

Newport Village Green
Conceptual Master Plan Update

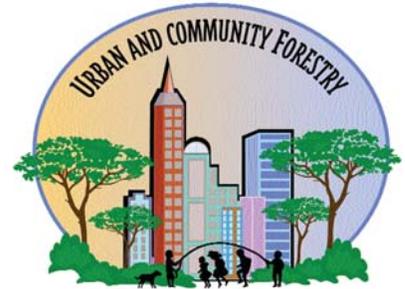


Prepared for Newport-Mt. Olivet United Methodist Church

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Prepared by:

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ACKNOWLEDGMENTS

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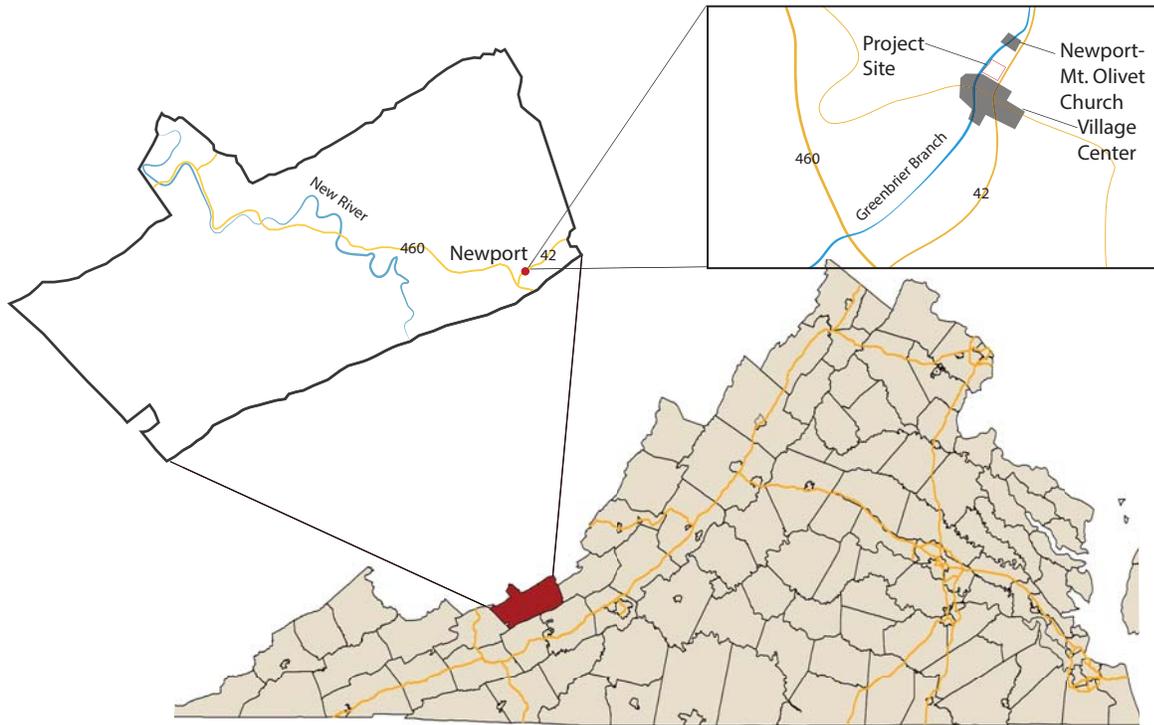
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PROJECT DESCRIPTION



Virginia state map showing Giles County and major interstates.

Above left: Giles County map showing the Village of Newport and the Village Green located along Rte. 42.

Above right: Project site in relation to Village Center and Newport-Mt. Olivet Church

Newport is a small village in Giles County located “between Gap Mountain, Salt Pond Mountain, and Spruce Run Mountain. It is the center community for Spruce Run, Mountain Lake, Clover Hollow, and Sinking Creek.”* The Village Green came into existence in 1997, following a conceptual design process through Professor Eran Ben Joseph’s undergraduate landscape architecture studio at Virginia Tech. Since that time, it has served the church and community well. Annual community events are hosted there (Easter egg hunt, ice cream social, Fourth of July event, etc). It also serves as a venue for weddings, community movie nights, and music events.

Some additional site features are desired to better accommodate these growing uses of the site. Additionally, some of the vegetation on the site is reaching maturity and requires updating. The Trustees would like to use these needs as an opportunity to take a comprehensive look at the Village Green and to update the conceptual master plan with a fresh look to the future. The Community Design Assistance Center (CDAC) was asked to assist in this process by working with the project stakeholders and the larger community to develop an updated conceptual master plan for the site.

*Taken from <http://www.gilescounty.org/newport.html>

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CDAC team members Peter Dunne (l) and Katelyn McKenna (r) discuss existing site conditions with project stakeholders.



The gazebo in the Village Green is the backdrop for many community events.

Major areas to be considered included:

- Improving ADA accessibility on site
- Updating planting beds
- Evaluating existing plant material and creating a phased plan for maintenance and/or replacement
- Highlighting the Village Green entry and sign
- Improving site lighting
- Creating a cohesive plan for site elements

CDAC worked closely with stakeholders in Newport-Mt. Olivet United Methodist Church to develop these concepts which are discussed in further detail in the following report.

DESIGN PROCESS



View of the Newport Village Green from Rt. 42.



The CDAC project team discusses design ideas with Kristin Moye (second from right) and Joshua Galloway (right) at the Community Housing Partners office.

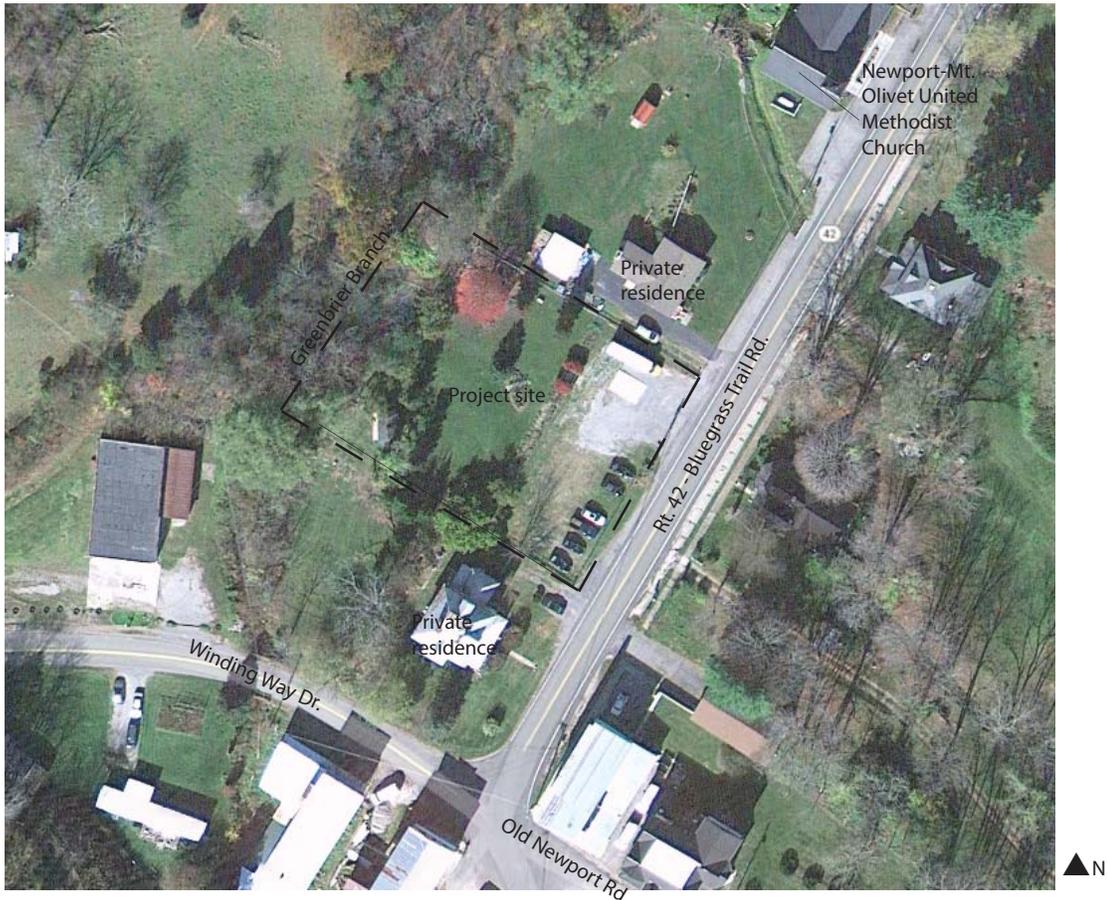
The design process began with an initial site visit to Newport in September 2014. The CDAC team walked the site with Trustee Chair Perry Martin. During this visit, Perry shared site history as well as current uses and future visions for this tremendous community asset. Opportunities as well as issues to be addressed were discussed as well. The team also toured the community to see existing community assets and potential connections. Following this initial visit, the CDAC team returned to the site several times to further document existing conditions and to complete a plant inventory and assessment and site analysis. By gathering on-site data, documenting existing conditions, and taking soil samples, the team was able to understand the opportunities and constraints of the site.

Site analysis and initial design thoughts were presented to members of the Mt. Olivet-Newport Methodist Church on September 26, 2013. During this meeting the CDAC team confirmed the vision and desires for the master plan update for the Village Green and also learned about the client's design preferences. After careful consideration of all the factors, a set of preliminary conceptual design alternatives was developed. These designs were first presented to CDAC Design Review Panel Member Joshua Galloway (Community Housing Partners - CHP) and CDAC alumna and CHP Design Intern, Kristin Moye. The CDAC team used the valuable feedback received at this meeting to refine the preliminary concepts before presenting them to the client.

The preliminary design concepts were presented to the client in November 2013. The design alternatives were then revised and combined into a final conceptual master plan based on the comments made at the meeting.

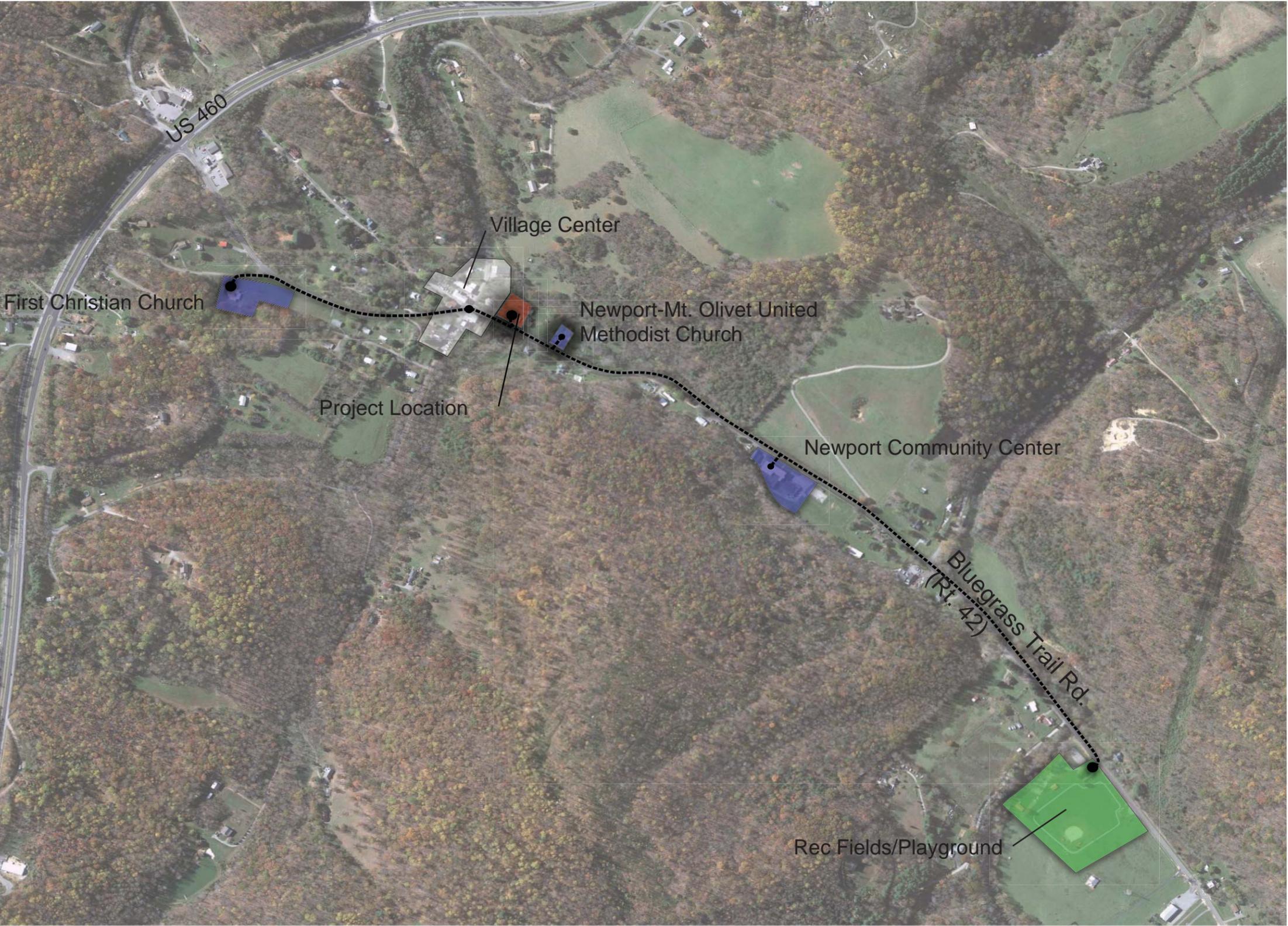
The final master plans were presented in January 2014. This short supporting report was prepared to document the design process and describe the design concepts in detail.

SITE INVENTORY AND ANALYSIS



Aerial image of project site. Image source: "Newport Village Green." Map. Google Maps. Google, September 2013. Web. September 2013.

The project site consists of approximately 0.6 acres of relatively flat land located off of Blue Grass Trail (Rt. 42). Blue Grass Trail currently connects the site to the Newport-Mt. Olivet United Methodist Church as well as the Newport Community Center, recreation fields and Newport's village center. There is limited access to a creek that runs along the northwestern edge of the site, the Greenbrier Branch, while private properties border the northern and southern sides. The CDAC team inventoried existing plant and structural material. Inventory findings can be found on 11x17 pullouts on the following pages.





The stone, seen above and below, which serves as the support of the gazebo, was retrieved from remnants of an adjacent slave cabin that burned down in the 1850s.



Village Green signage



Existing playground and benches



View of the Village Green street edge, entrance, and parking looking North along Rt. 42. The Newport-Mt. Olivet United Methodist Church can be seen in the background.



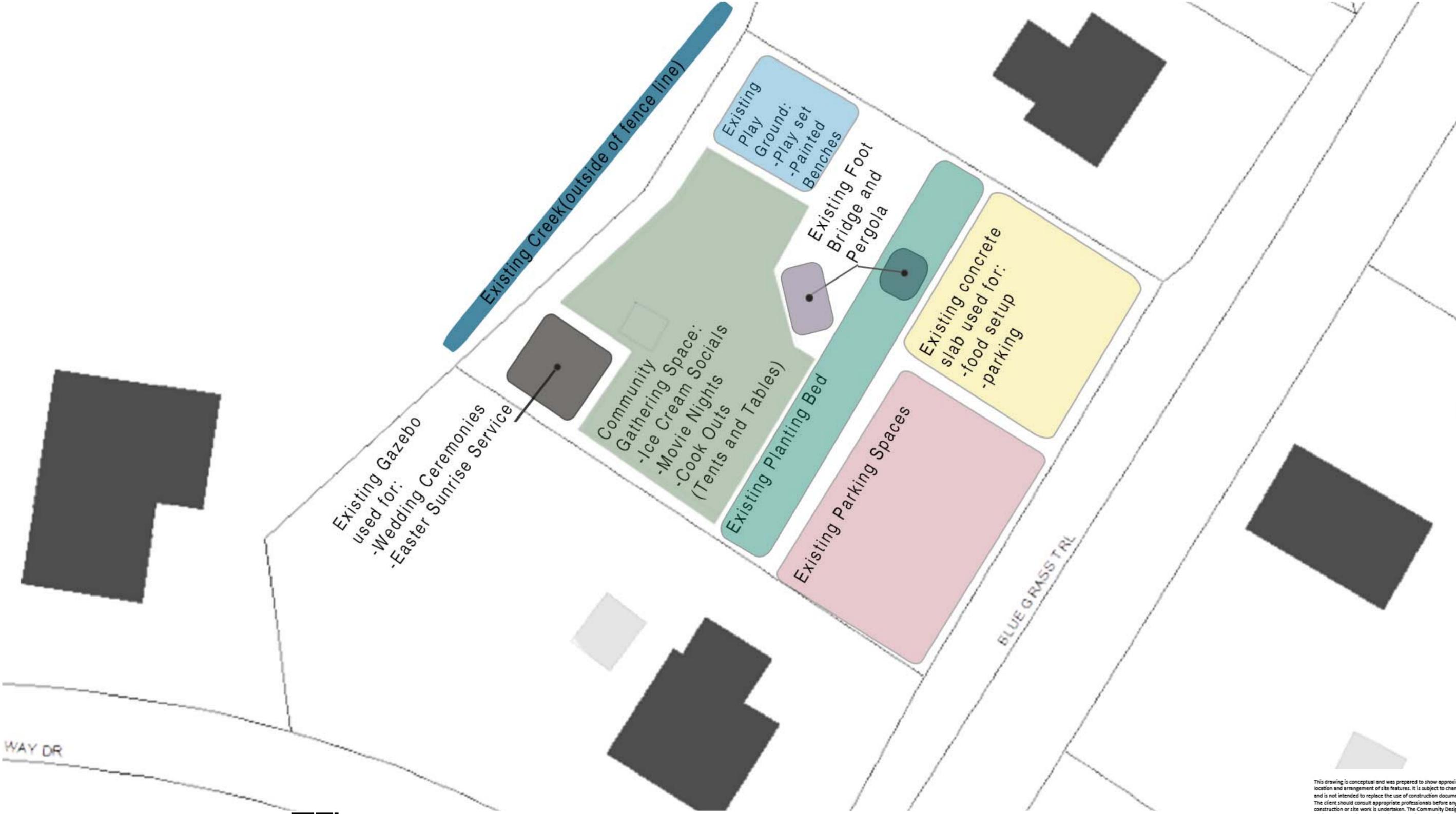
The grassy area in the foreground is used as informal parking for functions at the Village Green as well as at the Newport-Mt. Olivet United Methodist Church. A planting bed divides the parking area from the rest of the Village Green.



View of existing bridge and planting bed leading into an open grassed area, with the gazebo in the background



View of adjacent buildings (intersection of Rt. 42 and Old Newport Rd.)



This drawing is conceptual and was prepared to show approximate location and arrangement of site features. It is subject to change and is not intended to replace the use of construction documents. The client should consult appropriate professionals before any construction or site work is undertaken. The Community Design Assistance Center is not responsible for the inappropriate use of this drawing.

SITE INVENTORY AND ANALYSIS CONT.

The functions that take place at the Newport Village Green, and its placement in the community make beautiful, eye-catching plantings a priority. The CDAC team wanted to assess the soil to ensure it could support those kinds of plantings and to guide plant selection for proposed design concepts. Existing plantings were also evaluated to determine which would be best to include in the new design. Site hydrology, shade, and site circulation were also analyzed.

Soil Conditions

To know more about the growing conditions at the site, the CDAC team took composite soil samples at four different locations. The soil samples were analyzed by the Virginia Tech Soils Lab for a variety of factors with pH, organic matter, and nutrient content being the information in which the CDAC team was chiefly interested. Organic matter helps determine the soil's fertility, its ability to house and release nutrients and strongly contributes to good soil structure which, in turn, provides healthy growing conditions for roots. Soil pH influences nutrient availability, determines which plants will grow successfully in that soil and guides liming recommendations for lawns. In fact, it's a good idea to have soil samples taken every few years to make sure you're not over or under liming lawns or applying unnecessary fertilizer. The Giles County Extension Agent could help the volunteers at Newport Village Green test the soil in future.

Most trees and shrubs like to have a slightly acidic soil, which this site provides according to the soil samples we took. Lawns tend to prefer a more alkaline soil. After looking at a variety of extension publications from different universities, the major grasses in the Newport Village Green lawn will do best in a range of 5.5 – 7, with some publications narrowing the range to 6-6.5. The samples collected were all within this range, so liming may not be necessary. However, soil tests should be taken every 2-3 years to monitor the quality of your soils. If the pH falls below this range, liming will be helpful. The soil test results will include liming recommendations.

All of the soil samples showed sufficient organic matter (above 3.5% according to the Virginia Cooperative Extension). To maintain these levels in the lawn, use a mulching mower and leave clippings on the lawn, as long as the clippings don't accumulate in piles that can smother grass underneath.

Most of the samples had adequate nutrient levels. The sample taken near the play area had low levels of potassium and phosphorus and given the health of the pear tree in that area, fertilization around the root zone of that tree may be helpful. Apply a complete fertilizer with a ratio of 3-1-2 or 3-1-1 in early spring and water well afterward. As long as the lawn is meeting expectations, fertilizing isn't necessary. Given the site's proximity to a stream and history of stormwater runoff, particular attention should be paid to fertilizer application.

SITE INVENTORY AND ANALYSIS CONT.

Existing Plants

After surveying the plants at Newport Village Green, a few were clearly wonderful additions to the new plan, some would be fine to leave in place until the design could be implemented or until they declined, and a few showed signs of disease or deterioration that required further consideration. There are many existing perennials that can be incorporated into redesigned plantings. In fact, these clumps could be separated to make even more plants to fill out larger planting areas. The CDAC team categorized the existing trees into three conditions: good, moderate, and poor. Those in good condition and moderate condition were incorporated into the updated conceptual master plan. Those trees in poor condition are suggested to be removed. A summary of the tree conditions can be found below, as well as graphically depicted on the 11x17 pullout on page 14.

Trees in Good Condition (shown in green on the following page)
Red Maple (*Acer rubrum*)

Trees in Moderate Condition (shown in yellow on the following page)
Cleveland Select pear (*Pyrus calleryana* 'Cleveland Select') – All three of these trees have spots on their leaves, which the Virginia Tech Insect Lab attributed to the pearleaf blister mite, which is not serious but must be controlled. This pest is not serious enough to require any steps to control its activity. Each of the pears have branches with blackened, wilted tips, which is a sign of fireblight. The pear closest to the parking lot was diagnosed with thread blight.

Weeping Cherry (*Prunus subhirtella* var. *pendula*) – Cherries grow best in full sun, which these trees don't receive, and might have caused the canopies to thin.

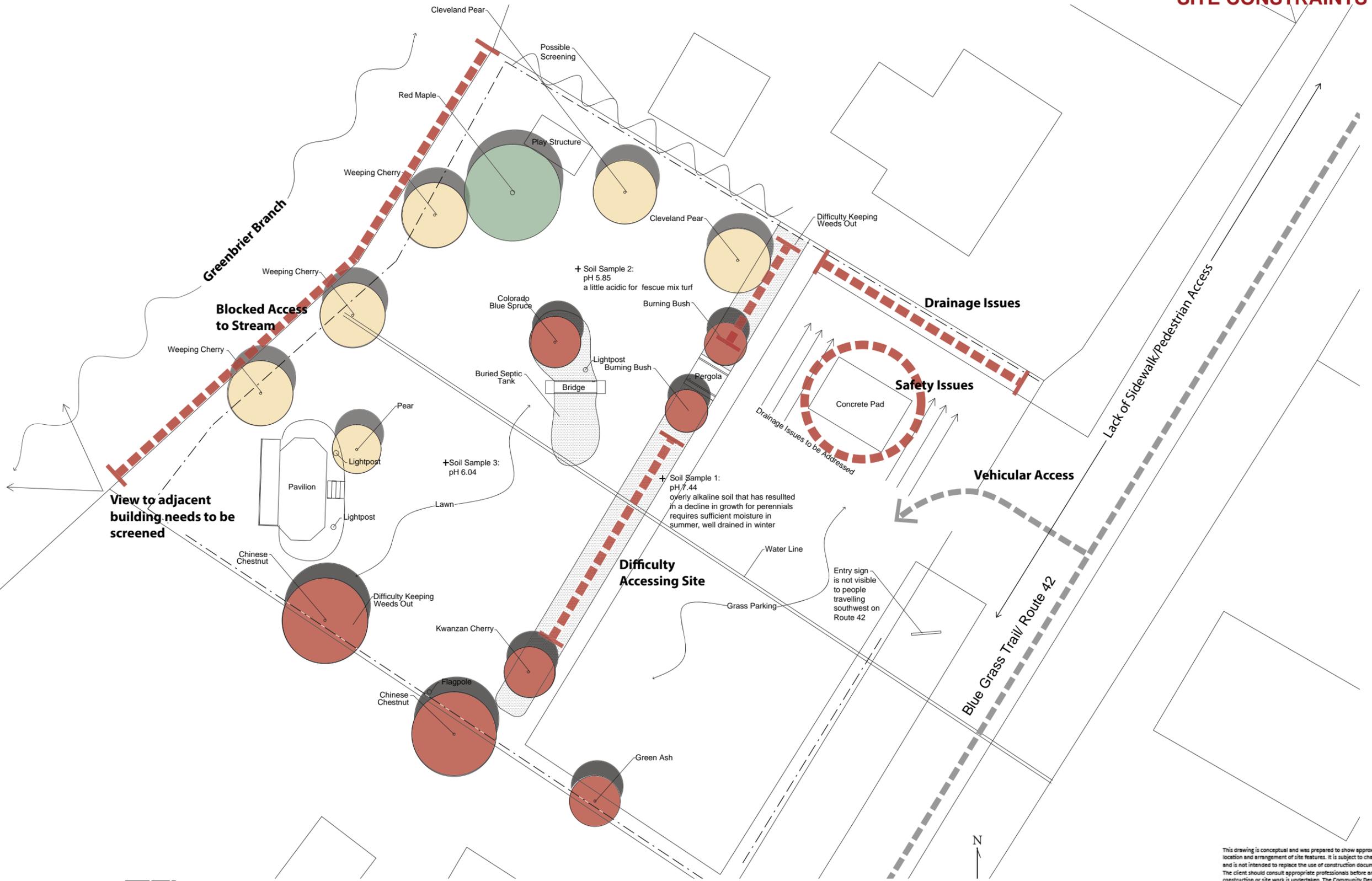
Trees In Poor Condition (shown in red on the following page)

Chinese chestnut (*Castanea mollissima*) – Has died back considerably and it may be near the end of its life. Nothing can really be done to salvage this tree and it should be removed.

Green Ash (*Fraxinus pennsylvanica*) – The lower limbs of this tree have died, and the crown is thin and a wound at the bottom of the trunk.

Kwanzan cherry (*Prunus serrulata* 'Kwanzan') – This tree has what looks like a large fungal canker disease or wound high in the canopy.

Colorado blue spruce (*Picea pungens*) – This tree has grown too tall to be easily decorated for Christmas



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PRELIMINARY DESIGN CONCEPTS



CDAC team members Lauren Paul (left) and Katelyn McKenna (right) present preliminary design ideas for the Village Green master plan update.



The CDAC team discusses preliminary design concept ideas with CDAC Design Review Panel Member Joshua Galloway (left).

Following the inventory and analysis process, the CDAC team presented their findings to church stakeholders for review and feedback. Stakeholders shared some additional ideas for improving the site, including the potential of a small prayer labyrinth and planting preferences. The CDAC team used this feedback as well as the findings in the inventory and analysis process to develop two preliminary design concepts. These designs were presented to CDAC Design Review Panel member Joshua Galloway (CHP) and CDAC architecture alumna and CHP Design Intern, Kristin Moyer for comments and suggestions. The concepts were refined based on comments received and presented to the church stakeholders in November 2013.

The preliminary concepts, accompanied by their 11x17 drawings, are described on the following pages.

PRELIMINARY CONCEPT 1

Preliminary Concept 1 includes a proposed foyer space in close proximity to the street (Rt. 42) to guide pedestrians into the Village Green, while also serving as a barrier between vehicular and pedestrian traffic moving through the space. The foyer also gives opportunity and space to expand on the already existing memorial bricks. This concept offers proposed street trees that can be implemented into a possible future plan for Newport Village's sidewalk and streetscape. The existing planting beds were broken up and raised to permit better access to the community gathering space, provide secondary seating for community members, and allow for less maintenance on site. Two paths are proposed on site, one being an ADA path for better access to site events for those with limited mobility from the parking lot into the community gathering space. The second path consists of a less formal path in association with the Greenbrier Branch (creek) to take advantage of the visual and aural amenities that the creek provides.



- 1. Pavilion
- 2. Signage
- 3. Lawn
- 4. Playground
- 5. Perennial beds
- 6. Bridge
- 7. Pergola
- 8. Parking
- 9. Entrance patio
- 10. Creek view path
- 11. Christmas tree
- 12. Benches
- 13. Raised planters/seating



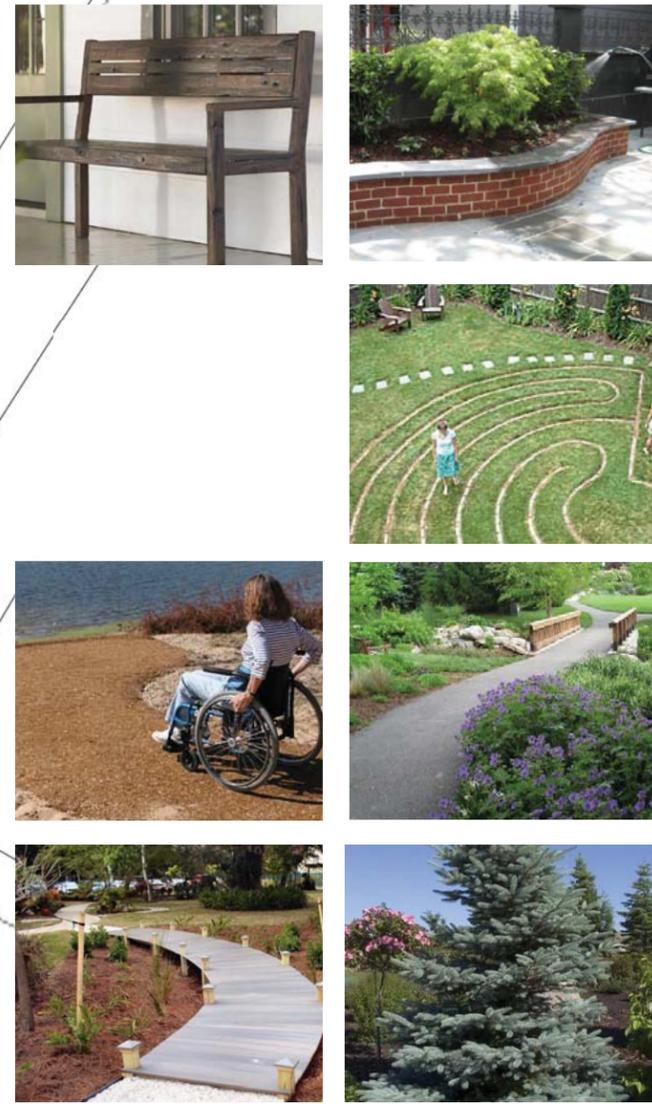
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PRELIMINARY CONCEPT 2

Preliminary Concept 2 was designed to create a more formal boardwalk into the Village Green, separating vehicular and pedestrian traffic moving through the space. This concept also includes a children's garden plot adjacent to the existing playground, and a small prayer labyrinth. Proposed high canopy trees provide not only desired shade to the community green space, but also visual access to the main lawn area. The planting bed was also divided to allow for easier pedestrian access to the Village Green lawn and raised in order to provide secondary seating and create less maintenance along edges. More permanent seating was also introduced along the path. The existing Christmas tree was replaced with a smaller species but remained in a central location that is visible from the street. Lastly, an added ADA path encourages pedestrian circulation around the Village Green.



- 1. Signage
- 2. Pergola
- 3. Bridge
- 4. Grass Swale
- 5. Playground
- 6. Leaf/Grass Clippings Pile
- 7. Lawn
- 8. Pavilion
- 9. View to Mural
- 10. Parking
- 11. Raised Bed with Seating
- 12. Benches
- 13. ADA Path
- 14. Labyrinth
- 15. Plots
- 16. Boardwalk
- 17. Christmas Tree



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FINAL CONCEPTUAL MASTER PLAN



CDAC team members Lauren Paul (left) and Tish Poteet (right) present the final concept for the Village Green master plan.



Newport Village project stakeholders Doug Martin (l), Pastor Morris Fleisher (c) and Perry Martin (r) provide comments in response the final conceptual master plan presentation.

The CDAC design team used the feedback received from the project stakeholders on the initial concept plans to refine design ideas for the Village Green into one final master conceptual plan. The final conceptual master plan welcomes visitors to the Village Green via a new formal foyer entry with updated signage bordered by ornamental shrubs and grasses. This addition to the current site helps create a pedestrian friendly environment at the entrance to the Village Green and offers a clear and welcoming site entrance. A small grassed swale is proposed along the eastern edge of the property to mitigate current stormwater runoff that is entering the adjacent property. The existing grassed parking area is retained in its current location with some minor adjustments to better define the space and allow for safer pedestrian movement into the heart of the site. Parking is now defined by trees and plantings on each edge. Streetscape enhancements (sidewalk, street trees, pedestrian scale lighting with the opportunity for hanging baskets and banners) are proposed along Route 42 to better connect the Village Green to the Newport-Mt. Olivet Methodist Church. It is hoped that this streetscape enhancement could be continued along Route 42, connecting other key Newport features, such as the Community Center and the recreation fields.

The final conceptual master plan maintains the integrity of the existing open lawn, an important community gathering and event space located in the heart of the Village Green. This space is enhanced by the addition of large, high canopy trees to provide shade in the summer months as well as an ADA accessible path that offers easier site access for visitors with limited mobility. The original large planting bed that separates the open lawn from the parking area is divided to allow for better access into the site. The existing bridge was rotated to create a stronger connection and procession into the space. Raised planters are proposed to replace the existing ground beds, eliminating the grass creep conflict and providing additional secondary seating along the raised planter walls. The existing pavilion is maintained in its current location. Evergreen flowering shrubs were placed behind the pavilion to provide a pleasant backdrop for weddings and other events, while also screening the view of the adjacent building.

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The existing pergola was relocated from the center of the existing planting beds to the edge of the newly created foyer. In its new location, the pergola serves as a threshold between the newly created pedestrian entry sequence and the heart of the site. The existing Christmas tree is replaced with a lower growing variety to make community decorating an easier task. The tree is sited in a central location that affords the opportunity for community gatherings as well as clear sight lines to the tree from Route 42.

The final updates to the Village Green Conceptual Master Plan include the addition of children's garden plots and edible shrubs. These provide educational opportunities as well as screening to the adjacent property. An ADA pathway is extended to this space as well.

The final conceptual master plan, supporting sketches and suggested materials, planting plans, and a phasing plan can be found on the following pages.

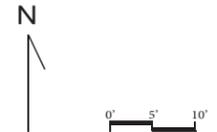


- 1. Parking
- 2. Signage
- 3. Foyer
- 4. Raised Planters and Seat Walls
- 5. Pergola
- 6. Children Plots
- 7. Christmas Tree
- 8. Playground
- 9. Leaf/Grass Compost
- 10. Bridge
- 11. Community Green
- 12. Pavilion
- 13. Existing Cherry Trees
- 14. Seating
- 15. Proposed Street Lights
- 16. Center of Swale
- ⬡ Uplighting
- Small Scale Lighting

Private Residence

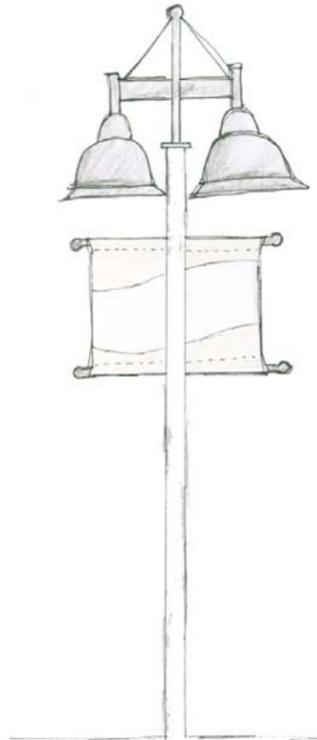
Proposed Sidewalk

Blue Grass Trail/Route 42





Perspective - View from Blue Grass Trail/ Route 42 into Village Green



Streetscape lamppost



Wooden Benches



Gray Crushed Stone Gravel Path



Wood Children's Plots



Raised Brick Planters

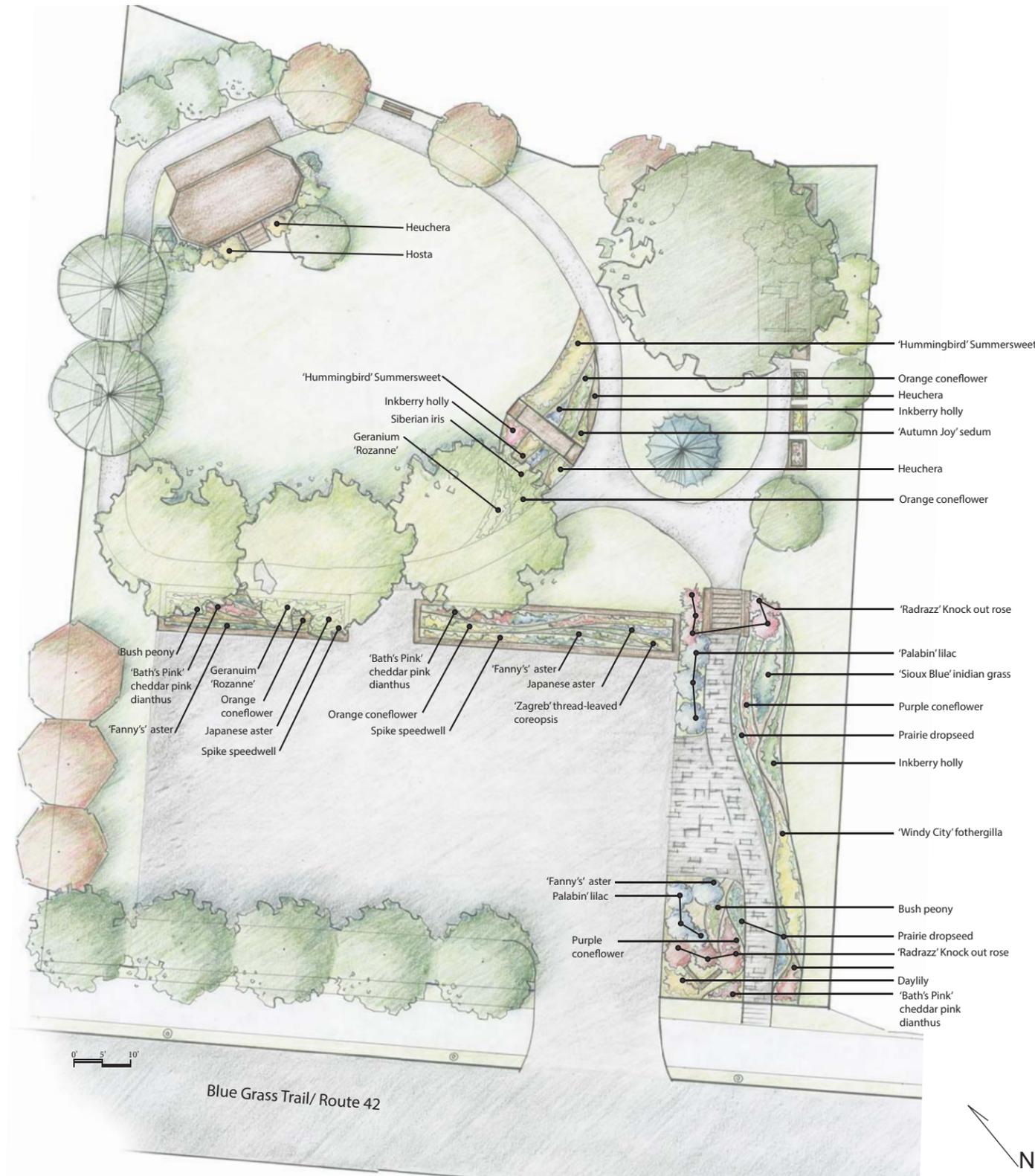


Gray Concrete Entrance Pavers



Section - Park entrance with signage

Newport Village Green Conceptual Master Plan Update
PLANTING PLAN: PERENNIALS, SHRUBS, AND GRASSES



Plant Information

Perennials	Description	Grasses	Description	Shrubs	Description
	<i>Heuchera</i> 'Southern Comfort' 'Southern Comfort' heuchera		<i>Sedum</i> 'Autumn Joy' 'Autumn Joy' sedum		<i>Syringa meyeri</i> 'Palabini' 'Palabini' lilac
	<i>Heuchera</i> 'Plum Pudding' or 'Palace Purple'		<i>Sporobolus heterolepis</i> prairie dropseed		<i>Clethra alnifolia</i> 'Hummingbird' 'Hummingbird' summersweet
	<i>Iris sibirica</i> Siberian iris		<i>Sorghastrum nutans</i> 'Sioux Blue' 'Sioux Blue' indian grass		<i>Rosa</i> 'Radrazz' 'Radrazz' Knock out rose
	<i>Hemerocallis</i> hybrids 'daylily'				<i>Fothergilla minor</i> 'Windy City' 'Windy City' fothergilla
	<i>Paeonia</i> bush peony				<i>Ilex glabra</i> inkberry holly
	<i>Dianthus gratianopolitanus</i> 'Bath's Pink' 'Bath's Pink' cheddar				
	<i>Geranium</i> 'Rozanne'				
	<i>Hosta</i> sp. hosta				
	<i>Coreopsis verticillata</i> 'Zabreb' 'Zabreb' thread-leaved coreopsis				
	<i>Veronica spicata</i> spike speedwell				
	<i>Rudbeckia fulgida</i> var. <i>sulivantii</i> 'Goldsturm' orange coneflower				
	<i>Kalmeris pinnatifida</i> 'Hortensis' Japanese aster				
	<i>Echinacea purpurea</i> purple coneflower				
	<i>Symphyotrichon oblongifolium</i> 'Fanny's Aster' 'Fanny's' aster				



Phase 1



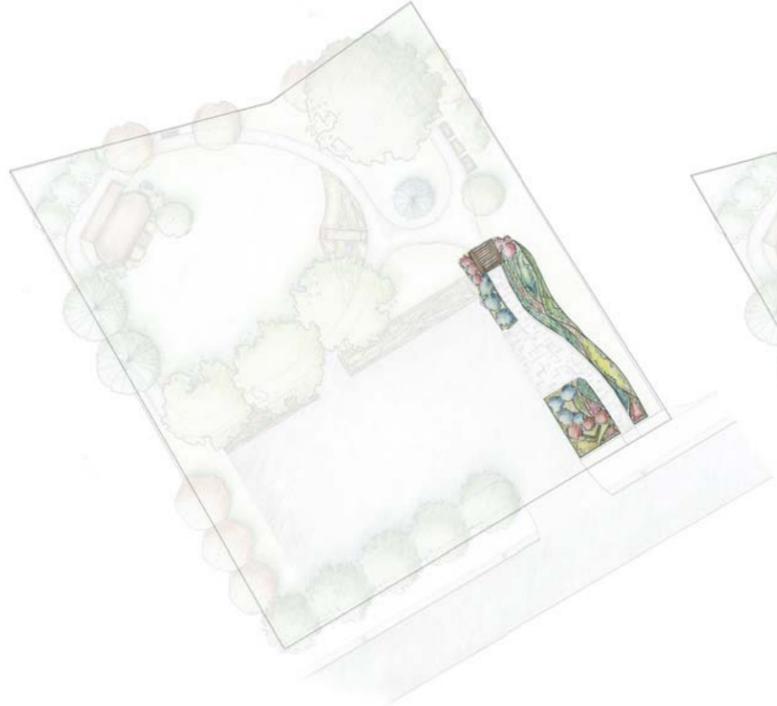
Phase 2



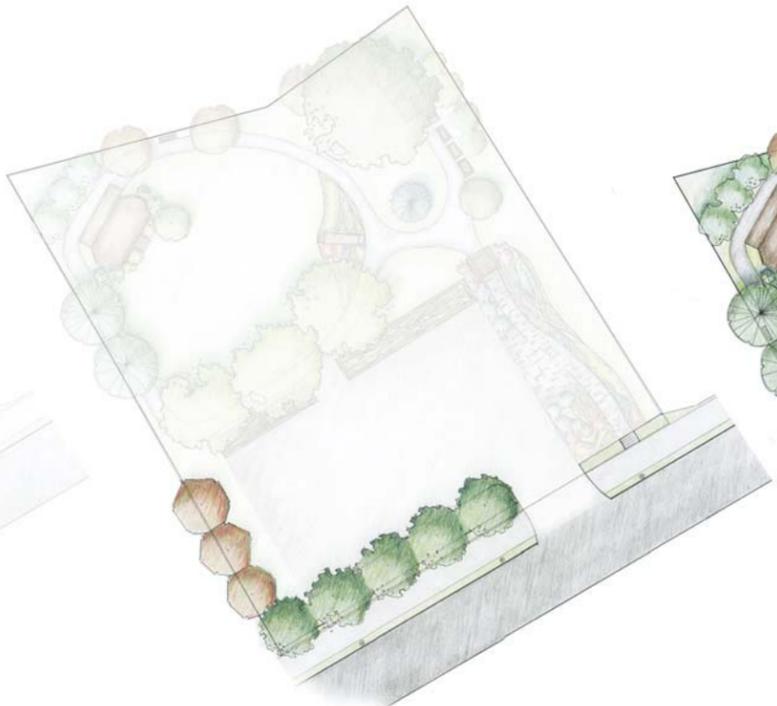
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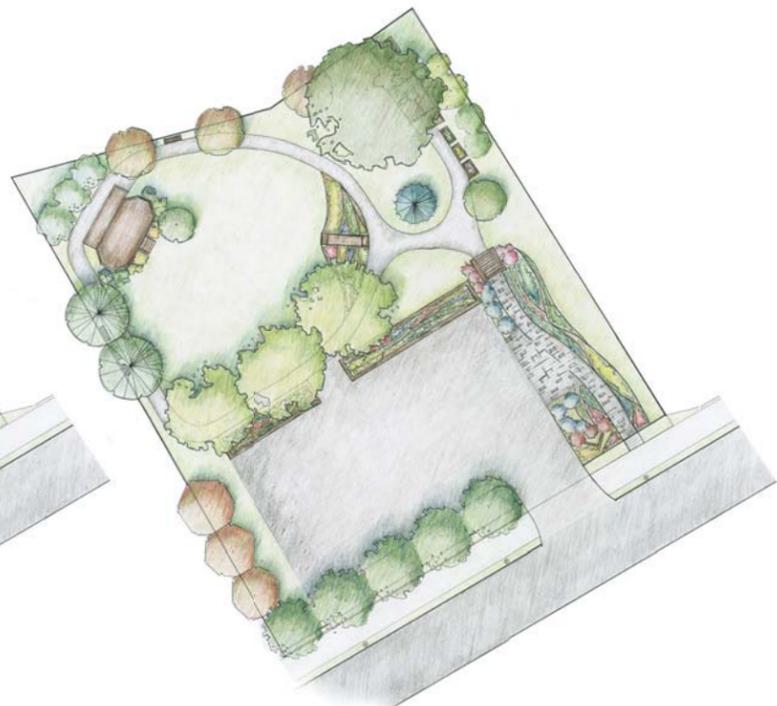
Phase 4



Phase 5



Phase 6



Completed

The final conceptual master plan has been divided into six phases. These phases can be reordered or combined based on interest, funding opportunities, and material/in-kind donations. In areas where there are proposed hardscape additions or required grading, the CDAC team strongly suggests that the hardscape elements (i.e. trail and walkways) and grading be completed prior to the installation of adjacent plant materials.

- Phase 1: ADA path installation
- Phase 2: Seat wall installation and planters
- Phase 3: Shade trees, Christmas tree and children's plot installation
- Phase 4: Concrete paver and foyer installation
- Phase 5: Foyer planting beds installation
- Phase 6: Streetscape renovations (street trees, proposed sidewalk, and lighting)

CONCLUSION

The Village Green is an amazing asset to the Newport community. The CDAC team worked closely with a Newport-Mt. Olivet Methodist Church Village Green stakeholders committee to enhance this existing community space to better serve current and future needs and users. Enhanced pedestrian access, an improved entry sequence, more clearly defined parking, updated plantings, and the addition of ADA accessible walking paths will help the Village Green serve as a desired gathering space for large and small community events for a wide range of people in aesthetically pleasing setting during all seasons. Revitalization of this space may also create opportunities for street and sidewalk renovations that connect the site to the downtown area, the church, and additional Newport community assets.

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APPENDIX A: Suggested Plant Material

Newport Plantings						
Botanical Name	Common Name	Spring	Summer	Fall	Winter	Culture
Perennials						
<i>Heuchera</i> 'Southern Comfort'	Southern Comfort heuchera or coral bells	apricot to soft orange foliage	apricot to soft orange foliage	apricot to soft orange foliage		These plants prefer average garden soil in part shade to full sun. They can be divided in the spring every few years. If the plants have been heaved out of the ground during winter freeze/thaw cycles, gently press back into place. Placing mulch around the plants after the ground has frozen can help keep the plants in the ground.
						
<i>Heuchera</i> 'Plum Pudding' or 'Palace Purple'	existing purple cultivar of coralbells/heuchera	purple foliage	purple foliage	purple foliage		These are existing plants at Newport Village Green. We're not sure of the exact cultivar, as there are several purple-leaved forms. If you need to replace any of these at the Village Green, bring some leaves with you to the garden center and look for a similar cultivar. The care for these is the same as the other
						

Newport Village Green Conceptual Master Plan Update

Newport Plantings

Botanical Name	Common Name	Features				Height	Width	Culture
		Spring	Summer	Fall	Winter			
Perennials								
<i>Iris sibirica</i>	Siberian Iris	purple flowers				2-4'	2'	Undemanding perennial that prefers full sun and average garden soil, though they are adaptable. The foliage can turn golden in the fall, so enjoy it that is the case and cut back in early spring. Divide in the early fall.
								
<i>Hemerocallis</i> hybrids	existing daylily		yellow			1'	1-2'	These existing daylilies look like a reblooming, yellow cultivar, though we did not see them blooming. They have a reputation as a hardy, adaptable perennial. For more plants, divide in the spring. A fungal disease called rust can affect the leaves of this plant, leaving yellow to orange spots and streaks on the leaves. While the symptoms are unattractive, the disease doesn't usually kill the plant. Remove and destroy diseased foliage during the growing season as much as is possible. At the end of the year, clean up and destroy diseased foliage,
								

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Newport Plantings

Botanical Name	Common Name	Spring	Summer	Fall	Winter	Height	Width	Culture
Perennials								
<i>Paeonia</i>	bush peony	color varies from white through pink to dark magenta				2-3'	2-3'	A shrubby herbaceous perennial that grows in full to part sun. For best appearance, put a grow-through staking grid over the plant as it emerges in spring. Fairly hardy once established. Can develop powdery mildew, and while unsightly, it won't kill the plant. Cut back when the foliage begins to die back in the fall. Long-lived perennial that doesn't require frequent division.
								
<i>Dianthus gratianopolitanus</i> 'Bath's Pink'	Bath's Pink' cheddar pink		pink flowers, blue-green foliage		foliage may persist through winter	6-8"	12-18"	This plant forms a nice mat of blue-green foliage, with pink flowers in summer. Shear back the dying flowers to tidy up the plant and better enjoy the foliage. Does well in typical garden soil in full sun, and doesn't require frequent division.
								
<i>Geranium 'Rozanne'</i>	<i>Geranium 'Rozanne'</i>		blue flowers	blue flowers		12-18"	18-24"	Does well in most average garden soils, growing in full to part sun. Blooms most of the summer.
								

Newport Village Green Conceptual Master Plan Update

Newport Plantings

Botanical Name	Common Name	Spring	Summer	Features	Winter	Height	Width	Culture
Perennials								
<i>Hosta</i> sp.	hosta	Cultivars offer unending shades of green, blue-green and chartreuse, some with white or chartreuse variegation.	Cultivars offer unending shades of green, blue-green and chartreuse, some with white or chartreuse variegation.			6"-2'	6"-2'	Great foliage plant which, once established, is hardy and long-lived. Deer enjoy browsing on the leaves, but as the hostas already planted at Newport seem undisturbed, these could be used further for season-long color and fullness in the garden. Plant in shade to part shade, especially protecting leaves from afternoon sun. Prefers moist soil. Division isn't usually necessary, but if more plants are desired they can be divided in spring.
								
<i>Coreopsis verticillata</i> 'Zagreb'	Zagreb' thread-leaved coreopsis		yellow	yellow		1-2'	2-3'	Site this perennial in good garden soils in full sun. Spreads by rhizomes. Other cultivars available as well as hybrids that offer shades of red, apricot and pale yellow.
								
<i>Veronica spicata</i>	spike speedwell		blue flowers in summer	a few blue flowers in early fall		1-2'	1-2'	Grows in average garden soil sited in full sun. Deadhead flowers to prolong blooming. Divide every couple of years in early spring.
								

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Newport Plantings							
Botanical Name	Common Name	Spring	Summer	Features	Height	Width	Culture
Perennials							
<i>Rudbeckia fulgida</i> var. <i>sulivanii</i> 'Goldsturm'	orange coneflower		yellow blooms in late summer into early fall	yellow blooms in late summer into early fall	1.5-2'	2-3'	Quite a few of these plants are already established in the village green. These plants are adaptable, durable perennials that can tolerate some drought once established. They prefer full sun, and can adapt to different soils. Divide in spring every few years to control spread and fill in any gaps in the planting.
							
<i>Kalmeris pinnatifida</i> 'Hortensis'	Japanese aster		white flowers in late summer to early fall	white flowers in late summer to early fall	2-3'	2-3'	Grows well in average garden soil. Plant in full sun to part shade. Divide in spring.
							
<i>Echinacea purpurea</i>	purple coneflower		new cultivars offer a wide range of colors: white, pink, purple, orange and red	new cultivars offer a wide range of colors: white, pink, purple, orange and red	2-3'	2'	Durable perennial performing well in many soil conditions. Some drought tolerance once established. Plant in full sun. This plant can be deadheaded to prolong bloom, but goldfinches love the seeds and seedheads can be ornamental in winter.
							
<i>Symphyotrichon oblongifolium</i> 'Fanny's Aster'	Fanny's aster		blooming late summer to early fall	blooming late summer to early fall	2-3'	3'	An aster that makes a lovely full mound and should not require pinching back as some asters do. Does well in most garden soils, sited in full sun. Some drought tolerance once established. A selection of a native aster. Divide when necessary in early spring.
							

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Newport Plantings

Botanical Name	Common Name	Spring	Summer	Features	Winter	Height	Width	Culture
Perennials								
<i>Anemone x hybrida</i>	Japanese anemone			white, pink flowers		4-5'	3-4'	Plant in full sun to part shade in average garden soils. Fairly carefree perennial, divide every few years in early spring to control spreading.
<i>Sedum 'Autumn Joy'</i>	Autumn Joy' sedum			dusky salmon pink		1.5-2'	1.5-2'	There are some sedums at the Village Green that seem to be this cultivar. To fill out the specified planting area, use existing plants first; dividing increases the number of plants. If necessary, more can be purchased. Site in full sun. Tolerates some drought once established. Stems may be weak and fall over if the plant received too much shade. Divide in early spring when necessary. 'Carl' is a brighter pink sedum with the same habit.



Grasses

<i>Sporobolus heterolepis</i>	prairie dropseed		wispy green foliage	wispy green foliage, airy flower plumes	wispy green foliage, airy flower plumes	2-3'	2-3'	Adaptable prairie grass preferring full sun. Cut back in early spring. As a warm season grass, it fills in late in the spring. If desired, divide in spring when the grass begins actively growing, but before flowering in summer.
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Newport Plantings							
Botanical Name	Common Name	Spring	Summer	Features	Height	Width	Culture
Grasses							
<i>Sorghastrum nutans</i> 'Sioux Blue'	Sioux Blue' indian grass		blue-green foliage	blue-green foliage, flower plumes in late summer	flower plumes remain through winter	3-5'(6') 2-3'	Durable prairie grass that adapts to a wide variety of soils. Prefers full sun. Rich soil can cause this grass to become floppy. As a warm season grass, its care will be similar to <i>Sporobolus</i> .
							
Bulbs							
<i>Narcissus</i> 'Rijnveld's Early Sensation'		yellow; super early spring				12-14"	Plant 6-8" deep in full sun to part shade in average garden soil. For best effect, plant in groups. Be sure to allow foliage to die back on its own. This allows the bulb to refuel for the next year's blooms. These can be lifted once they are dormant and divided to create more plants.
							
<i>Narcissus x odoratus flore pleno</i>		fragrant yellow flowers; early spring				10-12"	See above section.
							
<i>Narcissus</i> 'Las Vegas'		white petals/yellow trumpet; early to mid-spring				18-20"	See above section.
							

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Newport Plantings

Botanical Name	Common Name	Features			Height	Width	Culture
		Spring	Summer	Fall			
Bulbs							
Narcissus 'Pinza'		yellow petals and orange cup; mid-spring			12-16"		See above section.
Narcissus 'Fellow's Favorite'		yellow; mid-spring			12-16"		See above section.
Narcissus 'Bravoure'		white petals/yellow trumpet; mid-spring			14-18"		See above section.
Narcissus 'Yellow Cheerfulness'		light yellow double bloom; late spring			12-14"		See above section.
Narcissus 'Stratosphere'		fragrant yellow flowers; late spring			18-24"		See above section.

Newport Plantings

Botanical Name	Common Name	Spring	Summer	Features	Winter	Height	Width	Culture
Bulbs								
<i>Crocus</i>	crocus	shades of purple, white and yellow bloom early spring				0.5'		Plant groups for greater impact, siting the group in full sun. Be sure to allow foliage to die back on its own. This allows the bulb to refuel for the next year's blooms.
								
<i>Colchicum 'Giant'</i>				rosy lavender flowers in early to mid fall		10-12"		See above section.
								
<i>Crocus sativus</i>	saffron crocus			lilac flowers in early to mid fall		3-5"		See above section.
								
<i>Crocus medius</i>				lilac flowers in late fall		3-4"		See above section.
								

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Newport Plantings

Botanical Name	Common Name	Spring	Summer	Features	Winter	Height	Width	Culture
Vines								
<i>Clematis</i> sp.	clematis	Available in a wide range of shades in purple, pink, white and red. Different cultivars bloom from May to September.	Available in a wide range of shades in purple, pink, white and red. Different cultivars bloom from May to September.	Available in a wide range of shades in purple, pink, white and red. Different cultivars bloom from May to September.		5-12'		Widely known for large, showy flowers. Grows best when its roots are shaded and flowers are in the sun. Usually prefers evenly moist soil. Keep mulch pulled back from the base of the vine to avoid disease issues. Pruning times depend on which cultivar you plant. The Missouri Botanical Garden website has good information on many clematis cultivars (http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderProfileResults.aspx?basic=clematis).
<i>Lonicera sempervirens</i>	trumpet honeysuckle	shades of yellow, red and pink depending on cultivar which bloom in spring				10-20'		Lovely native vine with a more restrained habit than the rampant monster that usually comes to mind when thinking of honeysuckle. Attracts hummingbirds. Plant in good garden soil in full sun. Prune after flowering if necessary.



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Newport Plantings

Botanical Name	Common Name	Spring	Summer	Features	Winter	Height	Width	Culture
Shrubs								
<i>Hydrangea quercifolia</i>	oakleaf hydrangea		large panicles of white flowers	burgundy to red fall color		5-6'	same width; shrub can sucker	Plants do best in average garden soil in part shade, particularly if given relief from hot afternoon sun. No pruning is usually necessary, but if desired, do so soon after flowering.
								
<i>Syringa meyeri</i> 'Palabini'	Palabini lilac	light purple flowers in late spring				4-5'	4-5'	A lilac that is more resistant to powdery mildew than common lilac and of shorter stature. Plant in full sun in average garden soils, neutral to slightly acidic. Some drought tolerance once established. No pruning is usually necessary, but if desired, do so after flowering.
								
<i>Hydrangea arborescens</i> "Annabelle"	Annabelle smooth hydrangea		large balls of white flowers			3-4'	3-4'	Native hydrangea that blooms with large white bunches of blooms. Performs best in part shade, especially sheltered from afternoon sun. Blooms can be quite large and heavy, flopping over when wet. This cultivar has stems that are sturdier than the species. Cut back in late winter to about 6-10" from the ground to control height and avoid floppy stems.
								

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Newport Plantings

Botanical Name	Common Name	Spring	Summer	Features	Winter	Height	Width	Culture
Shrubs								
<i>Viburnum dentatum</i> 'Raspberry Tart'	Raspberry Tart' southern arrowwood	clusters of white flowers		light red fall color		5-6'	5-6'	Durable native shrub with white blooms in spring, blue-black berries and nice fall color. Plant in full sun, but will tolerate light shade. No pruning necessary.
								
<i>Clethra alnifolia</i> 'Hummingbird'	Hummingbird' summersweet		white blooms			3-4'	4-5', though this plant spreads by suckers	Native, durable shrub that thrives in full sun to part shade. No pruning needed. A bit late to break dormancy.
								
<i>Rhododendron</i> 'Elegans'	Elegans' rhododendron	lavendar blooms				6-10'	5-8'	Evergreen, native shrub. Plant in acidic soils in part shade. Pruning is not usually needed, but do so after flowering, if desired.
								

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Newport Plantings						
Botanical Name	Common Name	Spring	Summer	Features	Height	Culture
Shrubs						
<i>Aronia melanocarpa</i> 'Viking'	Viking' black chokeberry		white blooms	black, edible fruits, red foliage	3-6' 6-8'	Adaptable shrub that suckers from the roots. Tolerates a wide variety of soils, plant in full sun to partial shade.
						
<i>Rosa</i> 'Radrazz' Knock out	Knock out rose		red, yellow and pink cultivars available which bloom summer to frost	red, yellow and pink cultivars available which bloom summer to frost	3-4' 3-4'	This rose is known to bloom with less sun than other roses. However, at this site, plant these in full sun in good garden soil. Remove any diseased foliage when it's noticed, although this rose is particularly resistant to many typical rose diseases. While this plant is only supposed to get 3-4', many have reached 5' or more. If the plant gets too tall, prune mature bushes in early spring as buds begin to swell but haven't yet put out new growth.
						
<i>Fothergilla minor</i> 'Windy City'	Windy City' fothergilla	white bottlebrush flowers, fragrant, early spring	nice, tidy habit, blue-green leaves	select cultivar with good fall color		Plant in full sun to part shade. No pruning needed. Tends to prefer moist, rich, acidic soil.
						

Newport Village Green Conceptual Master Plan Update

Newport Plantings

Botanical Name	Common Name	Spring	Summer	Fall	Winter	Height	Width	Culture
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Picea pungens 'Fat Albert'
Fat Albert' colorado blue spruce
blue-green needles
blue-green needles
blue-green needles
blue-green needles
10-15'
7-10'
Plant in full sun. No pruning required.



Ilex xattenuata 'Fosteri'
Foster's holly
red berries, evergreen foliage
berries often persist through winter
20-30'
Plant in moist, well-draining acid to neutral soils. Fast growing.



Newport Village Green Conceptual Master Plan Update

Newport Plantings

Botanical Name	Common Name	Spring	Summer	Features	Height	Width	Culture
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Trees

<i>Cercis canadensis</i>	redbud	pink-purple flower in early spring		yellow fall color	15'	10-15'	Plant in full sun in moist, well-drained soils. Can tolerate some drought. This tree is one of the harbingers of spring, so a great addition to any garden. However, it is susceptible to canker. It may be a good idea to choose a smaller cultivar or hybrid like 'Ace of Hearts', so that if the tree does contract canker and dies removal will be easier. 'Don Egolf' is a cultivar of chinese redbud which flowers more heavily than the American species and is shorter, growing to about 10 feet.
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Asimina triloba

pawpaw



			yellow edible fruit	yellow fall color	15-20'	15-20'	Move while small in bal land burlap or container. Plant in full sun to part shade in moist, well-drained acid soils. Can sucker to form colonies, remove suckers when they appear.
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Newport Village Green Conceptual Master Plan Update

Newport Plantings

Botanical Name Common Name Spring Summer Features Fall Winter Height Width Culture

Trees

Carpinus caroliniana hornbeam



shades of orange, yellow, red; cultivars have been selected for brighter fall color

20-30'

20-30'

Plant in sun to part shade in moist, acid to neutral soils. Can tolerate periods of dry soil once established. Transplants best in early spring.

Acer griseum paperbark maple



excellent red fall color

20-30'

20-30'

Plant in moist, well-drained soils. Grows slowly.

Betula nigra 'Heritage' Heritage' river birch



exfoliating bark in shades of gentle white and salmon

40-70'

40-60'

Plant in full sun in moist, acid soils. Can tolerate periods of dry soil. Prune only during mid winter or early to mid summer. Tree bleeds profusely from pruning cuts when sap is running in late winter and spring. As this tree ages, branches may droop down. If they are in the way, prune off.

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Newport Plantings

Botanical Name	Common Name	Spring	Summer	Features	Height	Width	Culture
Trees							

<i>Taxodium distichum</i> 'Peve Minaret'	Peve Minaret' bald cypress			warm reddish brown			Dwarf, columnar tree with finely textured feathery foliage. Tolerates a wide variety of soil moisture conditions. Prefers acidic soils or leaves may become yellow. Needle-like leaves drop in the fall, but don't usually need to be raked up. Medium growth rate.
<i>Liriodendron tulipifera</i>	tulip poplar			yellow fall color	70-90'	35-50'	Tall, high canopied tree with smooth gray bark and unique flowers. Best transplanted in the spring into moist soil in full sun. Doesn't tolerate limited rooting area and heavy compaction. Fast growth rate, can be susceptible to ice damage.
<i>Viburnum prunifolium</i>	blackhaw viburnum		white flowers	edible black berries	12-15'	10-12'	Native, small tree with edible berries. Durable plant that adapts to many soil types, sun or shade.



Appendix B: Establishment and Maintenance Guidelines

For any design to be successfully realized, good installation, establishment and maintenance practices are key. The establishment period is one in which plants are particularly vulnerable. After all the effort of designing, selecting and installing a landscape, everyone is looking forward to seeing the plantings flourish and provide the shade and beauty for which they were chosen. For this to happen, they will need special care during at least the first growing season. For trees, this period can be even longer. According to an extension publication from Clemson University, it can take four years for a transplanted ball and burlap tree to regain 100% of its pre-dug root system. Shrubs and perennials take much less time to acclimate to their new surroundings. Once the establishment period is over, the landscape will benefit from volunteers continuing to follow good maintenance procedures. This appendix is meant to help the volunteers accomplish these goals. And while many topics are addressed, there is a wealth of information available through online extension publications and by calling local extension agents.

Planting

While there are some recommendations that specific species be planted in one season or another, most trees and shrubs can be planted anytime the ground isn't frozen or when they won't be under great heat stress. The best times of year are spring and fall, with fall being the best for trees. Some studies have shown that trees acclimate to their new location more quickly when planted in the fall as opposed to spring planting.

When getting ready to plant, look at the tree or shrub that will be planted and find the point at which the stem/trunk emerges from the soil. In ball and burlap trees, you may need to pull the burlap back from the base of the trunk and gently brush the soil back in case extra soil was piled on top when it was dug. The depth from where the trunk emerges from the soil to the base of the root ball is the depth at which the new hole should be dug. The width of the hole should be twice as wide or wider, as this helps loosen the soil, making root penetration easier. The back fill does not need to be amended. Once the tree or shrub is in place, refill the hole, watering to settle the soil when the hole is halfway full and again when full. After the hole is filled, spread mulch over top 2-3 inches deep.

Staking is not always necessary, unless the canopy is very full and might act as a sail in strong winds or the tree is in a windy site, which does not seem to be a problem at the Village Green. Some container trees have such a light root ball compared to their height that staking might be helpful. Use three stakes spread around the tree with a flexible staking material. Be careful not to injure the bark when attaching the ties, especially in early spring when the bark can be loose. These lines and the stakes should be removed after the first year, or they could injure the tree. A good article on planting with an illustration of proper staking can be found at: <http://pubs.ext.vt.edu/426/426-702/426-702.html>.

Mulching

Once any piece of this design has been installed, certain steps should be followed for the best chance of successful establishment. As part of installation, a 2-3 inch deep layer of mulch should be applied over the perennial bed as well as around

any trees. Mulch rings around trees should be wide enough to cover the planting hole. The mulch ring will help keep trimmers and mowers from damaging the trunk of the tree, leaving entry points for disease and insects. **All mulch should be pulled back from the base of trees and shrubs, and away from the crowns of perennials.** Dr. Linda Chalker-Scott, a horticulture professor at Washington State, writes in her article *Wood Chip Mulch: Landscape Bane or Boon?*:

“Piling mulch against the trunks of shrubs and trees creates a dark, moist, low oxygen environment to which above-ground tissues are not adapted. Fungal diseases require a moist environment to grow and reproduce; piling mulch on the trunk provides exactly the right conditions for fungi to enter the plant. Likewise, opportunistic borers are more likely to invade a plant whose bark is wet due to excessive mulching. “

Organic mulches will help build soil structure as it decomposes, suppress annual weeds, reduce surface soil temperatures, help retain moisture, and prevent frost heaving. Typically hardwood bark mulch or wood chips are used. Avoid very finely ground mulches, as they can mat together and create a water-resistant layer preventing moisture from reaching the soil. Maintaining this mulch layer each year will continue these benefits to the planting. Dyed mulches can be used if desired, but it can be helpful to ask where the wood comes from. Sometimes the wood is sourced from older demolished projects and may have been originally treated with out-dated preservatives that can contain arsenic. The manufacturer should be able to tell you where the wood originates.

Watering

During the first growing season, all plantings should be watered 2-3 times a week for a total of one inch of water applied each week. Trees may need extra care the following season as well, especially during dry periods. There are lots of methods to provide water: soaker hoses, sprinklers, and tree gators. Tree gators are water filled bags that can be put at the base of a tree, filled with water and left to slowly seep into the soil. If using a sprinkler, put a shallow, straight-sided dish or can in the area to be watered and time how long it takes to collect 1/3 to 1/2” of water, depending on whether you plan to water twice or three times a week. If there is rain that week, reduce water by the amount received. Soaker hoses can be installed before applying mulch, then hooked up to a hose and run for the appropriate amount of time. Some people prefer using this method over sprinklers since little water is wasted to evaporation or overspray, and less time is spent repositioning the sprinklers. However, installations costs for using soaker hoses are higher.

Fertilizer

If the soil has good fertility or has been amended with compost prior to planting, no fertilizer is needed at planting. Most trees and shrubs don't require fertilizer at all. The exception to this may be the trees at Newport Village Green that don't seem to be in good health. Wendy Silverman, Master Gardener Coordinator with the Montgomery County Extension Office, recommended the pear tree closest to the

maple and the cherry tree in the planting bed both be fertilized and watered over the next growing season to see if this would improve their health. In the future, the perennial beds may benefit from top-dressing with well-rotted compost before refreshing the mulch or the application of an appropriate fertilizer before new growth starts in spring.

Lawns

Aeration would be of great benefit to the Newport Village Green lawn. The soil underneath any lawn receiving frequent foot traffic can become compacted, making the soil less able to provide the moisture and oxygen that the grass needs. At Newport Village Green, the lawn also plays host to occasional vehicle traffic and gatherings of large numbers of people, making aeration an important part of maintaining the health of this lawn. Most lawn care companies can provide this service. Alternately, aeration machines can be rented from equipment rental stores in our area. It might also be helpful to spread an inch of well-rotted compost over the lawn before aeration, then run the aerator over top, with a baffle hung behind it to help drag the compost into the holes.

Compost

Adding organic material to soil can improve the structure of the soil, making it better able to hold onto water, nutrients and provide a good rooting environment. When sourcing compost, ask whether the company tests its compost and ask to see the results. Compost could also be tested at the Virginia Tech Soil lab, contact your extension service for the forms and boxes. Washington State University has a sheet on understanding what the analysis helps you understand at <http://puyallup.wsu.edu/soilmgmt/Pubs/Poster-CompostAnalysis.pdf>

Pruning

Following good pruning practices can help improve the form and health of trees and shrubs. Most of the shrubs chosen for this design should not need regular pruning, as their mature size should fit the space in which they were placed. The one exception is the smooth hydrangea, which could benefit from being pruned according to the information Appendix B, but is not necessary. If pruning is desired, an excellent resource is *Pruning: An Illustrated Guide to Pruning Ornamental Trees and Shrubs* available through Cornell University at <http://www.gardening.cornell.edu/woodies/>.

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APPENDIX C: Soil Test Results

The functions that take place at the Newport Community Green, and its placement in the community make beautiful, eye-catching plantings a priority. The CDAC team wanted to assess the soil to ensure it could support those kinds of plantings and to guide plant selection for our proposed designs.

Soil Conditions

To know more about the growing conditions at the site, we took composite soil samples at four different locations. The soil samples were analyzed by the Virginia Tech Soils Lab for a variety of factors with pH, organic matter and nutrient content being the information in which we were chiefly interested. Organic matter helps determine the soil's fertility, its ability to house and release nutrients and strongly contributes to good soil structure which, in turn, provides healthy growing conditions for roots. Soil pH influences nutrient availability, determines which plants will grow successfully in that soil and guides liming recommendations for lawns. In fact, it's a good idea to have soil samples taken every few years to make sure you're not over or under liming lawns or applying unnecessary fertilizer. Your local extension agent can help the volunteers at Newport Village Green test the soil in future.

Most trees and shrubs like to have a slightly acidic soil, which this site provides according to the soil samples we took. Lawns tend to prefer a more alkaline soil. After looking at a variety of extension publications from different universities, the major grasses in the Newport Village Green lawn will do best in a range of 5.5 – 7, with some publications narrowing the range to 6-6.5. The samples we collected are all within this range, so liming may not be necessary. However, soil tests should be taken every 2-3 years to monitor the quality of your soils. If the pH falls below this range, liming will be helpful. The soil test results will include liming recommendations.

All of the soil samples showed sufficient organic matter (above 3.5% according to the Virginia Cooperative Extension). To maintain these levels in the lawn, use a mulching mower and leave clippings on the lawn, as long as the clippings don't accumulate in piles that can smother grass underneath.

Most of the samples had adequate nutrient levels. The sample taken near the play area had low levels of potassium and phosphorus and given the health of the pear tree in that area, fertilization around the root zone of that tree may be helpful. Apply a complete fertilizer with a ratio of 3-1-2 or 3-1-1 in early spring and water well afterward. As long as the lawn is meeting expectations, fertilizing isn't necessary. Given the site's proximity to a stream and history of stormwater runoff, particular attention should be paid to fertilizer application.

APPENDIX C: Soil Test Results

Newport Village Green Soil Test Results

Sample Number	Lab ID	ph	bph	p	k	ca	mg	zn	mn
1	34795	7.44	N/A	7	46	1617	194	2.8	24
2	34796	5.85	6.28	5	25	702	103	1.9	11.6
3		6.04	6.28	40	58	801	117	6.7	13.8
4 (pear nearest play area)	36680	5.63	6.17	11	135	968	158	4.2	18.3

Newport Village Green Soil Test Results

Sample Number	Lab ID	cu	fe	b	om	ss	cec	pct acidity	base sat	ca sat
1	34795	0.4	5.1	0.9	8.5		9.8	N/A	100	82.5
2	34796	0.7	4.7	0.4	4.2		5.1	13.9	86.1	68.3
3		1.3	0.4	0.4	3.8		5.8	12.2	87.8	16.6
4 (pear nearest play area)	36680	0.5	5.2	0.5	5.4	141	7.8	17.4	82.6	16.5

Newport Village Green Soil Test Results

Sample Number	Lab ID	mg sat	k sat	p rating	k rating	ca rating	mg rating	ss rating	om rating
1	34795	16.3	1.2	M-	M-	VH	VH		VH
2	34796	16.5	1.2	L+	L	M+	H		VH
3		16.6	2.6	H	M	H-	VH		VH
4 (pear nearest play area)	36680	16.5	4.4	M	H	H+	VH	L	VH

Virginia Cooperative Extension

PUBLICATION 452-701

Explanation of Soil Tests

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.

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%.

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

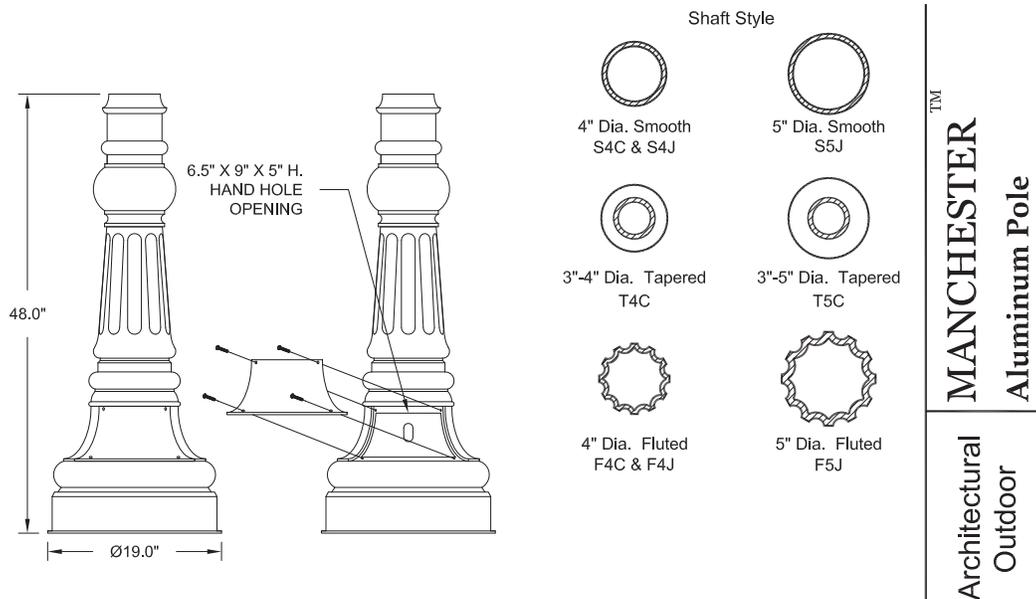
Pounds per 1,000 square feet x 43.6 = pounds per acre

Pounds per acre x 0.0023 = pounds per 100 square feet

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

APPENDIX D: Lighting Suggestions

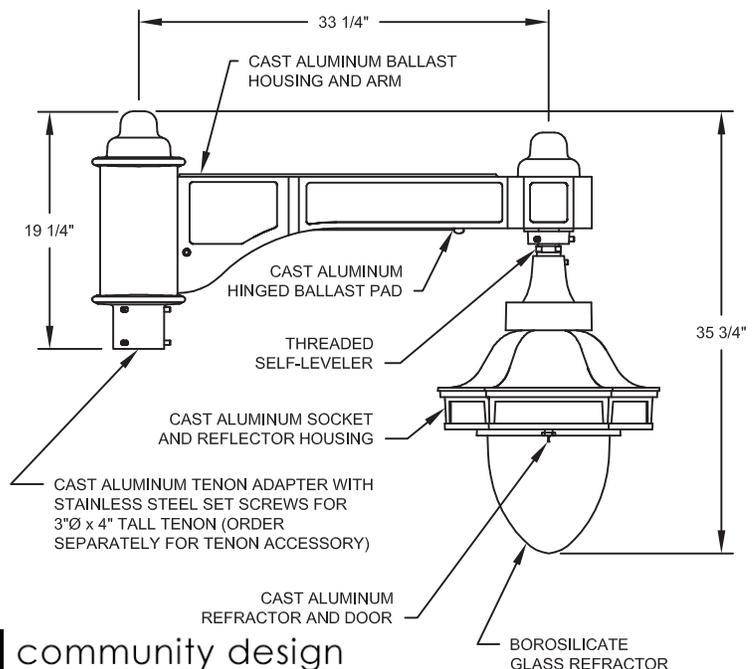
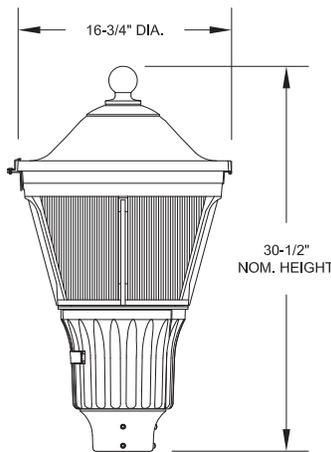
Improved pedestrian lighting is desired for the Newport Village Green. A good starting point for the project stakeholders would be to consult with a private company to discuss design desires and budget options. Frequently private companies will offer a preliminary light design free of charge. The number of lights will depend on the model select and the area of coverage desired. The following are suggested lighting examples for on site and street lighting from Holophane.



Milwaukee Lantern

Maximum weight - 85 lbs

Maximum effective projected area - 4.3 sq. ft.



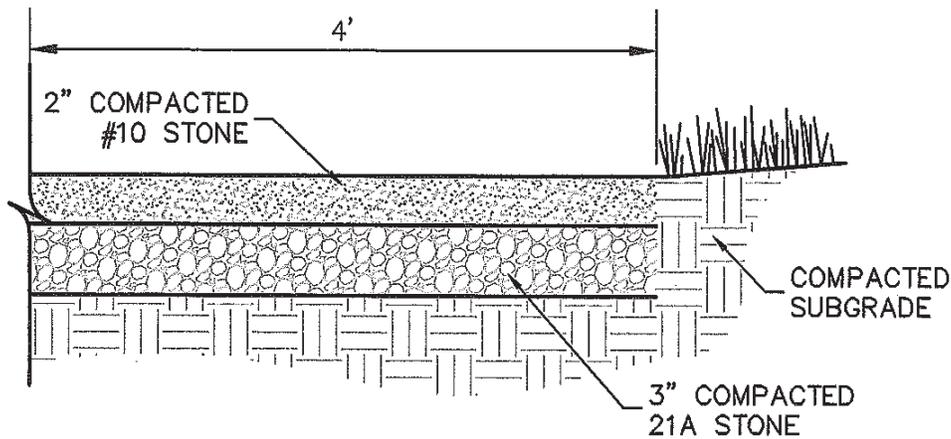
Utility Postop® LED Series
Luminaire

APPENDIX E: ADA Path Details

The following trail construction details were provided by Blaine Keese, Senior Landscape Architect at Draper Aden Associates.

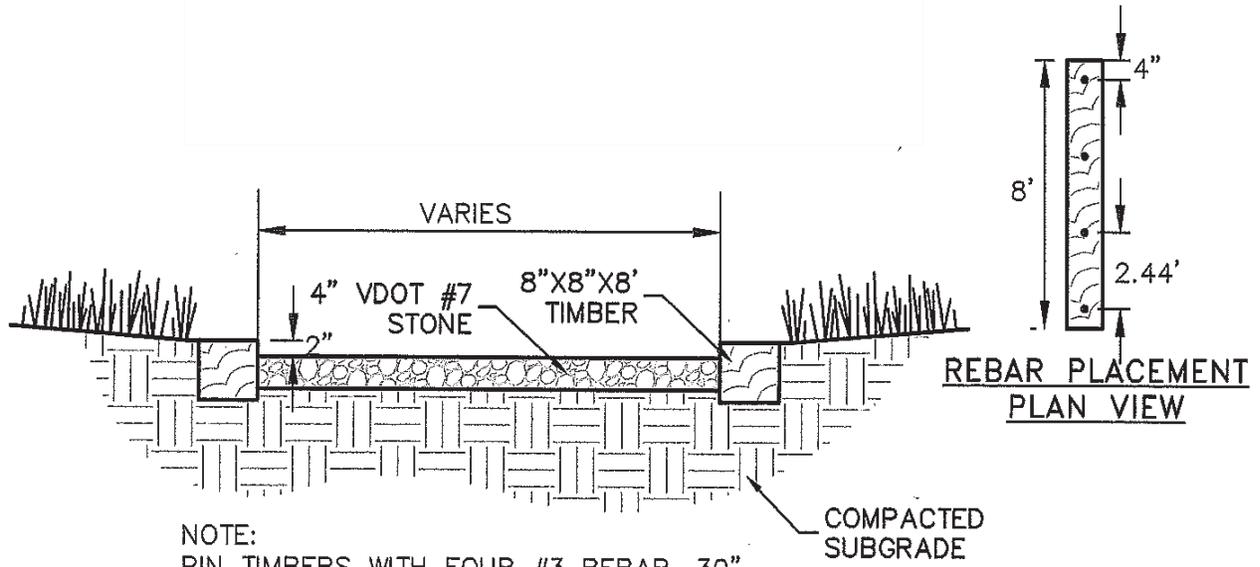
In addition to the details, Blaine offered the following advice:

“The gravel trail will need some maintenance from time to time and some and some judgments will need to be made on how to handle grading as to avoid concentrating for runoff for extended lengths along the trail surface. Think carefully about using timber edging detail – might be best to avoid its use – as it can cause the trail edge to erode if drainage turnouts are not properly placed.”



NOTE:
1 BAG (94 LBS) PER 250 SQ FT PORTLAND
CEMENT SURFACE APPLIED & RAKED TO ¼" DEPTH.
COMPACT SURFACE & WATER SPRAY TO SET.

SEGMENT A – 1/2 SECTION
COMPACTED STONE PATH
NO SCALE



NOTE:
PIN TIMBERS WITH FOUR #3 REBAR, 30"
LONG WITH 18" IN GROUND.

TIMBER EDGED GRAVEL DRIVE

NO SCALE