

Designing for Aesthetic Appeal

Shapes, Edges, Material



Designing for Aesthetic Appeal

Grouping & Clustering



DAKOTA COUNTY SWCD

Designing for Aesthetic Appeal

Combining Aesthetics with Function



DAKOTA COUNTY SWCD

2018 Design Course Registration

Course Includes:

- Professional help to design a project plan specific for your yard
- Receive the book *The Blue Thumb Guide to Raingardens*
- Qualify for \$250 grant to help offset the cost of your raingarden
- Receive help creating materials necessary for \$1,000 Burnsville grant (plan and cost estimate)

To Register:

\$25 fee per project, fill out form, submit tonight, mail in, or call

Landscaping for Clean Water Workshops are hosted by Dakota County Soil and Water Conservation District in partnership with:

Workshop funding provided by:

Dakota County Soil and Water Conservation District • Vermillion River Joint Powers Organization
Black Dog Watershed Management Organization • Eagan-Inver Grove Heights Watershed Management Organization
Lower Mississippi River Watershed Management Organization

The Raingarden Design Course is intended for homeowners who attended the Landscaping for Clean Water Introduction Workshop. The registration fee is \$25. Pre-registration with payment is required.

Participants will receive The Blue Thumb Guide to Raingardens book.



Mail registration to:
Dakota County SWCD
Extension and Conservation Center
4100 220th St. W, #102
Farmington, MN 55024
Email: swcd@co.dakota.mn.us
Phone: (651) 480-7777

✂

Yes, I will attend the 2016 Landscaping for Clean Water Workshop Design Course as indicated in the check box to the right. (Please send form to Dakota SWCD along with \$25 registration fee.)

A preparation packet will be sent to you prior to the course date.

Name _____

Address _____

City _____ State _____ Zip _____

Email _____

Phone _____

FOR OFFICE USE ONLY

Payment Amount: \$ _____ ☐ Received Book

☐ Cash

Check # _____

☐ Apple Valley – Mon. & Wed. February 29th and March 2nd

☐ Lakeville - Tues. & Thurs. March 8th and 10th

☐ Burnsville –Mon. & Wed. March 14th and 16th

☐ Eagan –Mon. & Wed. March 21st and 23rd

☐ Hastings - Mon. & Wed. April 11th and 13th

☐ Farmington – Friday, April 15th

☐ Apple Valley - Mon. & Mon. April 18th and 25th

☐ West St. Paul- Mon. & Thur. April 18th and 21st

☐ Burnsville - Tues. & Thurs. April 26th and 28th

☐ Farmington - Mon. & Mon. June 13th and 20th

Design Workshops

10 Courses Throughout Dakota County

- Design a plan specific for your yard – Master Gardeners, Landscape Professionals
- Receive a copy of *The Blue Thumb Guide to Raingardens* - \$21 value
- Access to \$250 grants and technical assistance
- \$25 fee - Attendance
- Workshop style – Iterative process



What is Landscaping for Clean Water?



Dakota County Soil and Water Conservation District
BLUE THUMB GRANTS APPLICATION

1. APPLICANT CONTACT
Name _____
Address _____
City, State, Zip _____
Phone _____
Email _____

2. PROJECT TYPE: _____
3. SOURCE OF RUNOFF: _____
4. SIZE OF RUNOFF AREA: _____
5. SIZE OF RAINGARDEN: _____
6. ATTACH PROJECT PLANS FROM BLUE THUMB DESIGN COURSE AND COMPLETED COST ESTIMATE WORKSHEET

7. Public Outreach: Are you willing to allow a small sign to be placed near the project and site visit?
Yes _____ No _____

8. Which Application Round would you like to apply for?
Round 1: April 28th, 2014 _____
Round 2: June 2nd, 2014 _____
Round 3: July 26th, 2014 _____
Round 4: August 26th, 2014 _____
Round 5: November 16th, 2014 _____

I certify that to the best of my knowledge and belief that the information contained in this application is true, complete and accurate.

Signature of Applicant Contact _____ Date _____
Signature of Property Owner(s) _____ Date _____

Blue Thumb Grants
1. Eligible project types are limited to native prairie, riparian and shoreline stabilization that demonstrate compliance with Blue Thumb District criteria and approved prior to beginning the design work. (Grant is not retroactive)
2. District staff will review applications, select grant recipients, verify completed project and determine grant in accordance to program goals.
3. Applications regarding grant approval will be reviewed in the following order:
Round 1: April 28th, 2014 _____
Round 2: June 2nd, 2014 _____
Round 3: July 26th, 2014 _____
Round 4: August 26th, 2014 _____
Round 5: November 16th, 2014 _____
4. Eligible grant and project cost estimates of \$500 to \$10,000 per approved application. Applications need to be received by a certain date and must be received by the District staff.
5. The District staff will review the application and select grant recipients. The number of subsequent applications received on the remaining funds may be considered.
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Dakota County Soil and Water Conservation District 4100 22nd Street West, Suite 302, Farmington, MN 55024 Revised 2/07/12



DAKOTA COUNTY SWCD

Design Workshops

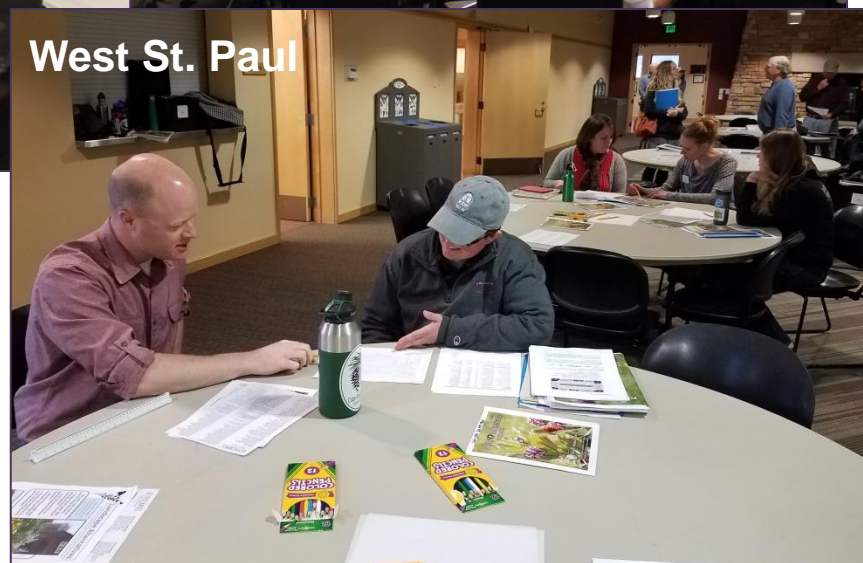
Apple Valley



Farmington



West St. Paul



10 Identical Design Workshops

Collaboratively design projects tailored to landowner's property and goals

Design Workshops



Goals:

- Create full remote design
- Collaborative process
- Tailored to property
- Clear direction
- Limited options
- Listen to their needs
- Empower participants
- Show how others have taken on these projects
- Provide information needed for installation of project

Funding:



Host / Outreach:



Volunteer Expertise:

Landscape Alternatives, Inc.



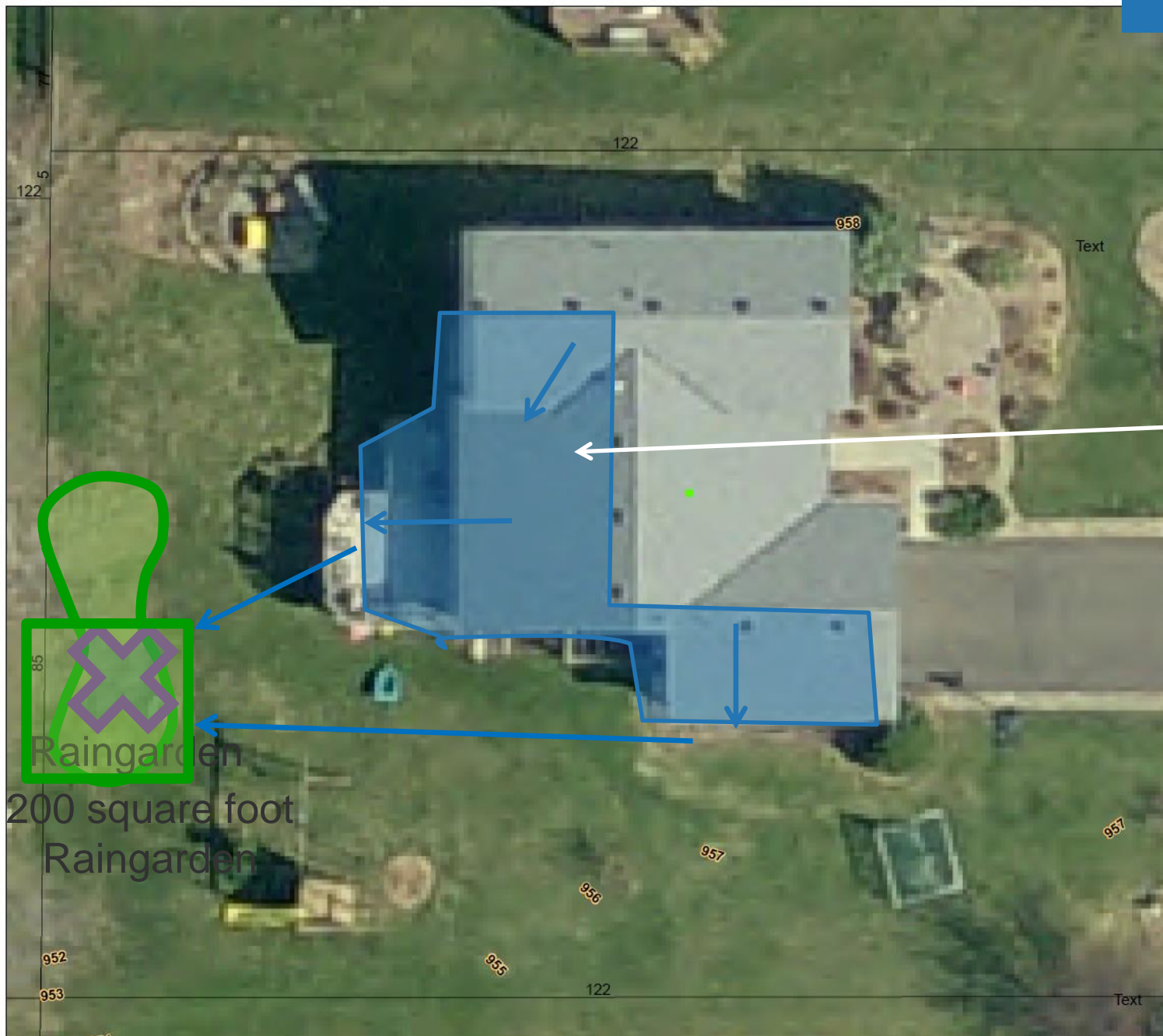
Master Gardener

Design Night 1

- Location of project
- Size of project
- Shape of project
- Homework
- 1 1/2 hours



DAKOTA COUNTY SWCD



600 square
feet of roof
drainage

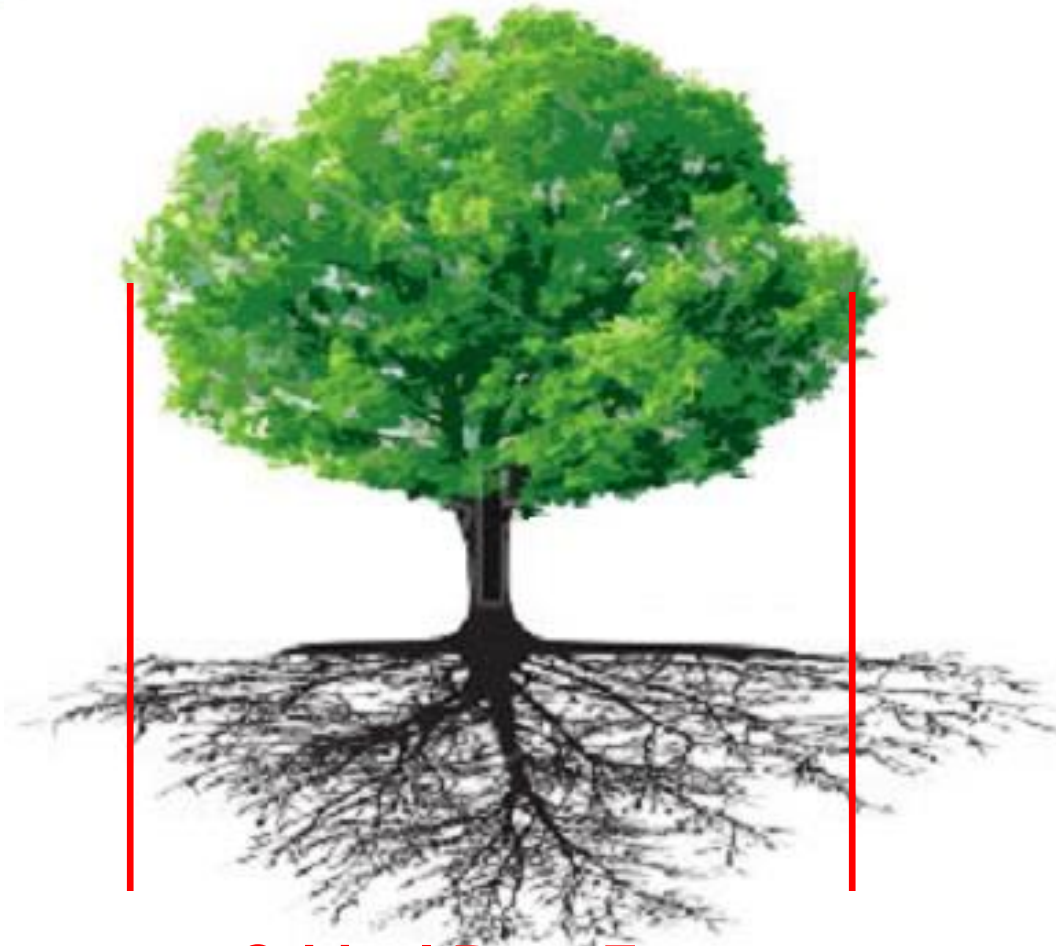
The diagram illustrates a building layout with various rooms and corridors. The layout is divided into sections by dashed lines. Key features include:

- A large central hall (yellow) with a staircase (red) on the right side.
- Several smaller rooms (green) and corridors (yellow) surrounding the central hall.
- Blue arrows indicating the direction of airflow or movement throughout the building.
- A red dashed line indicating a specific path or boundary.
- A green dashed line indicating another specific path or boundary.

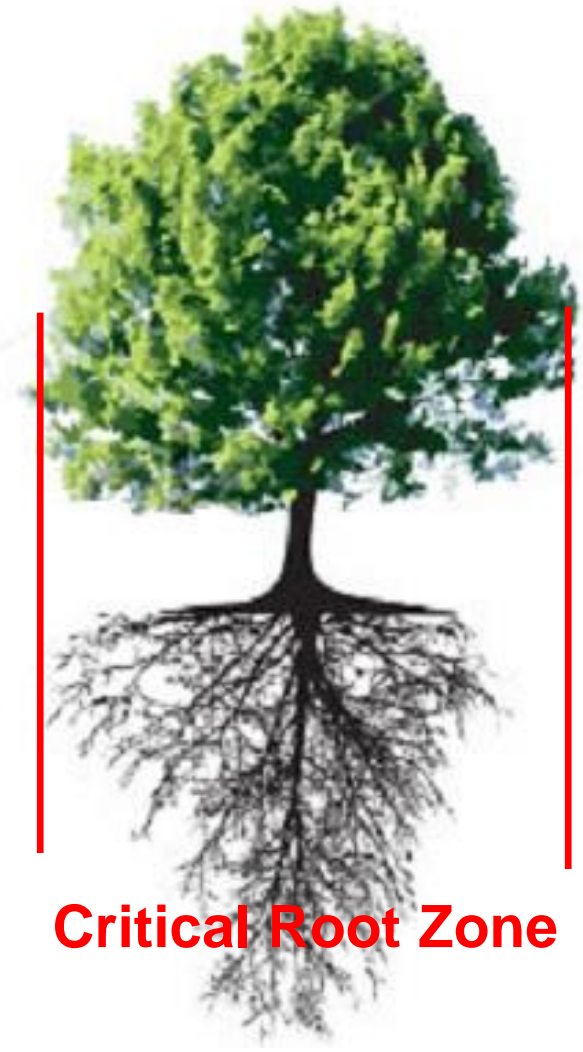
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DAKOTA COUNTY SWCD

Trees.....Have Roots



Critical Root Zone

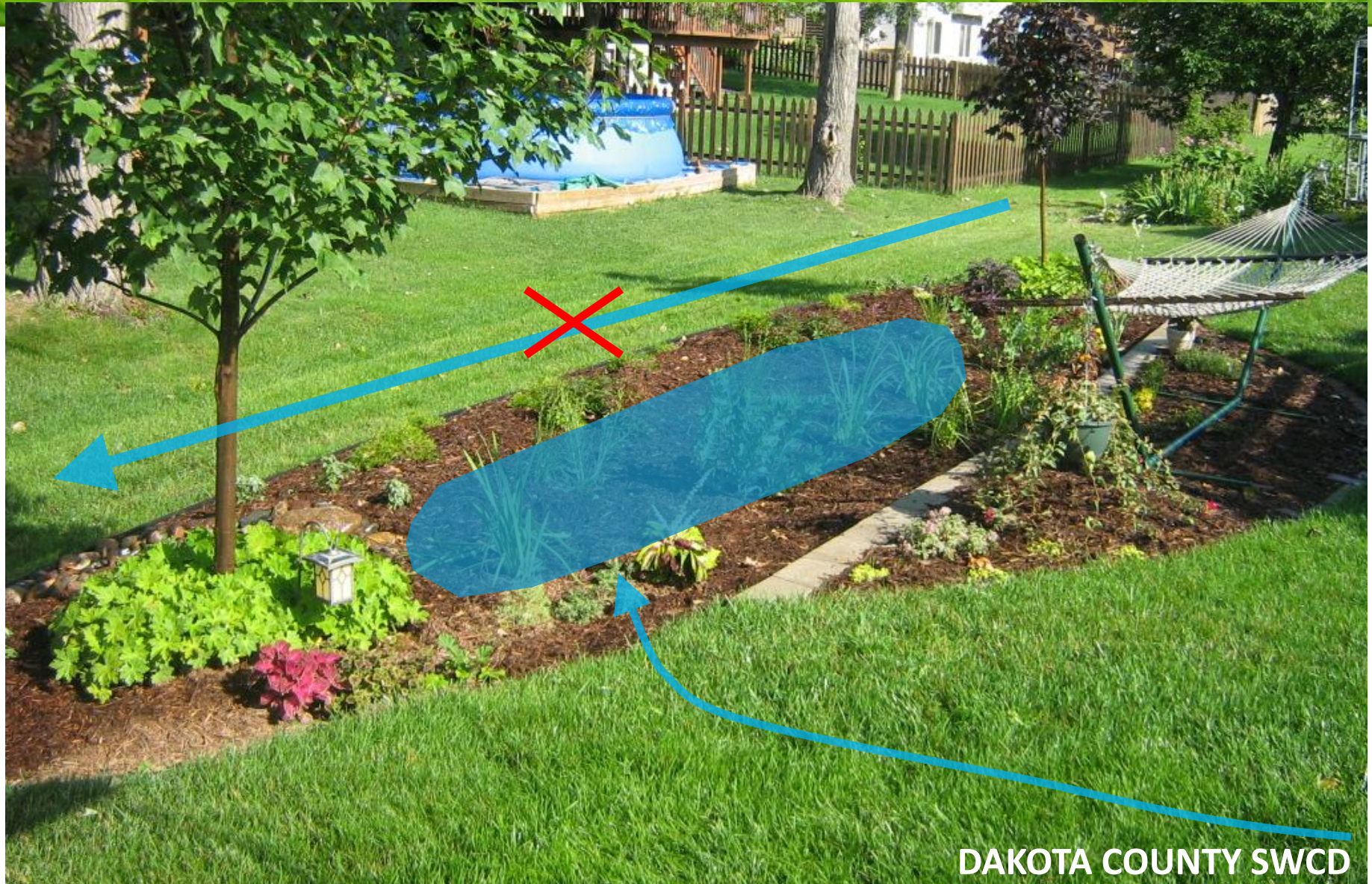


Critical Root Zone

**Minimum 15' away from
building with basement**



Too Much Water!!



DAKOTA COUNTY SWCD

Distance from Street



Goal: Identify the location of your raingarden

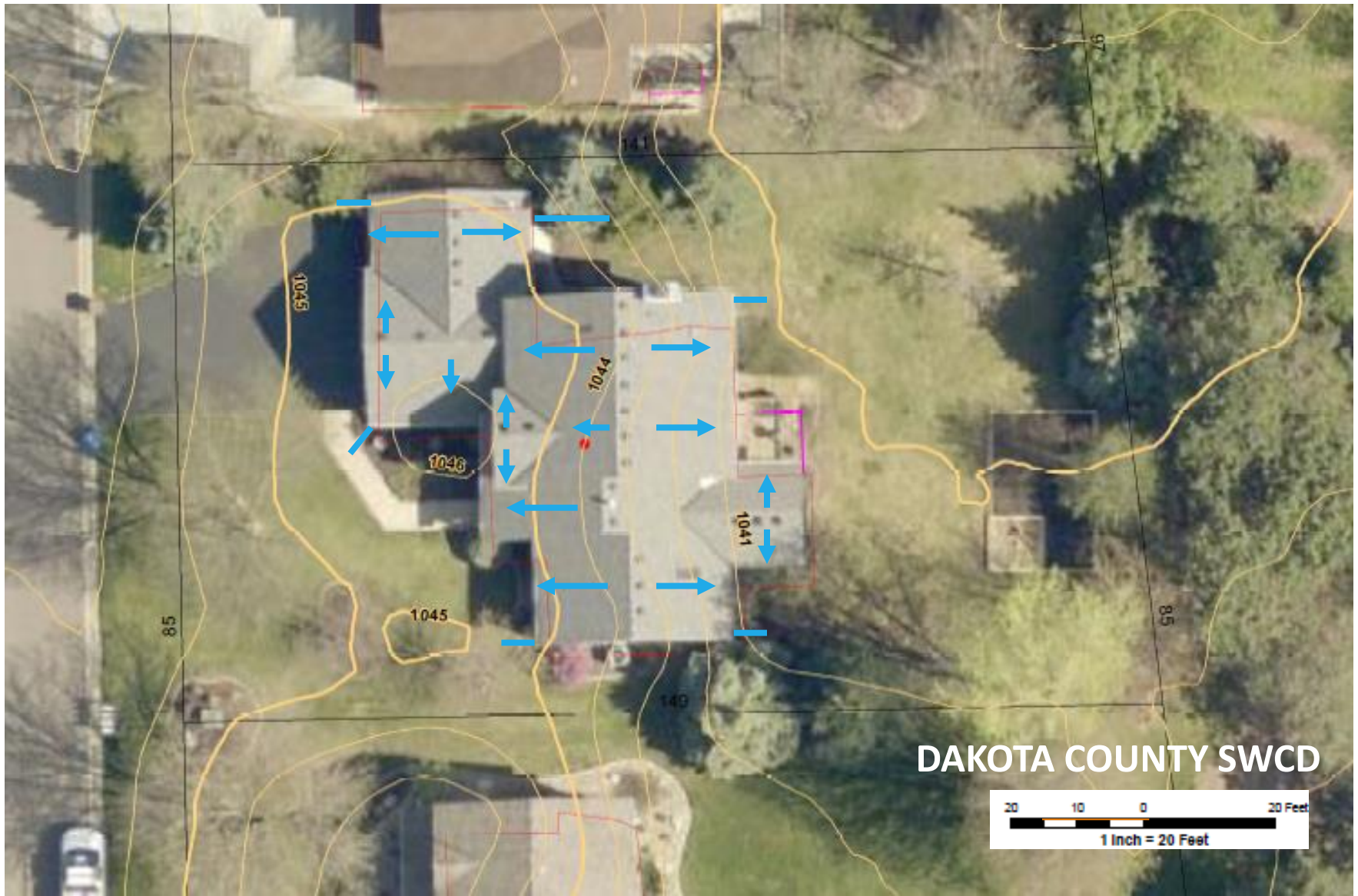
Things to keep in mind...

1. Where is the water coming from and where is it going?
2. Avoid tree roots, critical root zone
3. Minimum distance from building *with basement* (near garage = OK)
4. Consider amount of water flow
5. Consider maintenance obstacles (mowing, fences)
6. Distance from street (right of way)
7. 6:1 slope max for raingarden without retaining wall

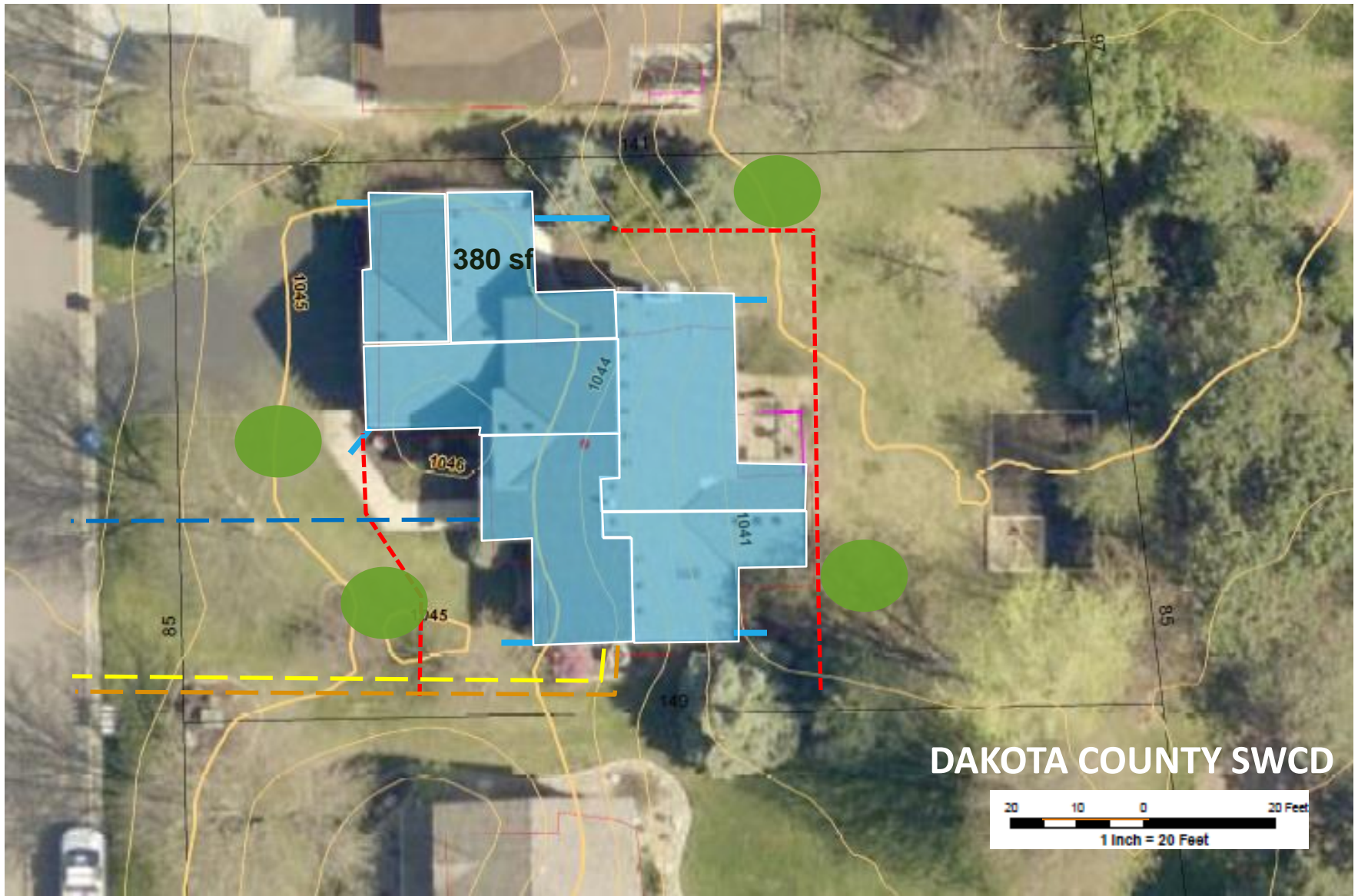
Time: 20 minutes



Example Project



Example Project



How big of a raingarden?



Step 2 – Calculate Size

Drainage Area (ft)
Depth of Raingarden (in)

DAKOTA COUNTY SWCD
= Size of raingarden (sq. ft.)

Shaping Your Garden

LANDSCAPING FOR
CLEAN WATER



Dakota County Soil and
Water Conservation District

DAKOTA COUNTY SWCD



After Rain



Rainbarrel to Raingarden

Design Night 2

- **Water Conveyance**
- **Cost Estimate**
- **Plant Selection and Layout**
- **Cost-Share Application Form**
- **1.25 hours**



Cost Estimate Worksheet

Night 2

Prep Related Materials

drain tile outlet (as per plan) (4-6" pipe w/ debris cover @ inlet & outlet)
soil Replacement for Raingarden (well-aged, weed-seed free) + delivery

1 truck = 150 sq ft garden

Compost) Liam

Qty	Unit	Unit Cost	Amount
	overflow	\$	\$
2	\$25 cu yd	\$	\$ 50-
80 ft	.75 ft	\$	\$ 60 180
2	60 hr	\$	\$ 120
1	2 hr	\$	\$ 12
	delivery	\$	\$ -

GRADING AND SITE-PREPARATION RELATED COSTS

rock tier -

30

each block

\$2

\$ 242

60 / \$302

Plant Materials

Blanket (Material: _____, Size: _____' x _____')
es, 6" (for anchoring ECB)
ish Area (at outlet of drain-tile pipe) (approx. _____' x _____' x _____")
wood Mulch (2-3" depth) (entire planting area) (1 cy = 150 sq. ft.)
Mulch) Liam

Qty	Unit	Unit Cost	Amount
—	roll	\$	\$ —
—	each	\$	\$ —
—	cu ft	\$	\$ —
2	\$24 cu yd	\$	\$ 48-
—	— load	\$	\$ —

cover

EROSION CONTROL MATERIALS COSTS

\$ 48-

(Plugs & Plots)

(for Wet-Moist Soils-raingarden bottom) (_____" spacing)
(for Moist Soils-raingarden bottom/sides) (18" spacing) .45
(for Dry Soils-raingarden sides/border) (15" spacing) .65
for _____ Soils) (_____" spacing)
(for Moist Soils-Inlet Filter grass) (12" spacing) (Sweetgrass)
)

Qty	Unit	Unit Cost	Amount
—	each	\$	\$ —
150 sq ft	each	\$	\$ 67.50
180 sq ft	each	\$	\$ 117-
—	each	\$	\$ —
—	each	\$	\$ —
—	delivery	\$	\$ 0

PLANT MATERIALS COSTS

80 -

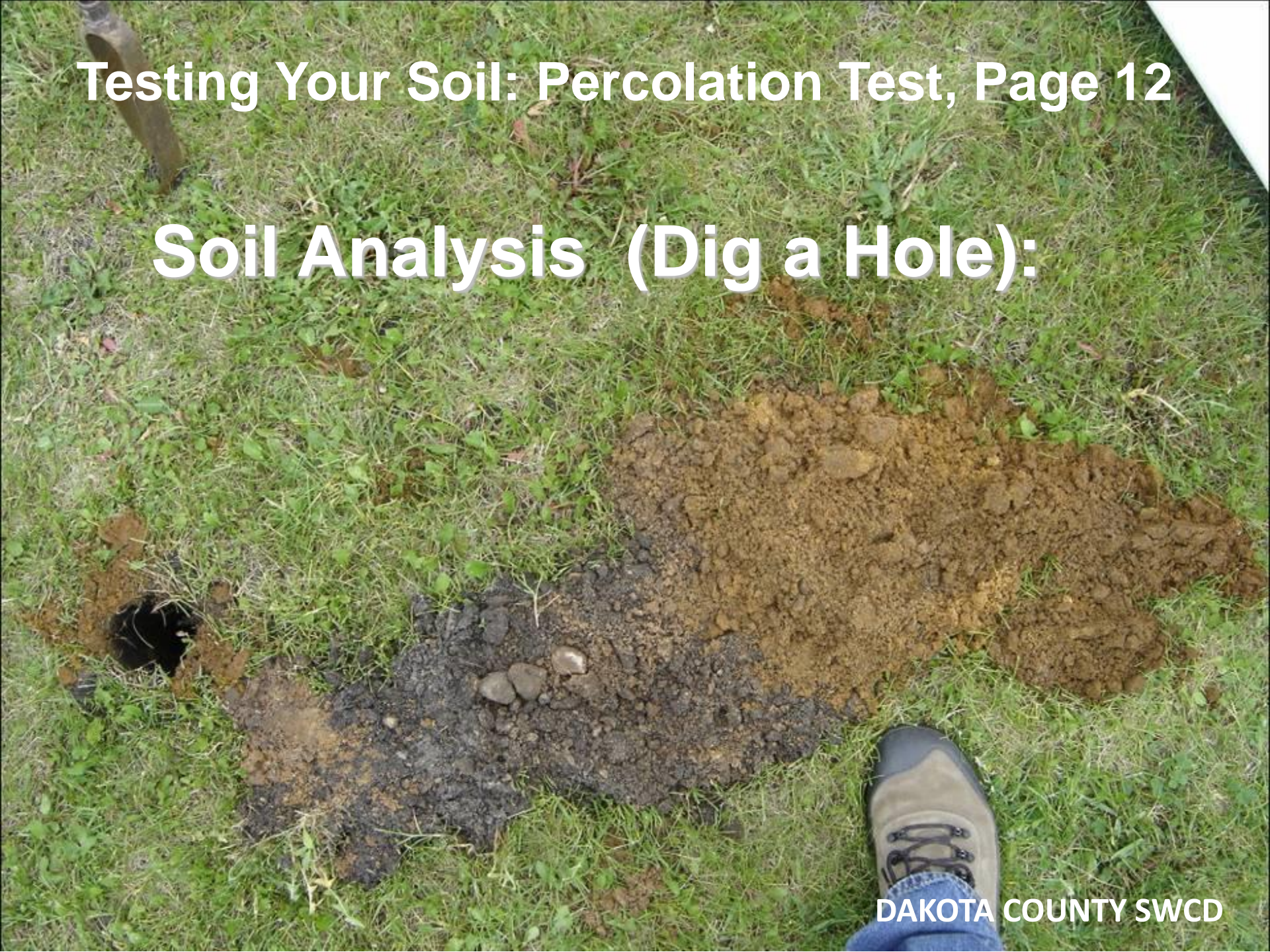
80 -
\$ 264.50

Total: 614.50



Testing Your Soil: Percolation Test, Page 12

Soil Analysis (Dig a Hole):



Soils & Raingarden Depths



- Clays:
 - 3 to 4" Raingarden Depth
 - Over-excavate and Incorporate Leaf Compost
- Silts or Loams:
 - 5" Raingarden Depth
 - Loosen soils and Incorporate Leaf Compost
- Sands:
 - 6 to 8" Raingarden Depth
 - Incorporate Leaf Compost

Cost Estimate

Water Conveyance

Raingarden Project Worksheet
Cost Estimate

Landowner:
Street Address:
City, Zip:

Water Conveyance (if needed)	Qty	Unit	Unit Cost	Amount
Downspout connector				
Drain Tile or PVC Piping				
Critter Guard				
Pop Up Emitter				
River Rock Splash Area (at outlet of drain-tile pipe)				
WATER CONVEYANCE COSTS				\$

Grading and Site Prep Related Materials	Qty	Unit	Unit Cost	Amount
Sod Cutter		hr	\$	\$
Rototiller		hr	\$	\$
Leaf-Compost/Soil Replacement for Raingarden (well-aged, weed-seed free)		cu yd	\$	\$
Delivery (Leaf-Compost)		delivery	\$	\$
Edging (Type _____)		ft	\$	\$
Edging Trencher		hr	\$	\$
GRADING AND SITE-PREPARATION RELATED COSTS				\$

Mulch	Qty	Unit	Unit Cost	Amount
Shredded Hardwood Mulch (2-3" depth) (entire planting area) (1 cu = 150 sq. ft.)		cu yd	\$	\$
Delivery (Wood Mulch)		load	\$	\$
MULCH AND DELIVERY COSTS				\$

Plant Materials (Plugs & Pots)	Qty	Unit	Unit Cost	Amount
Native Perennial Plugs (_____ spacing)		each	\$	\$
Native Perennial 3-4" Pots (_____ spacing)				
Outlier Perennials (_____ spacing)				
Other Plants (larger container sizes)		each	\$	\$
Native Shrubs (for _____ Soils) (_____ spacing)		each	\$	\$
Delivery (Plants)		delivery	\$	\$
PLANT MATERIAL COSTS				\$
OTHER COSTS (retaining wall, excavation equipment, erosion control blanket, etc.)				\$
Total Project Cost				\$



Downspout Connection



Catch Basin with Grate: \$40



Flexible downspout filter: \$10

Water Conveyance (if needed)

Downspout connector

Drain Tile or PVC Piping

Critter Guard

Pop Up Emitter

River Rock Splash Area (at outlet of drain-tile pipe)

Qty

Unit

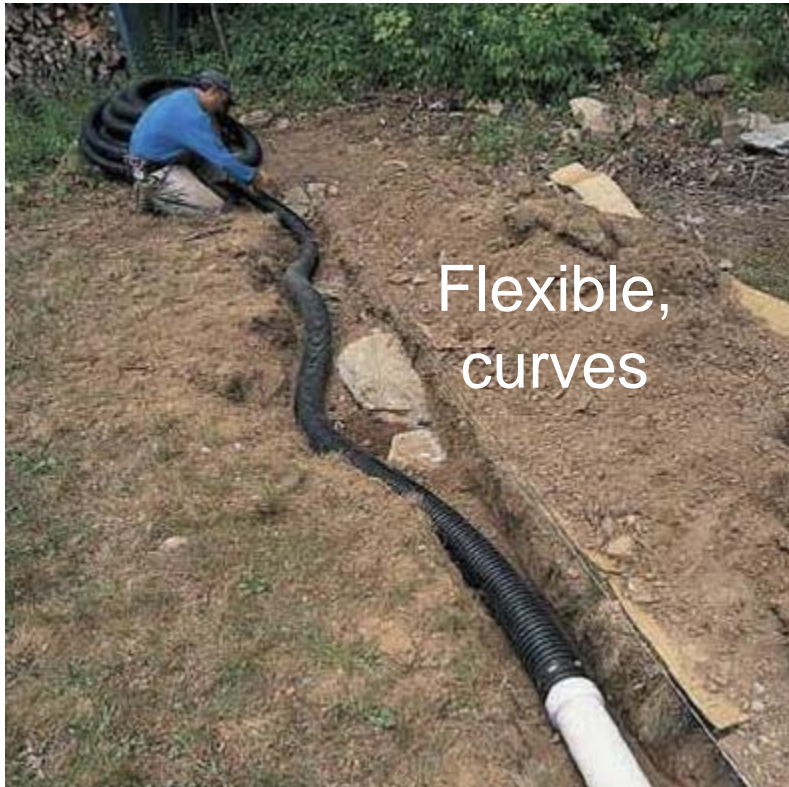
Unit Cost

Amount

WATER CONVEYANCE COSTS

\$

Drain Tile and PVC Piping



Water Conveyance (if needed)

Downspout connector

Drain Tile or PVC Piping

Critter Guard

Pop Up Emitter

River Rock Splash Area (at outlet of drain-tile pipe)

Qty

Unit

Unit Cost

Amount

WATER CONVEYANCE COSTS

\$

Critter Guard, Pop-up Emitter



Critter Guard
(Atrium Grate): \$6



Pop-Up Emitter: \$15

Water Conveyance (if needed)

	Qty	Unit	Unit Cost	Amount
Downspout connector				
Drain Tile or PVC Piping				
Critter Guard				
Pop Up Emitter				
River Rock Splash Area (at outlet of drain-tile pipe)				

WATER CONVEYANCE COSTS

\$

Cost Estimate

Grading and Site Preparation Materials



Sod Cutter

Sod Cutter Rental
\$50.00 for 2 hrs



Grading and Site Prep Related Materials

	Qty	Unit	Unit Cost	Amount
Sod Cutter		hr	\$	\$
Rototiller		hr	\$	\$
Leaf-Compost/Soil Replacement for Raingarden (well-aged, weed-seed free)		cu yd	\$	\$
Delievery (Leaf-Compost)		delivery	\$	\$
Edging (Type _____)		ft	\$	\$
Edging Trencher		hr	\$	\$

GRADING AND SITE-PREPARATION RELATED COSTS

\$

Leaf Litter Compost

1 truckload (1 yard) for
150 sq. ft. raingarden

Cost is \$15-\$25 per yard
(more if it is bagged)



Delivery fee approx.
\$70 per load

Grading and Site Prep Related Materials

	Qty	Unit	Unit Cost	Amount
Sod Cutter		hr	\$	\$
Rototiller		hr	\$	\$
Leaf-Compost/Soil Replacement for Raingarden (well-aged, weed-seed free)		cu yd	\$	\$
Delievery (Leaf-Compost)		delivery	\$	\$
Edging (Type _____)		ft	\$	\$
Edging Trencher		hr	\$	\$

GRADING AND SITE-PREPARATION RELATED COSTS

\$

Wood Mulch

Shredded Hardwood Mulch

(fibrous stands will mat together)

\$30 and up per
cubic yard



1 cubic yard of mulch covers
150 square feet (at 2-3" depth)

Mulch

Shredded Hardwood Mulch (2-3" depth) (entire planting area) (1 cy = 150 sq. ft.)

Delivery (Wood Mulch)

Qty

Unit

Unit Cost

Amount

	cu yd	\$	\$
	load	\$	\$

MULCH AND DELIVERY COSTS

\$

Plants

Selection and Cost Estimate



Plant Prices

'Plugs'

\$1.00-1.50 ea.
in 6 packs



(native plants)

Gallon pots (cultivars)

\$8+ each



3-4" pots

\$3-10 each



Shrubs

\$20-35 each

Plant Materials (Plugs & Plots)

Native Perennial Plugs (____ " spacing)
Native Perennial 3-4" Pots (____ " spacing)
Cultivar Perennials (____ "spacing)
Other Plants (larger container size)
Native Shrubs (for ____ Soils) (____ " spacing)
Delivery (Plants)

Qty	Unit	Unit Cost	Amount
	each	\$	\$
	each		
	each	\$	\$
	delivery	\$	\$

PLANT MATERIAL COSTS

\$

Plant Selection



Asclepias tuberosa

Butterfly Milkweed

Butterfly milkweed is a clump forming prairie flower that thrives in dry to medium soils. It has flat-topped orange flowers that are on stems that grow to 3-feet tall. It has a long taproot, making transplanting difficult. It is very hardy, heat and drought tolerant. Butterfly milkweed is an excellent plant for attracting caterpillars and butterflies, particularly monarchs. It seems to be deer resistant. It prefers dry sandy to loam soils though it will tolerate most soils. (Native to Midwest)



Butterflies

Dry to Average

3-inches of inundation

Sides and Front

Sand, Loam



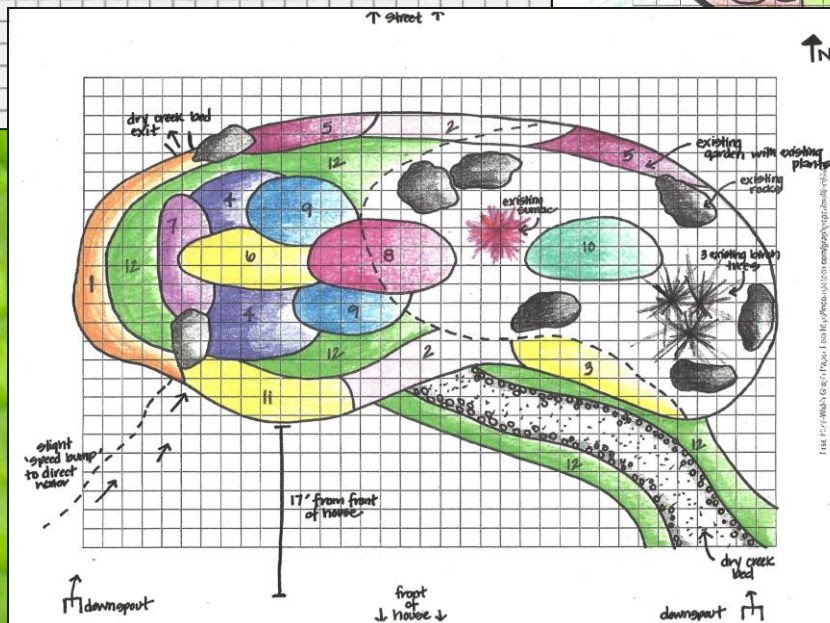
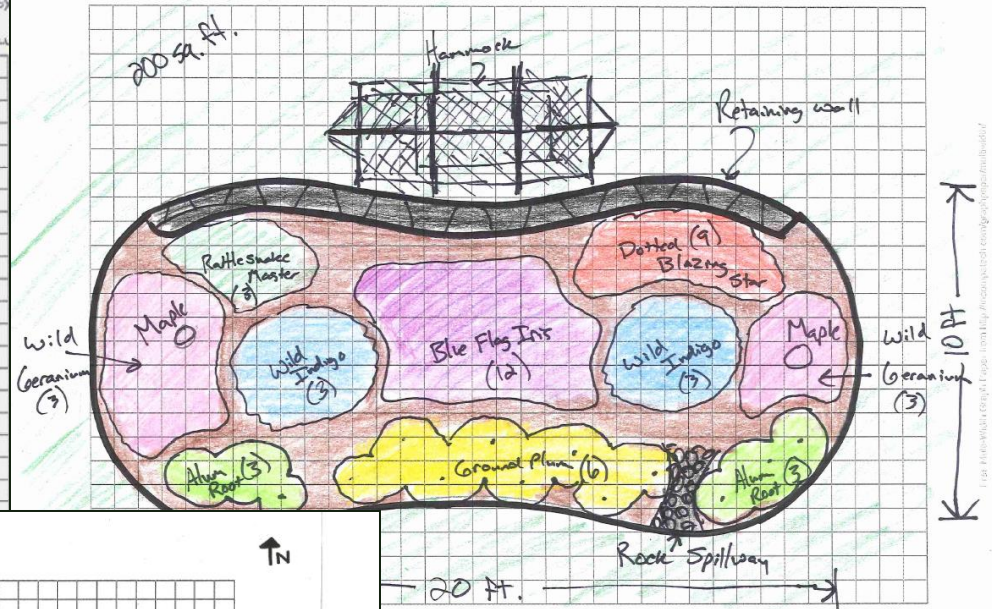
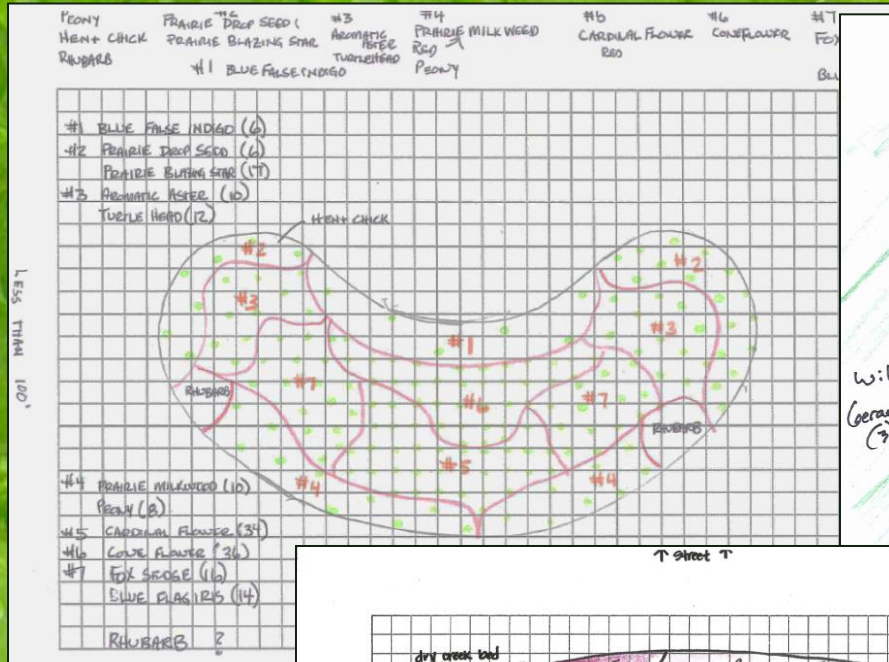
Goal

Have a written planting plan for your garden

Time: 30 minutes



Example Planting Plans



Plant	sun	irradiation	placement	color	notes
1 Butterfly Milkweed	full/part	8"	side/front	orange	1-8
2 Anemone	full/part	8"	side/front	pink	9-10
3 Foxglove	part/shade	9"	bottom/back	white	9-10
4 Purple Coneflower	full/part	10"	side/back	purple	1-8
5 Flower	full/part	8"	front	pink	9-10
6 Anemone	full/part	12"	bottom	yellow	8-10
7 Meadow	full/part	10"	bottom/back	purple	7-9
8 Cardinal	part/shade	10"	bottom	red	7-9
9 Great Blue	full/part	9"	bottom/front	purple	7-10
10 Evening	full/part	8"	front	pink	7-9
11 Wild	full/part	8"	front	purple	7-9
12 Flower	full	8"	side/back	open	anytime

What is Landscaping for Clean Water?



**Dakota County Soil and Water Conservation District
BLUE THUMB GRANTS APPLICATION**

1. APPLICANT CONTACT
Name: _____
Address: _____
City, State Zip: _____
Phone: _____
Email: _____

2. PROJECT TYPE: _____ Rain garden _____ Native Garden _____ Shoreline _____
3. SOURCE OF RUNOFF: _____ Roof _____ Driveway _____ Other (specify): _____
4. SIZE OF RUNOFF AREA: _____ square feet
5. SIZE OF RAINGARDEN, NATIVE GARDEN, SHORELINE: _____ square feet
6. ATTACH PROJECT PLANS FROM BLUE THUMB DESIGN COURSE AND COMPLETED COST ESTIMATE WORKSHEET

7. Public Outreach: Are you willing to allow a small sign to be placed near the project and site visit?
Yes _____ No _____

8. Which Application Round would you like to apply for?
Application Deadline
Round 1: April 25, 2014 _____ Project Completion* July 25, 2014
Round 2: June 25, 2014 _____ August 25, 2014
Round 3: July 25, 2014 _____ November 15, 2014
* Grant installation begins if the project is not completed by this date.

I certify that to the best of my knowledge and belief that the information contained in this application is true, complete and accurate.

Signature of Applicant Contact: _____ Date: _____
Signature of Property Owner(s): _____ Date: _____

Blue Thumb Grants
1. Eligible project types are limited to native prairie, rain garden and shoreline revegetation that demonstrate compliance with Blue Thumb District criteria and approved prior to beginning the design phase. District review and approval is required for all projects.
2. District staff will provide technical assistance, site visits, and materials. District staff will not be responsible for the cost of the project.
3. Applicants must successfully complete a Blue Thumb design workshop and submit a project plan and cost estimate for the project.
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5. Applicants must submit a project plan and cost estimate for the project.
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Dakota County Soil and Water Conservation District 4100 22nd Street West, Suite 102, Farmington, MN 55024 Revised 2/07/12



What is Landscaping for Clean Water?



1. Learn



2. Plan/Design

The form is titled "Dakota County Soil and Water Conservation District BLUE THUMB GRANTS APPLICATION". It contains several sections for applicant information, project details, and a checklist of requirements. The form is numbered 1 through 7, with sub-sections for each. It includes fields for Name, Address, City, State, Zip, Phone, Email, Project Type, Source of Runoff, Size of Runoff Area, Size of Rain Garden, Native Garden, Shrubline, Attach Project Plans, and a Public Outreach section. It also includes a section for the Applicant's Signature and Date, and a section for the Property Owner's Signature and Date. The form is dated 2/07/12.

3. Apply



4. Install



Installation Oversight

1. Project Layout

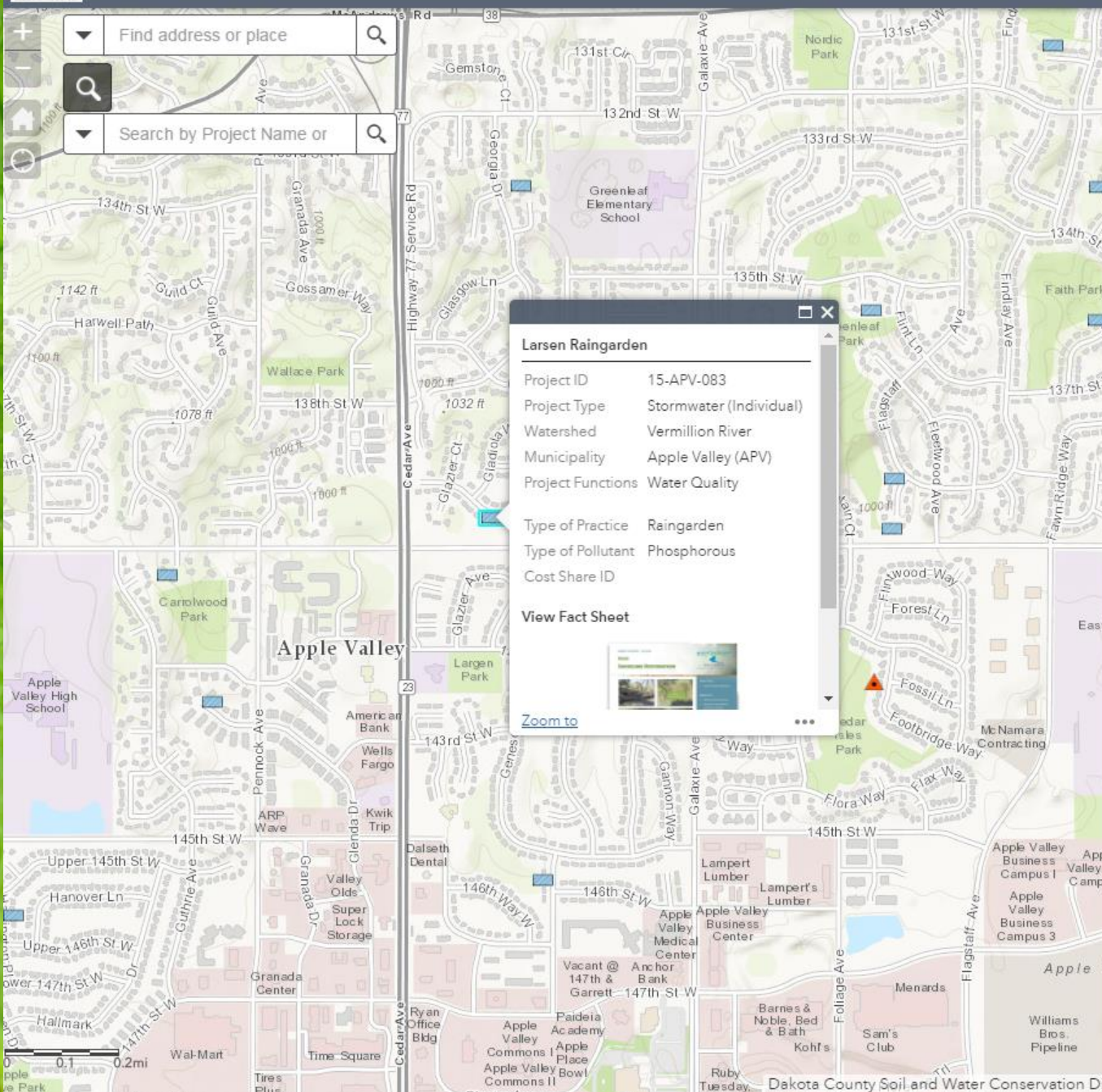
2. Midpoint Check

3. Final Project Check



**Most Critical & Large
Time Commitment**





Legend

Feedlots



Raingardens



Shoreland Streambank



Stormwater



Wetland Conservation Act



Grade Stabilization



Grassed Waterways



Sediment Control Basin Tiles



Sediment Control Basins



Critical Area Seeding



Field Retention Ponds

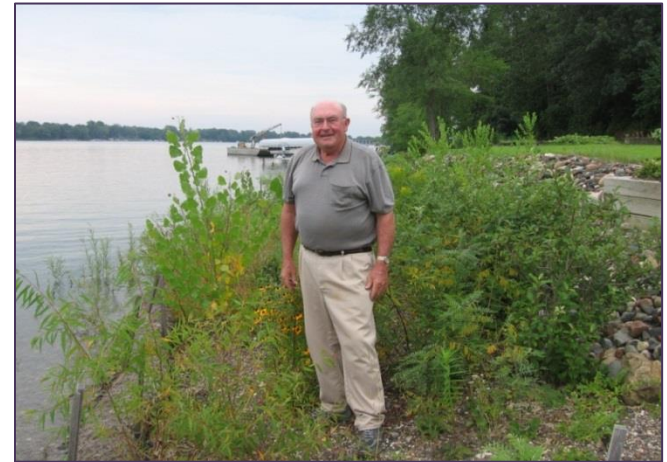


Filter Strip



Program Outcomes

- **Partnerships**
- **Projects on the Land**
 - ✓ Stormwater benefits
 - ✓ Pollinator habitat
 - ✓ Reduced erosion
- **Engaged & Informed Residents**



Before...



After...



Next Year Mt. Calvary

2017 Program Results

- 432 Introductory Workshop Participants
- 148 Design Course Participants
- 123 Individual Projects Designed In Design Courses
- 67 Grant Applications Received For Projects
- 67 Grant Applications And Projects Approved For Funding
- 60 Project Layout Meetings With Landowners
- 52 Installed Raingardens, Shorelines, Or Native Gardens



10 INTRODUCTORY WORKSHOPS



20 DESIGN COURSES



2007-2017 Program Results

3,889	Introductory Workshop Participants
430	Raingardens, Native Gardens, or Shorelines
\$350,000	Grant & Resident Funds Leveraged for Projects
25,000	Square Feet of Native Gardens Installed
70,000	Square Feet of Raingardens Installed
35,000	Square Feet of Shoreline Restorations
1,533,173	Cubic Feet of Volume Reduction
8,932	Pounds of Sediment Reduction
21.6	Pounds of Phosphorus Reduction

LANDSCAPING FOR CLEAN WATER



Dakota County Soil and
Water Conservation District

JOE BARTEN

RESOURCE CONSERVATIONIST - DAKOTA COUNTY SWCD

ACTING ADMINISTRATOR - LOWER MISSISSIPPI RIVER WMO

QUESTIONS?

