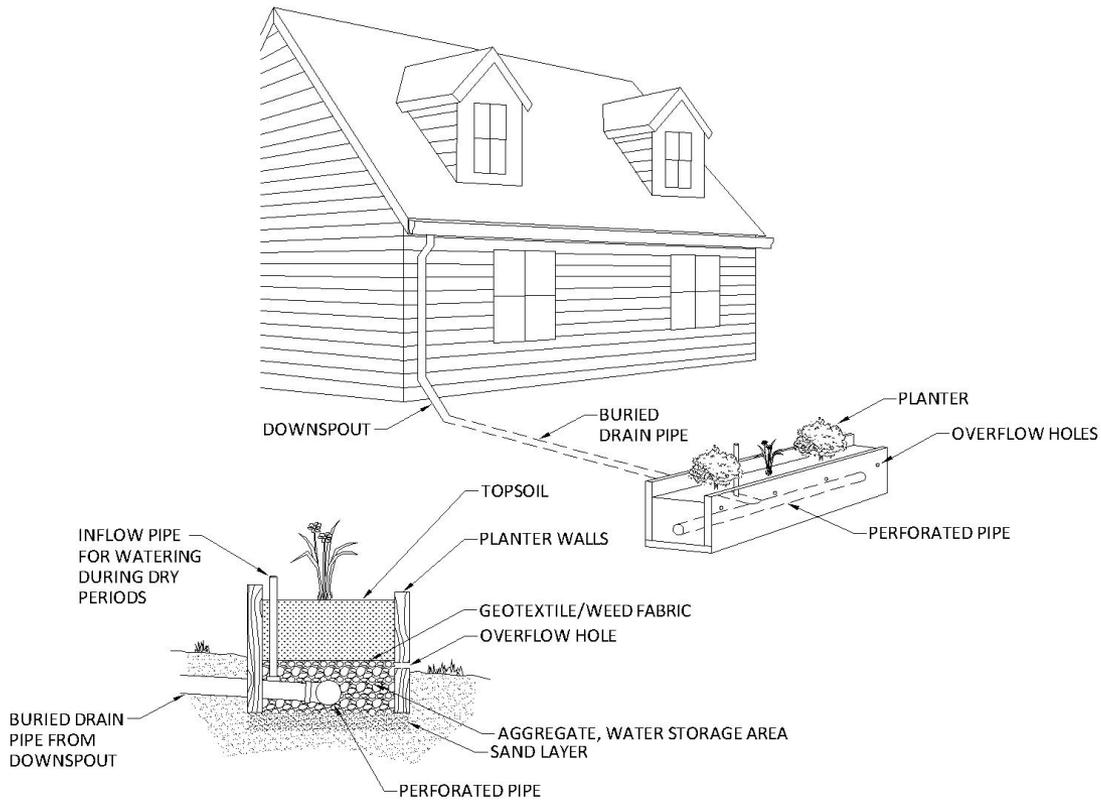
# Permeable Pavers



Permeable pavers are a system of concrete blocks or pavers set in gravel to allow water to pass around them and into the soil.

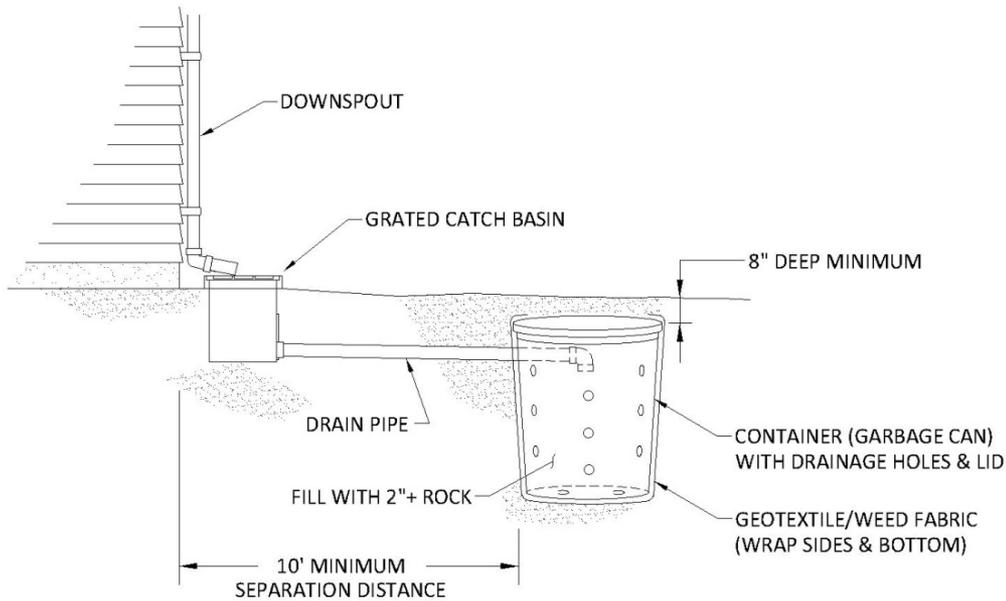


# Flow-Through Planters

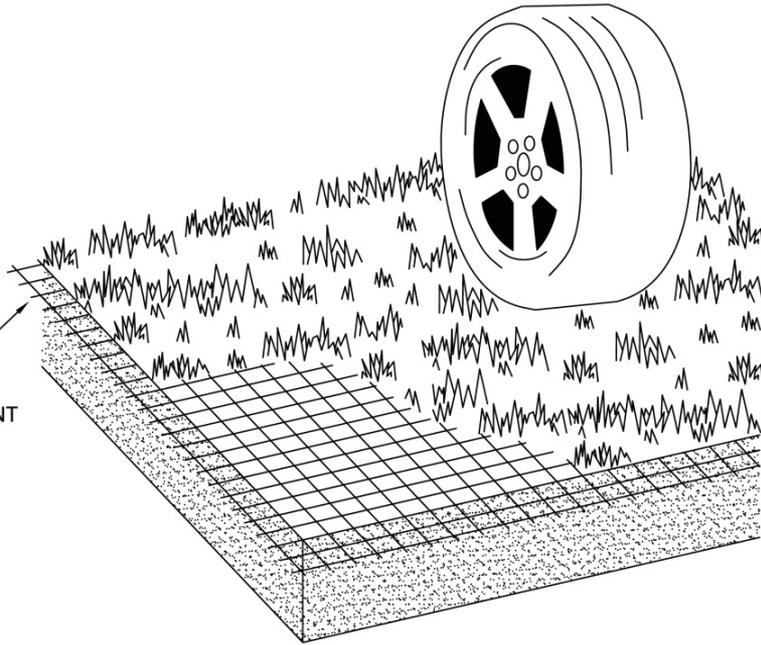




# Dry Wells

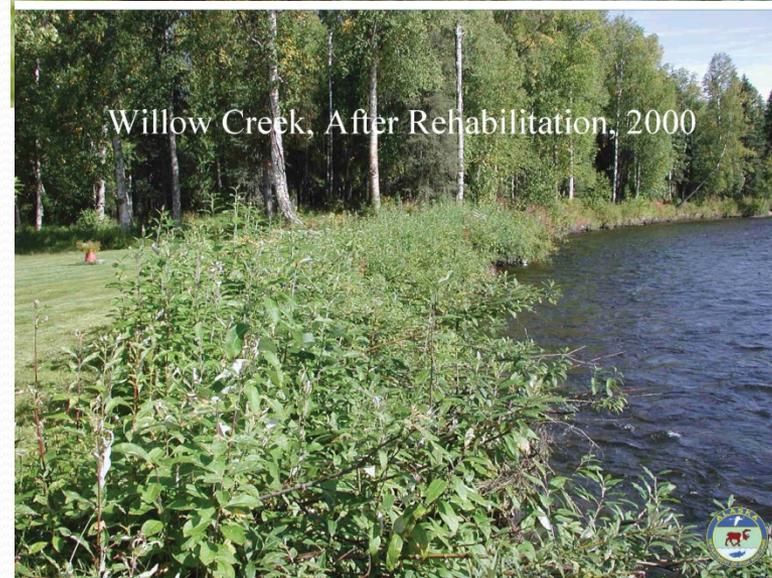
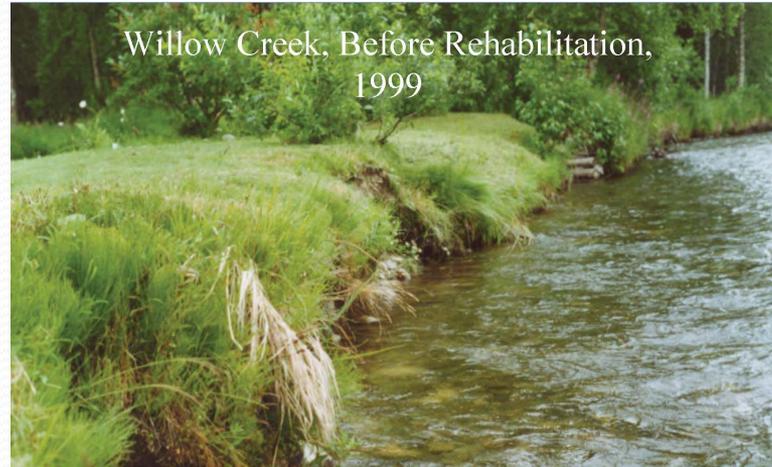
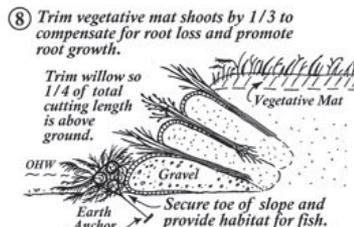
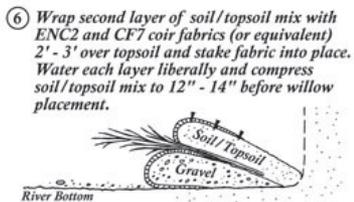
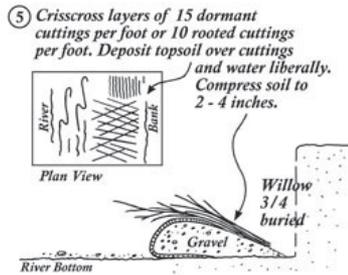
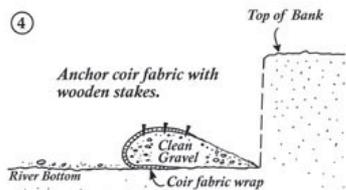
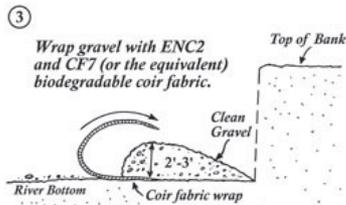
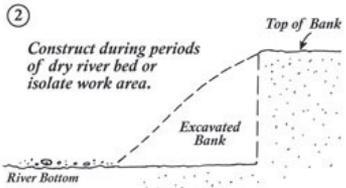
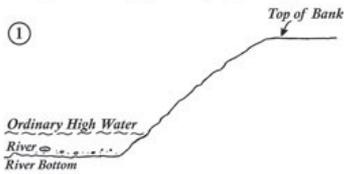


# Grass Mesh



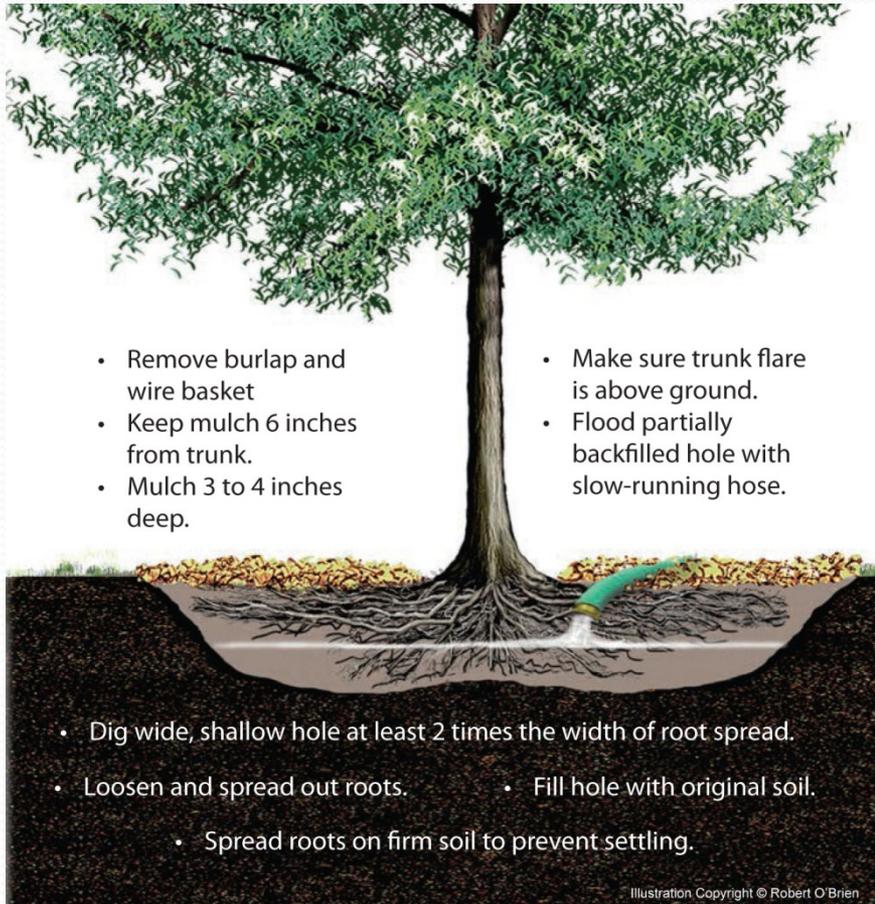
# Riparian Zone Revegetation

## Brush/Hedge Brush Layering Step-by-Step





# Stormwater Trees



# Examples – S Salon (before)



# 2016 Planned Construction

- Rain barrel
- Flow-through planter
- Permeable pavers
- Trees

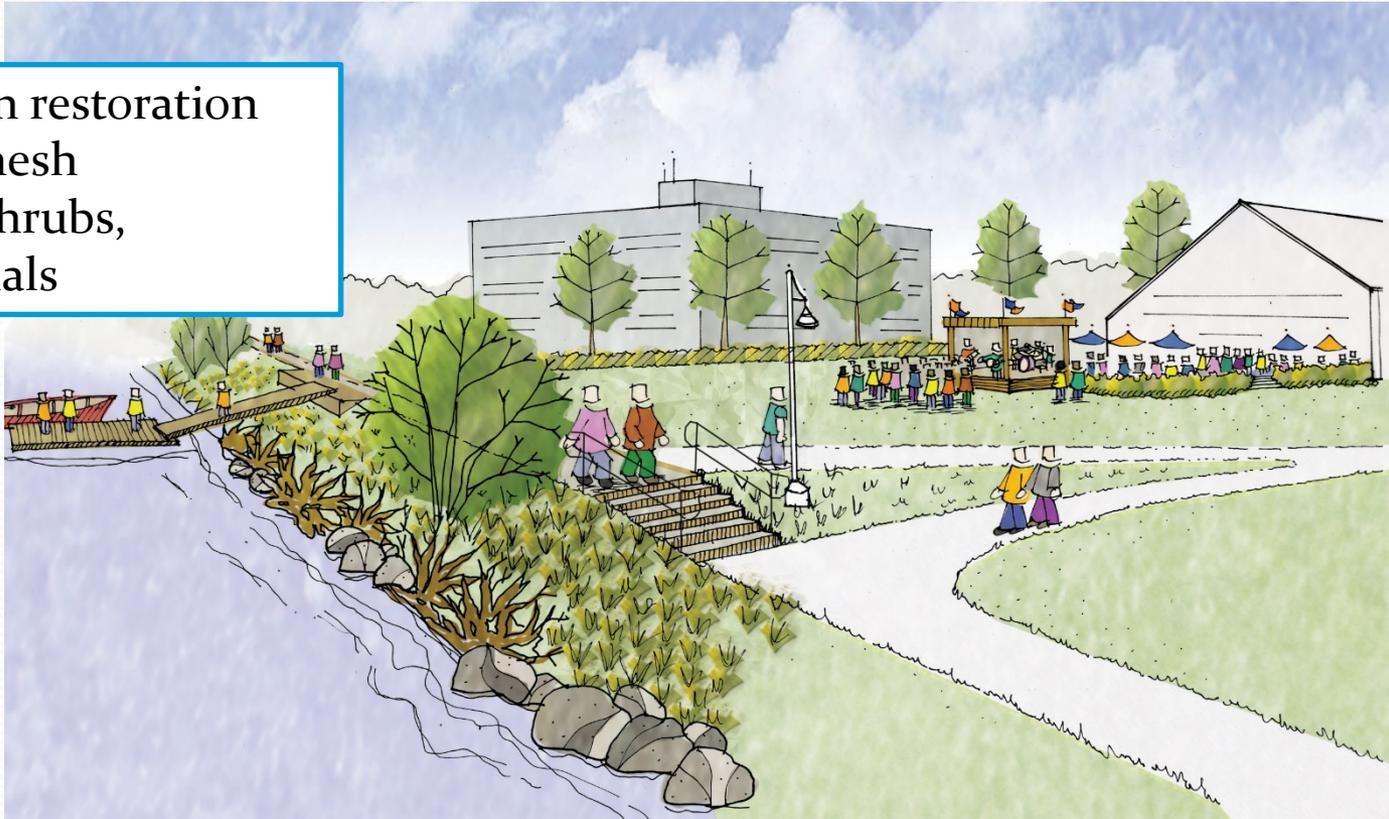


# Examples – the Big I (before)



# 2016 Planned Construction

- Riparian restoration
- Grass mesh
- Trees, shrubs, perennials



# Examples – Bus Depot (before)



# 2016 Planned Construction

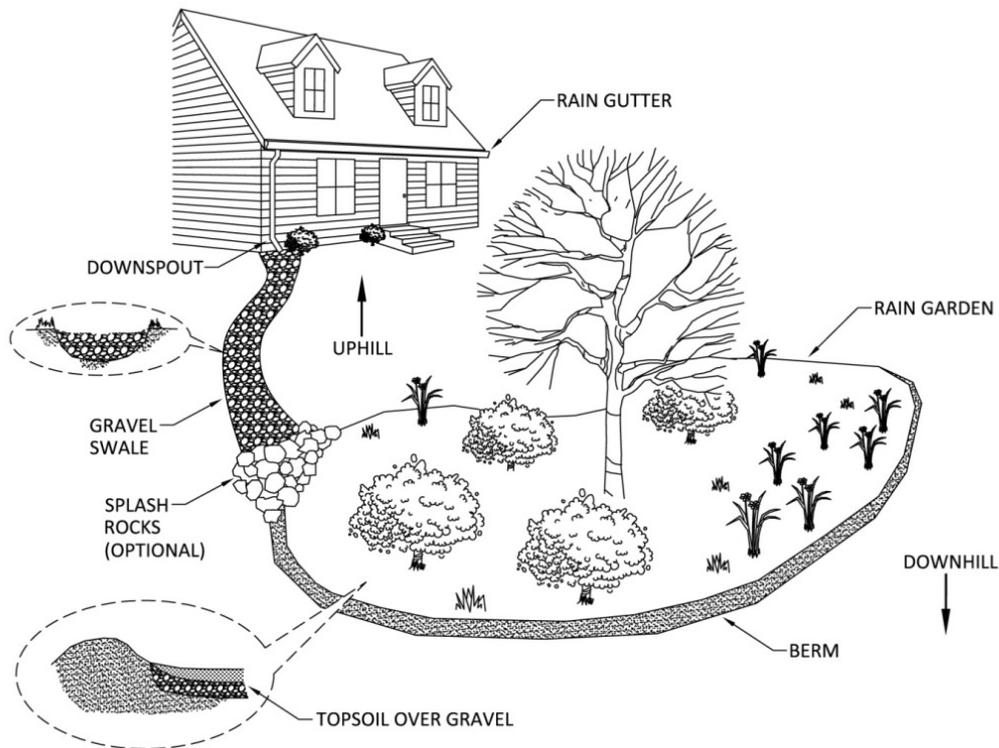
- Permeable pavers
- Curb Cuts



# How Green Infrastructure can benefit and create habitat

- What is habitat?
- Why does it matter to homeowners?
- How GI can create and add to it...

# Rain Gardens



# What is a Pollinator Garden?



A pollinator garden is different than a regular flower garden. In a pollinator garden the plants and structures in the garden are specifically chosen to attract a variety of pollinators and provide them with things that they need to thrive.

# Why Install a Pollinator Garden?



Pollinators need your help! There is increasing evidence that many pollinators are in decline.

Pollinators will also help your vegetable garden.

# Pollinators?



# Planting

Choose native plants if possible. Native plants will attract more native pollinators and can serve as larval host plants for some species of pollinators.



# Recommended Native Plants



Columbine



Fireweed



Tundra Rose



Wild Rose



Yarrow



Forget me not

# Recommended Native Plants



Delphinium



Iris



Jacob's Ladder



Bluebells



Raspberries



Highbush Cranberry

# Landscaping

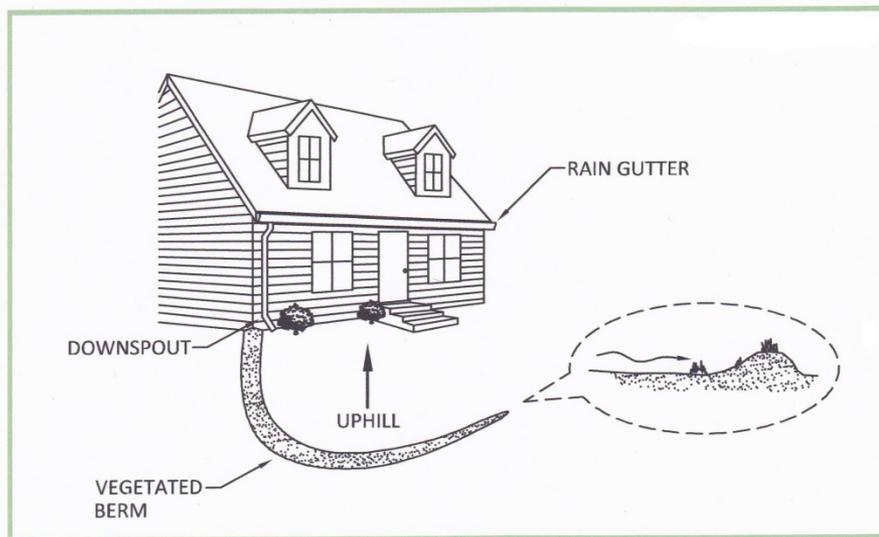
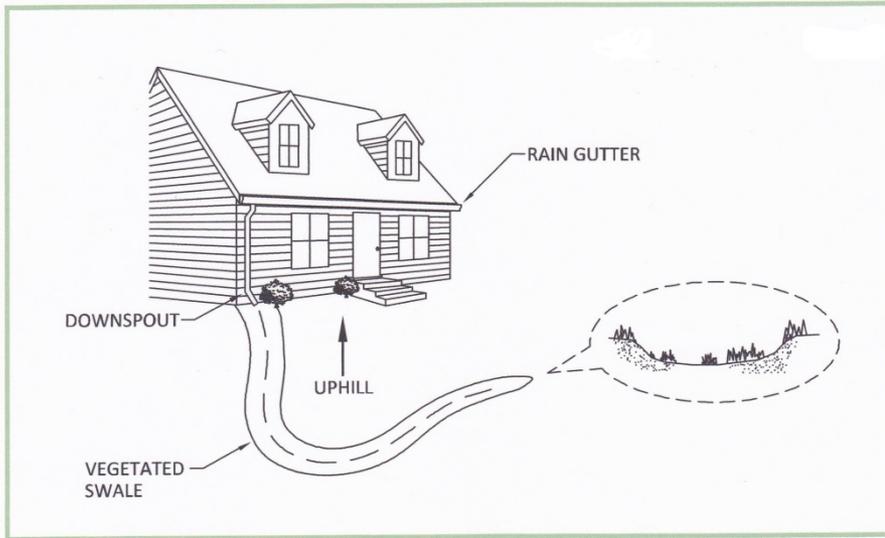


If your garden site is very windy, a wind block may be necessary. Rocks are great for providing contrast to the garden and provide warm places for pollinators to perch.



A bowl with water and mud in the garden provides a place to drink and get minerals.

# Swales and Berms



# What is a Bioswale?

A bioswale is a ditch that allows for rainwater to soak into the earth slowly, rather than flooding streets or going into the ocean.

Here's how it works:

**1** Stormwater runoff from streets and parking lots enters the bioswale through a gradual slope.

**2** Once the water enters the bioswale, it slowly seeps into the soil.

**3** The water slowly filters through the roots of native plants, where a majority of automobile pollutants are removed.

**4** The water enters a secondary filtration level usually made of sand, gravel, or rock.

Lastly, the purified water slowly makes its way to the local aquifer.

**5**



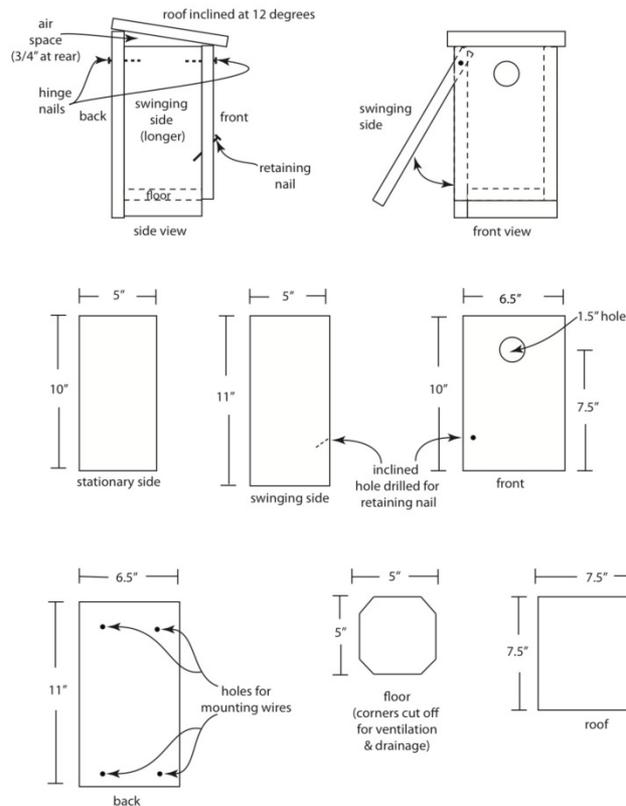




# Habitat for Birds



## Tree Swallow (*Tachycineta bicolor*) Nest Box Plans



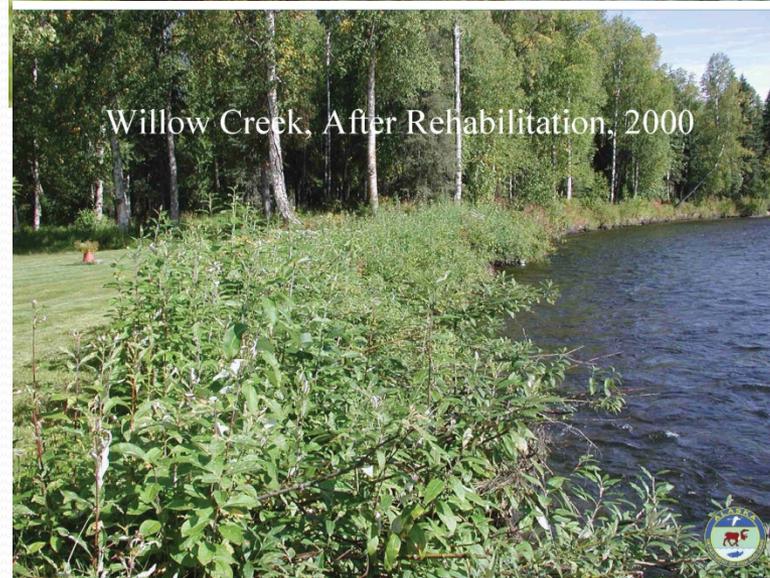
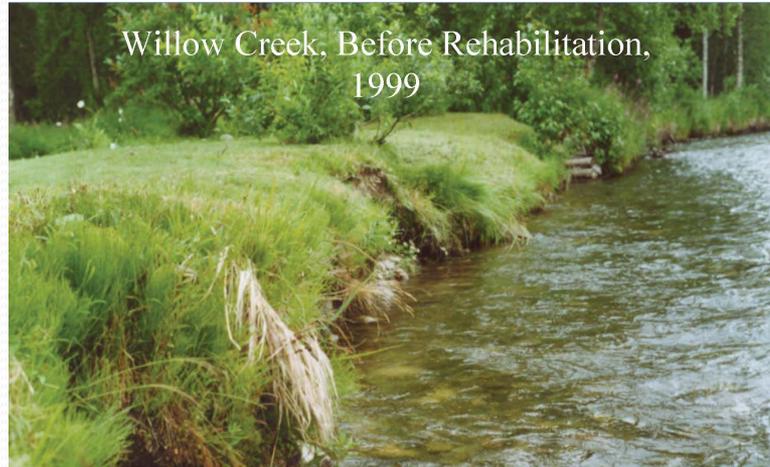
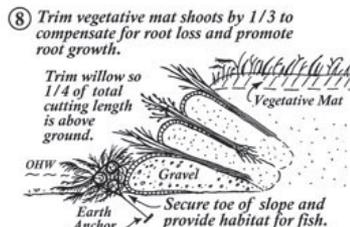
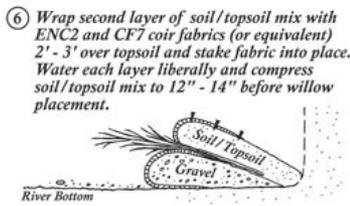
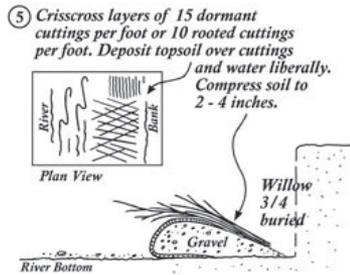
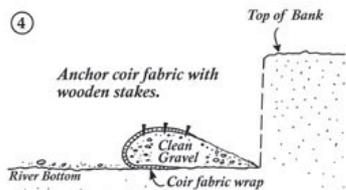
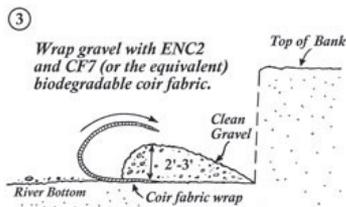
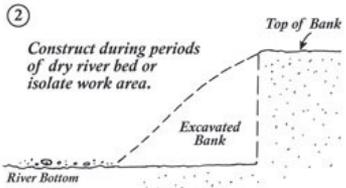
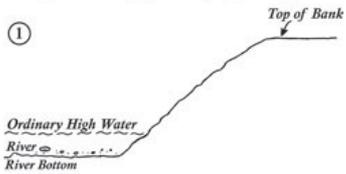
Alaska Songbird Institute, P.O. Box 80235, Fairbanks, AK 99708

[www.aksongbird.org](http://www.aksongbird.org)



# Riparian Zone Revegetation

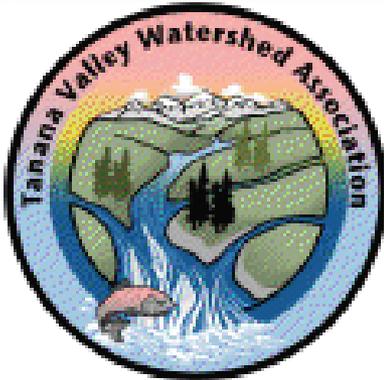
## Brush/Hedge Brush Layering Step-by-Step



# Adding Habitat with Willows



# Partners in this Project



**COLD CLIMATE HOUSING RESEARCH CENTER  
CCHRC**

