

Sherman Public Library

Children's Demonstration Garden



The Sherman Library is requesting the addition of several gardens to enhance the beauty of the site as well as to add an educational opportunity to the library system.



Location

Front window
on Travis Street
near children's
area inside

Purpose

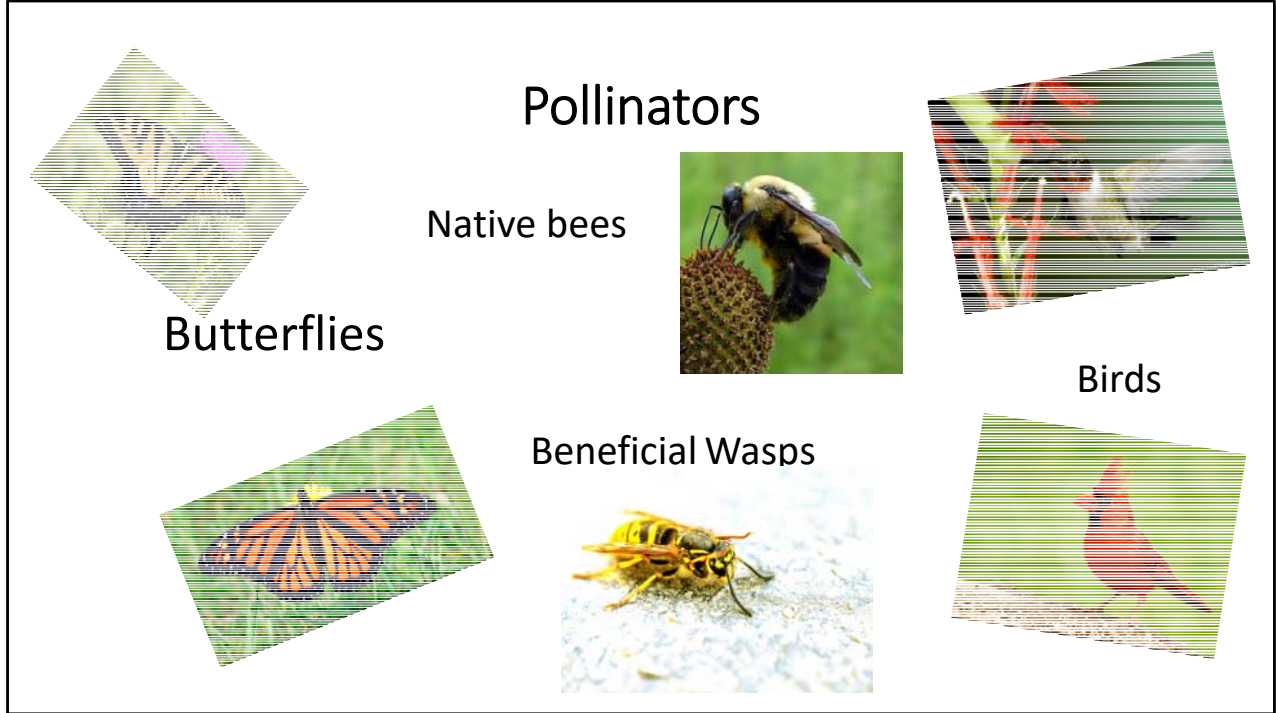
To demonstrate
the interaction
between
pollinators' life
cycles and plants



The gardens will be installed in two areas of the library property. The first phase will be on the east side facing Travis Street. It will be between the window and the ramp that goes to the children's area.

The purpose of this garden is to attract the various wildlife species which will provide an educational opportunity for the citizens of Sherman. It is meant to show the interaction between animals of all kinds and plants.

The requirements are that it contains proven shade plants that provide interest from both inside and outside the front window. It should also have educational value. The Master Gardeners require a sign showing their involvement with the garden.



This garden is a wildlife garden because it will be planted with native plants that attract various insects including pollinators: butterflies, native bees, beneficial wasps, and pollinating flies as well as those that improve the soil, and will also attract birds and other wildlife that will feed on these insects and plants

Plants

A focus on native plants that provide interest year around through



Leaves



Berries



Plant structure

Blooms



Seeds

The plants will thrive in the shade and provide interest through their varied leaf and plant structure and through blooms, berries, and seeds throughout the year.

These gardens will highlight plants that can be used in other areas of Sherman and surrounding communities and will also highlight the interaction between the different species of plants and animals.

Outside View Before



Currently, no landscaping is done to this area of the library. An old oak tree shades the area, and it dictates that a shade garden should be put there. Many people in the Sherman area have yards with shade like this. Most of them are not sure how to landscape this type of yard. By planting the area with natives that live in the shade, we educate people on the plants that work as well as providing an area for local wildlife.

Outside View After



This shows a sample of how the garden would look once the plants become mature. The plants would be flowering at different times providing interest from spring to fall. In the winter, plants provide interest through form or berries or seeds. Art installations may be added to draw the eye to the garden.

Inside View Before



From the inside, the view is open but uninteresting. It provides light but little else to attract the casual observer.

Inside View After



With the addition of plants, the view is enhanced, but the light is not reduced and the view beyond the plants will not be obstructed. It also will attract wildlife that people can watch and where they can learn about the natural sciences through observation.

Children's Demonstration Garden

Option 1-Traditional Shade Garden

Option 3-Traditional Shade Garden

Four options are being presented today. Two of the options are variations of traditional shade garden. They provide a lovely view with a variety of plants that will attract birds and wildlife for shelter and food.

Traditional gardens use a wide variety of plants from all over the world including plants native to Texas and the United states. Because of this, it is easy to find plants to fit almost any need in the Traditional garden. In addition, many traditional gardens provide a neat appearance and offer a sense of security because of their familiarity.

Children's Demonstration Garden

Option 2- Native Shade Garden

Option 4-Native Shade Garden

The other the two options are variations of formalized native landscapes. When native plants are discussed, most people visualize a meadow that is informal in the planting with grasses and flowers intermingled randomly; however, native plants can also be used in a formal landscape.

“approximated **9/10** of the cost of conventional landscape maintenance is avoided” with native plants

<https://archive.epa.gov/greenacres/web/html/chap2.html>

Native plants have two main attractions. One is that they not only provide shelter and food for pollinators and wildlife, but since they have evolved together, they also provide places to raise their young. The second attraction is cost saving benefits because the plants are adapted to our environment.

An article in *Greenacres* entitled “A Source Book on Natural Landscaping for Public Officials” showcases many of the benefits of natural landscaping of public areas.

<https://archive.epa.gov/greenacres/web/html/chap2.html>) This study was done on large areas in Illinois; however, the benefits stated there can also pertain to Texas and smaller projects. The Demonstration Gardens at the Library will also have many of the benefits shown in this article

First on the list is the financial benefits. According to the Greenacres report, they “approximated 9/10 of the cost of conventional landscape maintenance is avoided.” A bed landscaped with native plants saves in the initial installation as well as maintained. In addition to financial gain, many ecological, community, and educational opportunities are available

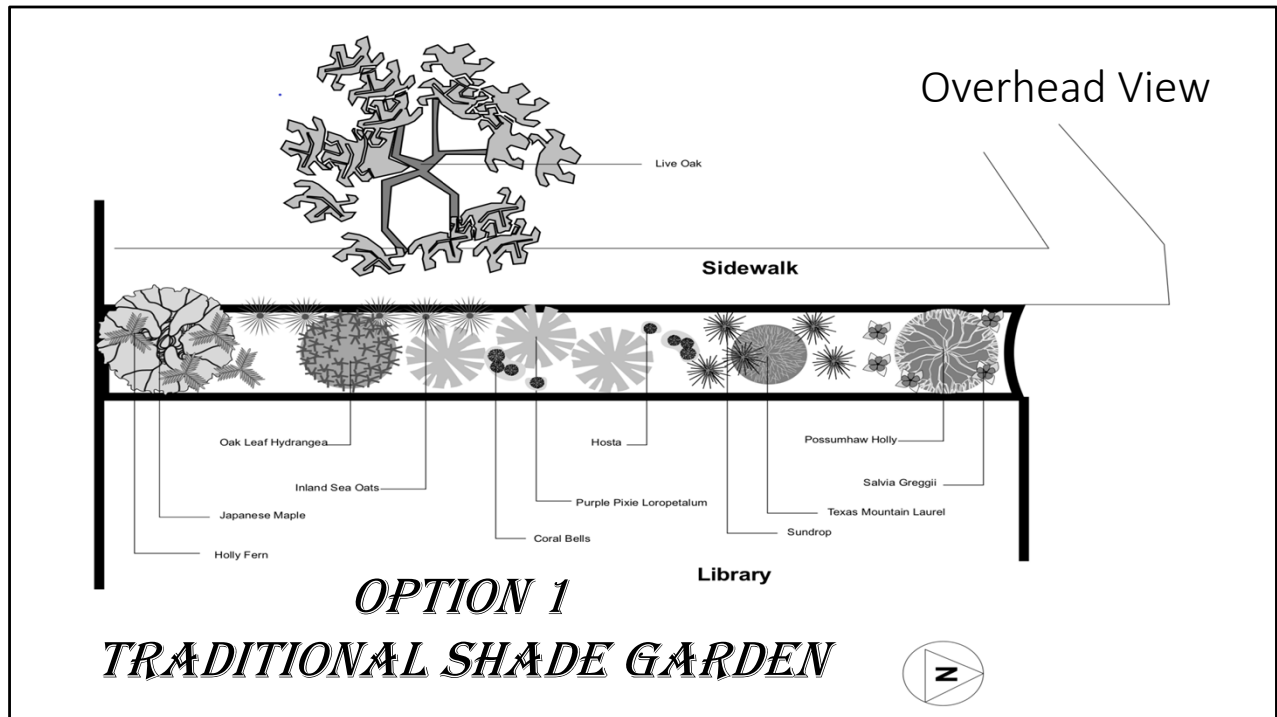
“People will only conserve what they love;
That they will only love what they understand
And they will only understand what they are
taught”

. In the Greenacres report is an old saying:

“People will only conserve what they love; that they will only love what they understand’ and they will only understand what they are taught.”

By having the Demonstration Gardens at the library, people will learn about native plants and the environmental as well as the financial benefits. These benefits will include reduced cost for installation and maintenance of beds, reduced erosion leading to less flooding, improved water quality, reduced air and noise pollution, reduced greenhouse effects, and habitat restoration and beautification.

With these beds being planted as Wildlife Habitats, the library can provide materials that will allow people to learn the interactions of plants with pollinators and other insects and between the pollinators and birds and other wildlife. Signs identifying the plants will assist people interested in learning more about plants for their homes. With the understanding of these systems and the knowledge of the benefits, people will love the natural landscape and be willing to apply it to other areas as well as share their new knowledge with other people.



Two traditional options were presented.

In Option 1, Plants were chosen that attract birds with the berries and seed they produce. Since this space is mostly shade, it will not attract many butterflies, but it could attract birds!

The arrangement of plants alternates deciduous and evergreen growth habits to ensure some greenery throughout the winter months.

In addition, smaller plants were added for visual interest at the base or between the larger shrubs.

Plants for Garden



Texas Mountain Laurel
(*Sophora secundiflora*)
March-May



Possumhaw
(*Ilex decidua*)
June-October



Coral Bells
(*Heuchera* species)
April-May



Inland Seoats
(*Chasmanthium latifolium*)
June-October



Greggi Salvia
(*Salvia Greggii*)
April-November



Oakleaf Hydrangea
(*Hydrangea quercifolia*)
April-June

The plants shown here are Texas or United States natives.

The Texas natives are the most adapted to our area; however, these United States natives do well in our climate also.

The months listed below the plants are its common bloom period.

The Texas natives, Texas Mountain Laurel and Possumhaw Holly, are shrubs or small trees that provide berries for wildlife. The Texas Mountain Laurel produces fragrant, showy blooms in the spring and leaf color in the fall while the Possumhaw produces berries on bare stems in the winter.

The Texas natives Greggii Salvia and Sundrop are perennials that provide summer color. Inland Seoats is a bunch grass that provides shelter and food for wildlife, and winter interest with its seeds.

The United States natives Oakleaf Hydrangea and Coral Bells provide showy blooms and shelter for wildlife with interesting leaf color.



Holly Fern
(*Cyrtomium galeatum*)



Sundrop
(*Calylophus berlandieri*)
March-November



Hosta
(*Hosta* species)
July-September



Japanese Maple
(*Acer palmatum*)



Purple Pixie Loropetalum
(*Loropetalum* Chinese 'Peack')
April-June

The plants shown here are imported species mostly from Asia. They have adapted well to our climate and soil; however, the interaction between them and native wildlife is limited. Hostas, Holly Fern, and the Loropetalum are non-native plants that add interest through their leaf structure. They also provide shelter for wildlife. All of these plants are perennials that return every year.

Common Name	Scientific Name	Height	Spacing	Light	Bloom Time (Mo.)	Color	Origin	Type
Texas Mountain Laurel	<i>Sophora secundiflora</i>	6-12'	10'	Dappled shade to Sun	3-5	Purple	Texas	Deciduous Ornamental Tree
Inland Seaots	<i>Chasmanthium latifolium</i>	2-4'	2'	Shade to part shade	6-10	Green-Tan	Texas	Bunch grass
Possumhaw	<i>Ilex decidua</i>	12-15'	12-15'	Dappled shade to Sun			Texas	Deciduous Ornamental Tree
Coral Bells	<i>Heuchera species</i>	1-3'	1'	Part Shade	4-5	Pink	United States	Evergreen Perennial
Greggii Salvia	<i>Salvia Greggii</i>	2-3'	2-3'	Shade to Sun	4-11	Red, pink, white	Texas	Semi-evergreen Shrub
Holly Fern	<i>Cyrtomium galcatum</i>	2'	2-3'	Part Shade or Shade			Asia	Evergreen Perennial Fern
Oakleaf Hydrangea	<i>Hydrangea quercifolia</i>	6-7'	6-8'	Part Shade to Sun	4-6	White	United States	Deciduous Perennial
Sundrop	<i>Calylophus berlandieri</i>	1'-1.5'	1.5'	Sun	3-11	Yellow	Texas	Perennial
Hosta	<i>Hosta species</i>	1-3'	1-3'	Shade to Part Shade	7-9	White, lilac, lavender blue	Asia	Perennial
Japanese Maple	<i>Acer palmatum</i>	6-20'	10-20'	Shade to Part Shade			Asia	Small Ornamental Tree
Purple Pixie Loropetalum	<i>Loropetalum Chinese 'Peack'</i>	4-6'	4-5'	Part Shade to Sun	4-6	Pink	Asia	Semi-evergreen Shrub

The plant charts for all the options show the common and scientific names of the plants. The size, spacing, and light requirement are included along with the bloom time, color, and origin of the plant. The type of plant is also included.

Scientific Name	Common Name	Number	Price (ea.)	Total
Hechera	Coral Bells	6	5	30
Cyrtomium falcatum	Holly Fern	4	9	36
Hosta species	Hosta	2	9	18
Chasmanthium latifolium	Inland Sea oats	5	9	45
Acer palmatum	Japanese Maple	1	100	100
Hydrangea quercifolia	Oakleaf Hydrangea	1	24	24
Ilex decidua	Possumhaw Holly	1	5	100
Loropetalum chinese 'Peack'	Purple Pixie Loropetalum	5	9	45
Salvia gregii	Salvia Greggii	5	9	45
Calylophus berlandieri	Sundrop	5	5	25
Sophora secundiflora	Texas Mountain Laurel	1	100	100
Total		36		\$568

Total Budget

\$1186

Item	Number	Price (ea.)	Total
Decomposed Granite	15	30	450
Compost	12	10	120
Mulch	12	4	48
Totals			\$618

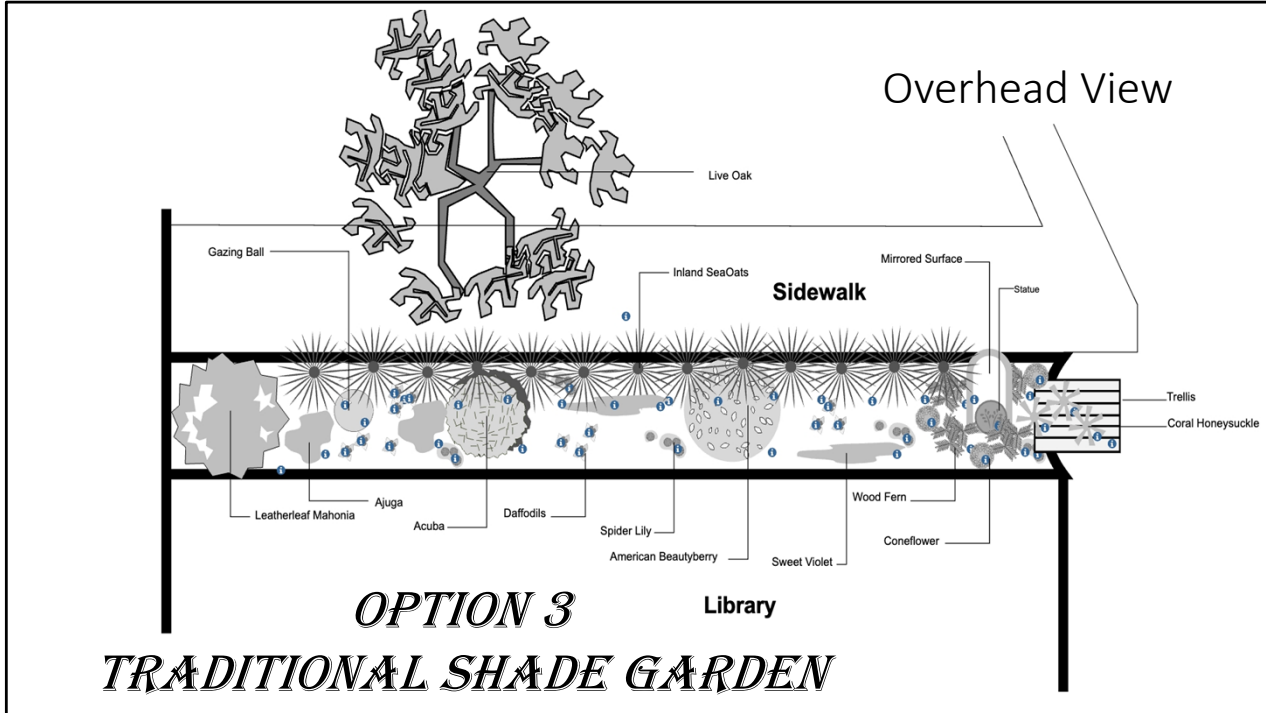
This bed would need 36 plants. Using transplants hastens the maturity of the flower bed. The cost for the plants would be approximately \$568.

In addition to the plants, other materials will be needed. The final component of the garden is soil additives which include compost and decomposed granite along with mulch.

The decomposed granite loosens the soil which is particularly important for the imported plants and the compost improves the quality of the soil; therefore, improving the plants overall. These additives would only be needed when the initial bed is prepared for planting.

The mulch helps keep a steady soil temperature and reduces evaporation from the soil. The cost of these materials would be \$618.

The total cost for this bed would be \$1186.



Option 3 is a shade garden that provides beauty and interest to the front of the library. It provides shelter and food for wildlife. People that have shady yards will find inspiration from this bed.

The plants chosen for this bed do well in shade and dappled shade. They are readily available to the public. These plants are a mixture of native species and exotics (imported species). It includes 3D artwork to provide additional interest.

Plants for Garden



Inland Seoats
(*Chasmanthium latifolium*)
June-October



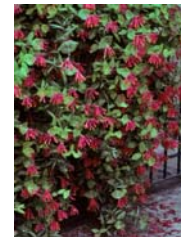
Cone Flowers
(*Echinacea augustifolia*)
April-June



American Beautyberry
(*Callicarpa americana*)
March-July



Wood Fern
(*Dryopteris ludoviciana*)



Coral Honeysuckle
(*Lonicera sempervirens*)
May-October

The plants shown here for Option 3 are Texas or United States natives. American Beautyberry and Inland Seoats are used in this option also. Texas natives, Cone Flower and Coral Honeysuckle, are nectar plants. The cone flower is a perennial plant, and the Coral Honeysuckle is a vine that will require a trellis. The Honeysuckle is a host plant for Spring Azure butterfly and Snowberry Clearwing moth. The United States native Wood Fern adds an interesting leaf structure.



Aucuba
(*Aucuba japonica*)
May-June



Ajuga
(*Ajuga reptans*)
May-October



Spider Lily
(*Lycoris radiata*)
June-September



Daffodils
(*Narcissus* spp.)
March-May



Sweet Violet
(*Viola odorata*)
April-June



Leatherleaf Mahonia
(*Mahonia bealei*)
March-May

The plants shown here are imported species from Europe and Asia. They have adapted well to our climate and soil; however, the interaction between them and native wildlife is limited.

These plants shown for Option 3 are imported species from Europe and Asia. They have adapted well to our climate and soil.

Aucuba and Leatherleaf Mahonia are non-native evergreen shrubs. The Aucuba provides interesting leaf color. The Leatherleaf Mahonia provides seeds for wildlife.

Daffodils and Spider Lilies are non-natives that provide beautiful blooms.

Sweet Violets is a non-native that can be a host plant for Variegated Fritillary butterflies.

Ajuga is a good non-native evergreen groundcover.

Common Name	Scientific Name	Height	Spacing	Light	Bloom Time (Mo.)	Color	Origin	Type
Inland Seaoats	Chasmanthium latifolium	2-4'	2'	Shade to part shade	6-10	Green-Tan	Texas	Bunch Grass
American Beautyberry	Callicarpa americana	3-4'	3-4'	Shade	5-7'	White	Texas	Deciduous Shrub
Daffodils	Narcissus species	9-18"	12-18"	Sun	3-5	Yellow, White, Orange	Europe Africa	Perennial Bulb
Cone Flowers	Echinacea augustifolia	2'	1'	Dappled shade to sun	4-6	Rose, pink, white, purple	Texas	Herbaceous Perennial
Spider Lily	Lycoris radiata	15-24"	6-12"	Part Shade to Sun	6-9	Purple, red, pink, white, yellow	Asia	Perennial Bulb
Sweet Violet	Viola odorata	2-6"		Shade to Part shade	4-6	Purple	Europe Asia	Evergreen Perennial
Ajuga	Ajuga reptans	6-9"	6-12"	Part Shade to Sun	5-6	Blue	Europe	Herbaceous perennial
Coral Honeysuckle	Lonicera sempervirens		6-8'	Part shade to sun	5-10	Red	Texas	Semi-evergreen vine
Aucuba	Aucuba japonica	5-6'	5-6'	Shade			Asia	Evergreen Shrub
Leatherleaf Mahonia	Mahonia bealei	5-7'	3-5'	Shade	3-5	Yellow	Asia	Evergreen Shrub
Wood Fern	Dryopteris ludoviciana	4'	4'	Shade to Part Shade			Texas	Semi-evergreen perennial Fern

This chart shows the plants for Option 3.

Scientific Name	Common Name	Number	Price (ea.)	Total
Callicarpa Americana	American Beautyberry	1	24	24
Ajuga reptans	Ajuga	6	1.50	9
Aucuba japonica	Aucuba	1	24	24
Echinacea purpurea	Coneflower	3	9	27
Lonicera semipervirens	Coral Honeysuckle	1	9	9
Narcissus spp.	Daffodils	1 pkg.	9	9
Chasmanthium latifolium	Inland Sea oats	13	9	117
Mahonia bealei	Leatherleaf Mahonia	1	24	24
Lycoris radiata	Spider Lily	3 pkg.	11	33
Viola odorata	Sweet Violet	6	1.50	9
Dryopteris ludoviciana	Wood Fern	4	9	36
Total		36		\$321

Total Budget
\$1124

Item	Number	Price (ea.)	Total
Gazing Ball	1	65	65
Statue	1	20	20
Trellis	1	50	50
Mirrored Surface	1	50	50
Decomposed Granite	15	30	450
Compost	12	10	120
Mulch	12	4	48
Totals	49		\$803

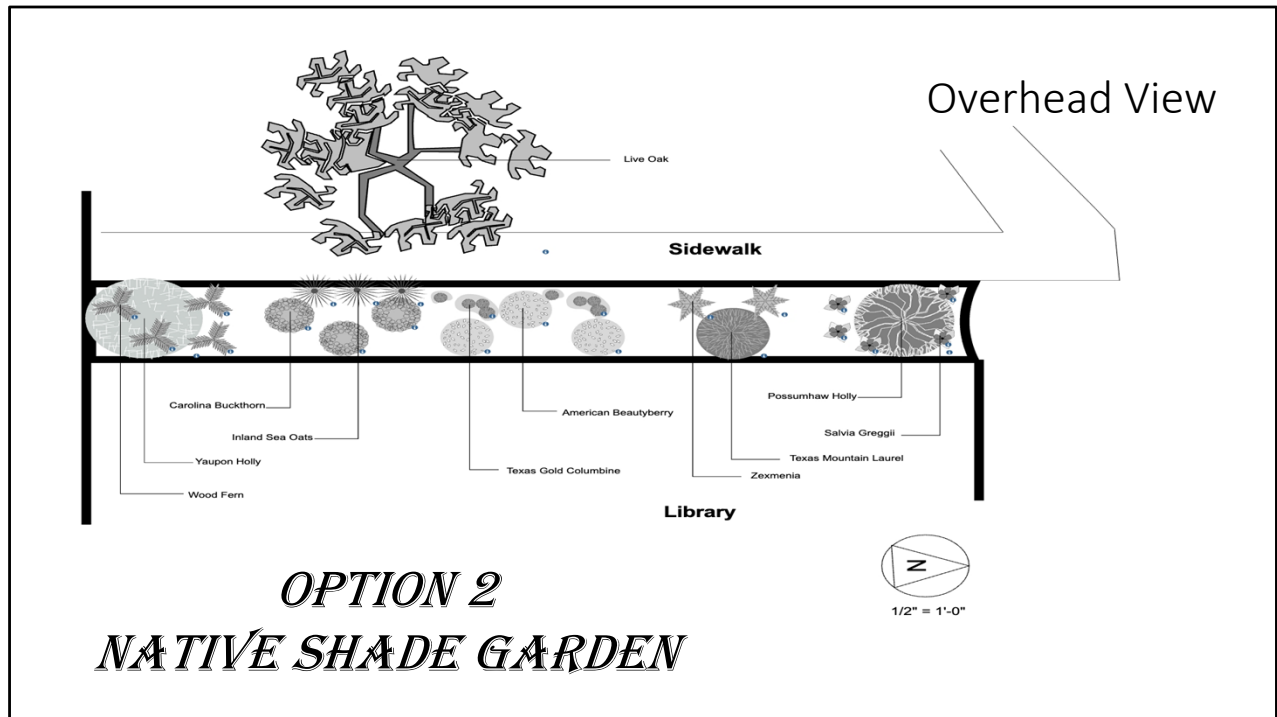
This bed would need 36 plants. Most of the plants would be transplants with two of the plants would requiring bulbs. The cost for the plants would be approximately \$321.

In addition to the plants, other materials will be needed. Small art installations such as sculptures add interest especially in the winter when most of the plants are dormant. The final component of the garden is soil additives which include compost and decomposed granite along with mulch. The soil additives would only be needed when the initial bed is prepared for planting. The mulch helps keep a steady soil temperature and reduces evaporation from the soil. The cost of these materials would be \$803. The total cost for this bed would be \$1124.

UPKEEP

- Water- weekly
- Fertilizer- once or twice a year
- Mulch- maintain a 3" depth (twice a year)
- Replace plants- as needed
- Purchase new plants- as needed
- Pest control- as needed

The upkeep for Options 1 and 3 are the same. The non-native plants in the traditional garden would need watering weekly especially during our hot summers. They would also benefit from being fertilized at least once a year. Mulching should be checked twice a year to maintain a depth of 3". New or replacement plants would be purchased as needed.



Two native plant options were presented.

Texas Native plants were chosen that attract birds with the winter berries they produce. Some of these plants are nectar sources as well as host plants for butterflies.

Plants were selected which thrive in the shade and can be observed from either inside the library and/or from the street view.

The arrangement in the plan alternated deciduous and evergreen growth habits to ensure some greenery throughout the winter months.

In addition, smaller native plants were added for visual interest at the base or between the larger shrubs.

Plants for Garden



Texas Mountain Laurel
(*Sophora secundiflora*)
March-May



Yaupon Holly
(*Ilex vomitoria*)



Possumhaw
(*Ilex decidua*)
June-October



Zexmenia
(*Wedelia texana*)
May-November



Greggii Salvia
(*Salvia Greggii*)
April-November

The plants shown here are the Texas native trees, shrubs and grasses that do well in the sh

The Texas natives Texas Mountain Laurel, Yaupon Holly, Carolina Buckthorn, and Possumhaw Holly are shrubs or small trees that provide berries for wildlife. Carolina Buckthorn is a host plant for the Snout butterfly.

Inland Seoats is a grass that provides shelter and food for wildlife, and winter interest with its seeds.

ade or light shade.



Inland Sea oats
(*Chasmanthium latifolium*)
June-October



American Beautyberry
(*Callicarpa americana*)
May-July



Texas Gold Columbine
(*Aquilegia chrysantha* var.
hinkleyana "Texas Gold")
May



Carolina Buckthorn
(*Fragula caroliniana*)



Wood Fern
(*Dryopteris ludoviciana*)

Here are the perennials and ferns that like some shade.

Zexmenia is a native perennial that is a larval host for Bordered Patch, Sierran Metalmark, and Lacinia Patch butterflies.

The Texas native Gregg Salvia is a perennial that provides summer color.

The United States native Wood Fern adds an interesting leaf structure.

Texas Gold Columbine is a native perennial that provides spring color and nectar.

Common Name	Scientific Name	Height	Spacing	Light	Bloom Time (Mo.)	Color	Origin	Type
Texas Mountain Laurel	<i>Sophora secundiflora</i>	6-12'	10'	Dappled shade to sun	3-5	Purple	Texas	Deciduous Ornamental Tree
Inland Seaots	<i>Chasmanthium latifolium</i>	2-4'	2'	Shade to part shade	6-10	Green-Tan	Texas	Bunch Grass
Possumhaw	<i>Ilex decidua</i>	12-15'	12-15'	Dappled shade to sun			Texas	Deciduous Ornamental Tree
Zexmenia	<i>Wedelia texana</i>	1.5-2', 3'	2'	Dappled shade to sun	5-11	Yellow	Texas	Semi-evergreen Perennial Shrub
Greggii Salvia	<i>Salvia greggi</i>	2-3'	2-3'	Shade to Sun	4-11	Red, pink, white	Texas	Semi-evergreen Shrub
Yaupon Holly	<i>Ilex vomitoria</i>	12-15', 25'	12-15'	Shade to Sun			Texas	Evergreen Ornamental Tree
Wood Fern	<i>Dryopteris ludoviciana</i>	4'	4'	Shade to Part Shade			Texas	Semi-evergreen perennial Fern
Texas Gold Columbine	<i>Aquilegia chrysantha</i> var <i>hinkleyana</i> "Texas Gold"	1-3'	1'	Shade to Dappled Shade	5	Yellow	Texas	Evergreen Perennial
Carolina Buckthorn	<i>Fragula caroliniana</i>	12-15', 20'	8-12'	Dappled Shade to Sun			Texas	Semi-evergreen ornamental Tree
American Beautyberry	<i>Callicarpa americana</i>	3-4'	3-4'	Shade	5-7'	White	Texas	Deciduous Shrub

Here are the plants for Option 2.

Scientific Name	Common Name	Number	Price (ea.)	Total
<i>Callicarpa americana</i>	American Beautyberry	3	9	27
<i>Frangula caroliniana</i>	Carolina Buckthorn	3	9	27
<i>Chasmanthium latifolium</i>	Inland Seaots	3	9	27
<i>Ilex decidua</i>	Possomhaw Holly	1	5	100
<i>Salvia greggii</i>	Salvia greggii	5	1	45
<i>Aquilegia chrysantha</i> var <i>hinkleyanna</i> "Texas Gold"	Texas Gold Columbine	8	9	72
<i>Sophora secundiflora</i>	Texas Mountain Laurel	1	100	100
<i>Dryopteris ludoviciana</i>	Wood Fern	4	9	36
<i>Ilex vomitoria</i>	Yaupon Holly	1	24	24
<i>Wedelia texana</i>	Zexmenia	2	5	10
Total		31		\$468

Total Budget

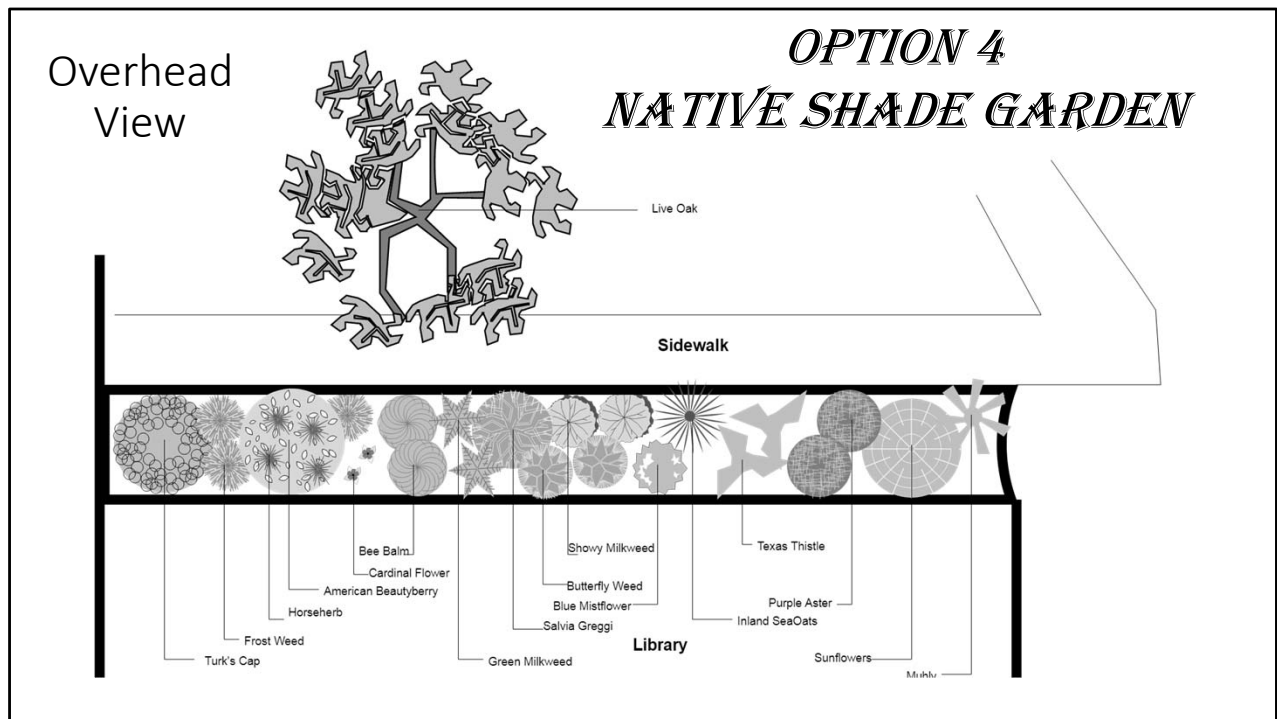
\$636

Item	Number	Price (ea.)	Total
Compost	12	10	120
Mulch	12	4	48
Totals			\$168

This bed would need 31 plants. . Using transplants hastens the maturity of the flower bed. The cost for the plants would be approximately \$468.

In addition to the plants, other materials will be needed. The final component of the garden is compost and mulch. The compost would only be needed when the initial bed is prepared for planting. The mulch helps keep a steady soil temperature and reduces evaporation from the soil. The cost of these materials would be \$168.

The total cost for this bed would be \$636.



Option 4 is a shade garden that takes into consideration the needs of wildlife native to the area. It provides areas for shelter for butterflies and other wildlife. In addition, it provides the plants that give nectar and pollen to the pollinators. A number of the plants are host plants for various types of butterflies. Some of the plants provide berries and seeds for birds and other wildlife.

This is a native shade garden that takes into consideration the needs of wildlife native to the area. It provides areas for shelter for butterflies and other wildlife. In addition, it provides the plants that give nectar and pollen to the pollinators. A number of the plants are host plants for various types of butterflies. Some of the plants provide berries and seeds for birds and other wildlife.

The plants in this area do well in the shade from the oak tree. The area in front of the bed has a ramp and that is taken into consideration when placing the plants. The taller plants that require shade are placed on the left-hand side where is shadiest and the ramp is higher. As the viewer moves to the center, the plants become shorter so they do not impede the view from the window. In addition, the plants change from those requiring shade to those requiring sun as the right-most part of the bed gets afternoon sun. On the right end are tall sun-loving plants that are in proportion to the height of the tower on that end of the garden.

Plants for Garden



Cardinal Flower
(*Lobelia cardinalis*)
May-October



Horseherb
(*Calyptocarpus vilais*)
January-December



Butterfly weed
(*Asclepias tuberosa*)
April-September



Green milkweed
(*Asclepias viridis*)
October



Blue Mistflower
(*Eupatorium coelestinum*)
April-December



Showy Milkweed
(*Asclepias speciosa*)
May-September



Texas Thistle
(*Cirsium texanum*)
June-August



Maximilian Sunflower
(*Helianthus maximiliani*)
September-November

These plants are of particular benefit to wildlife. The cardinal flower blooms most in the fall when the hummingbirds migrate. The other plants are hosts for butterflies to raise young.

All of these plants are Texas natives.

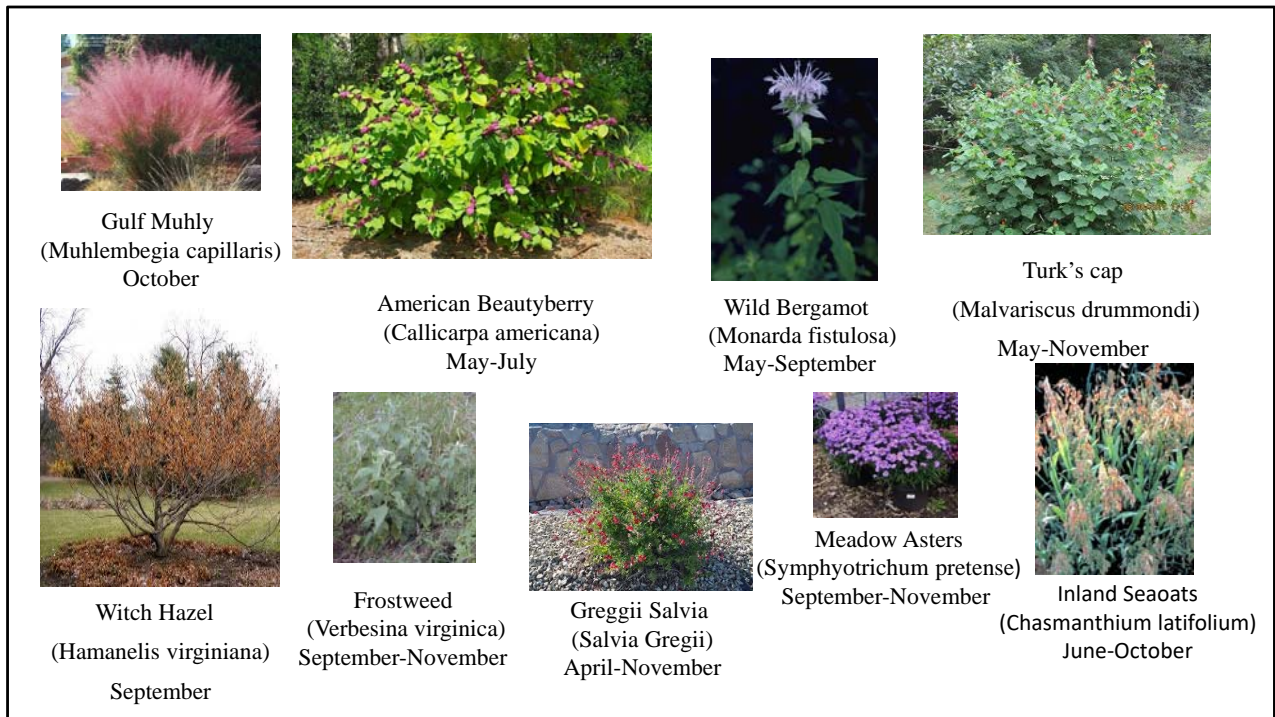
American Beautyberry and Witch Hazel are small trees or shrubs that have berries in the winter for wildlife.

Blue mistflower is a nectar plant and a host plant for the Queen butterfly.

Showy milkweed and Green milkweed are nectar plants and host plants for Monarch, Viceroy, and Queen butterfly.

Butterfly weed is a nectar plant and is also a member of the milkweed family.

Greggii Salvia, Frostweed, Meadow Aster, and Wild Bergamot are nectar plants. Frostweed provides winter interest.



Inland Seoats and Gulf Muhly are bunch grasses that provide winter interest and food and shelter for birds and other wildlife.

Horseherb (straggler daisy) is a host plant for the Bordered Patch butterfly and is a good shade evergreen ground cover.

The Maximillian sunflower is also a host plant for the Boarded Patch butterfly, and the seeds are loved by many variety of birds.

Texas Thistle is a nectar plant and a host plant for the Painted Lady butterfly. Finches eat the seeds of the Texas Thistle, and they use the down of the seed pod for nesting.

All of these plants are perennial, so they return every year.

Common Name	Scientific Name	Height	Spacing	Light	Bloom Time (Mo.)	Color	Origin	Type
Turk's Cap	Malvariscus drummondii	2-3'	3-5'	Shade	5-11	Red	Texas	Semi-evergreen Ground cover
Maximilian Sunflower	Helianthus maximiliani	2-6'	3'	Sun	4-11	Yellow	Texas	Hardy Perennial
Blue Mistflower	Eupatorium coelestinum	9"-3'	1-2'	Shade to sun	4-12	Purple, blue	Texas	Hardy Perennial
Wild Bergamot, bee balm	Monarda fistulosa	1.5-5'	2'	Shade to sun	5-9	Lavender, pink, white	Texas	Hardy Perennial
Greggi Salvia	Salvia greggi	2-3'	2-3'	Shade to sun	4-11	Red, pink, white	Texas	Semi-evergreen Shrub
Green Milkweed	Asclepias viridis	1-2'	2'	Part shade to sun	4-9	White , Yellow , Green , Purple	Texas	Hardy Perennial
Showy Milkweed	Asclepias speciosa	1-3'	2'	Part shade to sun	5-9	Pink, Green, Purple	Texas	Hardy Perennial
Butterfly Weed	Asclepias tuberosa	1-2'	2'	Dappled shade to sun	4-9	Orange, Yellow	Texas	Short-lived Perennial
Meadow Aster	Symphyotrichum pretense	2-3'		Sun	9-11	White, blue, purple	Texas	Hardy Perennial
Cardinal Flower	Lobelia cardinalis	6"-6'	1'	Shade to sun	5-10	Red	Texas	Hardy Perennial
Frostweed	Verbesina virginica	3'	2'	Shade to sun	9-11	White	Texas	Hardy Ground cover
Texas Thistle	Cirsium texanum	2-5'		Sun	6-8	Purple	Texas	Hardy Perennial
American Beautyberry	Callicarpa americana	3-4'	3-4'	Shade	5-7'	White	Texas	Deciduous Shrub
Witch Hazel	Hamamelis virginiana	10-15'	8-10'	Shade	9-3	Yellow	Texas	Deciduous Ornamental Tree
Horseherb	Calyptocarpus viais	8-10"	1'	Shade	1-12	Yellow	Texas	Semi-evergreen Ground cover
Gulf Muhley	Muhlenbergia capillaris	1.5-2',5'	2'	Shade to sun	10	Pink	Texas	Bunch Grass
Inland Seaoats	Chasmanthium latifolium	2-4'	2'	Shade to part shade	6-10	Green-Tan	Texas	Bunch Grass

This chart shows the plants for Option 4.

Scientific Name	Common Name	Number	Price (ea.)	Total
<i>Malvariscus drummondi</i>	Turk's Cap	1	17	17
<i>Helianthus spp.</i>	Sunflowers	1	11	11
<i>Eupatorium coelestinum</i>	Blue Mistflower	1	6	6
<i>Monarda fistulosa</i>	Bee balm, Bergamot	2	6	12
<i>Salvia greggi</i>	Salvia	1	10	10
<i>Asclepias viridis</i>	Green Milkweed,	2	7	14
<i>Asclepias speciosa</i>	Showy Milkweed	2	7	14
<i>Asclepias tuberosa</i>	Butterfly Weed	2	11	22
<i>Asters spp.</i>	Asters, Purple Aster	2	9	18
<i>Lobelia cardinalis</i>	Cardinal Flower	2	8	16
<i>Verbesina virginica</i>	Frostweed	2	5	10
<i>Cirsium texanum</i>	Texas Thistle	2	1 pkg.	6
<i>Callicarpa americana</i>	American Beautyberry	1	17	17
<i>Hamamelis virginiana</i>	Witch Hazel	1	10	10
<i>Calyptocarpus vilais</i>	Straggler Daisy (Horseherb)	4	3	12
<i>Muhlembegia capillaris</i>	Gulf Muhley	2	7	14
<i>Chasmanthium latifolium</i>	Inland Seoats	1	10	10
Total Plants		29		\$219

**Total Budget
\$489**

Item	Number	Price (ea.)	Total
Stones	6	7	42
Sculpture	3	25	60
Compost	12	10	120
Mulch	12	4	48
Totals			\$270

This bed would need 29 plants. Most of the plants would be transplants to start the flower bed quickly. The cost for the plants would be approximately \$219.

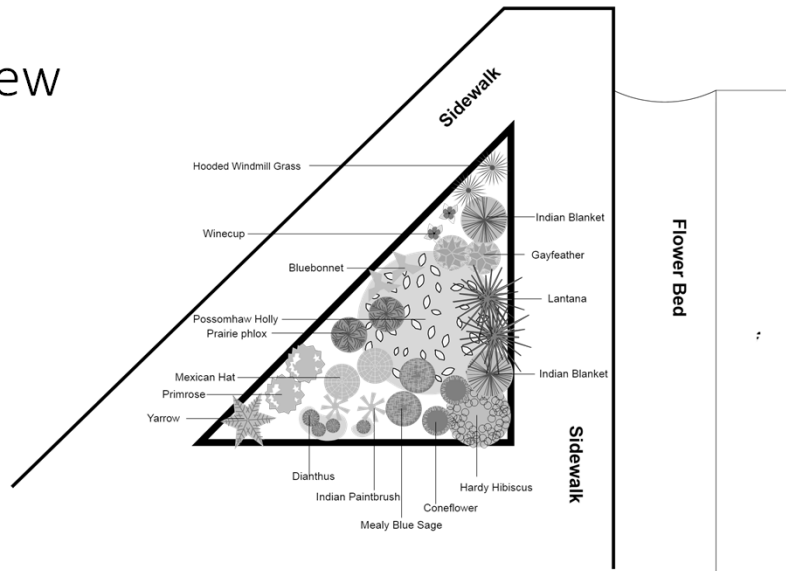
In addition to the plants, other materials will be needed. This would include stones for the butterflies to puddle and sun on. Butterflies like small amounts of water on flat stones to drink from. This is called puddling. Small art installations such as sculptures add interest especially in the winter when most of the plants are dormant. The final components of the garden are compost mulch. The compost would only be needed when the initial bed is prepared for planting. The mulch helps keep a steady soil temperature and reduces evaporation from the soil. The cost of these materials would be \$270. The total cost for this bed would be \$489.

UPKEEP

- Water- 1st year (bi-monthly), Once established (monthly or less)
- Fertilizer- none
- Mulch- maintain 3" depth (twice a year)
- Replace plants- as needed
- Purchase new plants- as needed
- Pest control- hand weed as needed

Natives gardens reduce upkeep. Because they are acclimated to our area, they would require less watering (once established) and no fertilizer. In addition, the plants would only need to be replaced if one dies or is not suitable for the area. Pest control would primarily be weeding, but the mulch will help reduce that also. New or replacement plants would be purchased as needed.

Overhead View



TRIANGULAR SIDEWALK SUN GARDEN

To further attract wildlife, a small flower bed can be added to the grassy area between the sidewalk and the ramp leading to the building. This can be added to any of the other options; however, option 4 would benefit most from this option.

Butterflies usually like to visit sunny gardens, but with the existing oak tree, the garden next to the window is shaded most of the day. This flower bed is in the space where the sidewalk turns and will have sun-loving plants that attract pollinators. Once the pollinators are in the area, they will also be attracted to the window garden. This bed focuses more on nectar plants while the window garden focuses on both nectar and host plants for butterflies. Both gardens also have plants that will attract birds and other wildlife. This bed also has more annuals that can be changed for variety if desired.

This plot shows an overview of the triangle bed. A Possumhaw anchors the bed in the corner with a hardy hibiscus to add summer drama to the bed. The rest of the flowers were chosen for size, color, and bloom time. There is a mix of perennial and annual plants. Most of the annual plants reseed easily once

established.

Plants for Garden



Penstemon
(Penstemon Species)
March-June



Cone Flowers
(*Echinacea augustifolia*)
March-June



Winecup
(*Callirhoe involucrate*)
March-June



Prairie Phlox
(*Phlox pilosa*)
April-May



Mealy Blue Salvia
(*Salvia farinacea*)
April-October



Mexican Hat
(*Ratibida columnaris*)
April-October



Gayfeather
(*Liatris* Species)
August-December



Showy Primrose
(*Oenothera speciosa*)
March-June

These perennial plants provide nectar and color from spring through fall.

Cone Flowers, Mealy Blue Salvia, Showy Primrose, Prairie Phlox, Gay Feather, Mexican Hat, Penstemon, and Winecup are perennial nectar plants. Birds and other wildlife eat the seeds of the Mexican Hat.



The trees, shrubs, and grasses provide interest when the perennials are dormant. Most of these plants are perennial Texas natives.

The non-native plants provide color even in the winter, and the annuals reseed themselves to provide more blooms the next spring.

Possumhaw is a deciduous shrub that is known for its showy berries that provide food for wildlife in the winter.

Hardy Hibiscus is a perennial nectar plant, and the host plant for the Southern Dogface butterfly.

Texas Lantana is a perennial nectar shrub that many butterflies including the swallowtail butterflies like to visit.

Hooded Windmill Grass is a native bunch grass that is a host plant for the Branded Skipper moth and the Satyr butterfly.

Bluebonnets, Indian Blanket and Indian Paintbrushes are annual/biannual nectar plants.

The Bluebonnets are the Texas state flower, and the Indian Paintbrush is a host plant for the Common Buckeye butterfly.

White Yarrow and Dianthus are the two non-native plants. Dianthus provides winter color. The White Yarrow is evergreen.

Most of these plants are perennial that will return every year. Three of them are annual/biannual plants that could be allowed to reseed, or they could be replaced yearly.

Common Name	Scientific Name	Height	Spacing	Light	Bloom Time (Mo.)	Color	Origin	Type
Possumhaw	Ilex decidua	12-15'	12-15'	Dappled shade to sun			Texas	Deciduous Ornamental Tree
Texas Lantana	Lantan horrida	1-3'	2-4'	Sun	6-10	Yellow, orange, blue, pink	Texas	Deciduous Perennial
Cone Flowers	Echinacea augustifolia	2'	1'	Dappled shade to sun	4-6	Rose, pink, white, purple	Texas	Hardy Perennial
Hardy Hibiscus	Hibiscus coccineuss	5-6'	3-6'	Part shade to sun	5-10	White, Pink, Red	Texas	Hardy Perennial
Dianthus	Dianthus Chinensis	8-12"	12-18"	Sun	10-6	White, Pink, White, Purple	Asia	Hardy Perennial
Mealy Blue Salvia	Salvia farinacea	2-3'	1-2'	Part shade to sun	4-10	Dark blue, White	Texas	Hardy Perennial
Bluebonnet	Lupinus texensis	1'	1-2'	Sun	3-4	Blue	Texas	Annual
Hooded Windmill Grass	Chloris cuculata	6-24"		Part shade	3-11	Tan	Texas	Bunch Grass
Yarrow	Achillea Species	2'	2'	Sun	4-8	White	Europe	Evergreen Perennial
Penstemmon	Penstemmon Species	2-4'	1-2'	Part shade to sun	3-6	, Purple	Texas	Evergreen or Hardy Perennial
Indian Paintbursh	Castilleja Species	6-12"	6"	Sun	3-5	Orange, Red	Texas	Annual
Showy Primrose	Oenothera speciose	1'	1'	Part shade to sun	3-6	Pink	Texas	Semi=evergreen ground cover
Prairie Phlox	Phlox Pilosa	8-12'	1'	Dappled shade to sun	4-5	Pink, Lavender	Texas	Hardy Perennial
Gayfeather	Liatris Species	1-3'	1-2'	Sun	8-12	Purple, Pink	Texas	Hardy Perennial
Winecup	Callirhoe involucrate	6-12"	2-4"	Part shade to sun	4-6	Red	Texas	Hardy Perennial
Indian Blanket	Gaillardia pulchella	1'	2'	Part shade to sun	5-10	Yellow and Red	Texas	Annual
Mexican Hat	Ratibida columnaris	1-3'	1-2'	Part shade to sun	4-10	Yellow	Native	Hardy Perennial

This chart shows the plants for the Triangle Option.

Scientific Name	Common Name	Number	Price (ea.)	Total
<i>Hibiscus coccineus</i>	Hardy Hibiscus	1	15	15
<i>Ilex decidua</i>	Possumhaw	1	75	75
<i>Lantana horrida</i>	Texas Lantana	2	8	16
<i>Echinacea augustifolia</i>	Coneflowers	2	6	12
<i>Phlox pilosa</i>	Prairie Phlox	2	8	16
<i>Dianthus chinensis</i>	Dianthus	1 tray	10	10
<i>Salvia farinacea</i>	Mealy Blue Salvia	1 pkg	2	6
<i>Liatris species</i>	Gayfeather	2	8	16
<i>Gaillardia pulchella</i>	Indian Blanket	2	4	8
<i>Lupinus texensis</i>	Bluebonnet	2	5	10
<i>Castilleja species</i>	Indian Paintbrush	1 pkg.	6	6
<i>Ratibida columnaris</i>	Mexican Hat	1 pkg	3	3
<i>Penstemon species</i>	Penstemon	2	9	18
<i>Callirhoe involucrate</i>	Winecup	1 pkg	3	3
<i>Achillea species</i>	White Yarrow	1	6	6
<i>Oenothera speciosa</i>	Showy Primrose	2	8	16
Total Plants		30		\$236

**Total Budget
\$404**

Item	Number	Price (ea.)	Total
Compost	12	10	120
Mulch	12	4	48
Totals			\$168

This bed would require 30 plants at a cost of \$236. Several of them would need to be started from seed.

In addition, this bed would also need compost and mulch which would cost approximately \$168.

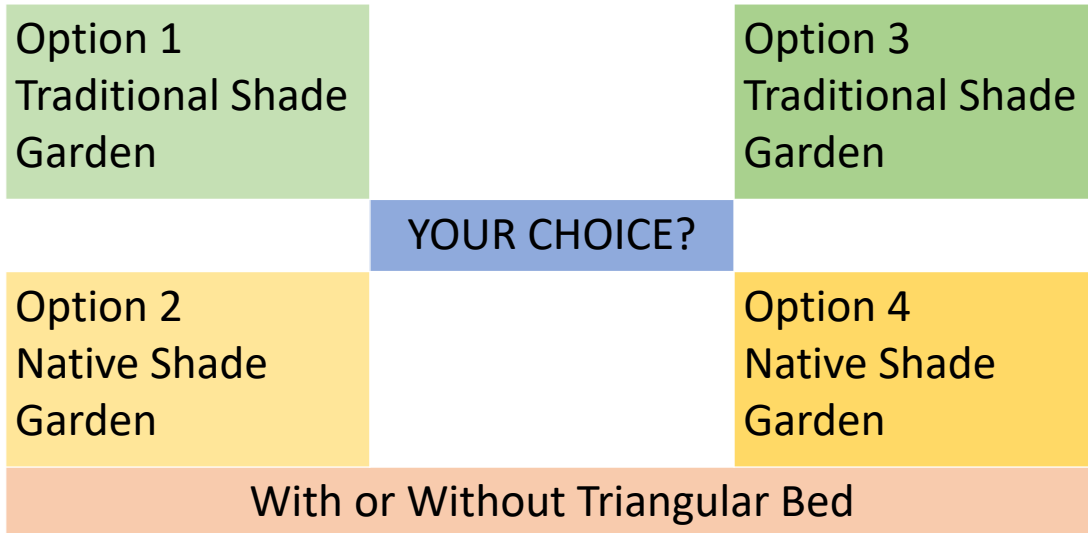
The total budget for this bed would be \$404.

UPKEEP

- Water- 1st year (bi-monthly), Once established (monthly or less)
- Fertilizer- none
- Mulch- maintain 3" depth (twice a year)
- Replace plants- as needed
- Purchase new plants- as needed
- Pest control- hand weed as needed

The upkeep of this bed would be approximately the same as the window bed. The only area that might be different is whether allow the annuals to reseed or to replace them every year. New or replacement plants would be purchased as needed.

What's Next?



Four options were shown to the city for the window garden with an additional option of adding a garden between the sidewalks. All of these gardens meet the requirements of containing proven shade plants that provide visual interest from both inside and out. In addition, all of the gardens provide food for wildlife, whether it be for birds, pollinators, or both. Educational options can be added based on the option chosen and the focus of the garden. The educational options will be determined after the option is chosen. Signs including one showing Master Gardener involvement will be placed in the garden. In the 5 beds, 55 different varieties of plants were shown with the majority of them being native. Of those 55 varieties, only 6 varieties were used in more than one option with Inland Seoats, Greggii Salvia, and American Beautyberry being the most used.