

South Boston, VA:
First Baptist Church Learning Area and Garden Conceptual Design



Prepared for the First Baptist Church of South Boston, VA

December 2015

South Boston, VA:
First Baptist Church Learning Area and Garden Conceptual Design

PARTNER AGENCIES

First Baptist Church
South Boston, VA



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South Boston, VA:
First Baptist Church Learning Area and Garden Conceptual Design

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The Community Design Assistance Center (CDAC) is an outreach center in the College of Architecture and Urban Studies at Virginia Tech that assists communities, neighborhood groups and non-profit organizations in improving the natural and built environments. Assistance is provided in the areas of landscape architecture, architecture, planning, and interior design. Working with communities, the conceptual planning and design provides communities with a graphic vision of their project that can then be used for grant applications and fundraising for the next steps toward implementation.

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Tuck Family Farms

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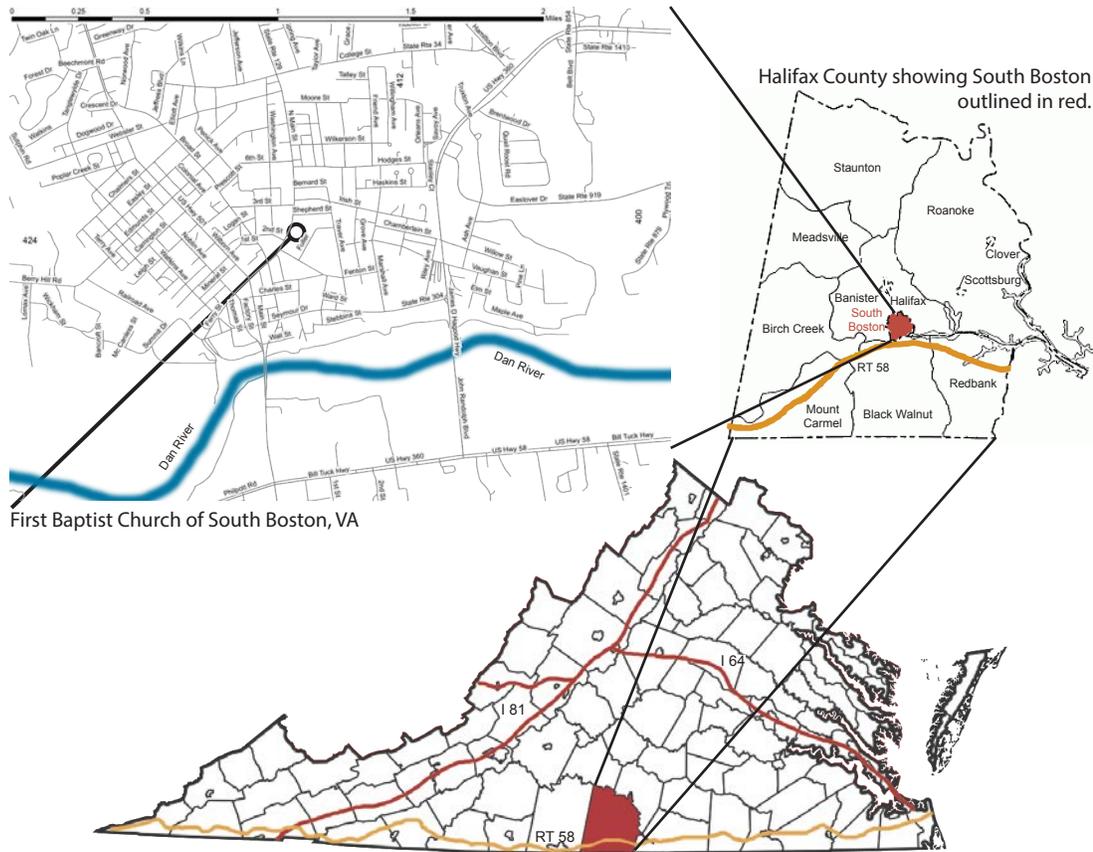
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South Boston, VA:
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PROJECT DESCRIPTION



First Baptist Church of South Boston, VA

Halifax County showing South Boston outlined in red.

Virginia state map showing Halifax County and major highways.

Located in the Town of South Boston, Virginia, the First Baptist Church (FBC) owns a large fill lot on Main Street and is hoping to create an outdoor space which can be used by all members of the church. First Baptist Church and the First Baptist Weekday School, which is run by FBC, would like to create an outdoor learning area/garden that “weaves their community, children and adults, with new and existing educational and religious programs”¹ says Mary Tucker Irby, director of the First Baptist Weekday School. This outdoor learning area would also expand upon the outreach services already provided by the church community and allow them to potentially grow food for the hungry, cultivate flowers for hospice patients, and provide a space for “education, play, recreation, friendly gatherings, performances, prayer, church meetings, Godly play, and gardening”.¹ In addition to these elements, an outdoor gathering space or stage would allow outdoor services, children’s plays, weddings, and gatherings. This space would be a wonderful addition to First Baptist Church.

The Community Design Assistance Center (CDAC) was contacted to work with the FBC to develop conceptual designs for the vision of the First Baptist Churchyard.

1 Application for Planning or Design Assistance submitted to CDAC 3/9/15

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DESIGN PROCESS

The design process began with an initial site visit to South Boston in June 2015. The CDAC team met with project stakeholders at First Baptist Church and discussed initial design visions and ideas for the churchyard. The team then walked the First Baptist Churchyard with these stakeholders, talking further about the visions and conditions of the site. The team documented existing conditions and took soil samples, which helped the team to understand the opportunities and constraints of the site. This inventory and analysis influenced the design concepts for First Baptist Churchyard. The team worked closely with a stakeholders group to better understand their vision for the site. Research was conducted regarding programs and elements that the stakeholders expressed interest in: natural and creative play, Godly Play, terraces, and gardens. After careful consideration of all the factors, a set of preliminary conceptual design alternatives was developed.

In July 2015, the CDAC team visited First Baptist Church to present the inventory and analysis of the site, research and case studies, and initial design ideas and concepts for the churchyard to the stakeholders and FBC community. During this meeting community members gave their feedback on the initial design concepts and how they wanted them changed and consolidated into a final concept. After this discussion, the design alternatives were then revised and combined into a final conceptual master plan for the First Baptist Churchyard.

The final master plans were presented at a second and final community meeting at the First Baptist Church in September 2015.



Stakeholders discuss their vision and ideas at the initial stakeholders meeting.



CDAC team member Lexi Moskaluk talks about the opportunities and constraints of the site during an in-house design charrette.



Carter Gresham and Lexi Moskaluk present the final design at the third community meeting in September 2015.

PART 1: FINAL DESIGNS

South Boston, VA:
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FINAL CONCEPTUAL MASTER PLAN

Design Description

The final vision for the First Baptist Churchyard came from the idea that all users should feel comfortable in their own spaces. The keenagers (active senior church members), teenagers, children, and those who simply want to stroll the grounds should feel welcome and safe in this new churchyard.

The Weekday School wanted an outdoor learning area that “weaves their community, children and adults, with new and existing educational and religious programs.” The site is divided into several smaller areas serving specific groups, and includes a children’s play area, Little Lambs’ Meadow Play Area, a large open air amphitheater with stage, a rain garden, garden plots, an area for teens to hang out or play volleyball, and a meandering path through each of the spaces. The Little Lambs’ Play Area serves both the Weekday School and the FBC.

The dangerous drop-off to the north of the site should be planted as much as possible to stabilize the slope as well as to inhibit anyone from venturing down into it. In addition, these forest plantings serve as a visual and functional boundary around the site, allowing those using the site to feel comfortable and safe.

Three speed tables have been proposed in the existing parking lot to slow cut-through traffic as well as to create a safe pedestrian crosswalk through the lot. Plantings and small rain gardens, planted near the pedestrian crosswalk and speed tables, are also recommended for the parking lot. This will collect rainwater runoff from the lot surface helping to mitigate dangerous black ice in the winter.

Following is the program map, final conceptual master plan, and a cross-section of the design. On subsequent pages are descriptions and drawings of the different areas (ie Little Lambs’ Meadow Play Area). Also included is an Alternative Schematic Plan as an alternative to address comments raised at the final community presentation in September.

FINAL CONCEPTUAL MASTER PLAN

Programming Map

Meadow and Path



The natural meadow will have native, tall grass that does not have to be mown, except for where paths are created, offering dynamic walking trails. These native meadows will attract pollinators such as bumblebees and monarch butterflies due to the presence of their needed plant habitats. Birdhouses can also offer close views of songbirds. Feeders can be placed close to the children's play area, so they may learn the songs of bird species. The relationships between wildlife and their habitats will be explained through educational signs along the walking paths.



Legend

- Children's Play Area
- Meadow and Path
- Outdoor Chapel/Amphitheater
- Rain Garden
- Church Garden
- Teen Area
- Traffic Calming

Active Play



Active, engaging play is necessary for healthy development in children's early years. Various aspects of natural and imaginative free play will be incorporated into an open play space converging with FBC's existing playground.



Traffic Calming



Traffic calming measures will cut across the expansive existing FBC parking lot, providing safe passage for pedestrians and implementing traffic-slowing road tables and curbs cuts. Proposed water infiltration and storage will mitigate the black ice which forms during cold months. The pedestrian sidewalks and planted curbs serve to slow down cars by bringing the roadway to a human scale.



Teen Area



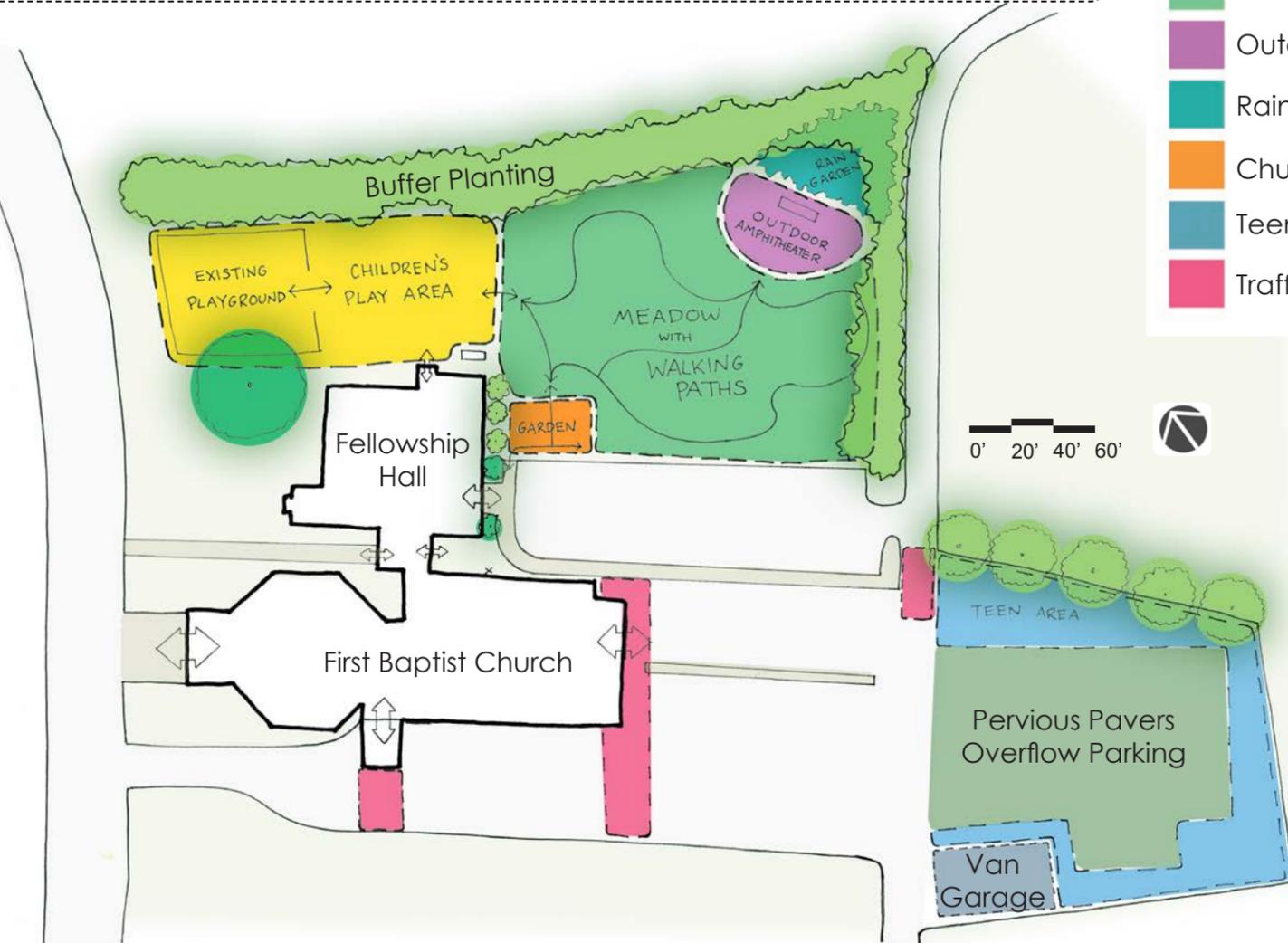
Teens benefit from having space to call their own and using it to socialize, learn from one another, and gain a sense of freedom from their daily school and family routines. This space, while still visible from the church, provides the youth group teens with opportunities to play, engage, sit, chat, or relax beneath the tree canopy.



Outdoor Chapel



To allow for multiple uses, an outdoor chapel was decided as the best option for the scale and needs of the First Baptist Church community. A covered stage serves as a backdrop for services, weddings, or children's plays. In addition, ADA access makes this a space for many levels of mobility.



FINAL CONCEPTUAL MASTER PLAN
Master Plan and Inspiration Imagery

- | | | | |
|---|-----------------------------------|----|-----------------------|
| 1 | Berms with Tunnels | 9 | Church Garden |
| 2 | Existing Playground | 10 | Fountain |
| 3 | Nature Play Area | 11 | Amphitheater Seating |
| 4 | Slide and Sand Pit | 12 | Stone Stage and Arbor |
| 5 | Tricycle Path | 13 | Rain Garden |
| 6 | Deck | | |
| 7 | Children's Stage | | |
| 8 | Wildflower Meadow and Grass Paths | | |



Amphitheater and Stone Stage



Meadow and Mown Grass Paths



Teen Area



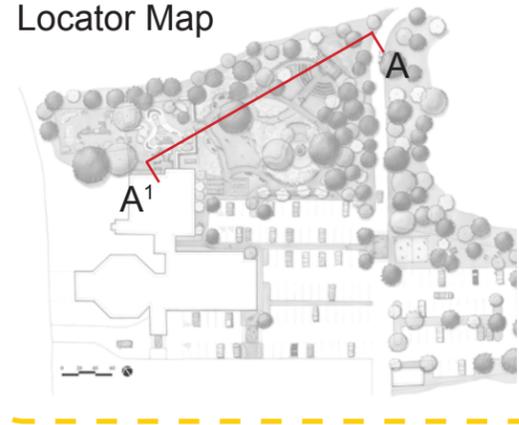
Little Lambs' Meadow Play Area



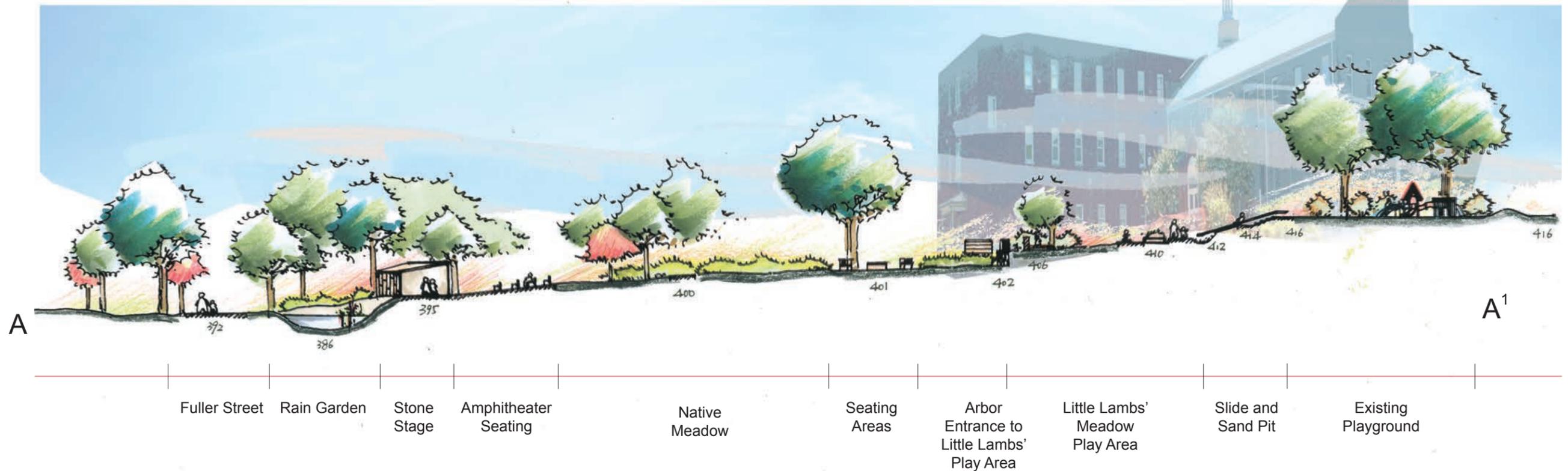
- | | |
|----|-----------------------------------|
| 14 | Speed Table, typ. |
| 15 | Sand Volleyball Court |
| 16 | Teen Space |
| 17 | Overflow Parking Lot |
| 18 | Proposed Van Garage Location |
| 19 | Bioretention with Curb Cuts, typ. |

FINAL CONCEPTUAL MASTER PLAN
Churchyard Cross-Section

Locator Map

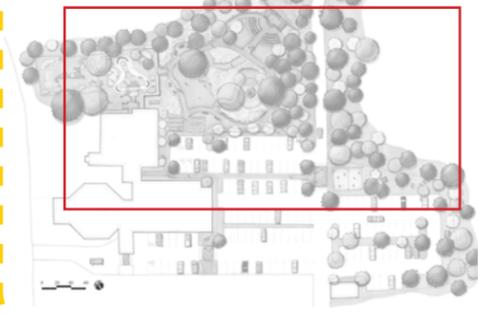


This cross-section gives illustration to what the hill of the churchyard might be like. It stretches from the Fuller street area, by the rain garden and amphitheater, up the native meadow slope to the Little Lambs' Meadow Play Area and the existing playground. One can see how the First Baptist Church building relates to its proposed churchyard.



FINAL CONCEPTUAL MASTER PLAN
Bird Feeders and Houses Map

Locator Map:



Suggested Locations of
 Bird Feeders & Bird Houses



Native Birds of South Boston, VA

	Cardinal		Bluebird
	Robin		Chickadee
	Blue jay		Nuthatch
	Tufted Titmouse		Pileated Woodpecker
			Ruby-Throated Hummingbird

Legend

- Bird Feeder Locations
- Bird House Locations

LITTLE LAMBS' MEADOW PLAY AREA

Design Description

The First Baptist Church currently has an existing fenced-in play structure alongside North Main Street that caters to children over the age of twelve years. However, additional play space would further increase the opportunities for children to play, practice Godly Play, and enjoy the outdoor space. The First Baptist Day School and Church congregation desired a place where imaginary play and outdoor learning could come alive.

The Little Lambs' Play Area is a place where young minds can explore nature's adventures. Entry into the Little Lambs' Play Area can be gained either through the church or from the main garden area through an arbor. The door from the church opens onto a proposed deck where the existing fire escape is now. From this point, children can access the play area via stairs or a drawbridge. Wooden boardwalk steps and a hill slide connect the existing and new playground areas. For safety, fencing surrounds the play area and can be adorned with musical crafts and whimsical instruments. Native flowers, shrubs, and trees attract butterflies and songbirds, creating a beautiful teaching moment. A loop path, children's wooden castle structure, sand play, and sensory garden enhance the play space. Elements such as boulder scrambles, tree-trunk stepping-stones, a water pump, living hide-outs, and play excavator lend even more adventure, sensory engagement, learning, and skill-building into the playground.

Following is the conceptual plan, an illustrative vision of the Little Lambs' Play Area, a planting plan, and a Little Lambs' imagery map.

LITTLE LAMB'S MEADOW PLAY AREA
Master Plan and Inspiration Imagery

The Little Lambs' Meadow Play Area consists of a curving tricycle path, a hill slide following the terrain, a small deck for teachers, a children's stage for Godly Play, a large sand pit with play excavator, water pump, a rocky swale, and plenty of green space

for children to run freely. The children can feel free to explore the space as they wish and search for small lamb details throughout. In addition, a clear view of the site from the deck gives teachers piece of mind.



Plant Recommendations:

- Attracts Song Birds
- Attracts Butterflies
- Special Value to Beneficial Pollinators

Locator Map:



Black Cherry
Prunus serotina



Lowbush Blueberry
'Top Hat'
Vaccinium angustifolium

Inspiration Images:



Children's Stage



Lambs' Ear
Stachys byzantina



Tree Stump Path



Creeping Thyme
Thymus serpyllum



Sensory Garden Boxes



Log Tower



Free Fort Building



Hill Slide



Riding Tricycles



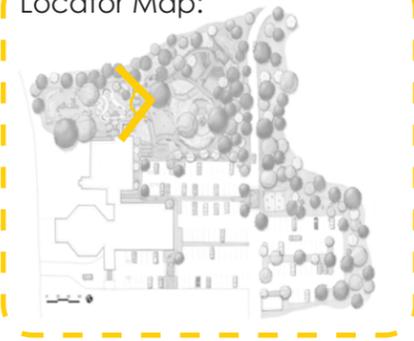
Play Excavator



Drawbridge

LITTLE LAMBS' MEADOW PLAY AREA
Illustrative Perspective

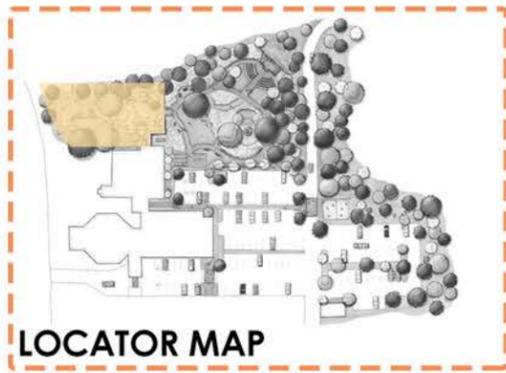
Locator Map:



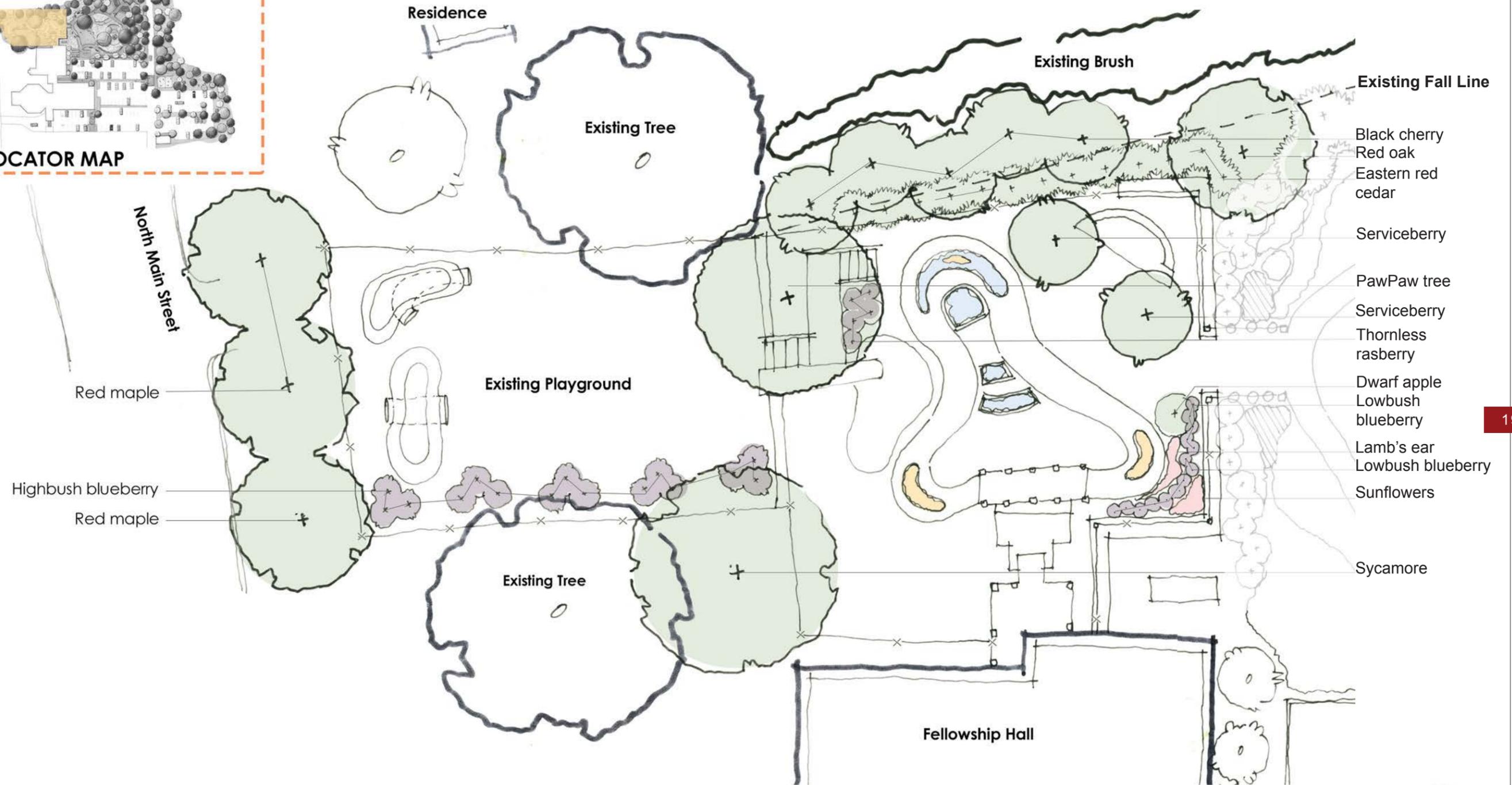
This perspective showcases the tricycle path and surrounding landscaping behind the First Baptist Church. This area is close to the church for safety, and landscape elements engage children both physically and mentally.



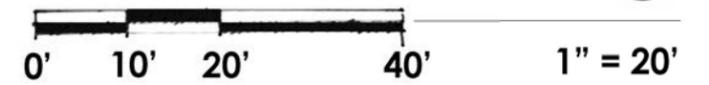
LITTLE LAMBS' MEADOW PLAY AREA Planting Plan



LOCATOR MAP



*A complete list of the plant selections in this plan can be found on the following page.



LITTLE LAMBS' MEADOW PLAY AREA

Planting Selections

The planting selections below correspond to the Little Lamb's Meadow Play Area Planting Plan on the previous page. The colors associated with each plant type correlate to areas of planting types on the Planting Plan. Please see page 68 of the Appendix of a full description for each plant selection.

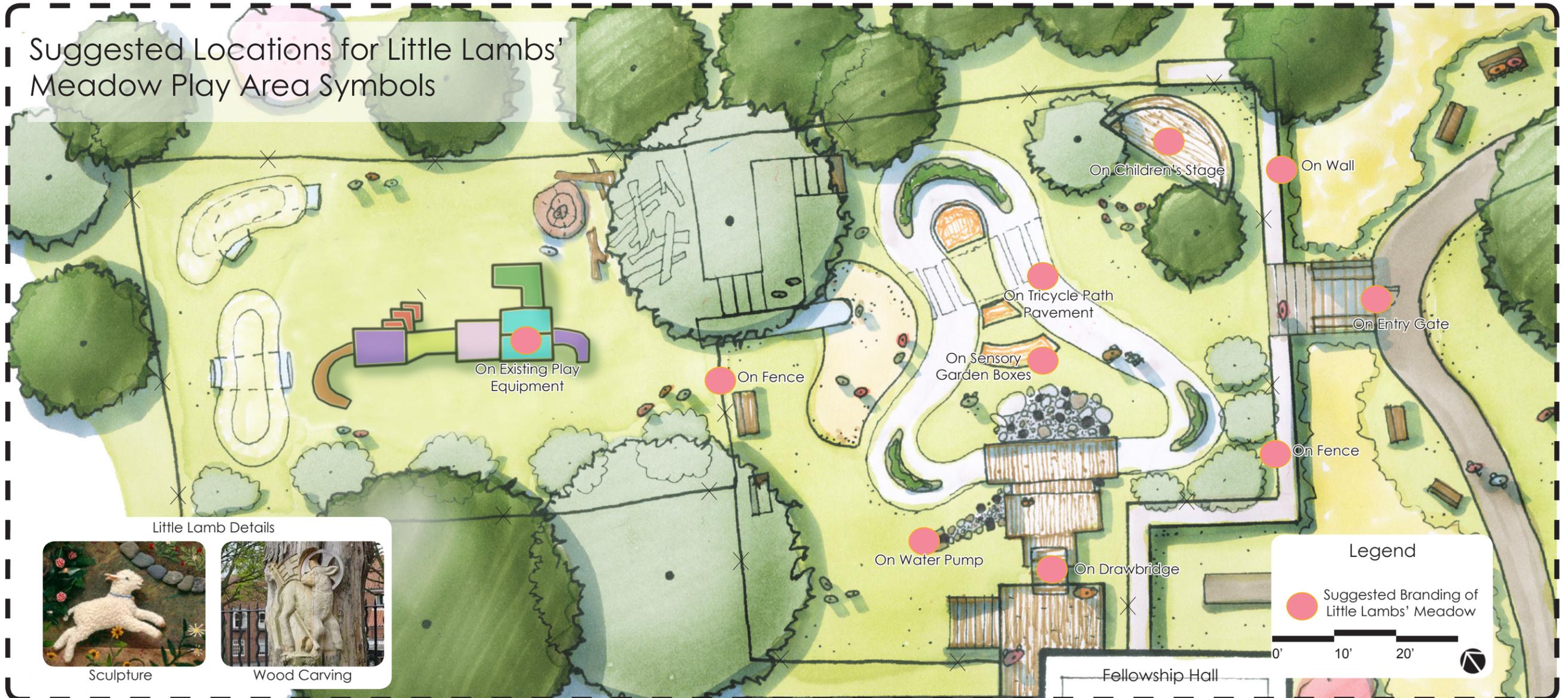
	TREES <i>Asimina triloba</i> <i>Prunus serotina</i> <i>Quercus coccinea</i>	PawPaw tree Black cherry Red oak
	SHRUBS <i>Rubus idaeus</i> var. <i>strigosus</i> "Canby" <i>Vaccinium angustifolium</i>	Thornless raspberry Lowbush blueberry
	GRASS <i>Chasmanthium latifolium</i>	Northern sea oats
	PERENNIALS <i>Helianthus maximiliani</i> <i>Stachys byzantine</i>	Maximillian sunflower Lamb's ear
	HERBS <i>Mentha x piperita</i> <i>Ocimum basilicum</i> <i>Rosemary officinalis</i> <i>Thymus serpyllum</i>	Peppermint Sweet basil Rosemary Creeping thyme

LITTLE LAMBS' MEADOW PLAY AREA Imagery Map

Locator Map:



Suggested Locations for Little Lambs' Meadow Play Area Symbols



Little Lamb Details



Sculpture



Wood Carving

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NATIVE MEADOW AND WALKING PATHS

Design Description

The meadow was conceived as a solution for low maintenance and programmable open space that the Church can shape to meet the congregation's needs. Mown paths provide a mini adventure through tall, sweeping native grasses, which don't need as much water or maintenance to thrive. A paved path down to the fountain provides easy access to a calming water feature, a favorite sitting spot, and a beautiful photo opportunity. Where mown, the lawn provides grassy space for ball-play, kite flying, and lawn games. Interpretive signage describing birds and animals and the native plants that provide habitat for them can be placed around the meadow. Bird feeders and bird houses provide habitat for these songbirds and an opportunity for people to enjoy their company and song.

Following is a design for the Native Meadow, a planting plan, and a map of suggested locations for bird feeders and houses. An alternative schematic design for the Native Meadow can be found in the Appendix.



NATIVE MEADOW

Master Plan and Inspiration Imagery
Planting Recommendations:

- Attracts Song Birds
- Attracts Hummingbirds
- Attracts Butterflies
- Special Value to Beneficial Pollinators



Wild Bergamot
Mondara fitulosa



Sundial Lupine
Lupinus perennis



Summersweet Clethra
Clethra alnifolia



Southern Arrowwood
Viburnum dentatum



Blackgum
Nyssa sylvatica



Tiered Fountain



Millstone Fountain

Inspiration Images:



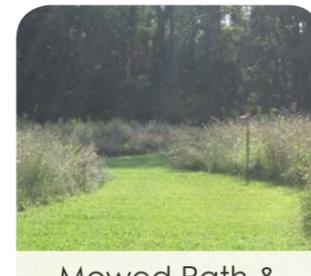
Virginia Meadow



Meadow Bench



Gravel Path



Mowed Path & Birdhouse

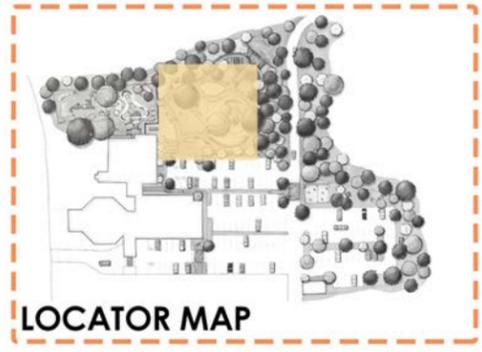
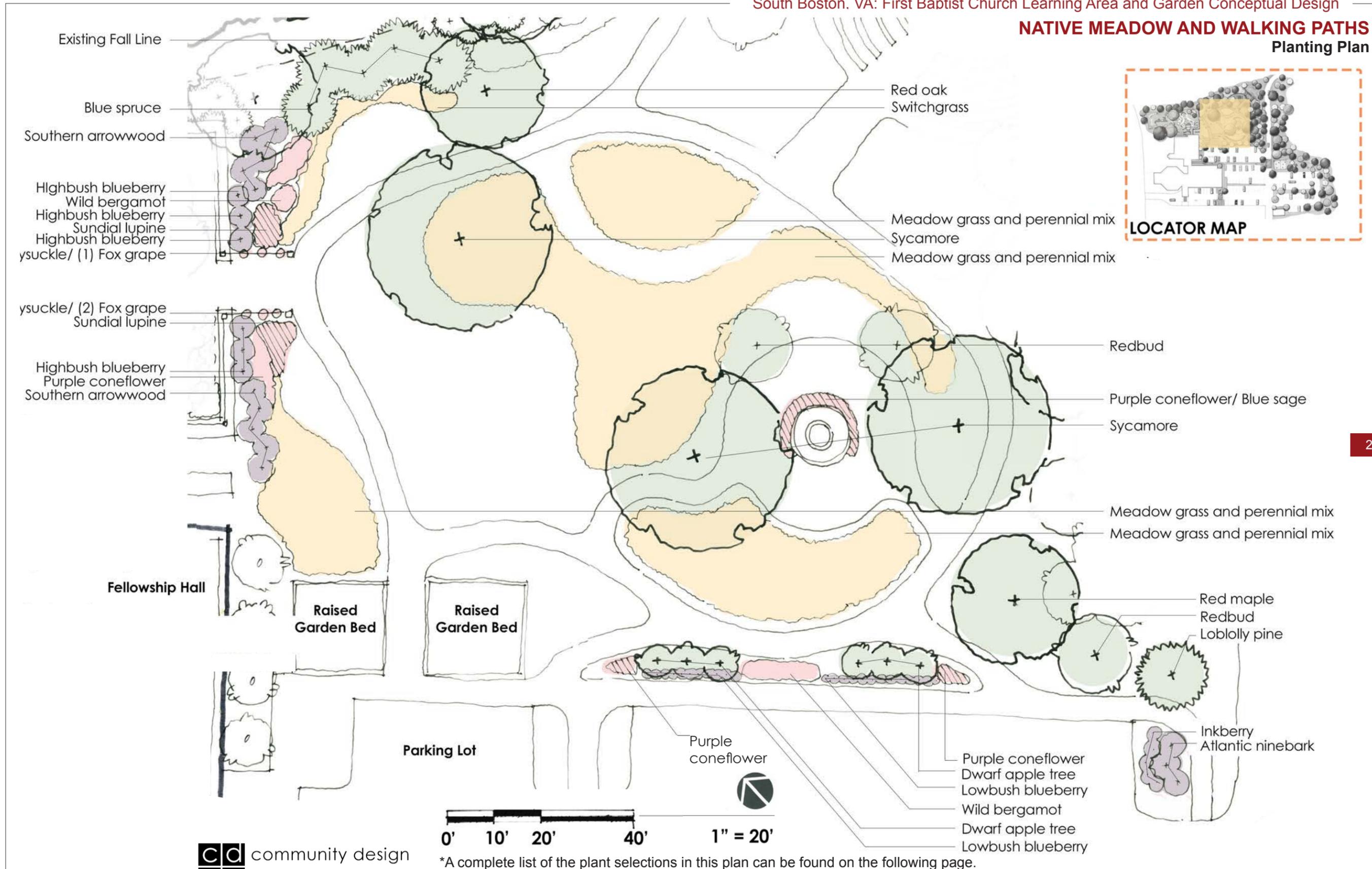


Rustic Bench



Wedding Photos

NATIVE MEADOW AND WALKING PATHS
Planting Plan



- Existing Fall Line
- Blue spruce
- Southern arrowwood
- Highbush blueberry
- Wild bergamot
- Highbush blueberry
- Sundial lupine
- Highbush blueberry
- ysuckle/ (1) Fox grape

- ysuckle/ (2) Fox grape
- Sundial lupine
- Highbush blueberry
- Purple coneflower
- Southern arrowwood

- Red oak
- Switchgrass

- Meadow grass and perennial mix
- Sycamore
- Meadow grass and perennial mix

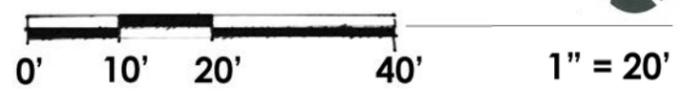
- Redbud
- Purple coneflower/ Blue sage
- Sycamore

- Meadow grass and perennial mix
- Meadow grass and perennial mix

- Red maple
- Redbud
- Loblolly pine

- Inkberry
- Atlantic ninebark

- Purple coneflower
- Dwarf apple tree
- Lowbush blueberry
- Wild bergamot
- Dwarf apple tree
- Lowbush blueberry



*A complete list of the plant selections in this plan can be found on the following page.

NATIVE MEADOW AND WALKING PATHS

Planting Selections

The planting selections below correspond to the Native Meadow and Walking Paths Planting Plan on the previous page. The colors associated with each plant type correlate to areas of planting types on the Planting Plan. Please see page 70 of the appendix for a full description of each plant selection.

GRASS AND PERENNIAL MIX

Andropogon gerardii	Big bluestem
Panicum virgatum	Switchgrass
Schizachyrium scoparium	Little bluestem
Sorghastrum nutans	Rumsey Indian grass
Asclepias tuberosa	Butterfly milkweed
Coreopsis lanceolata	Lanceleaf tickseed
Liatris spicata	Gayfeather
Symphotrichum novae-angliae	New England aster

TREES

Acer rubrum	Red maple
Cercis Canadensis	Redbud
Malus domestica	Dwarf fruit trees: 'Braeburn', 'Winesap', and 'Honeycrisp'
Picea pungens	Blue spruce
Platanus occidentalis	Sycamore
Pinus taeda	Loblolly pine
Quercus coccinea	Red oak

SHRUBS

Ilex glabra	Inkberry
Physocarpus opulifolius	Atlantic nineback
Vaccinium corymbosum	Highbush blueberry
Viburnum dentatum	Southern arrowwood

PERENNIALS

Echinacea purpurea	Purple coneflower
Lupinus perennis	Sundial lupine
Mondara fitulosa	Wild bergamot
Salvia azurea	Blue sage

VINES

Lonicera sempervirens	Trumpet honeysuckle
Vitis labrusca	Fox grape

AMPHITHEATER AREA

Design Description

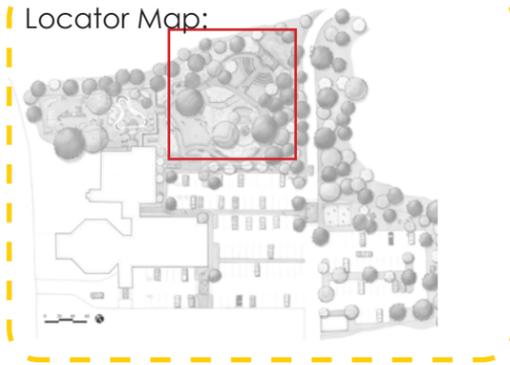
The final proposal also includes a large open air amphitheater to facilitate a wide range of events. The amphitheater space provides opportunity for church members to celebrate, worship, and enjoy the beautiful natural surroundings. Here, a beautiful wedding or an Easter service could be held.

A small flagstone stage is located at the front, where a Pastor could celebrate a service, or a group of children could put on a show for their parents. The modest flagstone stage shaded by a vine-covered arbor is proposed to serve as both a chapel for outdoor services, as well as for an elegant outdoor wedding venue. An ample area for seating is afforded just southwest of the stage. Movable wooden benches could be placed where needed or permanent cement pews could be constructed. In addition, green space is proposed behind the seating to allow for more seating to be brought in if need be. The amphitheater space is bounded by the meandering path (5-7' in width) to the southwest, integrating the space with the broader churchyard. In addition, a lush rain garden, planted for year-round brilliance, is located behind the stage.

The following pages include the amphitheater concept and a planting plan.

AMPHITHEATER AREA
Master Plan and Inspiration Imagery

Locator Map:



Fox Grape Trumpet Vine



Wooden Arbor/Pavilion



Small Chapel



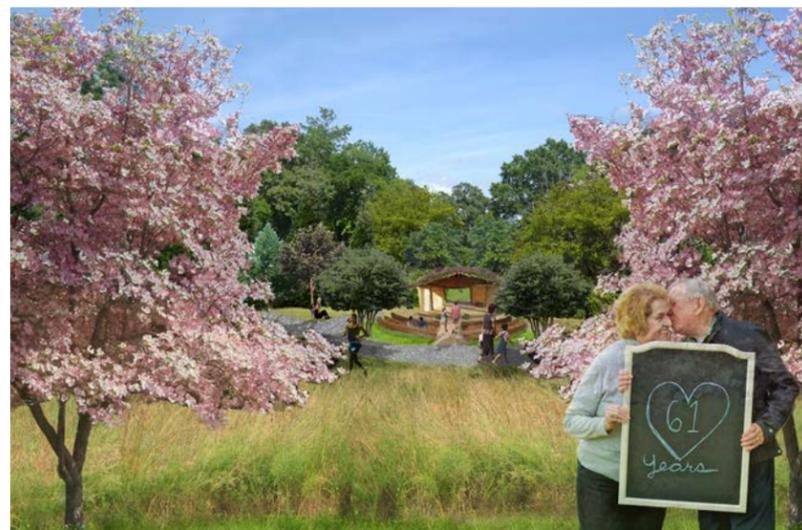
Mixed Seating



Wooden Pews



"The Woods"



Perspective of an area for taking pictures with the amphitheater in the background



Red Oak
Quercus coccinea



Sycamore
Platanus occidentalis



Serviceberry
Amelanchier arborea



Atlantic ninebark
Physocarpus opulifolius



Black Huckleberry
Gaylussacia baccata



Coreopsis
Coreopsis lanceolata



New England Aster
Symphotrichum novae-angliae

Attracts Song Birds

Attracts Butterflies

Special Value to Beneficial Pollinators



A Planted Flower Bed



Rain Garden Filtration



A Planted Rain Garden

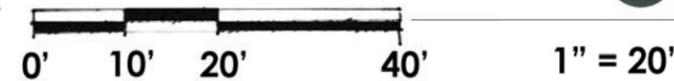
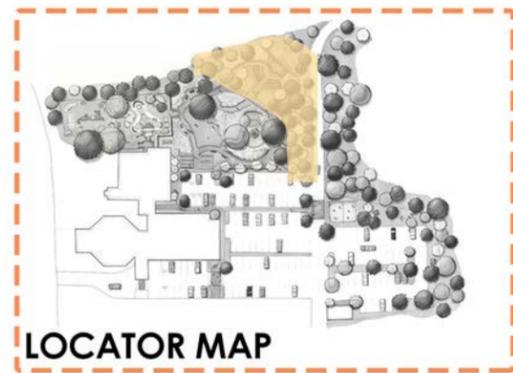
AMPHITHEATER AREA
Planting Plan

- Red oak
- Wild bergamot
- Atlantic ninebark
- Sweetbay magnolia
- Atlantic ninebark
- Wild huckleberry
- Existing Fall Line**
- Virginia chokecherry

Switchgrass

- River birch
- Silky dogwood
- River birch
- Inkberry
- Foxglove beardtongue
- River birch
- Switchgrass
- Cinnamon fern
- Swamp milkweed
- Foxglove beardtongue
- Highbush blueberry
- Switchgrass
- Southern arrowwood
- Redbud
- Loblolly pine
- Red maple
- Serviceberry
- Redbud
- Virginia chokecherry
- Redbud
- Virginia chokecherry
- Loblolly pine
- Redbud
- Virginia chokecherry

Fuller Street



*A complete list of the plant selections in this plan can be found on the following page.

AMPHITHEATER AREA

Planting Selections

The planting selections below correspond to the Amphitheater Area Planting Plan on the previous page. The colors associated with each plant type correlate to areas of planting types on the Planting Plan. Please see page 74 of the Appendix for a full description of each plant selection.

	TREES	
	<i>Acer rubrum</i>	Red Maple
	<i>Amelanchier arborea</i>	Serviceberry
	<i>Pinus taeda</i>	Loblolly Pine
	<i>Cercis Canadensis</i>	Redbud
	SHRUBS	
	<i>Gaylussacia baccata</i>	Black huckleberry
	<i>Physocarpus opulifolius</i>	Atlantic nineback
	<i>Prunus virginiana</i>	Virginia chokecherry
	Rain Garden	
	TREES	
	<i>Betula nigra</i>	River birch
	<i>Magnolia virginiana</i>	Sweetbay magnolia
	SHRUBS	
	<i>Cornus amomum</i>	Silky dogwood
	<i>Ilex glabra</i>	Inkberry
	<i>Vaccinium corymbosum</i>	Highbush blueberry
	GRASS	
	<i>Panicum virgatum</i>	Blackwell switchgrass
	PERENNIAL	
	<i>Asclepias incarnata</i>	Swamp milkweed
	<i>Penstemon digitalis</i>	Foxglove beardtongue
	<i>Osmunda cinnamomea</i>	Cinnamon fern

South Boston, VA:

First Baptist Church Learning Area and Garden Conceptual Design

TEEN AREA AND OVERFLOW PARKING LOT

Design Description

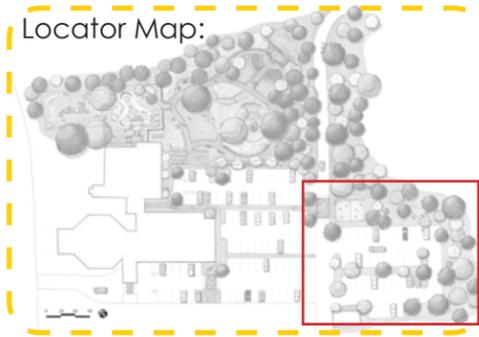
We propose that the green space surrounding the overflow lot be converted into a usable, open space for teens. Picnic tables, a beach volleyball net, open space for corn hole, and ample space to simply hang out are proposed within the space. With that in mind, however, security is a major priority, so any plantings within this space will need to have canopies high enough to ensure clear visibility of the space at all times. In addition, we propose that the overflow parking lot become more structured with a central planted median containing a bioswale to retain and treat stormwater collected from the other parking lots. Finally, a speed table is proposed on Fuller street to slow traffic and to allow pedestrians to cross Fuller Street into the teen area safely.

The following pages include the concept for the Teen Area and Overflow Parking Lot and the Planting Plan.

TEEN AREA AND OVERFLOW PARKING LOT

Master Plan and Inspiration Imagery

Locator Map:



Teen Picnic



Sand Volleyball Court



Vegetated Median Swale



Grass Permeable Pavers



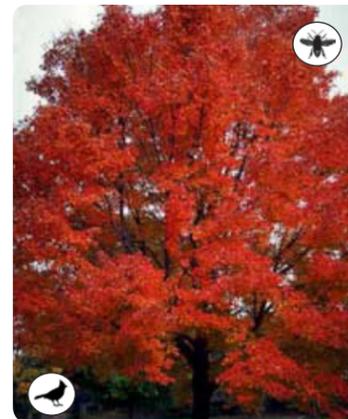
Vegetated Parking Swale



Illustrative sketch of teen area

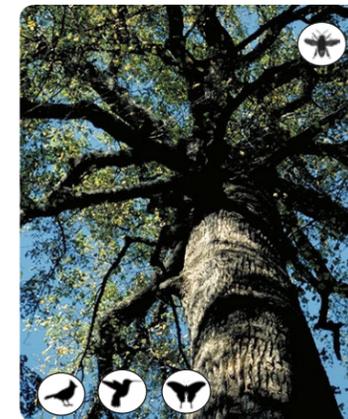


Planting Suggestions



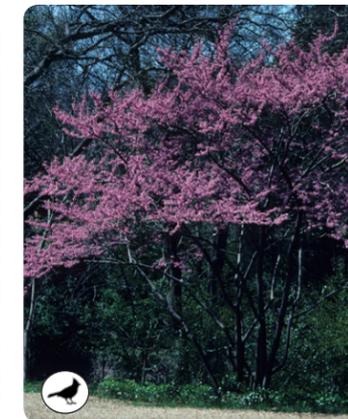
Red Maple
Acer rubrum

Attracts Song Birds



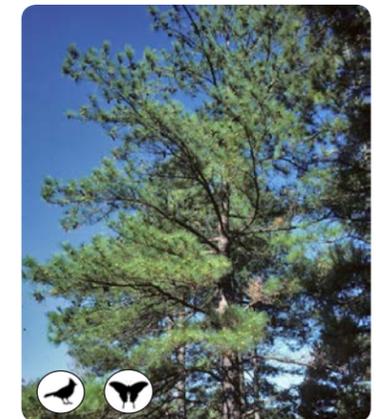
Tulip Poplar
Liriodendron tulipifera

Attracts Hummingbirds



Redbud
Cercis canadensis

Attracts Butterflies

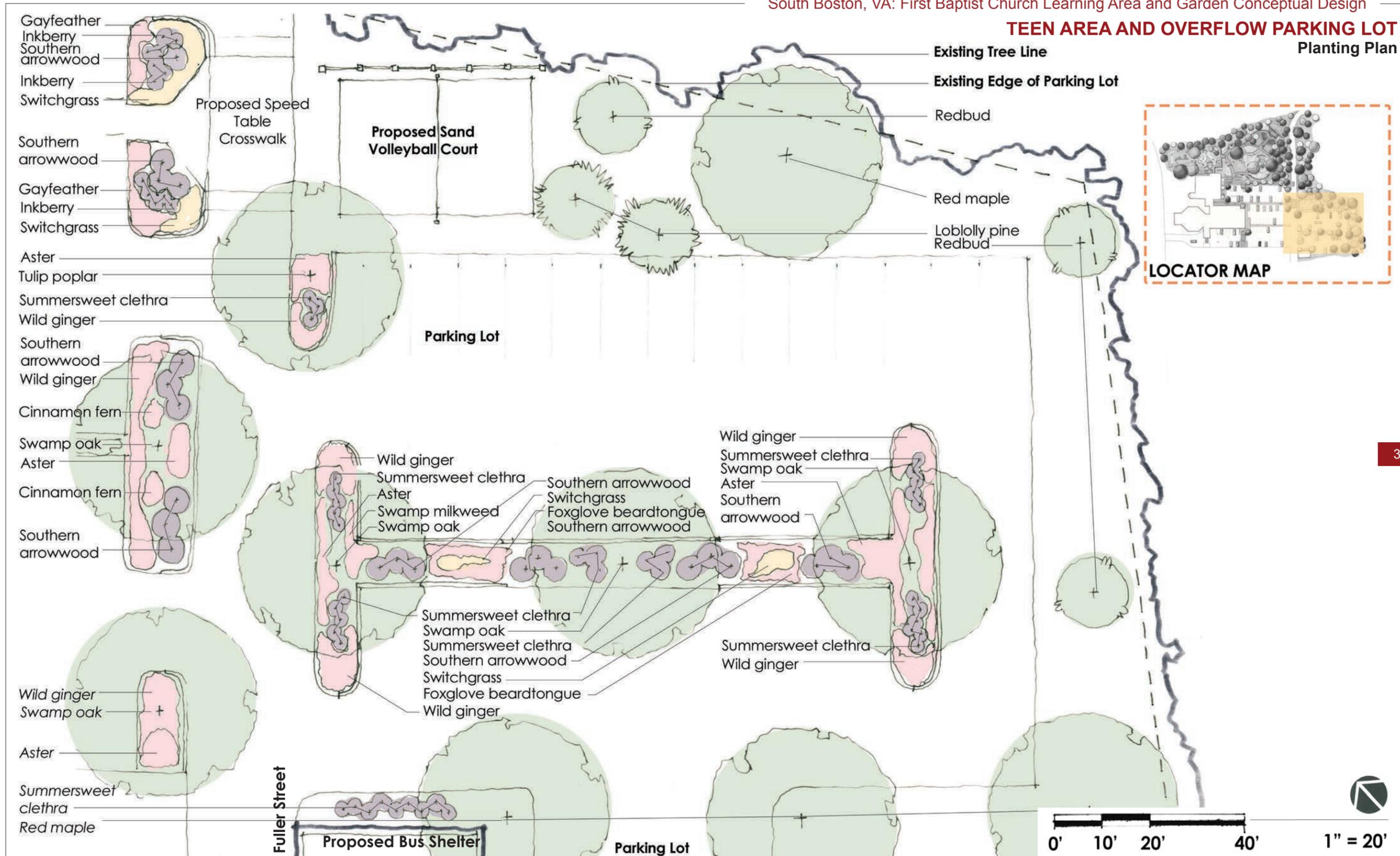


Loblolly Pine
Pinus taeda

Special Value to Beneficial Pollinators

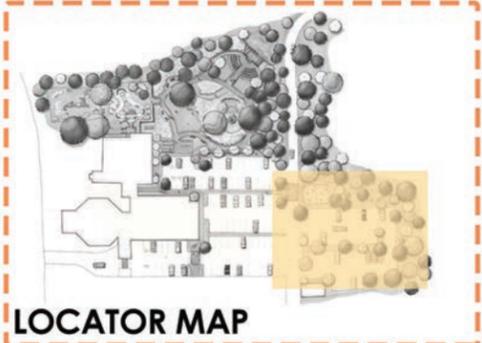
TEEN AREA AND OVERFLOW PARKING LOT

Planting Plan



- Gayfeather
- Inkberry
- Southern arrowwood
- Inkberry
- Switchgrass
- Southern arrowwood
- Gayfeather
- Inkberry
- Switchgrass
- Aster
- Tulip poplar
- Summersweet clethra
- Wild ginger
- Southern arrowwood
- Wild ginger
- Cinnamon fern
- Swamp oak
- Aster
- Cinnamon fern
- Southern arrowwood
- Wild ginger
- Swamp oak
- Aster
- Summersweet clethra
- Red maple

- Existing Tree Line
- Existing Edge of Parking Lot
- Redbud
- Red maple
- Loblolly pine
- Redbud



*A complete list of the plant selections in this plan can be found on the following page.

TEEN AREA AND OVERFLOW PARKING LOT

Planting Selections

The planting selections below correspond to the Teen Area and Overflow Parking Lot Planting Plan on the previous page. The colors associated with each plant type correlate to areas of planting types on the Planting Plan. Please see page 77 of the Appendix for a full description of each plant selection.

Teen Area

TREES

<i>Acer rubrum</i>	Red maple
<i>Cercis Canadensis</i>	Redbud
<i>Liriodendron tulipifera</i>	Tulip poplar
<i>Pinus taeda</i>	Loblolly pine
<i>Quercus bicolor</i>	Swamp white oak

Bio-retention Area

SHRUBS

<i>Clethra alnifolia</i>	Summersweet clethra
<i>Ilex glabra</i>	Inkberry
<i>Viburnum dentatum</i>	Southern Arrowwood

GRASS

<i>Panicum virgatum</i>	Switchgrass
-------------------------	-------------

PERENNIALS

<i>Asarum canadense</i>	Wild ginger
<i>Asclepias incarnata</i>	Swamp milkweed
<i>Osmunda cinnamomea</i>	Cinnamon fern
<i>Penstemon digitalis</i>	Foxglove beardtongue
<i>Symphotrichum novae-angliae</i>	Aster

South Boston, VA:
First Baptist Church Learning Area and Garden Conceptual Design

PHASING PLAN

Overview

A phasing plan was drawn up to help the First Baptist Church community organize and prioritize the proposed designs. The plan represents complementary design elements that could be implemented in logical groupings. The phases are also logical, complementary groupings for when applying for funding or raising funds to implement areas of the design.

The phasing plan and phase descriptions can be found on the following page.

PHASING PLAN
Phasing Areas Diagram

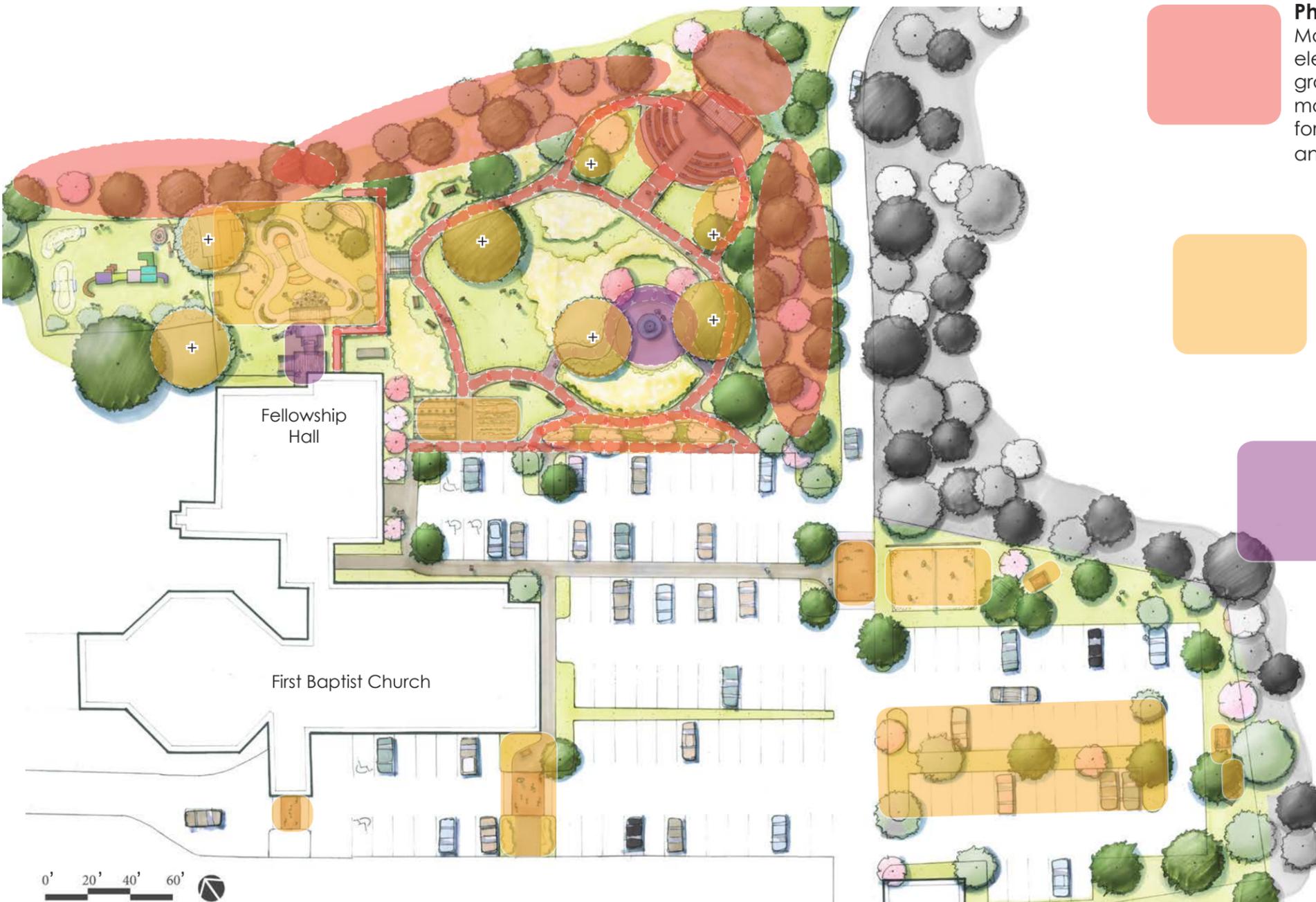
Legend

- Phase 1:**
 Major hardscape construction and important elements such as the chapel and amphitheater, gravel walking paths, rain garden for stormwater management, retaining walls, trees along east side for slope stabilization, seeding of native meadow, and planting of vegetative barrier on north side.

- Phase 2:**
 Improvement of existing garden, planting of shade trees, children's play area, speed tables/ pedestrian crosswalks, benches, flowering trees, changing gravel paths to asphalt walking paths, sand volleyball court, picnic tables, and vegetated parking medians.

- Phase 3:**
 Points of interest such as the meadow fountain and benches, deck from Fellowship Hall to children's play area, birdhouses, bird feeders, and educational signage on native flora and fauna.

- Phase 4:**
 Special details as funding becomes available: Sculpture, dedicated pavers, memorial trees and benches, and other fundraising ideas could be implemented.



After the final community meeting and additional community feedback, some suggestions were made about incorporating the children's area into the overall concept instead of separating the children from other generations. In this alternate schematic plan, the children's play area is separated into pieces and incorporated into the larger meadow area

allowing the children's areas to be constructed earlier in the process. There is also an additional rubberized play court with a basketball hoop inside the meadow area, so the whole churchyard becomes a place for all generations to mingle and enjoy the outdoors.



PART 2:
SITE INVENTORY, ANALYSIS, AND
PRELIMINARY DESIGNS

SITE INVENTORY AND ANALYSIS

Overview

An initial site visit was conducted on June 24th, 2015. During this meeting the team met with key stakeholders of First Baptist Church to identify their overall needs and desired elements of the Churchyard, learn which user groups would use the site when, and what kinds of events the Church would like to hold in their outdoor space. The team also walked the site with the stakeholders, took photographs and measurements, and collected soil samples. This data was then incorporated into a site analysis to determine opportunities and constraints of the site.

Following is the site inventory and analysis map which includes a list of opportunities and constraints for the First Baptist Church site. The notes from this meeting can be found in the Appendix.

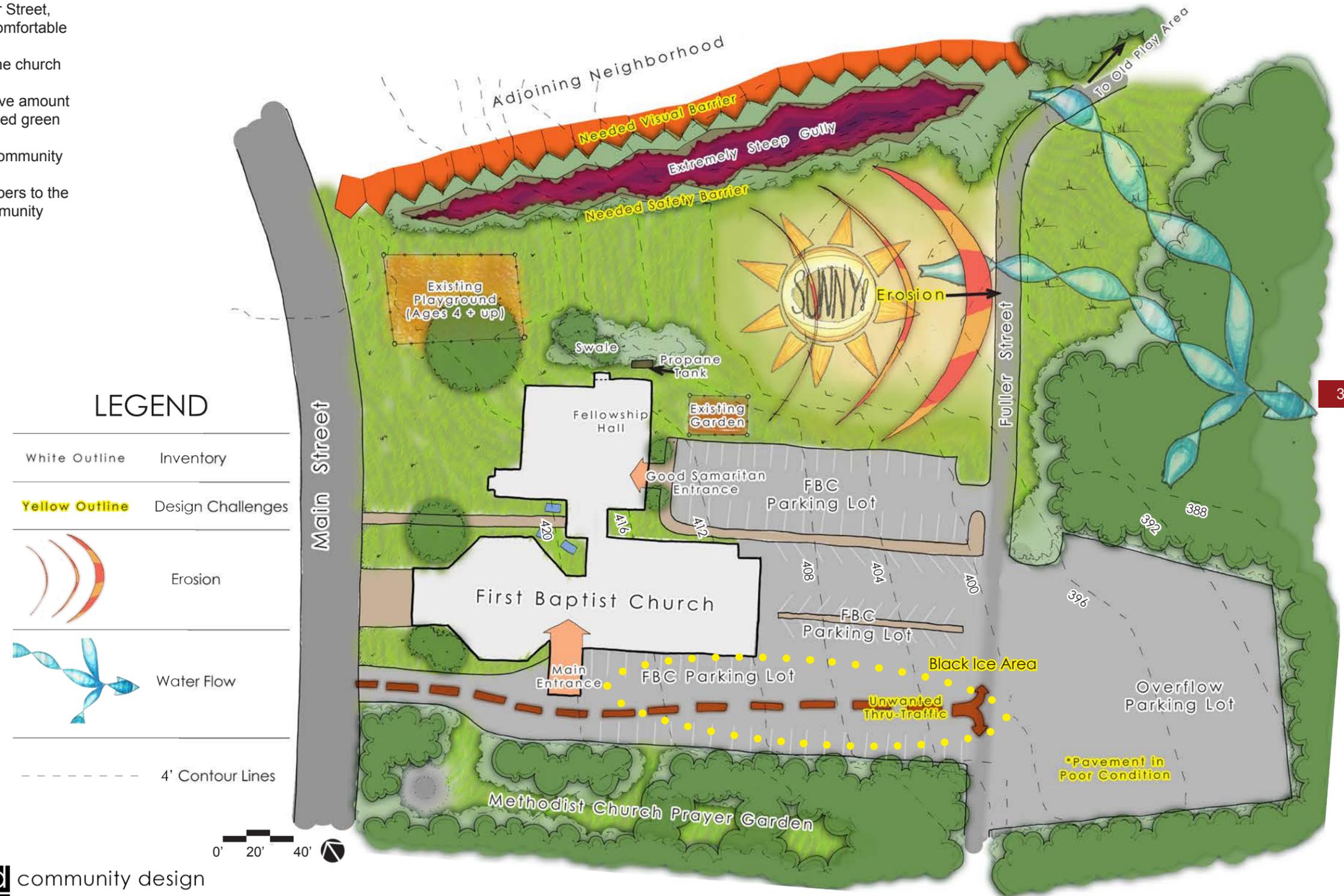
After examining the inventory and analysis information, it was evident that several factors needed to be addressed:

Opportunities

- Opportunity to create spaces through terracing
- Possibility of slowing traffic on Fuller Street, therefore creating safer and more comfortable spaces
- Land can become an extension of the church building
- Possibility of taking out a conservative amount of parking to create more programmed green space
- Create larger gardening space for community and church members
- Attract community and church members to the site, possibly creating a vibrant community space

Constraints

- Major topographic change
- Possible issues with safety due to the larger size and elongated shape of the parcel
- Little connection between existing picnic area and current open space
- Erosion and sun exposure on majority of green space
- Steep gully and adjoining neighborhood need barrier
- Unwanted through-traffic
- Black ice in FBC parking lot, especially along slope
- Water runs across Fuller Street during rain storms
- Degraded fill soils



South Boston, VA:
First Baptist Church Learning Area and Garden Conceptual Design

RESEARCH AND CASE STUDIES

Overview

After the inventory and analysis phase of the design process, the team researched elements that could be incorporated into the design. Research areas included natural play, Godly Play, and terraced gardens. Case studies into specific play yards was conducted to see how these schools, churches, and communities incorporated natural play into their play areas. The team could not find, in their research, any example of an outdoor Godly Play yard, so this will be a trailblazing project!

First Baptist Church community members provided feedback at the initial concept presentation in July 2016. The team then refined their two initial concepts into a final working concept, created a planting palette for the site, and conducted additional research on deer prevention methods, rain gardens, and attracting native bird and butterfly species to the garden.

Case study summaries and additional information can be found on the following pages.

Godly Play®

Practiced throughout the United States

Godly Play® involves the application and teaching of Scripture through movement, tangible storytelling, and active engagement. A teacher chooses a Scripture to teach and chooses the corresponding box. Inside, props, and set cloths (or other materials) are used to present the lesson.

Godly Play® focuses on the tangible interaction between the students and the Scripture. Bringing Godly Play® outside brings an entirely new dimension to the stories.

Design Implications:

1. Space for storytelling
2. Comfortable seating
3. Sense of wonder
4. Quiet space
5. Opportunities for children to be the storytellers
6. Creativity



The favorite Godly Play® set of the First Baptist Church children is the Desert Box.



A Godly Play® shelf. Here is where the different story sets are kept.



Godly Play® being taught in a circle.

"Godly Play® values process, openness, discovery, community and relationships. Godly Play® nurtures participants to larger dimensions of belief and faith through wondering and play."¹
¹ Godly Play Foundation



Godly Play® is acted out in a group setting.



Godly Play® in action between a pair of children.



A teacher acts as storyteller to the children.



A teacher tells the story of Noah's Ark with wooden characters.

Terraced Landscapes

Due to the steep slopes and drainage issues present on the site, we feel that terracing portions of the site could be beneficial. Below are several examples of landscapes broken into smaller spaces through terracing.

Terracing the site can:

- > Allow for more comfortable use of the space due to flatter topography
- > Create a more pedestrian accessible path around the entire site
- > Allow for better visual security as one can stand on the top level and survey the entire site



Design Implications:

1. Natural drainage is drastically impacted by terracing, therefore swales and stormwater management must be addressed in a final terrace design.
2. If small children are to use the site, attention must be given to the edge condition of all retaining walls (i.e. safety handrails).
3. Retention walls, while often strictly vertical, can be tilted or planted to create a more natural aesthetic.
4. Due to the fact that retention walls divide spaces (division varies due to height of wall) more public spaces and more semi-public spaces can be created, i.e. a playground and a large organized dinner in the same outdoor setting.



Boulder Retaining Wall
Use local stone from South Boston Quarry



Brick or Stone Retaining Wall
Match brick to the original brick used on the First Baptist Church



As shown above, "living walls" break up the masses and make the area seem much more natural and inviting.

Garden and Planting Opportunities

Vegetable gardens can be designed and planted in a myriad of ways. Options seen on the right range from raised spiral planters, corten steel undulating patterns, to clustered, high density plantings with high crop yields.



The images on the right show examples of "living walls." Here, the wall surface is softened by plant material. On the far right, one can also see that a wall can become a work of art, changing throughout the seasons.

South Boston, VA:
First Baptist Church Learning Area and Garden Conceptual Design

PRELIMINARY CONCEPTS

Overview

The following two preliminary concepts were presented to the First Baptist Church community for feedback before they were reshaped and consolidated into the final conceptual master plan.

PRELIMINARY CONCEPTS

Concept One: Common Gardens

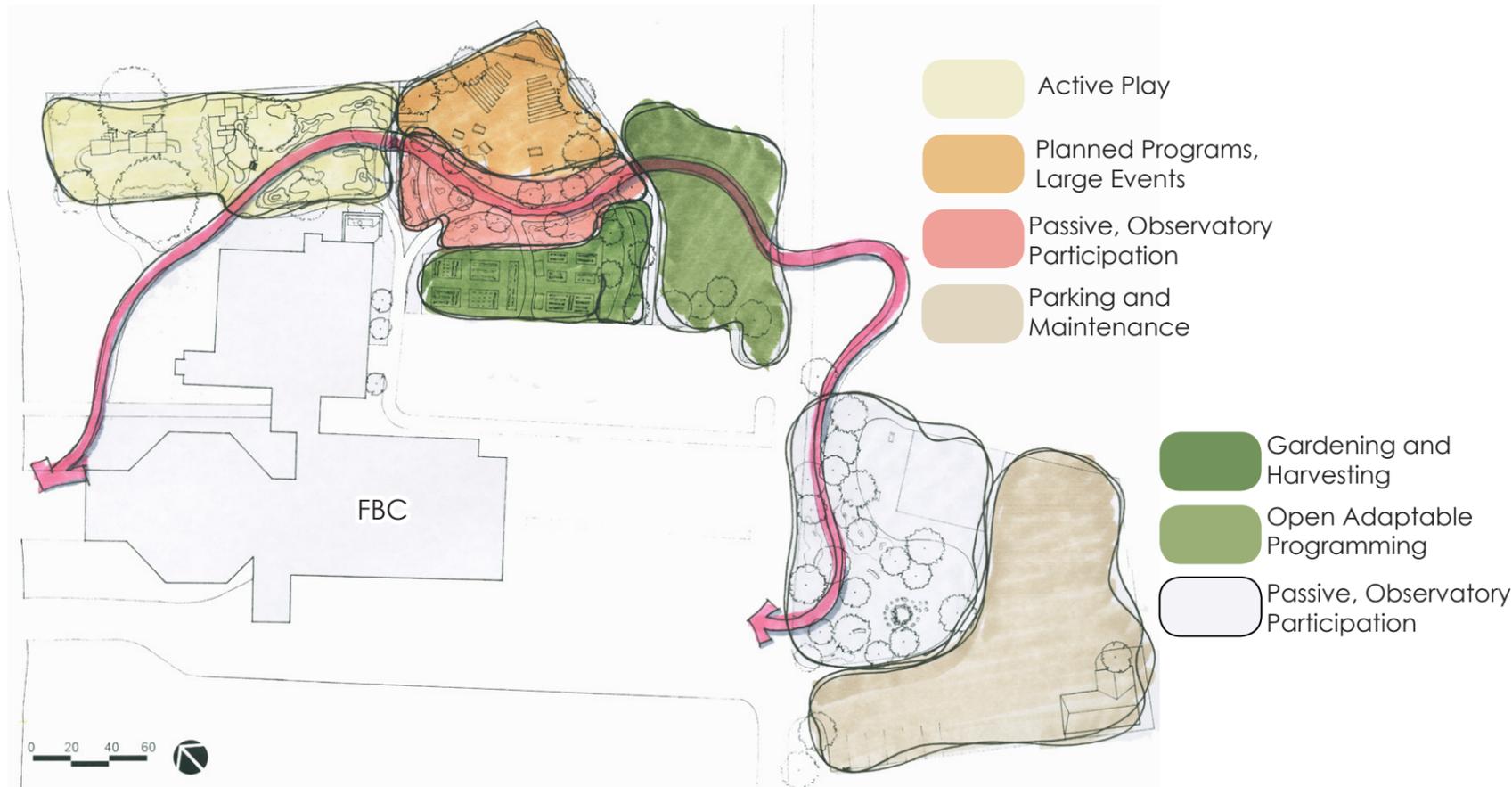
The Common Gardens concept focuses on the idea of a cohesive set of smaller spaces, each with their own identity and user group. Spaces would be created for “keenagers,” small children, teens, and those who simply want to take a stroll and enjoy the space. A meandering path makes its way through the children’s area, complete with seven small berms and a fort for active play or Godly Play. Then the path descends a set of stairs to the open, more public space containing an expanded community garden, picnic area, butterfly meadow, a grove of dogwoods, and the large outdoor amphitheater. Finally, the path descends again into an open green space for future development.

A teen area has also been designated, utilizing a portion of the overflow parking lot. Here, a small fire pit and ample seating for simply “hanging out” is found. Each of these spaces, seen as a whole, create a welcoming and comfortable space for the members of the First Baptist Church as well as the greater community of South Boston.

A program map and a conceptual design for the Common Gardens can be found on the following pages.

PRELIMINARY CONCEPTS
Concept One: Common Gardens - Programming

This concept is based on the idea of unity and connectivity. The Church is focused on bringing people together, no matter their age, gender, or background. The Church becomes the common ground. These “Common Gardens” extend that goal outside of the building. Here, a winding path meanders through six spaces, each unique in their users and uses. The path becomes a circuit around the churchyard, tangibly delineating the grounds of the Church.



Planting Palette

Shade Trees

- Green Giant
- Thornless Honey Locust
- Pin Oak
- London Planetree



Flowering Trees

- Crepe Myrtles
- Flowering Dogwoods
- Redbuds



Butterfly Garden

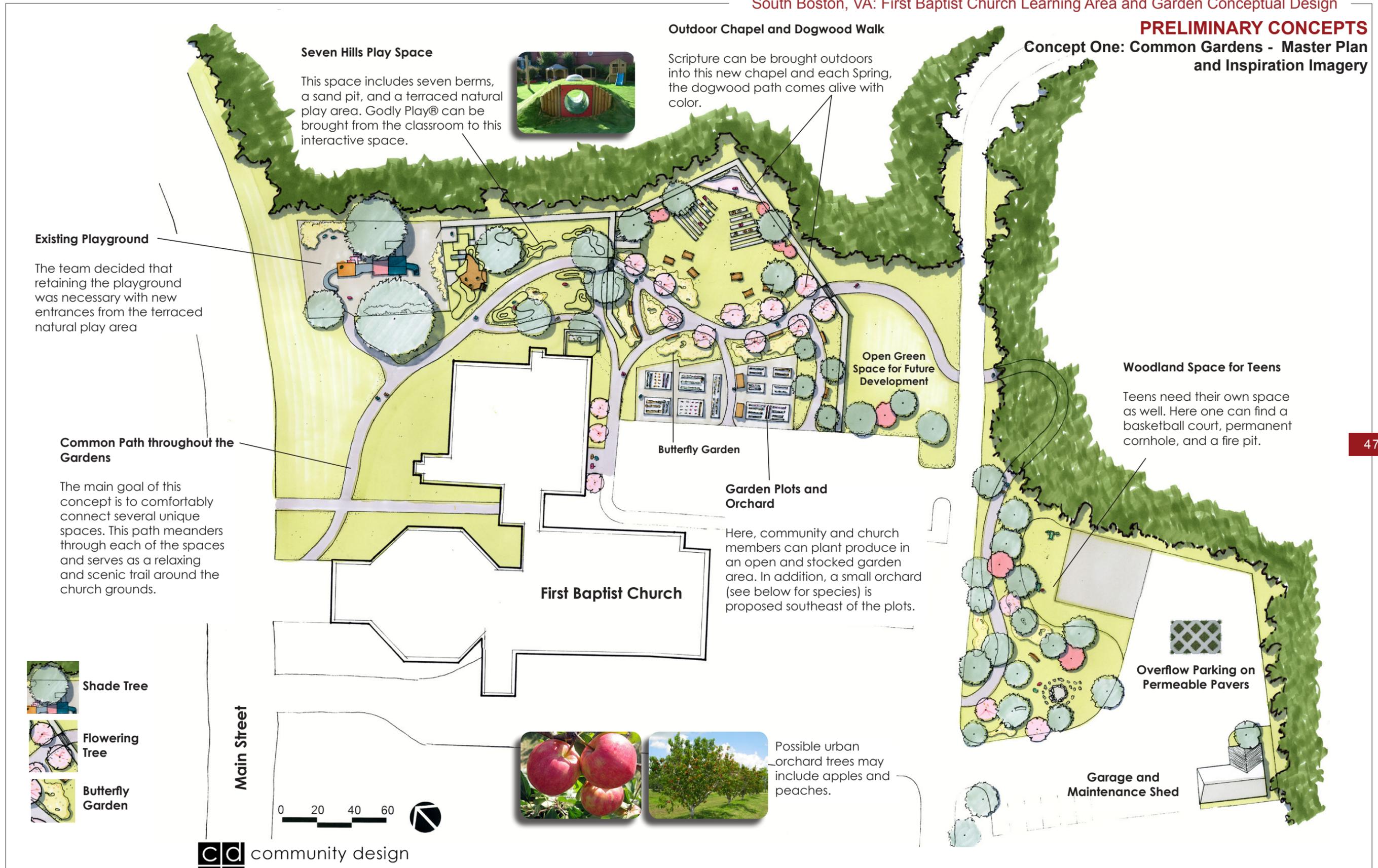
- Milkweed
- Lilac
- Lantana
- Goldenrod
- Tickseed Sunflower
- Ironweed



A variety of experiences are possible in the design: A space for young children to roam over the Seven Hills; a butterfly garden for parishioners to amble through; a fort and stacked plateaus for more adventurous youngsters to scale; an open green space to allow for future expansion; a quiet, yet comfortable wooded space for teens to relax; a small outdoor chapel for weddings, Scripture, or any gathering that may arise; a picnic area nestled on the edge of a grove of dogwoods; and an extensive garden and orchard ripe with possibilities. Each of these experiences are possible as one moves along the path throughout the Common Gardens. Unique uses and users, comfortably connected.

PRELIMINARY CONCEPTS

Concept One: Common Gardens - Master Plan and Inspiration Imagery



Seven Hills Play Space

This space includes seven berms, a sand pit, and a terraced natural play area. Godly Play® can be brought from the classroom to this interactive space.



Outdoor Chapel and Dogwood Walk

Scripture can be brought outdoors into this new chapel and each Spring, the dogwood path comes alive with color.

Existing Playground

The team decided that retaining the playground was necessary with new entrances from the terraced natural play area

Common Path throughout the Gardens

The main goal of this concept is to comfortably connect several unique spaces. This path meanders through each of the spaces and serves as a relaxing and scenic trail around the church grounds.



Shade Tree



Flowering Tree



Butterfly Garden

Main Street



First Baptist Church



Possible urban orchard trees may include apples and peaches.

Open Green Space for Future Development

Butterfly Garden

Garden Plots and Orchard

Here, community and church members can plant produce in an open and stocked garden area. In addition, a small orchard (see below for species) is proposed southeast of the plots.

Woodland Space for Teens

Teens need their own space as well. Here one can find a basketball court, permanent cornhole, and a fire pit.

Overflow Parking on Permeable Pavers

Garage and Maintenance Shed

PRELIMINARY CONCEPTS

Concept Two: Adventure Gardens

The Adventure Gardens concept was sparked from the desire for imaginative play opportunities in a natural setting leaving children to create their own play and build their skill-sets along the way. In order for this to be possible for the children at First Baptist Church, there needed to be an active playground which had room for multiple age groups, different kinds of play in different areas, and lots of space to let the imagination run free.

Adjacent to this large open play area would be the community garden. The garden would be in close proximity to the building running alongside the parking lot and available for visitors to admire as they walk from their vehicles to the Church. An open space acts as a transition between the child-dominated play area and a more secluded, adult-sized open-air pavilion, useful for outdoor services and events. The sloping topography is dealt with in a series of curving retaining walls. The paths all lead to the open pavilion at the bottom of the site. A curving walk runs from the community garden to the pavilion, with an opportunity to step down into an enclosed nook in the designated open space. This could be an opportunity for a butterfly garden or perhaps an amphitheater connecting this open space with the pavilion space. A rain garden at the lowest point of the site, near where runoff currently rushes over Fuller Street, gathers excess water and allows it to slowly infiltrate into the ground with the use of helpful water-loving plant species.

A program map as well as the conceptual design for the Adventure Gardens can be found on the following pages.

PRELIMINARY CONCEPTS
Concept Two: Adventure Gardens - Programming

Adventure Gardens are all about having fun and immersing children's play in the wonder and beauty of natural landscapes. In addition to many opportunities to explore, climb, build, and run, this garden offers opportunities for raising butterflies, outdoor children's performances, and community gardening. An outdoor pavilion and chapel offers a grand structure to host services, weddings, programs, and meetings in the beauty of the surrounding gardens. Opportunities to bring Godly Play® and class time outdoors occurs at many different sites around the garden. Naturalized and channeled swales offer opportunities for children to learn about native plants which help clean and slow stormwater and reduce erosion. A central paved pathway provides connections throughout adventure gardens.



Active Play



Natural Play Elements



Free-Play and Fort-Building



Outdoor Godly Play®



Channelized Swales



Community Garden

PRELIMINARY CONCEPTS
 Concept Two: Adventure Gardens - Master Plan
 and Inspiration Imagery

Medium Shrubs



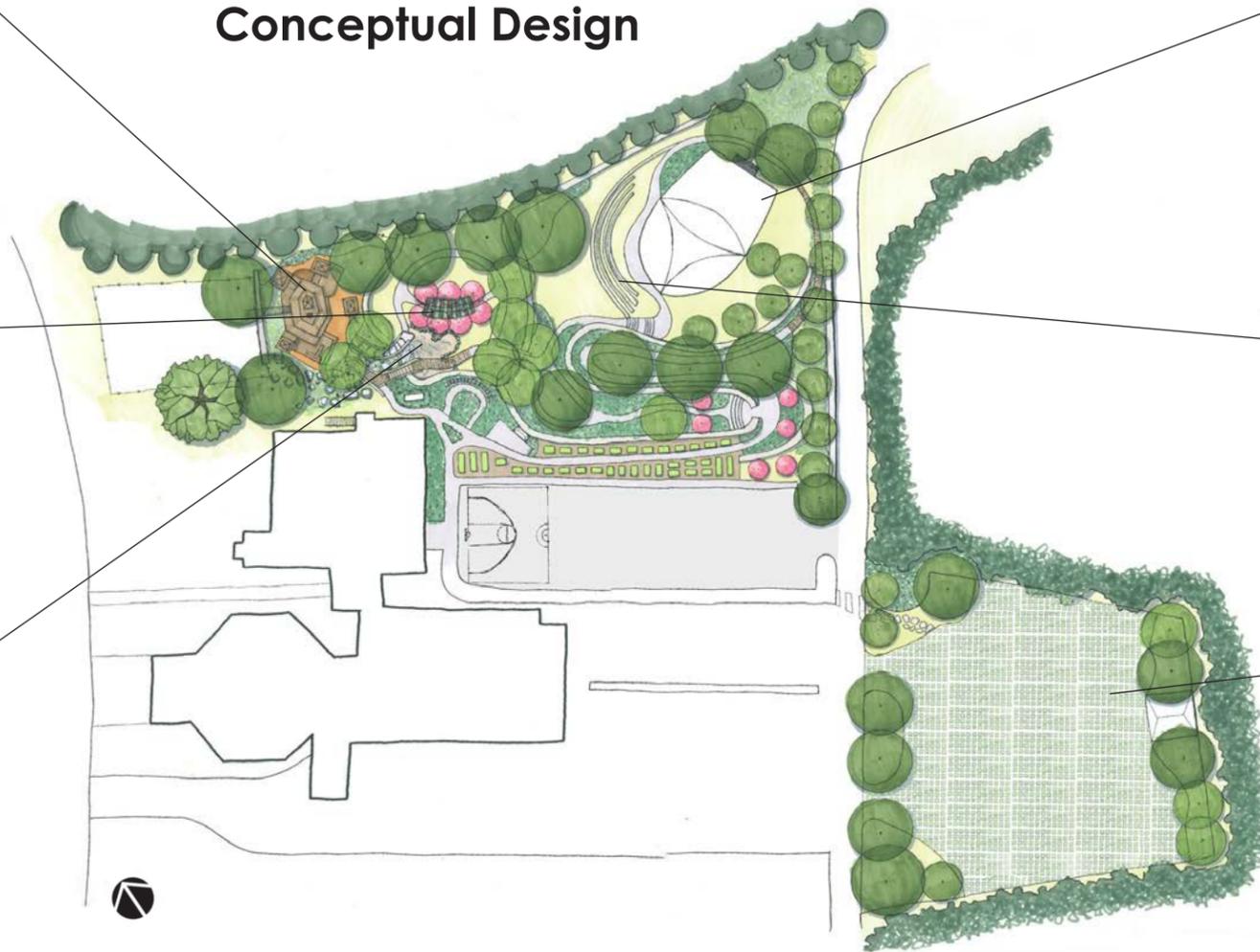
Small Shrubs



Groundcovers



Conceptual Design



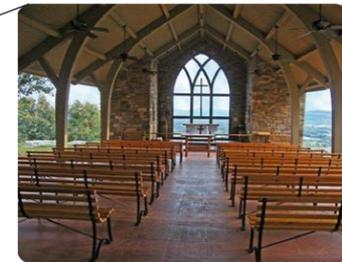
Wooden Castle & Bridges



Tricycle Path & Arbor



Mud Play Zone



Outdoor Pavilion & Chapel



Grassed Amphitheater Seating



Permeable Paving Surface

Big Trees



Medium Trees



Small Trees - Large Shrubs



CONCLUSION

The Community Design Assistance Center worked closely with the First Baptist Church community to create a churchyard that can be used by all members of the congregation, where all ages can have an enjoyable experience in an outdoor extension of the Church. This outdoor space will create new opportunities for the Church to enjoy their surrounding land, have services and events outside, and contributes to the community's enjoyment of gardens, walking paths, playgrounds and sermons. Visitors are provided with personal spaces, while still feeling a part of a larger community space. Functions in the churchyard can include celebrating Easter service outside in the amphitheater, racing around the tricycle track, playing a pick-up game of sand volleyball, or simply enjoying a stroll around the meadow. The keenagers, youth groups, Good Samaritan volunteers, and the many other community groups that are now a part of First Baptist Church will find joy in this churchyard. It is our hope that this work will help the community build a place where all members can enjoy the outdoors.

PART 3: APPENDIX

South Boston, VA:
First Baptist Church Learning Area and Garden Conceptual Design

STAKEHOLDERS MEETING NOTES

First Baptist Church Stakeholders Meeting

6/24/2015 at 2pm

South Boston, VA

Present:

Bennett, WW "Ted"
Hayes, Jessica Rose
Hayes, George
Irby, Marry Tucker
Tuck, Kaye S.
Tuck, Ralph D.
Upchurch, Emily
Wilkerson, Joe
Young, Sidney P.

To Do:

- Change timeline of project to revised version and add to proposal in Appendix A
- Begin site inventory & analysis
- Preliminary Conceptual Work

Notes:

FBC = First Baptist Church

FBWS = First Baptist Weekday School

User Groups

First Baptist Church Weekday School

Preschool (2 – 5 years) *mostly 2-yr olds

7:30am – 5:30pm

Afterschool (K – 5th grades)

3:30pm – 5:30pm on weekdays

All day in summer

Currently 10-20 kids, but is growing quickly – next year the Church will be running a van to the county school for after-school service

Youth Group

Tweens & teens

Meet Wednesday nights 6:30 – 8:00pm and Sunday 6:30 – 8:00 and have dinner

~20 kids

- Sunday School

Sunday mornings and nights

- Keenagers

60 – 100 years old

Need easy access to outdoor chapel/amphitheater

- Weekly Meetings at FBC

Boy Scouts, Weight Watchers, AARP, Master Gardeners, Downtown Mission, Cancer Support Group

Possibility of other church congregations (Trinity Episcopal, Methodist) using the space as well as First Baptist

South Boston, VA:
First Baptist Church Learning Area and Garden Conceptual Design

STAKEHOLDERS MEETING NOTES

Context

- Methodist Prayer Garden
 - Maintained by Methodist Church
 - Shared with general church communities
- Edmond's Park – CDAC designed, donated property outside town, memorial garden, horticulture gardens
- Prizery – Theater Company
- Vibrant downtown community a short walk south down Main Street
 - Several restaurants and boutiques

School/ Curriculum

- School created in 1961
- One church service on Sunday, large congregation
- Programming from pre-school to 5th grade
- Play-based
- Montessori based learning – all learning stems from the students interests/contributions
- Colors, letters, shapes, animals, nature, weather
- Godly Play – scriptures are taught through tangible means - small wooden figures move over felt landscapes. This could become a major element within the space, as the scriptures increase in scale to human scale

Desired Activities

- Imaginative, natural play
- Play-based learning
- Montessori learning
 - What the kids are interested in, they learn about
- Godly Play:
 - Montessori-based religious program
 - Wooden kits & characters on felt maps
 - Moving characters
 - Wondering questions
 - Storyteller tells bible stories and moves characters
 - Based on the oral tradition of story-telling
 - Desert box is children's favorite
- Nature learning themes:
 - Worms, tree homes, butterflies, caterpillars
- Fundraising:
 - First Baptist Church Weekday School Reunions
 - Memorial Trees
 - Memorial benches
 - Engraved brick pavers
 - Selling flower bulbs
 - Family Photoshoots
 - Pumpkin patch
 - Weddings
- Easter egg hunts (Currently held at existing prayer gardens)
- Activity rather than serenity

South Boston, VA:
First Baptist Church Learning Area and Garden Conceptual Design

STAKEHOLDERS MEETING NOTES

Desired Elements

- Open play area
- Stage for plays
- Hard-surface tricycle path (covered?)
- Butterfly garden (and lifecycle/hatching area?)
- Outdoor classroom (2-yr-olds to adult)
 - Gathering space
- Outdoor chapel
- Pavilion and amphitheater
- Garage for church van and bus (20' x 20')
- Community garden – look at Clarksville community garden
 - The kids have loved growing plants in the past
- Intergenerational programs
 - Sunday school
 - Gardening
- Rain barrels for irrigation
- Safety and clear visibility throughout the space are of the utmost importance
- Erosion control (Solve erosion issues)
- Raised walkway from Fellowship Hall to outdoor area?
- Water management – piping, swales
- Water-pump play area/Water play element
- Musical interactive elements
- Ground-level sandbox
- Discouraging fast through-traffic going through Church parking lot and on Fuller Street
 - Speed bumps?
 - Complete demolition of Fuller Street directly adjacent to the Church grounds?
- Accessibility
- ADA access
- Involving all age groups and organizations – better chance at selling design to Church
- Well-lit space
- Places to sit and rest
- As many groups as possible included in design
 - Preschool: 2-5 yrs old from 7:30-5:30
 - K-5th grades: ride bus for afterschool program from 3:30-5:30
 - Youth Group: 10-20 yr olds on Wednesday night from 6-8pm
 - Teenagers (open space, active, some privacy, outdoor chapel, amphitheater)
 - Keenagers (ADA compliant)
 - Weddings
 - Sunday morning: meals in Fellowship Hall (eat then play) parents want eyes on
 - Sunday evening: meals in Fellowship Hall (eat then play) parents want eyes on
- Consider teenagers: seating, semi-private, well-lit, opportunities for children to bond
- Arch with vines
- Open play areas (active areas)
- Shade - slope southern exposure
- Gardening with children included in curriculum
- Nutrition (Emily has nutrition degree)
- Flowers for nursing home
- Fruits and veggies for Good Samaritan Food Pantry, next door (Entrance between Fellowship Hall and Church)
- Structure on site



South Boston, VA:
First Baptist Church Learning Area and Garden Conceptual Design

STAKEHOLDERS MEETING NOTES

Vision

- Abingdon Elementary School, Ideal project
- Terrace land
- Screen adjacent properties (crepe myrtle along ravine)
- Slow traffic cutting through parking lot (cut-outs of plantings)
- Close road behind church (not used as a through road)
- Lower lot- organize and control where people park (currently used at 50% and haphazard)

The Good Samaritan

- People donate food, clothing, and furniture
- Keeps a flow of continuous traffic of needy coming into FBC
 - Measures put in to protect children
 - Locked Church
 - Separating doors

North of FBC:

Old Play Area to the North-East

- Feels like a part of the residential neighborhood rather than part of the Church
- Surrounded by residential backyards
- Too far from bathroom facilities
- Shade here is great
- Children ~2-12 years old: walk in traffic on road and play at distant property with no bathroom
- Drain on maintenance resources

Problems with Rental Properties on Shepherd Street

- Properties not properly kept up
- Inappropriate visibility into private properties
- Needs visual screen (in winter too)
- Needs physical barrier between play area and vegetated gorge
 - Fence + evergreen buffer?

Existing Church Playground

- Not appropriate for 2 – 3 year-olds, which is the largest age range
- Only appropriate for ages 4 and up

Fill Lot

- Terracing was mentioned several times
- Needs shade
 - Plant trees, but be careful about still getting garden full sun
- Garden
 - Firstly to educate children about growing food
 - Grow food for snacks at school
 - Grow food for Good Samaritan
 - Grow flowers for nursing home
- Wildflower & bulb box
- Fruit trees?

South Boston, VA:
First Baptist Church Learning Area and Garden Conceptual Design

STAKEHOLDERS MEETING NOTES

- Bird houses? Feeders?
Kids could paint houses, as well as learn about local native birds
- Grass is preferable to mulch due to expense and ease of maintenance
- Tie into existing catch basin

South of FBC:

Woods & Gorge to South-West

- Church owns a portion of this land
- Adjacent to easement property

Back Parking Lot

- Used as overflow parking for big events
- Secluded from Church site
- Should be multi-use; Should still be able to function as overflow parking
- Could be used for active play (Volleyball, badminton, basketball (but ball rolls down embankment))
- Basketball hoop should be moved closer to Fellowship Hall for youth group
- Need shelter for Church van and bus
- Asphalt needs to be repaved
- Needs removable barrier to separate Fuller Street from play space
- Potential for tricycle riding

Issues:

- Drainage/water issues along slope
- New Playground not used as actively (play seems different there because of programming)
- No shade

Community Resources of FBC:

- Joe – owns Southside Nursery and Landscape
- Emily – Has nutrition degree
- Bill McKaleb – Master Gardener
- Tuck Family Farms – Ralph and Kay Tuck
Grow mostly tobacco which goes to American Spirit brand
Rear beef cattle
Grow flowers

Implementation:

- Wanting affordable solutions
- A phasing plan is very important
- Want to bind the Weekday School to First Baptist Church
- Want a landscape maintenance plan
Confine areas of maximum maintenance
Desire for low maintenance

South Boston, VA:
First Baptist Church Learning Area and Garden Conceptual Design
**PRELIMINARY CONCEPTUAL DESIGN PRESENTATION
MEETING NOTES**

First Baptist Church Preliminary Design Presentation

7/30/2015 from 5:30 to 7:30

South Boston, VA

Present:

Davis, Susan
Irby, Marry Tucker
McCaleb, Shirley
Pittard, Audrey
Powell, Brenda B.
Powell, Freddie B.
Tuck, Kaye S.
Tuck, Ralph D.
Upchurch, Emily
Wilkerson, Joe
Wimbish, Carlyle
Wimbish, Jo

To Do:

- Synthesize needs and wants of user groups into a final conceptual master plan
- Identify detail areas
- Choose sections/perspectives
- Take soil samples in
- Further research:
 - Deer control
 - Native plantings and the fauna they attract/support

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Notes: _____

Overall Notes:

- Simplify design
- Phasing plan (stages of development) needed
- Low maintenance design & plantings
- Recycled water for irrigation & play
- Fewer items, more open space
- Lighting (Plan) for safety & comfort
- Fill or Terrace?

Site Users:

- Children: Active learning, Storytelling on a landscape scale, stage, tricycle path, sensory, wonder, delight, Range of stories: Christmas, Desert, Sand box, like a sand pit/trap (10-20 students), don't trip into box, water stories... sand and water big likes!!!
- Teens: desire a place to play soccer, they are a big baseball community, sand volleyball (kids would love), likes a place where they can throw balls, run, be active, Need to hang out to be teens, Space to hang out in amphitheater
- Adults: Like to take children to play, wants a path to walk and watch children from afar, and exercise, a lot of church members to walk
- Keenagers: will use space for exercise, places to sit

First Baptist Church Learning Area and Garden Conceptual Design
**PRELIMINARY CONCEPTUAL DESIGN PRESENTATION
MEETING NOTES**

- Others: Photographic place for weddings/ picture-taking
Likes open, outdoor space (not too programmed)
Sunrise service= 50 people, hosted by all downtown churches; they would like to be on the list to host
- Wide age gap between young families and keenagers

First Baptist Church/Weekday School Needs:

- Walking path/trail
- Interpretive signage
 - Native plants and animals
 - Water
- Small-scale vegetable garden

Children's Play Area:

- Must be private (fenced & gated)
- Keep play area close to building
- Bring Godly Play outside
 - Mouse on Main, Greenville, NC – bring hidden & out in the open Godly Play
 - Christmas story
 - Desert stories
 - Water
- Sand play rather than mud play
- Slides built into hills + steps or terraces
- Tricycle path

Youth Group/Teens:

- Safe place for teens to hang out
- They need space
- Still need to be seen/watched
- Soccer and baseball are huge in South Boston
- Sand volleyball court would be awesome

East Lot:

- Permeable paving
- Metal structure for van and bus--drive through and pull-out

Cut-Through from Main Street to Fuller Street:

- Traffic calming measures
- Planted Bump-Outs
- Road Tables
- Different paving materials
- Would like to see curb-cuts and use parking lots spaces, planting/ rain gardens
- Winter- ice sheet, could use curb-cuts for water to drain

Amphitheater & Chapel:

- Used together or separate
- Like amphitheater look

First Baptist Church Learning Area and Garden Conceptual Design
**PRELIMINARY CONCEPTUAL DESIGN PRESENTATION
MEETING NOTES**

- Like chapel and amphitheater likes together and separate at the same time
- Like location of amphitheater

Topography:

- Updated topography? No matter, a 25' grade change from Main Street to Fuller Street
- Options for more fill? Should church add more fill to property? Or leave as is and work with slope
- Option to bring in a small amount of fill. Because of grade, Mary envisioned, playground slope as a slide to sandbox. Can place large boulders along hill to buttress fill/slope

Water:

- Use site water/ drainage as a source of water- play
- Rain barrels, water harvesting, recycling
- Irrigation/ Water source, across parking (if plants need to be irrigated, then place that intensive irrigation near water source)
- Controlling water flow across parking lot—black ice in winter

Maintenance:

- Need low-maintenance!
- Master gardeners, not hired help. Department of Horticulture. Gardeners work in the Southern VA botanical gardens (have challenge maintaining these gardens)
- Teach classes on the following: perennials (separated every 3 years), pruning crape myrtles/ fruit trees, “landscape light” (program, your ideas, what will work)

Plants:

- Need a couple of shade trees
 - Honey locust
- Trees and shade, green space gives comfort
- Want feeling of entering into spaces, “being hugged”, enclosed (more private areas)
- Evergreen gully buffer
 - Arborvitae Green Giant
 - Black gum
 - Bald cypress
 - Plane trees
- Meadow plantings with mowed paths
 - Low maintenance and native
 - Wildflowers
 - Bluestem
 - Indian grass
 - Switch grass
- Small scale, at first, need room for improvement
- Really like rain gardens
- Butterfly garden can install one close to vegetable area
- Butterfly, Pollinator, Birds, Sensory, Herbs
- Deer-resistant
 - Skip laurels, rosemary, dill, hellebores, daffodil

South Boston, VA:

First Baptist Church Learning Area and Garden Conceptual Design
**PRELIMINARY CONCEPTUAL DESIGN PRESENTATION
MEETING NOTES**

Privacy:

- Want private access for liability
Fence & locked gate
- New, large sign at front, don't encourage public to come into garden from Main St.
- More private space near playground, and a more public, lower space

Materials:

- Opportunities for funding, endowment
- Make tricycle and walking path the same material.
- Gravel Lock fixing agent: 57 base, pea gravel= permanent base for walking
- Loves permeable pavers

Programs:

- Master Gardener classes
Pruning
Companion plantings
- Memorial trees
- Interpretive signage
Natives & why they're awesome
Butterflies & their host plants
Birds
- Community garden
- Outdoor Church services
Easter Service (~100 people from all three Churches)
Spring services when weather is nice
- Symbol for FBC
Fish symbolizes Christianity

Phasing Plan:

- Want outdoor chapel area and play area first
- Work from bottom up
 - Main feature 4' wide paved walking area
 - simplify open-space design,
 - Sand-play/pit
 - Amphitheater
- Larger sand area, Mary, play areas
- Joe, two areas (sand and terrace), build-work bottom of hill, up. Bones of site
- Simple, trees, phasing plan, trees more costly things, final things
- Sell that to others: phasing plan- guidance what needs, has to be first
- Agrees that design should not take remote site into consideration
- Looking for funding opportunities: if you can get a basic design, may have an endowment for implementation

South Boston, VA:
First Baptist Church Learning Area and Garden Conceptual Design

**FINAL CONCEPTUAL DESIGN PRESENTATION
MEETING NOTES**

**First Baptist Church Final Design Presentation on
September 20, 2015 from 2 - 4pm**
South Boston, VA

Present:

Faucer, Joey	Tuck, Ralph D.
Hayes, George	Upchurch, Emily
Irby, Marry Tucker	Upchurch, Gracey
McCaleb, Bill	Upchurch, Liza
McCaleb, Shirley	Young, Sid
Tuck, Kaye S.	

- Fundraising and Memorial Ideas:
 - Paver segments for purchase at important points/sections
 - Encourages ownership of space
 - Entrance to amphitheater
 - Christmas Trees
- Phasing Plan:
 - 1 - Expensive construction, grading, safety and security features, and important plantings
 - Erosion control
 - Big hardscape - Retaining wall and children's area, amphitheater and most important walking path
 - 2 - Walking paths
 - 3 - Memorial fountain and paths
- Amphitheater Seating:
 - Church members like removable and modest seats
 - Want tiered seating so movable benches can be there
- Speed Tables:
 - Add rumble strips
 - One between main street and fuller street is highest priority
- Meadow Walking Path:
 - Needs ADA surface - look at best materials
 - Asphalt is the cheapest
 - Brick pavers for fundraising
- To Do on Final Plan:
 - Label fence on children's area above retaining wall
 - Label 6' wide walking path
 - Put basketball hoop in plan at van garage in overflow parking lot
 - Suggest musical and play elements on children's fence
 - Take out permeable paving

FINAL CONCEPTUAL DESIGN PRESENTATION MEETING NOTES

Additional Comments After the Final Meeting:

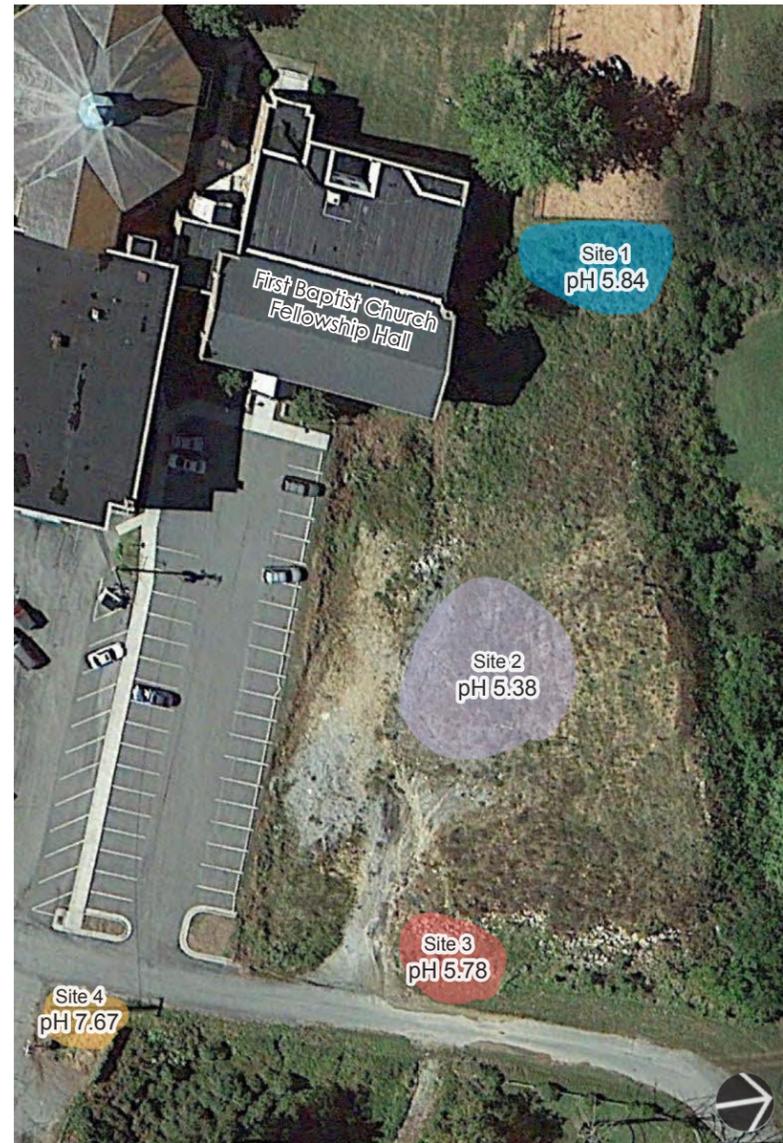
- Thoughts that the youth area should be integrated with the main open community area
Break/shield for the eyes with ornamental grasses and upright evergreens
Half-court rubberized basketball play surface
- Concern about off-season unsightly garden
Provide alternative locations

SOIL ANALYSIS

Soil Sample Results and Locator Map

Soil Sample Location	pH	BpH	P ppm	K ppm	Ca ppm	Mg ppm	Zn ppm	Mn ppm	Cu ppm	Fe ppm	B ppm	CEC meq/100g	% Acidity	% Base Sat	% Ca Sat	% Mg Sat	% K Sat	P Rating	K Rating	Ca Rating	Mg Rating
Site 1	5.84	6.19	8	37	773	252	1.5	8.2	0.8	7	0.5	7.3	17.1	82.9	53.1	28.5	1.3	M-	L+	H-	VH
Site 2	5.38	6	2	26	570	248	2	7.8	0.8	6.8	0.3	7.3	32.4	67.6	38.8	27.8	0.9	L-	L	M	VH
Site 3	5.78	6.06	2	32	581	270	0.8	16.4	0.9	8.7	0.3	7.2	28	72	40.2	30.8	1.1	L	L+	M	VH
Site 4	7.67	N/A	9	48	2382	158	4.9	28.1	2.4	59.7	0.4	13.3	N/A	100	89.3	9.8	0.9	M-	M-	VH	VH

Locator Map



South Boston, VA:
First Baptist Church Learning Area and Garden Conceptual Design
SOIL ANALYSIS

Explanation of Soil Analysis

Rory Maguire, Extension Nutrient Management Specialist, Virginia Tech
Steve Heckendorn, Soil Test Laboratory Manager, Virginia Tech

The accompanying Soil Test Report (and supplemental Soil Test Notes, when provided) will help you assess your plant's need for fertilizer and lime.

The "History of Sampled Area" section restates the information you filled in on the Soil Sample Information Sheet you submitted with the soil sample.

The "Lab Test Results" section shows the relative availability of nutrients numerically and if appropriate, as a rating. The rating may be interpreted as follows: L=Low, M=Medium, H=High, VH=Very High, EH=Excessively High (soluble salt test only), DEF=Deficient, or SUFF=Sufficient, and sometimes a "+" or "-." When soils test Low, plants almost always respond to fertilizer. When soils test Medium, plants sometimes respond to fertilizer and a moderate amount of fertilizer is typically recommended to maintain fertility. When soils test High to Very High, plants usually do not respond to fertilizer. If there is no rating for a nutrient, the adequacy of that nutrient in the soil for the plant you specified has not been determined.

The following is an explanation of the symbols and abbreviation used in the report:

Report Symbols and Abbreviations

P = phosphorus	K = potassium
Ca = calcium	Mg = magnesium
Zn = zinc	Mn = manganese
Cu = copper	Fe = iron
B = boron	SS = soluble salts
lb/A = pounds per acre	ppm = parts per million
meq = milliequivalent	g = gram
pH = acidity	Sat. = saturation
N = nitrogen	P ₂ O ₅ = phosphate
K ₂ O = potash	% = percent
Est-CEC = estimated cation exchange capacity	
AG = agricultural limestone (dolomitic or calcitic)	

Fertilizer Recommendation

The fertilizer recommendations may be used for the same crop for two to three years. After this time, it is advisable to retest the soil to determine if significant changes have occurred in nutrient levels. When the soil tests Very High for phosphorus or potassium and no fertilizer for these nutrients is recommended, you should retest the following year to determine if fertilizer will be needed. Due to the variability associated with sampling, fertilizer application rates may be varied by a plus or minus 10 percent.

No soil test is performed for **nitrogen** because this element is too mobile in the soil for laboratory results to be useful. Nitrogen fertilizer recommendations are based on the crop/plant to be grown, the previous crop, and when applicable, the soil's yield potential. Comments on the report and other enclosed Notes, if any, will have further information regarding nitrogen.

Lime Recommendation

If needed, a lime recommendation is given to neutralize soil acidity and should last two to three years. After that time, you should have the soil retested. The measured soil test levels of calcium and magnesium are used to determine the appropriate type of limestone to apply. If neither dolomitic nor calcitic lime is mentioned, or "Ag" type or "agricultural" limestone is stated on the report, then it does not matter which type is used. When no information on the Soil Sample Information Sheet was provided regarding the last lime application, the lab assumed you have not applied lime in the past 18 months. If this is not correct, contact your Extension agent for advice on adjusting the lime recommendation to take into consideration recent lime applications. Do not over lime! Too much lime can be as harmful as too little. For best results, apply lime, when possible, several months ahead of the crop/plant to be planted to allow time for more complete soil reaction.

SOIL ANALYSIS

Methods and Meanings

For more detail on the lab procedures used, visit www.soiltest.vt.edu and click on “Laboratory Procedures.”

Soil pH (or soil reaction) measures the “active” acidity in the soil’s water (or hydrogen ion activity in the soil solution), which affects the availability of nutrients to plants. It is determined on a mixed suspension of 1:1, volume to volume ratio of soil material to distilled water.

Virginia soils naturally become acidic, and limestone periodically needs to be applied to neutralize some of this acidity. A slightly acid soil is where the majority of nutrients become the most available to plants, and where soil organisms that decompose organic matter and contribute to the “overall health” of soils are the most active. When a soil is strongly acidic (< 5.0-5.5), many herbicides lose effectiveness and plant growth is limited by aluminum toxicity. When soils are over-limed and become alkaline (> 7.0), micronutrients, such as manganese and zinc, become less available to plants.

For most agronomic crops and landscaping plants, lime recommendations are provided to raise the soil pH to a slightly acid level of between 5.8 and 6.8. Blueberries and acid-loving ornamentals generally prefer a 4.5 to 5.5 pH, and an application of liming material is suggested when the soil pH drops below 5.0. For the majority of other plants, lime may be suggested before the pH gets below 6.0. This is to keep the soil pH from dropping below the ideal range, since lime is slow to react and affects only a fraction of an inch of soil per year when the lime is not incorporated into the soil. If the soil pH is above the plant’s target pH, then no lime is recommended. If the pH is well above the ideal range, then sometimes an application of sulfur is recommended to help lower the pH faster; however, most of the time, one can just let the soil pH drop on its own.

A Mehlich buffer solution is used to determine the **Buffer Index** to provide an indication of the soil’s total (active + reserve) acidity and ability to resist a change in pH. This buffer measurement is the major factor in determining the amount of lime to apply. The Buffer Index starts at 6.60 and goes lower as the soil’s total acidity increases and more lime is needed to raise the soil pH. A sandy soil and a clayey soil can have the same soil pH; however, the clayey soil will have greater reserve acidity (and a lower Buffer Index) as compared to the sandy soil, and the clayey soil will require a greater quantity of lime to be applied in order to raise the soil pH the same amount as the sandy soil. A reported

Buffer Index of “N/A” means that it was not measured since the soil (water) pH was either neutral or alkaline and not acidic (soil pH \geq 7.0) and therefore requires no lime.

Nutrients that are available for plant uptake are extracted from the soil with a Mehlich 1 solution using a 1:5 vol:vol soil to extractant ratio, and are then analyzed on an ICP-AES instrument. An extractable Mehlich 1 level of phosphorus from 12 to 35 pounds per acre (lb/A) is rated as medium or optimum. A medium level of potassium is from 76 to 175 lb/A. Medium levels of calcium and magnesium are 721 to 1440 and 73 to 144 lb/A, respectively. Calcium and magnesium are normally added to the soil through the application of limestone. It is rare for very high fertility levels of P, K, Ca and Mg to cause a reduction in crop yield or plant growth. Levels of micronutrients (Zn, Mn, Cu, Fe and B) are typically present in the soil at adequate levels for plants if the soil pH is in its proper range. See Soil Test Note 4, at www.soiltest.vt.edu/stnotes, for documented micronutrient deficiencies in Virginia.

Soluble Salts (**S.Salts**) or fertilizer salts are estimated by measuring the electrical conductivity of a 1:2, vol:vol ratio of soil material to distilled water. Injury to plants may start at a soluble salts level above 844 ppm when grown in natural soil, especially under dry conditions and to germinating seeds and seedlings. Established plants will begin to look wilted and show signs related to drought. This test is used primarily for greenhouse, nursery and home garden soils where very high application rates of fertilizer may have led to an excessive buildup of soluble salts.

Soil **Organic Matter** (SOM) is the percentage by weight of the soil that consist of decomposed plant and animal residues, and is estimated by using either the weight Loss-On-Ignition (LOI method) from 150° to 360°C, or a modified Walkley-Black method. Generally, the greater the organic matter level, the better the overall soil tilth or soil quality, as nutrient and water holding capacities are greater, and improved aeration and soil structure enhance root growth. The percent of organic matter in a soil can affect the application rate of some herbicides. Soil organic matter levels from 0.5% to 2.5% are ordinary for natural, well-drained Virginia soils. A soil organic matter greater than 3% would be considered very high for a cultivated field on a farm, but can be beneficial. Due to relatively large amounts of organic materials being commonly added to gardens, the soil organic matter in garden soils can be raised into the range of 5% to 10%.

SOIL ANALYSIS

The remaining values that are reported under the “Lab Test Results” section are calculated from the previous measured values and are of little use to most growers.

Estimated Cation Exchange Capacity (**Est-CEC**) gives an indication of a soil’s ability to hold some nutrients against leaching. Natural soils in Virginia usually range in CEC from 1 to 12 meq/100g. A very sandy soil will normally have a CEC of 1 to 3 meq/100g. The CEC value will increase as the amount of clay and organic matter in the soil increases. This reported CEC is an estimation because it is calculated by summing the Mehlich 1 extractable cations (Ca + Mg + K), and the acidity estimated from the Buffer Index and converting to units commonly used for CEC. This is also an Effective CEC since it is the CEC at the current soil pH. This value can be erroneously high when the soil pH or soluble salts level is high.

The percent **Acidity** is a ratio of the amount of acid-generating cations (as measured by the Buffer Index) that occupy soil cation exchange sites to the total CEC sites. The higher this percentage, the higher the amount

of reserve acidity in the soil, and the higher the amount of acidity there will be in the soil solution and the lower the soil pH will be. A reported Acidity% of “N/A” means that a buffer index was not determined, and the acidity is probably less than 1 meq/100g and/or 5%, and the soil pH is alkaline (greater than 7.0).

The percent **Base Saturation** is the ratio of the quantity of non-acid generating cations (i.e., the exchangeable bases, Ca, Mg, and K) that occupy the cation exchange (CEC) sites.

The percent **Ca, Mg, or K Saturation** refers to the relative number of CEC sites that are occupied by that particular nutrient and is a way of evaluating for any gross nutrient imbalance.

Additional Information

For questions and more information, contact your local Virginia Cooperative Extension (VCE) office or go to www.ext.vt.edu. Contact information for your local Extension office appears on the upper left of your soil test report.

Conversion Factors

(Some Values are Approximate)

1 acre = 43,560 square feet

1 pound of 5-10-5, 5-10-10 or 10-10-10 fertilizer = 2 cups

1 pound of ground limestone or ground dolomitic limestone = 1.5 cups

1 pound of aluminum sulfate or magnesium sulfate = 2.5 cups

1 pound of sulfur = 3.3 cups

1 quart = 2 pints = 4 cups

1 pint = 2 cups = 32 tablespoons

1 tablespoon = 3 teaspoons

1 bushel = 35.24 liters = 1.25 cubic feet

Pounds per 100 square feet x 0.54 = lbs per cubic yard

100 square feet = 5 feet x 20 feet, 10 feet x 10 feet, or 2 feet x 50 feet

1,000 square feet = 50 feet x 20 feet, 10 feet x 100 feet, or 25 feet x 40 feet

Pounds per 100 square feet x 436 = pounds per acre

Pounds per 1,000 square feet x 43.6 = pounds per acre

Pounds per acre x 0.0023 = pounds per 100 square feet

Pounds per acre x 0.023 = pounds per 1,000 square feet

PLANT SELECTION DESCRIPTIONS

Little Lambs' Meadow Play Area

Trees:

***Asimina triloba* | PawPaw tree**

Simply a great plant for foliage effect. The droopy, 6 to 12 inches long leaves lend a sleepy, "shut-eye" aura to the summer landscape. This beautiful native tree is often found as an understory plant in cool, moist, alluvial soils along streams. The fruit are greenish yellow maturing to black and have a slight banana-like taste. The rich green leaves turn spectacular yellow to golden hues in fall.

***Prunus serotina* | Black cherry**

New leaves are sparkling bronzy to bright green, turning dark green with maturity and developing reasonable yellow to red fall color. White flowers occur in 4 to 6 inches. Long racemes in April followed by red/black fruit. Grows 50 to 60 feet high and 20 to 30 feet wide.

***Quercus coccinea* | Red oak**

The lustrous, almost reflective, dark green summer leaves yield to brilliant reds and scarlets in the fall. Red Oak is adaptable, but it prospers in moist, well-drained, acid soils. Grows 70 to 75 feet high and 40 to 50 feet wide.

Shrubs:

***Rubus idaeus var. strigosus* 'Canby' | Thornless raspberry**

Very few or no thorns. Fine flavored, high quality fruits. Grows 4 to 6 feet high.

***Vaccinium angustifolium* | Lowbush blueberry**

White to delicate pink and rose flowers with sweet, bluish black berries. A spreading shrub, with lustrous dark green to blue-green foliage that turns brilliant yellow to scarlet and crimson in fall. Makes a fine groundcover mass and needs minimal maintenance. Grows 6 to 24 inches tall.

Grasses:

***Chasmanthium latifolium* | Northern sea oats**

Easily grown in average, medium to wet, well-drained soil in full sun to part shade. Tolerant of poor soils, but prefers moist, fertile soils. One of the more shade tolerant of the ornamental grasses. Self-seeds and may spread aggressively. Leaving foliage in place over winter adds interest to the landscape and helps protect crowns from the cold. Grows 2 to 5 feet tall.

PLANT SELECTION DESCRIPTIONS

Perennials:

***Helianthus maximiliani* | Maximillian sunflower**

Features 2 to 3 feet diameter sunflowers with yellow rays and darker yellow center disks from mid-summer into fall. Flowers appear on short stalks in the upper leaf axils in an elongated raceme-like inflorescence atop rigid hairy stems rising to as much as 10 feet tall. Stems are clad with rough, narrow, tapered, grayish-green leaves (3 to 6 inches long), frequently folded lengthwise.

***Stachys byzantine* | Lamb's ear**

Lamb's-ear plants are perennial herbs usually densely covered with gray or silver-white, silky hairs. They are named lamb's ears because of the leaves' curved shape and white, soft, fur-like hair coating. Flowering stems are erect, often branched, and tend to be 4-angled, growing 15 to 30 inches tall. The leaves are thick and somewhat wrinkled, densely covered on both sides with gray-silver colored, silky-hairs; the under sides are more silver-white in color than the top surfaces. Can be invasive, so may be better suited to containers or confined plant beds.

Herbs:

***Mentha x piperita* | Peppermint**

It is a herbaceous plant growing 12 to 35 inches tall, with smooth stems, square in cross section. The rhizomes are wide-spreading, fleshy, and bare fibrous roots. The leaves are from 1.5 to 3.5 inches long and 0.5 to 1.5 inches broad, dark green with reddish veins, and with an acute apex and coarsely toothed margins. The leaves and stems are usually slightly fuzzy. The flowers are purple. Can be invasive, so may be better suited to containers or confined plant beds.

***Ocimum basilicum* | Sweet basil**

A number of varieties exist today, ranging from a tiny-leaved Greek basil to robust 2-foot-high plants with large succulent leaves. Some varieties have deep purple leaves. While flowers are typically small and whitish, some can be pink to brilliant magenta. Leaves can be dried for later use. 1 to 2 feet wide and 1 to 2 feet tall.

***Rosemary officinalis* | Rosemary**

A woody, perennial herb with fragrant, evergreen, needle-like leaves and white, pink, purple, or blue flowers.

***Thymus serpyllum* | Creeping thyme**

It is a low, usually prostrate subshrub growing to 1 inch tall with creeping stems up to 4 inches long. The strongly scented flowers are either lilac, pink-purple, magenta, or a rare white, all produced in clusters.

PLANT SELECTION DESCRIPTIONS

Native Meadow and Walking Paths

Grass and Perennial Mix:

***Andropogon gerardii* | Big bluestem**

This species is tolerant of a wide range of soil conditions. Depending on soil and moisture conditions, it grows to a height of 3 to 10 feet. Big bluestem is a perennial bunchgrass. The stem base turns blue or purple as it matures. The seed heads have three spike-like projections.

***Panicum virgatum* | Switchgrass**

A hardy, deep-rooted, perennial rhizomatous grass that begins growth in late spring.

***Schizachyrium scoparium* | Little bluestem**

Grows to become an upright, roundish mound of soft, bluish-green or grayish green blades in May and June that is about 2 to 3 feet high. In July it starts to send up its flowering stalks until it gets to be about four to five feet high. In fall, it displays a good coppery or mostly orange color with tints of red or purple.

***Sorghastrum nutans* | Rumsey Indian grass**

A perennial bunchgrass, prominent in the tallgrass prairie eco-region.

***Asclepias tuberosa* | Butterfly milkweed**

A perennial plant growing to 1 to 3.25 feet tall, with clustered orange or yellow flowers from early summer to early fall. The leaves are spirally arranged. Commonly known as Butterfly Weed because of the butterflies that are attracted to the plant by its color and its copious production of nectar.

***Coreopsis lanceolata* | Lanceleaf tickseed**

A perennial plant sometimes attaining a height of over 2 feet. The plant produces yellow flower heads in late summer, each head containing both ray florets and disc florets.

***Liatris spicata* | Gayfeather**

Found in the southern part of the species natural range, the variable plants have only 5 to 6 flowers per head and the heads are more widely spaced on the stems, these differences are more pronounced when the plants are found in drier and coastal habitats.

***Symphotrichum novae-angliae* | Aster**

Grows up to 47 inches with a stout, hairy stem and clasping, lance-shaped leaves with entire margins. The flower heads are showy with yellow disc florets at the center and ray florets that range from a deep purple or rose to rarely white.

PLANT SELECTION DESCRIPTIONS

Trees:

***Acer rubrum* | Red maple**

A medium to large sized tree, reaching heights of 59 to 89 feet and exceptionally over 115 feet with a stunning beautiful fall red/scarlet color.

***Cercis Canadensis* | Redbud**

Grows to 20 to 30 feet tall with a 26 to 33 feet spread. It generally has a short, often twisted trunk and spreading branches. The leaves are alternate, simple, and heart shaped.

***Malus domestica* | Dwarf fruit trees: 'Braeburn', 'Winesap', and 'Honeycrisp'**

A deciduous tree, generally standing 6 to 15 feet tall in cultivation and up to 39 feet in the wild. When cultivated, the size, shape, and branch density are determined by rootstock selection and trimming method. The leaves are alternately arranged dark green-colored simple ovals with serrated margins and slightly downy undersides.

***Picea pungens* | Blue spruce**

Grows to about 75 feet, but when planted in parks and gardens, it seldom exceeds 49 feet tall by 16 feet wide. It is a columnar or conical evergreen conifer with densely growing horizontal branches. It has scaly, grey bark on the trunk with yellowish-brown branches.

***Platanus occidentalis* | Sycamore**

Typically reaching up to 98 to 130 feet high and 5 to 6.5 inches in diameter when grown in deep soils. Easily distinguished from other trees by its mottled exfoliating bark which flakes off in great irregular masses leaving the surface mottled and greenish-white, gray, and brown.

***Pinus taeda* | Loblolly pine**

Can reach a height of 98 to 115 feet with a diameter of 1.3 to 4.9 feet. The needles usually last up to two years before they fall, which gives the species its evergreen character.

***Quercus coccinea* | Red oak**

A medium-large deciduous tree growing to 67 to 100 feet tall with an open, rounded crown.

Shrubs:

***Ilex glabra* | Inkberry**

Spineless, flat, ovate to elliptic, glossy, dark green leaves have smooth margins with several marginal teeth near the apex. Leaves usually remain attractive bright green in winter.

***Physocarpus opulifolius* | Atlantic nineback**

A mound-shaped deciduous shrub with alternate, simple leaves, on arching stems. It has a height from 3 to 10 feet and a spread of 4 to 6 feet. The leaves vary from 1 to 5 inches in length, with palmately veined lobes. It is fast-growing, insect- and disease-resistant, and drought-tolerant.

PLANT SELECTION DESCRIPTIONS

***Vaccinium corymbosum* | Highbush blueberry**

A deciduous shrub growing to 6 to 12 feet tall and wide. It is often found in dense thickets. The dark glossy green leaves are elliptical. The fruit are blue-black berries.

***Viburnum dentatum* | Southern arrowwood**

It has opposite, simple leaves and fruit in berry-like drupes. Foliage turns yellow to red in late fall. The fruits appear blue.

Perennials:

***Echinacea purpurea* | Purple coneflower**

An herbaceous perennial up to 47 inches tall by 10 inches wide at maturity. Depending on the climate, it blooms throughout spring to late summer. Its cone-shaped flowering heads are usually, but not always, purple. Its individual flowers (florets) within the flower head are hermaphroditic, having both male and female organs in each flower. It is pollinated by butterflies and bees.

***Lupinus perennis* | Sundial lupine**

Sundial lupine only produces leaves in the first year of growth. The leaves are palmately compound, with 7 to 11 leaflets arranged radially or in a rosette. Their stalks are numerous, erect, striated, slightly pubescent. The leaflets are obovate, with a blunted apex or pointed spear, naked from above, sparsely pubescent from below. Petioles are longer than leaflets; stipules are very small, almost missing.

***Mondara fitulosa* | Wild bergamot**

An herbaceous perennial that grows from slender creeping rhizomes, thus commonly occurring in large clumps. The plants are typically up to 3 feet tall, with a few erect branches. Its leaves are about 2 to 3 inches long, lance-shaped, and toothed. Its compact flower clusters are solitary at the ends of branches. Each cluster is about 1.5 inches long, containing about 20 to 50 flowers.

***Salvia azurea* | Blue sage**

It's thin, upright stems can grow to 6 feet tall, with narrow, pointed, smooth-edged to serrated, furry to smooth green leaves, connected to their stems by petioles which are roughly 0.4 inches long. There are no basal leaves.

PLANT SELECTION DESCRIPTIONS

Vines:

***Lonicera sempervirens* | Trumpet honeysuckle**

It is a twining vine growing to 20 feet or more through shrubs and young trees. The leaves are produced in opposite pairs and oval. The leaves immediately below the flowers are perfoliate, joined at the base in a complete ring round the shoot. The flowers are produced in clusters of several groups of three together, tubular, 5 centimeters long, with five small lobes opening at the tip to expose the stamens and stigma; they are bright red to pinkish-red, and pollinated by ruby-throated hummingbirds and insects.

***Vitis labrusca* | Fox grape**

The majority of *Vitis labrusca* grape varieties are red, although white varieties such as Niagara and "pink-skinned" varieties such as Catawba have dark colored berries high in phenolic compounds that produced strongly flavored wines. As the berries near harvest and become fully ripe, they separate easily from the pedicel (berry stem). If the berry is squeezed gently between two fingers, the thick skin will slip easily off leaving the pulp intact as a ball.

PLANT SELECTION DESCRIPTIONS

Amphitheater Area

Trees:

***Acer rubrum* | Red maple**

A medium to large sized tree, reaching heights of 59 to 89 feet and exceptionally over 115 feet with a stunning beautiful fall red/scarlet color.

***Amelanchier arborea* | Serviceberry**

Is generally 16 to 39 feet tall. Occasionally, it can grow up to 66 feet tall and reach into the overstory. The trunk can be up to 16 inches in diameter. The bark is smooth and gray. The buds are slender with a pointed tip, and usually more than two scales visible. The leaves are ovate or elliptical.

***Pinus taeda* | Loblolly pine**

Can reach a height of 98 to 115 feet with a diameter of 1.3 to 4.9 feet. The needles usually last up to two years before they fall, which gives the species its evergreen character.

***Cercis Canadensis* | Redbud**

Grows to 20 to 30 feet tall with a 26 to 33 feet spread. It generally has a short, often twisted trunk and spreading branches. The leaves are alternate, simple, and heart shaped.

Shrubs:

***Gaylussacia baccata* | Black huckleberry**

A shrub up to 5 feet tall, forming extensive colonies. Flowers are in dangling groups of 3 to 7, orange or red, bell-shaped. Berries are dark blue, almost black, rarely white.

***Physocarpus opulifolius* | Atlantic nineback**

A mound-shaped deciduous shrub with alternate, simple leaves, on arching stems. It has a height from 3 to 10 feet and a spread of 4 to 6 feet. The leaves vary from 1 to 5 inches in length, with palmately veined lobes. It is fast-growing, insect and disease-resistant, and drought-tolerant.

***Prunus virginiana* | Virginia chokeberry**

A suckering shrub or small tree growing up to 16 feet tall. The leaves are oval, long, with a coarsely serrated margin. The flowers are produced in racemes bloom late spring (well after leaf emergence). The fruits are about 1 centimeter diameter, range in color from bright red to black, with a very astringent taste, being both somewhat sour and somewhat bitter. The very ripe "berries" (actually drupes) are dark in color and less astringent and sweeter than when red and unripe.

PLANT SELECTION DESCRIPTIONS

Rain Garden

Trees:

***Betula nigra* | River birch**

A deciduous tree growing to 82 to 98 feet with a trunk 50 to 59 inches in diameter, often with multiple trunks. The bark is variable, usually dark gray-brown to pinkish-brown and scaly, but in some individuals, smooth and creamy pinkish-white, exfoliating in curly papery sheets. The twigs are glabrous or thinly hairy.

***Magnolia virginiana* | Sweetboy magnolia**

The flowers are creamy white, 8 to 14 centimeters diameter, with 6-15 petal-like tepals. The flowers carry a very strong vanilla scent that can sometimes be noticed several hundred yards away. The fruit is a fused aggregate of follicles, 3 to 5 centimeters long, pinkish-red when mature.

Shrubs:

***Cornus amomum* | Silky dogwood**

A deciduous shrub growing to 5 meters tall. The leaves are opposite, 10 centimeters long and 7 centimeters broad, oval with an acute apex. The flowers are produced in cymes. The fruit is a small blue drupe.

***Ilex glabra* | Inkberry**

Spineless, flat, ovate to elliptic, glossy, dark green leaves (to 1.5 inches long) have smooth margins with several marginal teeth near the apex. Leaves usually remain attractive bright green in winter.

***Vaccinium corymbosum* | Highbush blueberry**

A deciduous shrub growing to 6 to 12 feet tall and wide. It is often found in dense thickets. The dark glossy green leaves are elliptical. The fruit are blue-black berries.

Grass:

***Panicum virgatum* | Switchgrass**

A hardy, deep-rooted, perennial rhizomatous grass that begins growth in late spring.

PLANT SELECTION DESCRIPTIONS

Perennials:

***Asclepias incarnate* | Swamp milkweed**

An upright, 39 to 59 inches tall plant, growing from thick, fleshy, white roots. Typically, its stems are branched and the clump forming plants emerge in late spring after most other plants have begun growth for the year. The oppositely arranged leaves are 2.75 to 6 inches long and are narrow and lance-shaped, with the ends tapering to a sharp point. The plants bloom in early to mid-summer, producing small, fragrant, pink to mauve (sometimes white) colored flowers in rounded umbels.

***Penstemon digitalis* | Foxglove beardtongue**

A herbaceous plant with opposite, simple leaves, on slender, purple stems. It is sometimes called beardtongue, as the stamen has small tufts of "hair". It produces tubular white flowers on 2 to 3 foot stems over attractive dark green foliage. The flowers are produced in June, adding color to the prairie garden. The plant grows in any moist soil in full sun.

***Osmunda cinnamomea* | Cinnamon fern**

A deciduous herbaceous plant which produces separate fertile and sterile fronds. The fertile leaves appear first; their green color slowly becomes brown as the season progresses and the spores are dropped. The spore-bearing stems persist after the sterile fronds are killed by frost, until the next season.

PLANT SELECTION DESCRIPTIONS

Teen Area and Overflow Parking Lot

Trees:

***Acer rubrum* | Red maple**

A medium to large sized tree, reaching heights of 59 to 89 feet and exceptionally over 115 feet with a stunning beautiful fall red/scarlet color.

***Cercis Canadensis* | Redbud**

Grows to 20 to 30 feet tall with a 26 to 33 feet spread. It generally has a short, often twisted trunk and spreading branches. The leaves are alternate, simple, and heart shaped.

***Liriodendron tulipifera* | Tulip poplar**

One of the largest of the native trees of the eastern United States, known to reach the height of 190 feet, with a trunk 10 feet in diameter; its ordinary height is 70 to 100 feet. It prefers deep, rich, and rather moist soil; it is common, though not abundant, nor is it solitary. Its roots are fleshy. Growth is fairly rapid, and the typical form of its head is conical.

***Pinus taeda* | Loblolly pine**

Can reach a height of 98 to 115 feet with a diameter of 1 to 5 feet. The needles usually last up to two years before they fall, which gives the species its evergreen character.

***Quercus bicolor* | Swamp white oak**

Grows rapidly and can reach 60 to 80 feet tall with the tallest known reaching 95 feet and lives up to 350 years. The bark resembles that of the white oak. The leaves are broad ovoid.

PLANT SELECTION DESCRIPTIONS

Bio-Retention Area

Shrubs:

***Clethra alnifolia* | Summersweet clethra**

A deciduous shrub growing to 4 to 10 feet tall. The leaves are ovate to oblong, 4 to 10 centimeters long and 2 to 4 centimeters broad, with a serrated margin; they are green turning yellow-golden during the autumn. The flowers are white or very pale pink, 5 to 10 millimeters in diameter, and have a sweet, somewhat cloying fragrance, the flowers attractive to bumblebees.

***Ilex glabra* | Inkberry**

Spineless, flat, ovate to elliptic, glossy, dark green leaves (to 1.5 inches long) have smooth margins with several marginal teeth near the apex. Leaves usually remain attractive bright green in winter.

***Viburnum dentatum* | Southern arrowwood**

It has opposite, simple leaves and fruit in berry-like drupes. Foliage turns yellow to red in late fall. The fruits appear blue.

Grass:

***Panicum virgatum* | Switchgrass**

A hardy, deep-rooted, perennial rhizomatous grass that begins growth in late spring.

Perennials:

***Asarum canadense* | Wild ginger**

Leaves are kidney-shaped and persistent. Underground shoots are shallow-growing, fleshy rhizomes that branch to form a clump. The flowers bloom from April through June, are hairy and have three sepals, tan to purple on the outside and lighter inside, with tapered tips and bases fused into a cup.

***Asclepias incarnate* | Swamp milkweed**

An upright, 39 to 59 inches tall plant, growing from thick, fleshy, white roots. Typically, its stems are branched and the clump forming plants emerge in late spring after most other plants have begun growth for the year. The oppositely arranged leaves are 2.75 to 6 inches long and are narrow and lance-shaped, with the ends tapering to a sharp point. The plants bloom in early to mid-summer, producing small, fragrant, pink to mauve (sometimes white) colored flowers in rounded umbels.

***Osmunda cinnamomea* | Cinnamon fern**

A deciduous herbaceous plant which produces separate fertile and sterile fronds. The fertile leaves appear first; their green color slowly becomes brown as the season progresses and the spores are dropped. The spore-bearing stems persist after the sterile fronds are killed by frost, until the next season.

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First Baptist Church Learning Area and Garden Conceptual Design

PLANT SELECTION DESCRIPTIONS

***Penstemon digitalis* | Foxglove beardtongue**

A herbaceous plant with opposite, simple leaves, on slender, purple stems. It is sometimes called beardtongue, as the stamen has small tufts of "hair". It produces tubular white flowers on 2 to 3 foot stems over attractive dark green foliage. The flowers are produced in June, adding color to the prairie garden. The plant grows in any moist soil in full sun.

***Symphotrichum novae-angliae* | New England Aster**

Grows up to 47 inches with a stout, hairy stem and clasping, lance-shaped leaves with entire margins. The flower heads are showy with yellow disc florets at the center and ray florets that range from a deep purple or rose to rarely white.

Source: Dirr's Encyclopedia of Trees and Shrubs, Michael A. Dirr

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Tips for Growing a Sensory Garden: Engaging Sight, Smell, Touch, and Taste:

Engaging Touch-

Sand play, textured plants, river rocks, angular gravel, wooden branches, trunk disks (tree cookies)

Engaging Sound-

Wind chimes, fence-instruments: symbols, tambourines, drums

Engaging Sight-

Sun dial, wind socks, kites, bird feeders, weeping trees

Engaging Taste-

In the community garden, there are both raised beds and an open “field plot”, so children (and adults!) can learn which plants need what kind of soil depth, watering maintenance, sunlight, and space. Plants such as corn, pumpkins, squash, and sunflowers can be grown in rows in the field plot. Vines such as beans and peas can be grown on poles in the field or in the raised beds. Having a “field plot” also educates children about the responsibilities of enriching the soil, how soil will stop producing over time with lots of use, and the values of rotating crop and pasture lands. The raised beds serve as nurseries for herbs, lettuces, root vegetables, tomatoes, peppers, and much more. Gardeners can decorate their own plant labels with information about the crop for church-goers to marvel at.

Sensory Garden Plant Recommendations:

Lambs' Ear - *Stachys byzantina*

Groundcover

Very soft and fuzzy leaves

Purple flower stalks June – September

Tolerates drought

* HIGHLY INVASIVE—KEEP CONTAINED

Creeping Thyme - *Thymus serpyllum*

Ground cover

Fragrant leaves

Deep pink flowers June – July

Tolerates deer, drought, and dry, rocky, shallow soil

Spearmint - *Mentha spicata*

Can be used for cooking

Fragrant leaves

Lavender flower spikes July - August

* HIGHLY INVASIVE—KEEP CONTAINED

Dill - *Anethum graveolens*

Can be used for cooking

Light, airy flowers from July – Sept.



REFERENCE MATERIALS



Wild in the Woods

Grow a Native Grass Meadow

by Carol A. Heiser
illustrations by Spike Knuth

When Katharine Lee Bates first wrote her 1895 poem “America the Beautiful,” which has since become one of our best loved patriotic songs, her “amber waves of grain” and “fruitful plain” described an icon of the American Midwest that was fast becoming our country’s breadbasket: the prairie. Hundreds of thousands of square miles of grasslands covered more than a quarter of the continental U.S. and supported an estimated 60 million bison, not to mention a whole guild of grassland birds and other species that made up the prairie ecosystem. Over the last century, however, the prairies succumbed to the marvel of agriculture, their rich soils rewarding us with tons of wheat and corn. Today, in stark contrast to their original size, only 1 percent of the original prairies are left, and conservationists are faced with the daunting challenge of how to preserve or restore the remnants.

Fortunately there is a resurgence of interest in these dwindling grassland ecosystems, and

Virginia is no holdout. Although we cannot hope to reestablish all of the historical ecosystems missing from our now highly developed and populated landscape, the Department of Game and Inland Fisheries nevertheless promotes the use of native warm season grasses in much of its habitat work. These grasses are suitable for both large-scale farm plantings as well as smaller meadows brimming with attractive wildflowers. By converting or restoring open lands to native grasses, we mimic prairie habitats and address the needs of numerous bird and mammal species that require prairie-like conditions to survive.

Grassland Habitats

Much of the existing “grassland” one commonly sees in Virginia’s rural landscape is either cut for hay or grazed by livestock. These open fields are planted with a final product in mind—grass or forage—and the plants most



Switchgrass



Indiangrass

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frequently used include orchardgrass or fescue. Landowners especially appreciate the non-native fescue for its tough, aggressive qualities that ensure fast growth, reduced soil erosion, and the ability to withstand heavy grazing. Unfortunately, there is a downside to fescue's tenacity: it is invasive and forms a dense mat that effectively out-competes native grasses, thereby excluding the plant diversity and habitat structure essential to many open-land wildlife species.

Missing from these artificial grassland monocultures are layers of different vegetation and the freedom of movement between plants that ground-foraging birds and mammals need to find food and to escape predation. Native warm season grass habitats are more productive for wildlife because their higher degree of species diversity bestows varying plant heights and excellent cover.

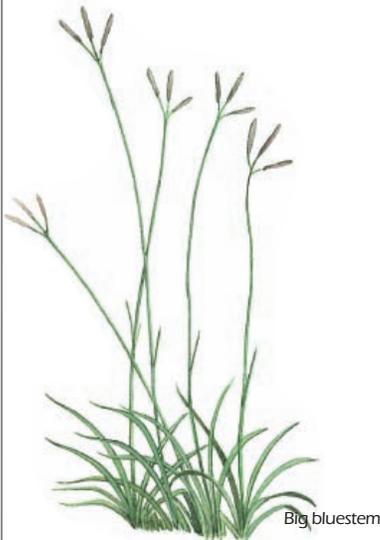
The value of cover can not be over-emphasized. Ground-dwelling birds rely on a range of cover types, such as nest cover to incubate eggs, brood cover to raise young, loafing cover to rest between forays, and winter cover against the elements. Warm season grasses stand upright and are quite tall, from six to eight feet. Height provides valuable overhead cover from predators, like hawks, as wildlife moves about underneath. Dry grass stalks bend over and form pockets of protection even during winter, when other plants are completely covered by snow.

Another advantage of native warm season grasses is that they grow in clumps or bunches. The spaces between the clumps are exposed patches of bare ground, and the first six inches above the ground is loosely structured and fairly open. In this environment, seeds and insects

are more accessible to birds like quail and turkey broods. Wildlife can also move quickly and easily between the plants should danger strike.

Wildlife which keys in on these open, early stages of plant growth or succession are called "early successional species." Of national concern is the grassland bird community that has been especially vulnerable to increasing development pressure and whose numbers are declining. In addition to quail mentioned above, other early successional species that benefit from native grassland management are grasshopper sparrow, dickcissel, meadowlark, sedge wren, and the state threatened upland sandpiper and loggerhead shrike.

Switchgrass, indiagrass, and big bluestem are native grasses that benefit a variety of bird species, including the sedge wren perched on foxtail grass (right) and bobwhite quail (upper left).



Big bluestem

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A blue grosbeak perched on sumac overlooks a native grass meadow.

For the landowner who raises livestock, native warm season grasses fill the void in summer when other forages are drying up. These grasses are very palatable to cattle, require little or no fertilizer, are disease resistant, and do not exhibit the endophyte (fungal) problems often associated with fescue. They can also be hayed in summer, after the peak nesting time of ground-nesting birds, and should be mowed high (at 10 inches) for proper management, which also leaves substantial wildlife cover.

For the “farmette” homeowner tired of mowing five acres of lawn every summer, native grasses can form an interesting landscape element that provides textural beauty and a pleasing backdrop to favorite wildflowers.

In addition, native grasses can be used effectively in field borders, filter strips, waterways, and right-of-ways.

Meadow Myths

Midwestern prairies are considered a climax plant community, which means that the community of grassland plants which occur there is the last stage of succession. Succession is a term ecologists use to describe the gradual change of vegetative types over time. Here in the East, in contrast, the climax community is forest. Our open fields are in an early successional stage which will gradually revert to a predominance of woody plants and trees over time (you’ve probably noticed on a drive through the country how abandoned fields sprout cedar trees within a few years). This means that if we

Reaping Benefits

In addition to improving wildlife habitat, there are several other benefits of using native grasses in the landscape. Because their historical origin is the prairie, where conditions are typically hot and dry during the growing season, native grasses are extremely drought tolerant and have a distinct survival advantage over non-natives during the summer months. In hot weather, fescue and other cool season plants wilt miserably or turn to brown crunch, while native grasses are growing vigorously and showing off their green—hence their name, “warm season” grasses. Natives like switchgrass, indiagrass, little bluestem, and big bluestem all have very deep roots—some up to 12 to 14 feet—that are adapted to find moisture in the soil and withstand the effects of extended dry spells. The plants are also adapted to fire and will respond with renewed vigor after a prescribed burn.



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want to maintain an area as an open grassland or meadow, we must manage that area with burning and mowing to keep it in an early successional stage. Meadows are, therefore, never “maintenance free,” as the purveyors of meadow-in-a-can type products might have us believe.

Another misconception is that a meadow is mostly flowers. It would certainly seem so, if we were to base our view solely on all those visually stunning pictures found in catalogs and magazine advertisements. In reality, a healthy meadow is at least 50 percent grasses, and usually more. The “wildflower” meadow is a myth, because here in Virginia it would be extremely difficult to establish and perpetuate a large field solely of flowers without a high degree of maintenance. Wildflower mixes that promise a burst of color the very first year are usually loaded with annuals. These plants will die after the first year of growth. They are intended to reward you with initial gratification while you wait for the perennials—the real powerhouses of a “wildflower” meadow—to become established in the second year. If you want to see continual splashes of color in a warm season grass meadow, plan for a 50:50 mix of native grasses and perennial wildflowers as a general rule (60:40 would be better). Flowers enhance a meadow habitat for butterflies and other nectar seekers.

A third misconception is that if the ground is cleared down to bare soil, then new grasses

and flowers planted there will automatically have a head start over any weeds, and there shouldn't be a weed problem. However, keep in mind that disturbing the soil during preparation for planting will bring dormant weed seeds to the surface, and the majority of them are well-adapted to thrive in the conditions you just created (that's because they're early successional species, too). Also, since grasses grow from the base of the plant or from underground stems called rhizomes, any bits of living grass roots or stems remaining in the soil at planting time will already have a foothold for stiff competition. This means that if you want a new meadow to grow successfully, you can't just walk away after the seeds or plugs are in the ground and forget about them. Growing a meadow is like any other type of gardening or farming: it requires some maintenance.

One must exercise patience after planting native warm season grasses, because they require at least two growing seasons (sometimes three) to become fully established. The most invaluable point to take home when planning a meadow of native warm season grasses is that fescue and any other pre-existing plants **must be completely** killed first, or you will be wasting your time, and probably money, too.

Planning a Meadow: What to Buy

When planning a meadow of native warm-season grasses, whether or not you choose to add flowers, select a site that receives full sun more than eight hours a day. Also consider placement with regards to how or whether you will be able to burn the field for future management. Remember, these plants are large and adapted to be out in the open. They will need a lot of space and are not well-suited to a small urban or suburban yard. At a very minimum, a full-blown grassland meadow should be at least one acre (43,560 sq. ft.) to have some benefit for wildlife.

Order your seeds directly from a supplier who will prepare a customized mix. This way you'll get exactly the species you want and the quantities you need, with no extra frills or surprises. Be sure to request Pure Live Seed (PLS) when ordering. PLS is the percentage of viable (live) seed that is contained in a bag of bulk seed, since most bulk native grass seed consists of other plant parts and chaff. A bag of bulk seed should be at least 75 percent PLS for good establishment.

On large acreages, the following is a good mix for wildlife:

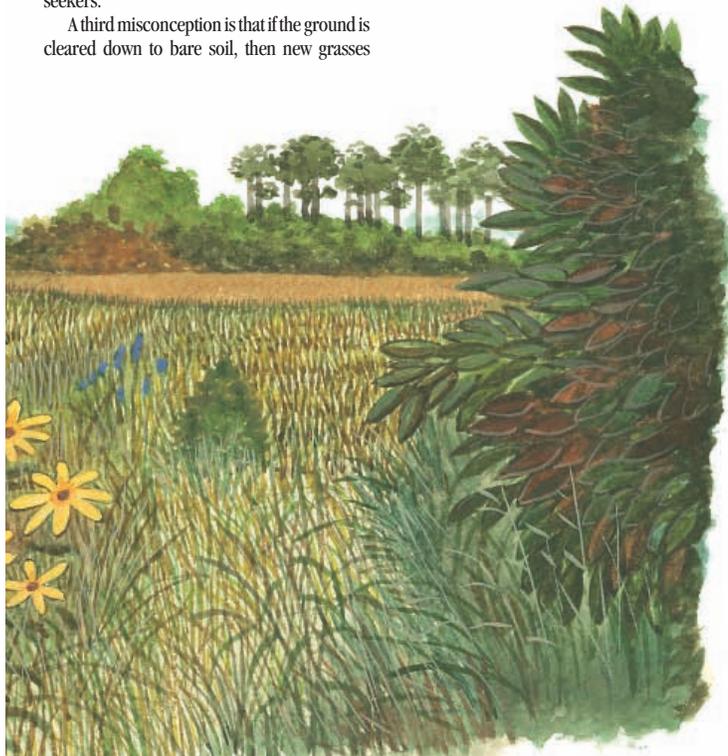
- 2 lbs. PLS Switchgrass (*Panicum virgatum*)
- 2 lbs. PLS Indiangrass (*Sorghastrum nutans*) or Big Bluestem (*Andropogon gerardii*)
- 2 lbs. PLS Little Bluestem (*Schizachyrium scoparium*)
- TOTAL = 6 pounds of seed PER ACRE**

If the objective is grazing land for livestock:

- 2 lbs. PLS Cave-in-Rock Switchgrass (*Panicum virgatum*)
- 3 lbs. PLS Big Bluestem (*Andropogon gerardii*)
- 2 lbs. PLS Indiangrass (*Sorghastrum nutans*)
- TOTAL = 7 pounds of seed PER ACRE**

If you want a grassland meadow with a fine display of flowers, use this recipe instead:

- 2 lbs. PLS Little Bluestem (*Schizachyrium scoparium*)
- 1 lb. PLS Shelter or Blackwell Switchgrass (*Panicum virgatum*)
- 1 lb. PLS Rumsey Indian Grass (*Sorghastrum nutans*)
- 1 lb. PLS Round Tree Big Bluestem (*Andropogon gerardii*)



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A grasshopper sparrow sways back and forth on a thin stem of switchgrass.

2 lbs. of a MIX of native perennial flowers that are true species types, not cultivars. Choose from the following list, based on your preferences and pocketbook, to make up 2 pounds of seed: black-eyed Susan (make sure it's the perennial kind); partridge pea (actually a bi-annual, but it reseeds itself like a perennial); lance-leaf coreopsis; "sunflower" heliopsis; purple coneflower; *Gaillardia* (blanket-flower); Maximilian sunflower (gets 3 to 6 feet tall with numerous yellow flowers on the top third of the plant); butterfly milkweed; New England aster; *Liatris* (gayfeather).

TOTAL = 7 pounds of seed PER ACRE

[**Note:** the terms "Cave-in-Rock," "Shelter," "Blackwell," "Rumsey," and "Round Tree" listed above refer to particular grass varieties you should select.]

Planting and Future Maintenance

To prepare a large area for planting, treat the site in the fall (October) with an herbicide that will kill existing vegetation; a second application may be needed the following spring for maximum effect. A conventional till method without chemicals can be used instead to turn under the existing sod. However, there will likely be future headaches with persistent plants unless the area is tilled more than once and the second tilling is done at the right time after the first flush of new weeds.

The seedbed must be firm when you plant, and seeds should be planted at a depth of $\frac{1}{2}$ -inch. Control weeds during the establishment year by mowing them when they first reach 18 inches, taking care that the mower blade is set above the warm-season grass seedlings.

In subsequent years when haying or grazing—or at anytime during the growing season—do not cut warm-season grasses below 10 inches. The first growth node of these grasses occurs at 10 inches above the ground, and cutting below this point during the growing season will force the plants to use valuable energy stored in the roots. Repeated cuttings below 10 inches at this time of year will eventually kill the plants. Also, do not mow or graze after September 1, as this is the time when the plants are moving nutrients from the leaves to the roots in preparation for winter dormancy.

If you do not plan to take hay or graze your meadow but instead leave it for wildlife, then you will need to manage the grass stand by burning or mowing.

Prescribed burning is preferred over mowing because fire removes the build-up of thatch and plant litter on the ground that will gradually occur. Untended, thatch reduces plant vigor and eventually causes the stand to thin out, which also leaves it more susceptible to fresh weed invasion. Therefore, in the third year of your meadow, begin a prescribed fire rotation by burning only one-third of the field in late March or early April, when the warm season grasses have only one to two inches of new regrowth (at this early stage of the growing season, the "10 inch rule" does not apply).

Burning only one-third of the field at a time each year ensures maximum habitat effect. The most recently burned area will be open,

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which is better habitat for rearing young and finding seeds. There is also a much higher availability of insects in the first year after a burn. In the unburned parts of the field that have older plant material, songbirds, rabbits, quail, and other wildlife use the dead litter for nest construction and cover.

Need Equipment?

It's always best to use the right equipment for the right job. If you are planting a small area by hand, you might use a Brillion seeder, a machine driller that is typically used to plant lawns. However, if the species you've selected have very "fluffy" seeds, they might clog this type of seeder. In this case you might simply broadcast with a chest bag, starting with the big seeds first and then going back over with other, smaller seeds. Check your local lawn and garden supplier for these types of equipment.

For large scale planting projects on several acres or a farm, the Virginia Department of Game and Inland Fisheries offers two invaluable pieces of large equipment, both available at no charge. The first is a grass drill to do the planting. This is specially outfitted to plant native warm season grass seed, which does not ordinarily flow through conventional no-till drills. The second is a "burn trailer," if you are prepared to conduct a prescribed burn on your own. The trailer—which can be pulled behind a pickup truck—is equipped with drip torches, hand tools, a fire weather kit, and a 150 gallon spray rig tank. Call the Powhatan field office of VDGI at (804) 598-3706 to reserve or ask questions about the equipment.

Taking Initiative

In an effort to address the continuing decline of early successional bird species, a management plan called the Northern Bobwhite Conservation Initiative (NBCI) was written in March 2002 by biologists, land managers, and other researchers. The word "bobwhite" in the name is somewhat misleading, because quail are not the only birds that benefit from these efforts. Rather, all early successional species reap the rewards of landscape-scale habitat restoration that the plan outlines. Also, the initiative is integrated with other species management plans that have parallel objectives, such as Partners in Flight and the North American Waterfowl Management Plan. More information about the NBCI is available at www.qu.org/seqsg/nbci/nbci.cfm.

March 2003

Learning More...

Native Warm Season Grasses for Virginia and North Carolina is a booklet that lists the detailed specifications for preparing and planting a meadow. Contact the Virginia Department of Game and Inland Fisheries at (804) 367-0904 for a free copy.

Virginia Native Plant Society, www.vnps.org.

Landscaping with Native Plants, an EPA page written for the Great Lakes region but with good links and information useful to Virginians, at www.epa.gov/greenacres/.

Wild Ones Natural Landscapers Ltd., a nonprofit that promotes environmentally sound landscaping practices, at www.for-wild.org/. See their online *Handbook* for landscaping with grasses and other natives.

Prairies Forever www.prairies.org, a nonprofit dedicated to promoting the ecological and cultural significance of the American prairie

Seed Suppliers—several seed companies offer fact sheets or helpful tips and techniques for planting a grass and wildflower meadow. Here is a sampling (not an endorsement):
www.prairienursery.com
www.sharpseed.com
www.stockseed.com
www.ernstseed.com
www.prairiesource.com

A dickcissel loudly chirps his presence from atop the flower of a common mullein plant.



REFERENCE MATERIALS

Native Plants

What is a native plant?

“Native plants are those that occur naturally in a region in which they evolved. They are the ecological basis upon which life depends, including people.”

- The Audubon Society

Why native plants are GREAT:

They require less water.

These plants are adapted to live in this habitat on their own, so they require less water and maintenance in gardens. Less water and maintenance means less money, time, and work!

They provide habitat for local wildlife.

Bugs, birds, and all kinds of animals depend on these native plants for survival. By supplying the ecosystem with native plants, children can watch bugs battle, see birds build nests and raise their young, and watch mammals gather stores for winter. The children benefit by learning about how their local ecosystem works, at the same time the ecosystem is enriched and enlivened!

They reduce use of chemicals.

Grassed lawns and mulch bark require tons of artificial fertilizers and pesticides to look their best. Native plants look great without these chemicals! Native grasses also need to be mowed far less than typical lawns. This reduction in noise and air pollution will make everyone happy!

They are beautiful.

Many native plants offer beautiful showy flowers, produce abundant colorful fruits and seeds, and brilliant seasonal changes in colors from the pale, thin greens of early spring, to the vibrant yellows and reds of autumn.

*Made with help from the National Audubon Society's "Why Native Plants Matter": <http://www.audubon.org/content/why-native-plants-matter>

REFERENCE MATERIALS

Deer Prevention Methods

Physical Exclusion:

Netting and Snow Fencing

To protect small areas such as vegetable gardens or foundation plantings, you can box in plants with burlap or netting. Standard snow fencing is good at protecting individual plant species too large to box or burlap.

Fencing

The most effective method of preventing browse damage is fencing the entire property. There are numerous types of fencing available. A fence designed exclude deer should be between 7-10 ft. high and low enough that deer cannot crawl under. While permanent chain-linked fencing is reliable, durable, and requires almost no maintenance, it is also expensive and may be unattractive. Other fencing options include plastic mesh fences and simple single/double strand electric fencing.

Plastic Mesh Fencing

Plastic mesh fencing has become popular in recent years. These fences are lightweight, very sturdy, and easy to install. The biggest advantage of this type of fencing is that it is practically invisible, so it does not make the property look unsightly. The fence is black in color and usually about 8 feet high. The lightweight of the fencing makes it easy to install and few posts may be required if fastened to existing trees.

Electric Fencing

Simple single or double stranded fencing is often sufficient to reduce deer damage if properly constructed and maintained. It is also relatively inexpensive to construct. Fiberglass or wooden posts can be used to support a 17-gauge wire suspended about 30 inches above the ground. The Minnesota Department of Natural Resources designed a fence that first attracts deer and then teaches them to avoid the fence. In this kind of fence, aluminum foils (4 inches by 4 inches, folded over the wire) are attached to the wire at 25-foot intervals using tape or paper clips. The underside of each flag is baited with a 1:1 mixture of peanut butter and vegetable oil. The smell attracts deer, which sniff the flags and receive an electric shock. This usually results in behavioral changes and deer learn to avoid the fence. The peanut butter – vegetable oil mixture needs to be reapplied to the aluminum flags every 4 to 8 weeks for the training to be effective.

Growing Plants that Deer Dislike:

This comes with a big caveat – deer, if hungry or curious enough, will eat almost anything. As such, none of the plants that might deter them are a sure thing but you can at least try. Some of the plants that deer seem to not like include ornamental grasses, iris, foxgloves, yucca, herbs and plants with a strong fragrance, such as sage, chives, lemon balm, bee balm, etc. They also dislike plants with thorns, such as purple coneflower but delicious roses seem to be a marked exception to that!

Equally, be aware of which plants are likely to tempt deer to your yard. Plants such as tulips, chrysanthemum, hyacinths, roses, apples, beans, peas, raspberries, strawberries, sweetcorn, hosta, dogwood, fruit trees, Norway maple, yew, and azaleas positively radiate welcome signs to deer!^[4] Sometimes people plant these a long way from parts of the yard or garden to lure deer away; that's a risky strategy though as may just invite them to one end and encourage them to keep wandering through.

Boxerwood Gardens' List of Deer-Resistant Plants:

<http://www.boxerwood.org/deer-resistant-plants.html>

Sources:

1. http://www.ct.gov/caes/lib/caes/documents/publications/fact_sheets/controllingdeer.pdf
2. <http://www.wikihow.com/Keep-Deer-Out-of-Your-Yard>

REFERENCE MATERIALS

Online Resources

Gardening with Children:

<http://www.gardeningknowhow.com/special/children/>

Rain Gardens:

Virginia Department of Forestry: <http://www.dof.virginia.gov/manage/riparian/rain-gardens.htm> (see “Technical Guide” pdf)

Halifax County WebGIS Database:

<http://arcgis.webgis.net/va/Halifax/>

Pollinator Funding:

WSFR Pollinator Conservation:

<http://wsfrprograms.fws.gov/Subpages/Pollinators/Pollinators.htm>

The Pollination Project Grant Funding Guidelines:

<https://thepollinationproject.org/funding-guidelines-for-grants/>